CAUSES, EFFECTS AND REGULATORY IMPLICATIONS OF FINANCIAL AND ECONOMIC TURBULENCE IN EMERGING MARKETS

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Preface

The impact of the East Asian crisis which materialised in the middle of 1997, and the subsequent turbulence that swept the world's financial markets over the next 12–18 months, has been significant not only in terms of the financial, economic and social consequences that these events wrought on emerging market economies, but also in terms of drawing the world's attention to outstanding issues concerning the structure, operation and regulation of the international financial system.

Since its advent, the crisis has generated a substantial amount of analysis and debate. These, however, have tended to focus on macroeconomic issues and less on those concerning securities markets. In order to address this situation, the Emerging Markets Committee (EMC) in November 1997 approved a mandate to examine the causes, effects and regulatory implications of the financial and economic turbulence in emerging markets. Following a survey of 17 EMC members to collect data and information, an interim report was prepared on events and issues that arose during the period January 1997–July 1998 which focused not only on issues of more general significance but primarily on those of particular relevance to securities markets.

The decision to release an interim report reflected the urgent need to inform and educate members of the issues surrounding the prevailing events at the time, given the fact that the crisis was still on-going as the report was being prepared. In light of this, at the Nairobi meeting of IOSCO in September 1998, the committee decided to extend the mandate with a view to formulating a final report that would provide an update of events, issues and policy implications that were first identified and discussed in the interim report. To this end, a further survey of the original 17 members was conducted, the results of which, where relevant, fed into the additional analysis. In addition to the survey, research also focused on assessing new views and issues, identifying those that appeared to be no longer relevant, and confirming those upon which some consensus had been reached.

As with the interim report, this final report has benefited greatly from the contributions of various IOSCO members—in particular, the timely and highly-informative responses of those who participated in and replied to the surveys. Comments have came from a wide spectrum of EMC jurisdictions, consisting of securities regulators from Africa, East Asia, Eastern Europe, the Middle East, South America and South Asia. This project owes much to their views and comments.

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1 Introduction

The purpose of this report is to provide an update of current views on the likely causes and effects of the period of financial and economic turbulence during 1997–99, and where possible to extend the analysis that had been presented in the interim report of the same title in September 1998. This report views the crisis and its consequences primarily from the perspective of emerging securities markets and their regulation. That said, it will, where appropriate and relevant, examine issues related to the wider financial systems and macroeconomy. Moreover, the term "financial and economic turbulence" in the report's title refers to the increased volatility and protracted decline in prices experienced by several jurisdictions around the world from the first half of 1997; the sharp global falls in financial markets during October 1997 and August 1998; as well as the severe economic downturn experienced by many emerging economies during the aftermath.

The events of 1997 to early 1999 are best understood as a series of linked crises in East Asia, Russia and Brazil. The crises are distinct, because, despite common elements, they do not have identical causes and characteristics. In the Russian and Brazilian context, concerns about government creditworthiness appeared to play a larger, more central role. In the East Asia context, by contrast, government finances were broadly in balance and levels of public debt were low. Hence. the East Asian crisis appeared to driven more by concerns about private, not public, indebtedness. While there is much to be learnt from all three crises, the East Asian crisis, with its roots primarily in the private sector, appears to have particular relevance for regulators of securities markets, where the private economy raises capital and where control of listed banks and corporations is exercised. Hence the report's particular focus on events in East Asia, although issues in relation to Russia and Brazil will be taken up in an appendix, as will a description of the unfolding crises.

In order to ensure consistency with the mandate, the following analysis will identify and discuss first a set of possible causes of the crisis, and then a set of effects that were observed in the crisis's aftermath. While some of these issues had been identified earlier by the interim report, where possible, the current report will re-examine them in light of fresh developments and the benefit of greater hindsight, and highlight areas where new consensus has emerged. For instance, the liquidity crunch experienced by many of the worst-hit economies at the height of the crisis has raised profound questions regarding the functions of financial systems in these economies, as well as the sufficiency of the institutional framework that underlies them. For another, factors leading to a build-up in balance-sheet risks and hence fragility in the face of greater asset price volatility are being examined more closely. Attention is also focusing on the social impact of the crisis.

Section 2 examines the causal factors in relation to the build-up to and subsequent breaking of the crisis. Causes of the crisis remain among the most contentious issues and continue to be debated at the academic as well as at the policy level. Views have seen many changes, while others have been significantly reinforced during the period of the crisis. For instance, it is now generally agreed that the central issue in the East Asian crisis concerns the financial system and not so much macroeconomic, especially current-account, imbalances as had been thought initially. It is perhaps worth noting that many of the less acknowledged or more contentious issues that had been raised earlier in the crisis has since become more widely recognised by policy-makers and commentators alike. One particular area where a sea-change in views has occurred relates to the international financial system. As will be discussed later in the report, views have also begun to focus on the role of investor behaviour within an environment of liberalised international financial markets in triggering and exacerbating the crisis.

Section 3 focuses on the immediate and longer-term responses of both markets as well as market authorities and regulators to the issues and pressures arising from the turmoil. The issues concentrate on two broad areas, namely macroeconomic effects, which seemed to have a major impact on the confidence in market fundamentals, and effects on the markets themselves. Clearly, there may be instances in which it is not so easy to delineate between certain causes and effects, given the cyclic nature of the dynamics underlying the crisis. One such example is the issue of capital flow reversal, which arguably played a significant role in driving currency and other asset prices lower, hence precipitating problems arising from corporate and banking balance-sheet weaknesses. On the other hand, such outflows were driven by investor panic as a result of an evaporation of confidence. Where these issues arise, the report will attempt to acknowledge them and endeavours to minimise any repetition in arguments.

There appears to be a trend among many commentators to refer to broad descriptions of factors pertaining to vulnerabilities, triggers and those that deepened the crisis. This seems reasonable, to the extent that certain vulnerabilities may have exposed certain economies to the risk of crisis, and that a confluence of certain factors—including market activity as well as policy stances and responses—were responsible for triggering the incidence of crises in various economies. Indeed, among the causal factors, the report does attempt to distinguish between those that would appear to have been sources of macroeconomic and structural vulnerability, and those whose characteristics spoke to triggering and deepening the crisis.

However, it should be noted that there currently appears to be no consensus on the precise nature or components of these classifications. Moreover, crises typically arise from a multiplicity of factors that interact to produce an adverse outcome; the crisis and turbulence that ensued during the period under consideration appears to be no exception. Thus, to provide a definitive framework that fully explains the onset and unfolding of the crisis is arguably impossible at this juncture and would, in any case, lie outside the scope of this report.

Section 4 contains a discussion of the various implications the crisis has had for securities regulators as well as more generally for economic policy-makers. In its assessment of implications, the report takes into account the need to consider the exact circumstances surrounding each economy and regulatory jurisdiction. The crisis has drawn attention to a broad range of issues, including the challenges to regulation and market development of an increasingly integrated global marketplace. The discussion in section 4 focuses on two broad areas, namely, enhancing the detection and management of crises, and structural issues that are necessary preconditions for robust securities markets. Section 5 contains some concluding remarks.

2 Causes of Economic and Financial Turbulence

This section examines certain causal factors that appear to have been significant in the build-up to and subsequent breaking of the crisis. Causes of the crisis remain among the most contentious issues and continue to be debated by academics and policy-makers. Many views have changed, while others have been reinforced over the last 12–18 months, largely as a result of recent developments and perhaps the benefit of hindsight. For example, the sharp "improvement" in the financial markets of worst-hit economies from October 1998 onwards, evidence of vulnerability among global market players in relation to their speculative activity, as well as a flood of theoretical explanations relating to various aspects of the crisis have kept these issues in flux. It has also been argued that difficulties in finding evidence to support certain arguments, or by the *post hoc ergo propter hoc* syndrome—that is, confusion between the presence of a weakness and an actual cause of the crisis—have further contributed to the on-going debate.[1]

Nevertheless, there have been certain noticeable trends. For instance: the liquidity crunch experienced by many of the worst-hit economies at the height of the crisis has raised profound questions regarding the functions of financial systems in these economies, as well as the sufficiency of the institutional framework that underlies them; factors leading to a build-up in balance-sheet risks and hence fragility in the face of greater asset price volatility are being examined more closely; attention is also focusing on the social impact of the crisis.

Perhaps one area where the most significant sea-change in views has occurred relates to the international financial system. As will be discussed in section 2.2, more recent views have also begun to focus on the role of investor behaviour within an environment of liberalised international financial markets in triggering and exacerbating the crisis. This contrasts with many initial arguments that laid blame squarely on fundamental weaknesses within some of the worst-hit economies, and is therefore important to report.

Despite the apparent multiplicity of factors that has contributed to the onset and unfolding of the crisis, many commentators have nevertheless tried to organise their arguments in terms of broad categories pertaining to vulnerabilities, triggers and factors that contributed to a "deepening" of problems. This seems to be a worthwhile exercise, to the extent that certain vulnerabilities may have exposed certain economies to the risk of crisis, and that a confluence of certain factors—including market activity as well as policy stances and responses—were responsible for triggering the incidence of crises in various economies. Indeed, among the causal factors discussed below, the report does attempt to distinguish between those that would appear to have been sources of

[1] See "Knowledge for Development: Economic Science, Economic Policy and Economic Advice" by Joseph Stiglitz, *Annual World Bank Conference in Development Economics 1998*, World Bank, April 1999.

macroeconomic and structural vulnerability, and those whose characteristics spoke to triggering and deepening the crisis. However, it should be noted that there does not appear to be, as yet, consensus on a single characterisation of the crisis. The current situation of deliberation and discussion, and the preliminary efforts to quantify many of the arguments that have been put forth, suggests that a definitive "model" of the crisis, especially one that successfully amalgamates arguments at both the macro as well as micro level, would be difficult—arguably impossible—to attain at this stage.

2.1 Domestic vulnerabilities

2.1.1 Surges in capital inflow and the build-up of financial and macroeconomic vulnerability

Survey responses and an analysis of the situation of several emerging markets during the crisis suggest that a possible starting point for an analysis of the crisis is the recent episode of capital inflows to developing economies. In the early 1990s, the confluence of several factors had led to the start of the most recent episode of private capital flows to developing economies. The level of capital movement into East Asia grew to as much as US$110 billion in 1996.

One view has been put forward that an acceleration in economic growth in several Asian economies during the 1990s, arguably in conjunction with increased productivity, acted as "pull" factors that attracted high capital inflow.[2] Moreover, commentators have also noted that investors were attracted by a significant improvement in economic fundamentals of many emerging markets, including a reduction in public debt, lower inflation and improved export volumes. On the other hand, changes in global macroeconomic conditions, including a cyclical drop in global interest rates, compounded with the increasing importance given to portfolio diversification by the growing number of institutional investors acted as "push" factors that drove foreign capital into the Asian economies.

Instances have also been noted of banking institutions in slow-growth countries seeking more lucrative investment opportunities in countries with high growth and, in the case of the East Asian economies, long record of low public indebtedness proved to be an added attraction. Moreover, the generally stable foreign exchange rate in many East Asian jurisdictions had made foreign credit seem cheap and riskless. In view of perceived exchange rate pegs, domestic and foreign banking institutions began making full use of the opportunity by making significant profit from interest rate differential. In what has

[2] Although it has been argued that the rapid growth of East Asian economies has had more to do with increases in factor inputs than improved efficiency of those inputs. See, for example, "The Myth of Asia's Miracle", by Paul Krugman, *Foreign Affairs* 73 (6), pages 62–78.

come to be termed as "carry trade", huge amounts of funds—a substantial proportion of which was short-term foreign capital—obtained from abroad at lower dollar interest rates by numerous banking institutions in Asian countries were on-lent domestically, spurring a lending and investment boom in certain countries. According to Bank for International Settlement (BIS) figures, international bank lending accounted for over 60% of net private capital flows to Indonesia, Malaysia, Philippines, Thailand and Korea. Hence, the increase in capital flows into the Asian economies, as well as other emerging markets could also be partly attributed to the process of globalisation and the increase in the interconnectedness among the world's economies.[3]

Global capital flows afforded developing countries the opportunity to smooth their consumption and investment patterns and also brought along with them the accompanying benefit of "knowledge spill-over" and improved resource allocation. However, these capital flows were not totally without cost as they also brought along with them significant risks. The World Bank, in a prescient policy research report, noted that after the Mexican crisis, international investors had become more discerning and stringent in exacting market discipline whenever confidence was lost. It also noted that without the necessary pre-conditions to ensure the sound deployment of private capital flows, the risks of large reversals could be devastating. The East Asian crisis appears to suggest that initial conditions not only matter but are crucial in ensuring that developing countries can successfully tap the benefits of private capital flows while shielding themselves from the accompanying risks.

It has been argued that capital flows can be related to economic vulnerability along the following lines.[4] Specifically, according to this analysis wweak initial conditions—among them, poor governance, inadequate supervision and regulation—as well as inappropriate policy responses to initial surges in capital flows—for example, lax fiscal policies and non-sterilised inflows—resulted in a credit boom and other imbalances in recipient economies, and allowed them to be sustained. For example, one argument suggests that a sudden surge in capital inflows may have meant that the capacity of the relevant authorities in certain jurisdictions to regulate and supervise the financial sector did not manage to keep pace with the ensuing increase in transactions in the capital market.[5] Studies had suggested that capital account liberalisation without adequate re-regulation would result in excessive risk-taking and over-accumulation of short-term external liabilities among banking institutions.

On the macroeconomic front, it has been argued that capital influx in a regime of relatively rigid exchange rates—regimes that tend to be favoured by many developing countries as a means of providing a nominal anchor for the domestic price level and/or

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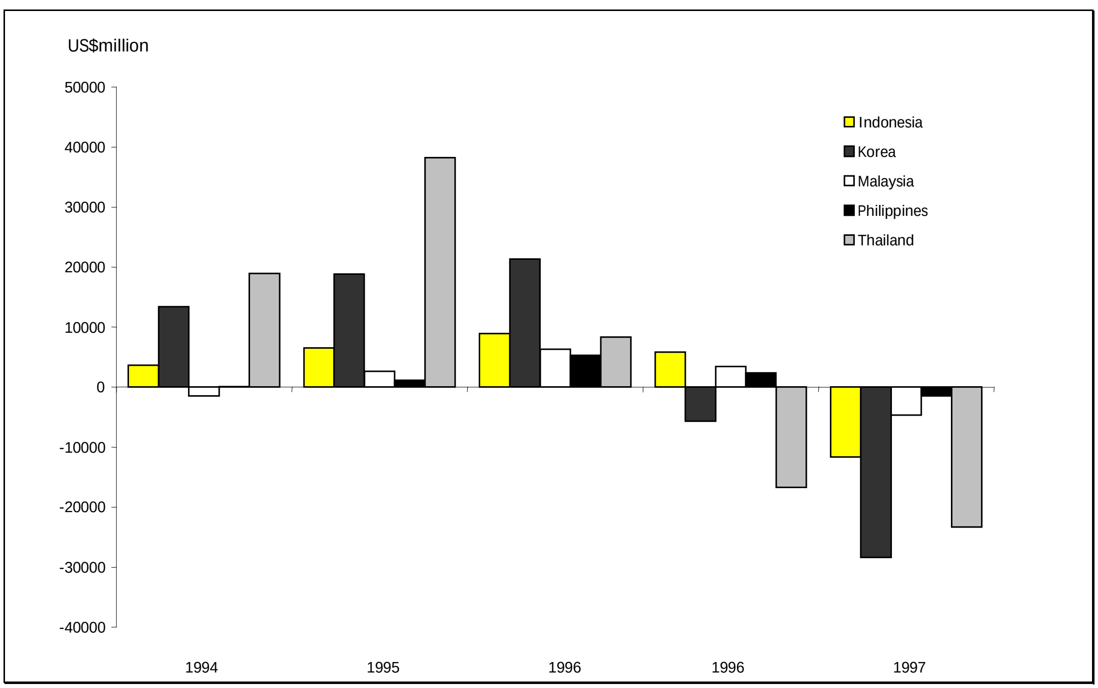
[3] For a theoretical background, see P. Montiel and C.M. Reinhart, "Do capital controls and macroeconomic policies influence the volume and composition of capital flows?", *Journal of International Money and Finance*, August 1999, Volume 18, pages 621 - 622
[4] See World Bank (1997).
[5] See a paper by S. Radelet and J. Sachs, "What have we learned, so far, from the Asian financial crisis?", 1999, pages 4 - 5

maintaining a competitive export position—caused, in the absence of sterilisation, monetary aggregates to increase.[6] Commentators have noted that sterilisation, which typically entailed an increase in interest rates, tended to incur quasi-fiscal costs. Furthermore, interest rate hike would only provide additional incentives for domestic banking institutions to increase their income by intensifying offshore borrowing and domestic on-lending activities, not to mention that higher yields would also encourage further foreign capital movement into the economy. As a result, attempts to sterilise the surge in capital flows would end up being incomplete and inadequate. The continuing surge in capital inflow would then spark off an investment boom in the economy. This whole process rendered many economies vulnerable to financial shocks, particularly in the event of a reversal in capital flows.

The poorly-sterilised entry of a huge amount of capital into the East Asian financial markets—particularly in the case of those economies that practised inflexible exchange rate regimes—had led to a rapid accumulation of foreign reserves. While retaining a big reserve of foreign currencies had its advantages, the rapidly increasing foreign reserves in the economy, as well as the lending boom stimulated by the surge in capital inflow, tended to expand the money supply. According to World Bank estimates, several East Asian countries recorded an annual increase in broad money (M2) of some 20% in the years 1996 and 1997.

Figure 1: Foreign borrowing by banks in Malaysia, Indonesia, Thailand, Korea and the Philippines

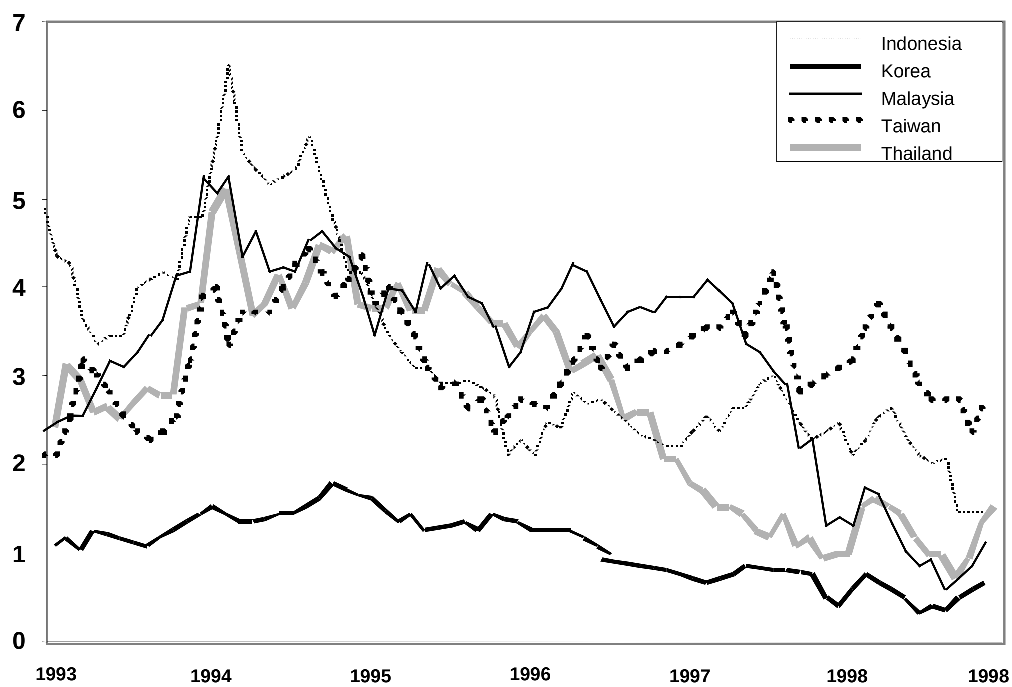


Source: IMF, BIS, OECD and World Bank

[6] This assumes minimal impediments to capital flows.

The increase in money supply, which implied lower interest rates, fed economic activity, inflationary expectations and real exchange rate appreciation. Moreover, excess liquidity also appears to have been channelled into asset markets, thus fuelling an asset price bubble: given the fixed supply of many non-tradable goods—which included real estate—the upsurge of investment and demand in this sector had, in a number of cases, allowed asset inflationary pressures to build, resulting in an upward spiral in asset prices. Anecdotal as well as some empirical evidence suggests the subsequent formation of an asset price bubble: price-to-book ratios were perceived to be considerably high in several East Asian jurisdictions during the second half of 1997, and a recent study appears to confirm signs of the presence of asset price bubbles in a number of the crisis-hit economies.[7]

Figure 2: Price-to-book value ratios on Asian stock exchanges, 1993-1999



Source: Financial Services Board of South Africa

Overpriced assets were used as collateral for loans, their higher values supporting loans of higher amounts and proportions, thus encouraging increased lending and borrowing

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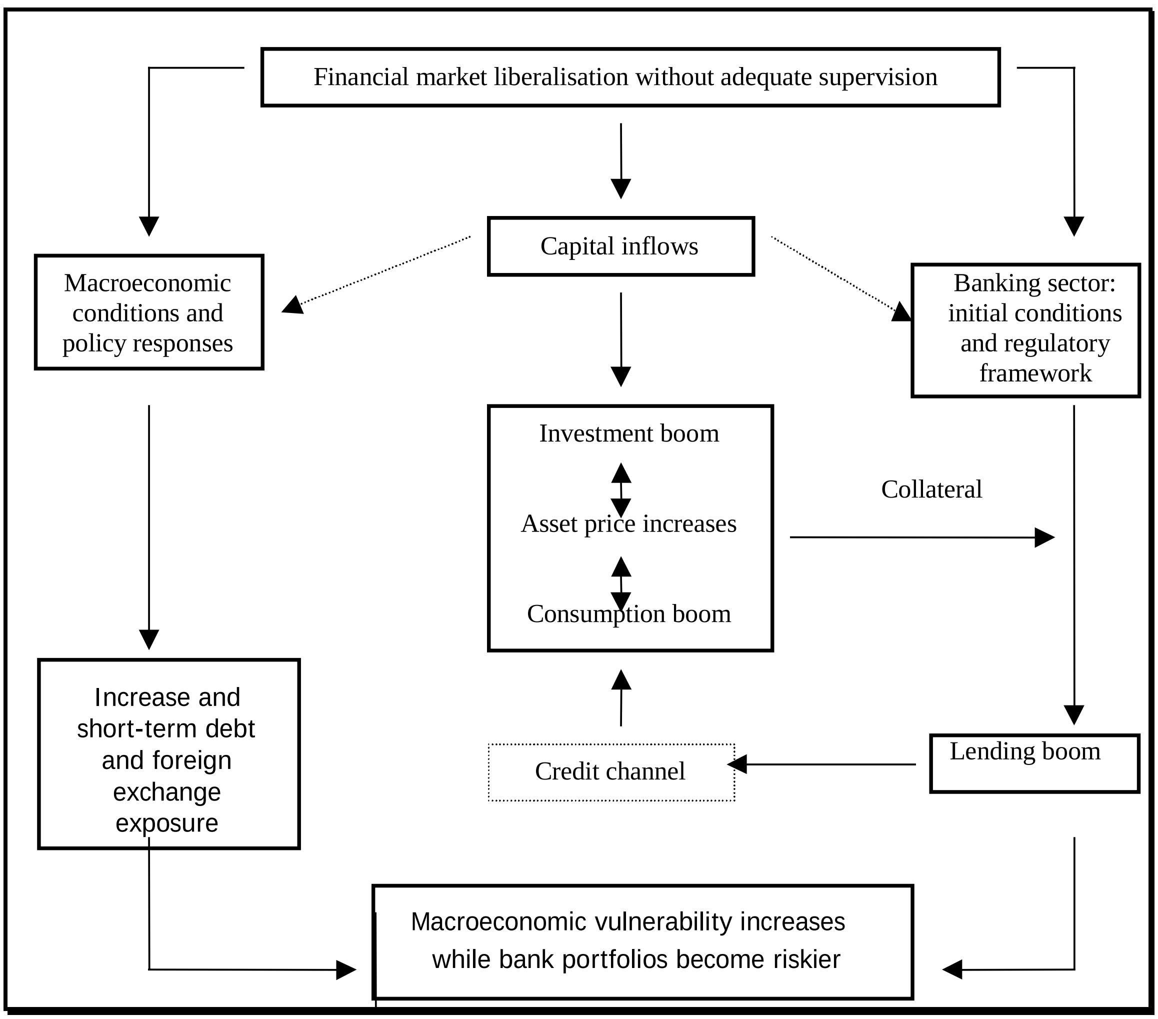
[7] Refer to L Sarno and M.P. Taylor, "Moral hazard, asset price bubbles, capital flows and the Eat Asian crisis: the first tests", *Journal of International Money and Finance*, August 1999, Volume 18, pages 639 - 655

activities in the economy. Over-valued collateral, among other factors, also appears to have reduced incentives for prudential lending, as will be discussed below.

This combination of a credit boom, mis-allocated funds, lax monetary policy and an asset price bubble, driven by a surge in capital inflow, can increase the local currency denominated wealth of the economy. However, the vulnerability of the macroeconomy to sudden reversals in capital flow also increases significantly (see figure __ below). Hence, a "virtuous" cycle continues until some "trigger-event" occurs—some exogenous shock such as the baht devaluation—causes investors to reassess and readjust their portfolios across a number of markets, geographically and by asset. However, at this stage, the macroeconomy is in no shape to absorb the adverse shocks associated with this portfolio readjustment and a crisis ensues.

Figure 3: Capital flows, lending booms and potential vulnerability



Source: World Bank

2.1.2 Build-up in short term foreign debt

The strong economic growth exhibited in the East Asian region as well as high yields on investment had seen enthusiastic lending activities by foreign creditors in Asian financial markets. Interest rate differentials and expectations of stability in the form of stable foreign exchange rates had further encouraged credit and capital flow into Asia. Taking advantage of lower interest rates overseas, banking institutions, corporations and companies began to seek offshore funding to support their domestic activities.

Offshore borrowing increasingly appeared in the form of short-term debts. Surveys had indicated that international interbank borrowing denominated in dollar and yen in Asian countries had grown by as much as US$43 billion between 1995 and 1996, with two-thirds of this expected to mature in a period of less than a year. The World Bank has also noted that 60% the short-term capital flows to developing countries had been concentrated in East Asia in the few years leading up to the crisis. In many cases, banking institutions and corporations in various countries acquired short-term foreign debt to finance or invest in domestic-currency generating projects with long gestation periods. The working assumption was that, foreign lenders, aware of the growth potential of the Asian economies, would routinely roll over the short-term debts, thus reducing any risks of maturity mismatches. Many corporations that acquired short-term foreign debts showed very low interest coverage ratio, implying that the non-financial firms in the Asian countries were using their operating cash flow to service debt payment. In some economies, for instance, the debt of non-financial corporations amounted to as much as a quarter of the GDP, while in others, as much as half of the short-term debt of non-financial corporations were foreign.

Moreover, rapidly burgeoning current account deficits also increased short-term foreign capital inflow into East Asia. Much of the deficit was financed by incurring short-term foreign debts. On the eve of the crisis, short-term foreign debts in some economies were observed to be in excess of their foreign exchange reserves, while in one jurisdiction, where short-term foreign debt went up as high as three times foreign exchange reserves. Other crisis-hit economies also indicated short-term debt to foreign reserves ratio of more than one.

Responses to the earlier survey had suggested that OTC products may have played a significant role in the massive build-up of private short-term foreign debt in several emerging-market jurisdictions. One survey respondent acknowledged that, with the crisis, financial institutions under its jurisdiction were exposed to greater risks from their off-balance-sheet transactions. Moreover, in at least one other jurisdiction, OTC instruments were responsible for an accumulation of official short-term foreign debt. It was reported that in this jurisdiction, the central bank had eventually built up significant short-term foreign obligations which had arisen from forward contract positions taken in defending the currency during the crisis.

Since short-term foreign capital is very mobile in nature, while it provided low-cost and easy financing to various sectors in the economy, it also exposed the various economies to the risk of serious liquidity problems in the event of a huge and sudden withdrawal. As it happened in the East Asian economies, the successive collapse of the regional currencies induced a re-assessment of risk exposures by foreign lenders, resulting in widespread refusal to roll over short-term debts that were reaching their maturity. The resultant and equally widespread maturity mismatches, especially in the cases of short-term funds being utilised to support long-term commitments, had a knock-on effect on the financial sector across the region. In the panic that ensued, illiquid institutions with strong fundamentals and potentials were, in many cases, perceived to be insolvent. Investors, in their rush to save their capital, had overlooked the strong fundamentals that could be observed in several Asian economies. As a consequence, the Asian economies experienced a chronic credit crunch, which exacerbated the huge and sharp depreciation of the various currencies.

2.1.3 Exchange rate rigidities

It has been observed that rigid or quasi-fixed exchange rate regimes were in practice in many East Asian countries that were hit by the financial crisis in 1997. A fixed exchange rate regime appears to have entailed a loss in competitiveness among several East Asian economies. Reports indicated that a considerable portion of trade among Japan, non-Japan Asia and Europe were conducted in US dollars. In addition to that, estimates have also shown that the implicit US dollar weights in a composite basket of East Asian effective exchange rates were extremely high. Given the virtually unmoving nominal exchange rates of various East Asian currencies, the appreciation of the dollar in the few years before the crisis and simultaneously increasing inflation rates in certain East Asian economies had caused a decrease in the competitiveness of many East Asian countries vis-à-vis their major trade partners.

Table 1: Implicit weights of US dollar and Japanese yen in nominal values of selected Asian currencies.

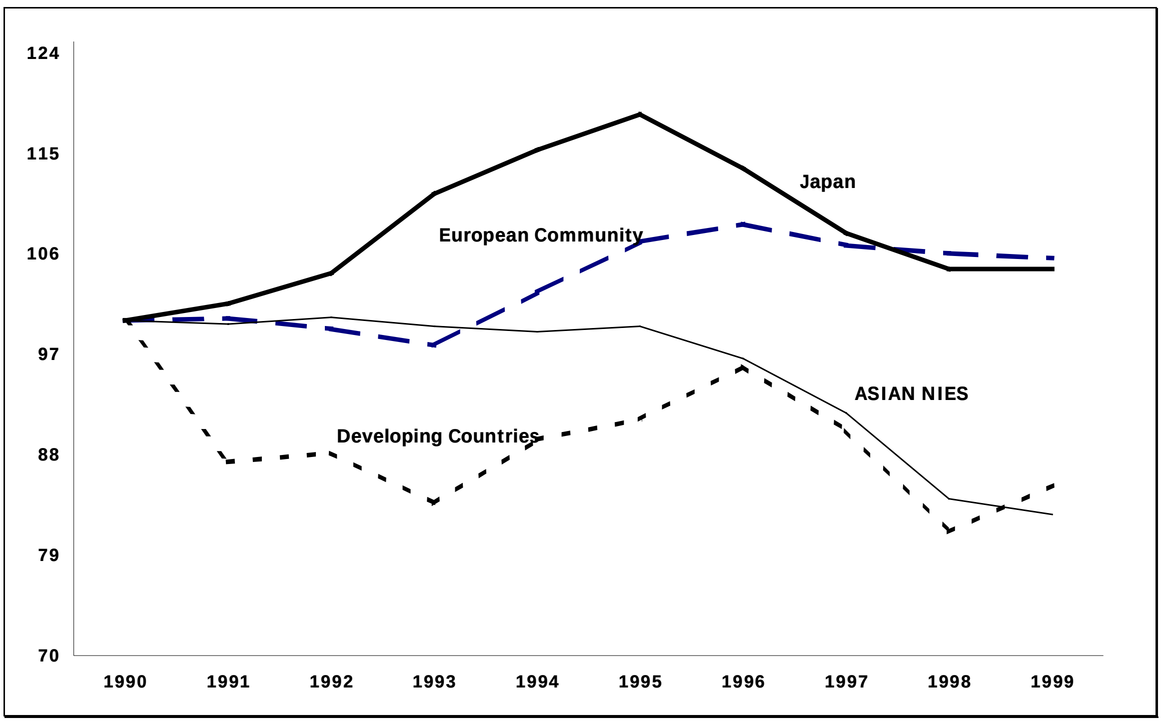
Currency	**Estimate A**[8]		**Estimate B**[9]	
	US dollar	Japanese yen	US dollar	Japanese yen
South Korean won	0.96	-0.001	0.84	0.17
Singaporean dollar	0.75	0.13	0.75	0.18
Malaysian ringgit	0.78	0.07	0.87	0.16
Indonesian rupiah	0.95	0.16	0.97	0.01
Philippine peso	1.07	-0.01	1.07	0.03
Thai baht	0.91	0.05	0.86	0.09

[8] Estimate A from “Yen bloc or Dollar bloc?: Exchange Rate Policies of East Asian Economies” by Jeffrey A. Frankel and Shang-Jin Wei, in *Macroeconomic Linkage: Savings, Exchange Rates and Capital Flows*, ed. By Takatoshi Ito and Anne Kureger, University of Chicago Press, 1994.
[9] Estimate B from “Enken no Keizaigaku” (“The Economics of the Yen Bloc”) by C.H. Kwan, Nihon Keizai Shiunbunsha, 1995.

Source: Reproduced from the World Economic Outlook, International Monetary Fund, October 1997, page 82. Original source: "The Yen and Its East Asian Neighbours, 1980-1995; Co-operation or competition?" by Shinji Takagi, National Bureau of Economic Research working paper no.5720, August 1996

Studies also confirmed that a rigid foreign exchange regime, while maintaining relatively stable prices of tradable goods, contributed to the increase in the prices of non-tradable goods and services. As prices in non-tradable sectors mounted, the ratio of the prices of tradable goods to those of non-tradable goods began to fall, marking a real appreciation that made domestic goods comparatively costlier than foreign goods. But while imports rose, a number of East Asian countries suffered a marked decrease in exports just prior to the crisis. The reduction in the demand for electronic goods and prices of major export products, the stagnation of the Japanese economy, the depreciation of the yen and the drop in world trade—from about 20% in 1995 to only 4% in US dollar terms in 1996—had contributed to a further real appreciation in these East Asian economies. [10]

Figure 4: Export price indices for Japan, the European Community, the Asian Newly Industrialised Economies (NIEs) and developing countries, 1990 -1998



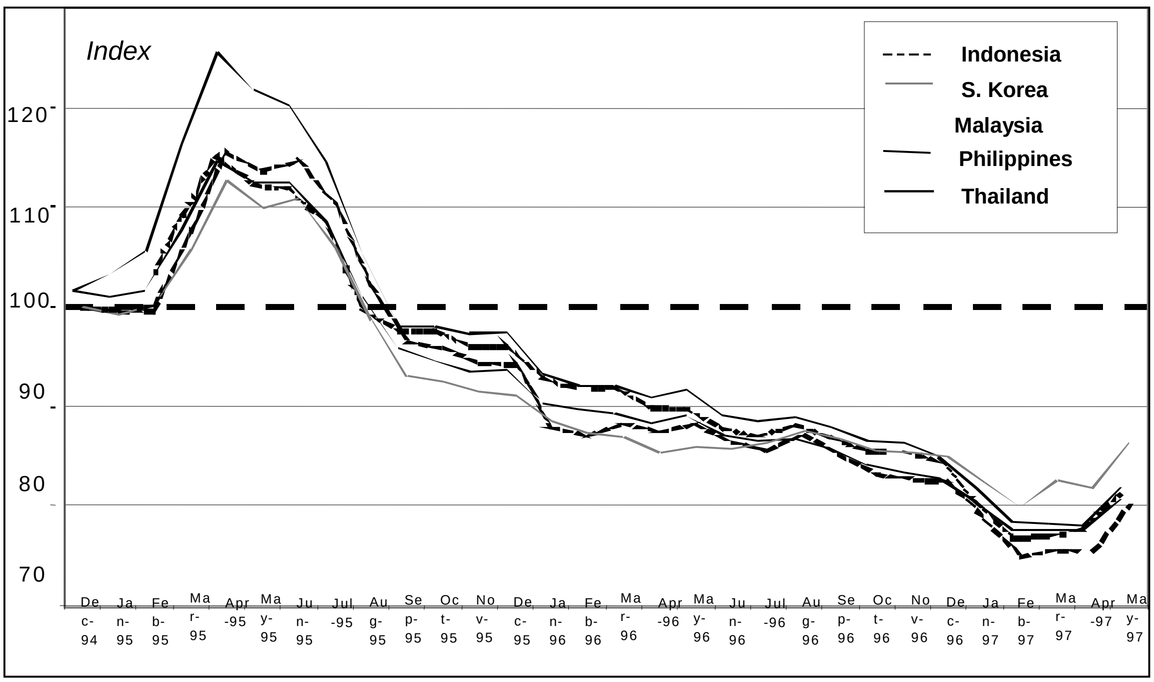
Source: U.S. Department of Labour

A view has also been mooted of the possibility that the devaluation of the official exchange rate of the Chinese yuan in 1994 and the surge in Chinese exports had started off the loss in export competitiveness among the other East Asian countries.

[10] World Bank

Nevertheless, to date, there has not been much evidence to substantiate this opinion. Critics of this view have pointed out that the devaluation took place at a time of high inflation in China and considering that the effective nominal depreciation relative to the dollar was small, the Chinese real exchange rate had been observed to *appreciate* during the period of 1994–1998. It has also been observed that the devaluation had unified the official exchange rate with a parallel floating exchange rate that did not depreciate.[11] Though China's share of the Japanese market, the region's main importer, had increased during the period, no significant change in the Japanese market share had been observed for most of the other East Asian countries.[12]

Figure 5: Real appreciation against the yen by Asian currencies (December 1994-May 1997)



Source: Bloomberg
Note: Decrease in index implies depreciation; increase implies appreciation.

Real exchange rate appreciation and the drop in exports coupled with an increase in imports were among the elements that contributed to a worsening of competitiveness and hence current account balance across the region, which, as was argued above, became increasingly financed by short-term capital inflows. These developments appear to have eroded investor confidence in the region and are thought to have increased the probability

[11] See J. Fernald et al, "Was China the first domino? Assessing the links between China and other Asian economies", *Journal of International Money and Finance*, August 1999, Volume 18, page 525.
[12] Ibid.

of a speculative attacks on some of the region's currencies. One reason for this may have been the fact that while in many of these economies foreign reserves appeared to have been adequate for import coverage, they became critically low in terms of short-term external liabilities. Given the likelihood of a "devaluation", a rush to hedge short-term currency positions that had been previously left unhedged because of the presence of exchange rigidities arguably led to further pressure on currencies.

A discussion of the moral hazard problems that possibly arose from currency rigidities—which is argued to have given the impression of an implicit guarantee that a particular rate of exchange would be sustained in the near future—and the risk management issues arising from this will be discussed in a later section.

2.1.4 Over-dependence on the banking system for financing and underdeveloped capital markets

Private-sector financing in many of the worst-afflicted economies appears to have been over-dependent on the banking system. This seems to have increased the risk of self-fulfilling crises characterised by a large, panic-driven withdrawal of funds by creditors. One argument implies that such over-dependence, in the event of a crisis of confidence, such as that which typified events in East Asia, prompted a greater outflow of capital from these economies than would otherwise have occurred if financing had relied more on capital markets. The argument notes that fund withdrawals operate differently in the so-called credit and capital market channels. In the credit channel, loans are often repayable on demand, and have to be paid in full even after adverse information becomes known.[13] Such loans exacerbate the rush for the exits, because each lender has an incentive to withdraw funds before other lenders do so. Those who come last may find that there are no resources left. Doubts about debtors' solvency become self-fulfilling.[14]

In capital markets, on the other hand, money is not directly withdrawn from issuers of securities because investors are able to liquidate their holdings through the secondary market (although the raising of fresh capital by issuers becomes more expensive). Moreover, the incentive to liquidate investment holdings is diminished by the fact that the price of the security is falling. In the case of bond markets, this secondary trading mechanism gives a measure of protection to the debtor, and is thought to help ensure more continuous financing. Capital flow data appear to bear out this argument and will be elaborated upon further with the issue of capital flow reversals in the next section.

A major consequence of being over-reliant on the banking system and, as is widely acknowledged, having underdeveloped capital markets—in particular those for longer-term debt instruments—is that Asian banks were overly exposed to risks arising from

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[13] Bank overdrafts, interbank lending and demand deposits are important examples.
[14] See, for example, "Bank Runs, Deposit Insurance and Liquidity" by Douglas W. Diamond and Philip H. Dybvig, *Journal of Political Economy*, vol. 91, June 1983, pages 401-419, for theoretical underpinnings.

maturity mismatch. The BIS has noted that Asian banks, which tended to have a short-term deposit base, found it difficult to hedge their long-term lending. Most Asian banks typically tried to limit apparent maturity risk on their respective balance sheets by lending at floating rates to long-term borrowers. However, as highlighted earlier, the incidence of sudden, sharp and sustained interest rate increases and asset price declines during the crisis rendered many long-term borrowers insolvent thus transforming interest rate risk into credit risk.[15]

According to one study, the risks of maturity matches are typically higher for banks in the emerging markets because they have less access to longer-term sources of funding on the liability side.[16] In Germany, 45% of the liabilities of depository institutions are long and medium-term bonds; in Japan, roughly one-third of the financial system's liabilities are classified as insurance reserves, trust funds or bonds. In the absence of well-developed markets for debt securities, banks do not have access to some of the key techniques to increase liquidity and spread risks. For example, the lack of deep government bond markets appears to have been a handicap for banks with a pressing need for liquidity.

As highlighted earlier, it might be argued that an alternative channel of financing provided by well-developed capital markets would also have decreased the probability and quantity of sudden capital flow reversals and may have contributed to a more stable structure of external flows. It might also be argued that the lack of a developed corporate bond market in particular increased the vulnerability of both companies and investors to interest rate and currency risks.[17] Companies did not have access to long-term, fixed rate and domestic currency source of funds, and resorted instead to short-term foreign currency alternatives. Domestic institutional investors, requiring long-term investments, were similarly constrained.

The lack of well-functioning capital markets in many of the crisis-hit economies may also have exacerbated information asymmetries. In the case of bond markets, they require and generate large amounts of information about borrowers' creditworthiness—partly because bondholders assume the credit risk of the borrower, and partly because the risk of the instrument affects its price in the secondary market. Moreover, bond markets are information intensive because they rely on timely cash flows rather than collateral as a basis for credit. Therefore, it is possible that the underdevelopment of secondary bond markets, in which market participants adjust the implicit rates at which the known risk of a borrower is fully reflected, reduced the incentive for generating accurate and up-to-date information on the creditworthiness of borrowers.

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[15] See BIS (1998), pages 118–120.
[16] Goldstein and Turner (1996)
[17] See "Asian Bond Markets" by H.D. Tsang at the Asian Debt Conference 1998, Hong Kong and "Causes and Solutions to the Recent Financial Turmoil in the Asian Region" by Joseph Yam, Hong Kong Monetary Authority, January 1999.

2.1.5 *Poor corporate governance*

It has been argued that a lack of adequate corporate governance was among the factors that triggered and contributed to the severity of the East Asian crisis. A key issue concerns the corporate ownership structure prevailing in many of the worst-affected economies. At the corporate level, the World Bank has noted that the ownership structure of public listed companies in certain East Asian jurisdictions were typically owner-managed.[18] For instance, assuming that a 20% holding grants effective control, the range of firms that fall into this category ranges from 48% to 72% in the main crisis-hit economies.[19] In a firm controlled by a bloc that also manages the firm, voting rights are of limited value for the protection of external shareholders. Where such structures prevail, investor protection measures may be relatively easy to circumvent because owner-managers typically have controlling interest in their companies. Furthermore, conflict-of-interest rules—including disclosure requirements for related-party transactions, standards of conduct and, in some cases, requirements for particular transactions to be authorised—in many of the crisis countries were not well developed.

The reported experience of some East Asian jurisdictions suggests that the duties and responsibilities of directors seem to have been discharged in a less than satisfactory manner. For example, it has been reported that minority shareholders were placed at a distinct disadvantage as a result of certain corporate exercises and inadequate disclosures. In addition, independent auditors, who are to some extent intended to act as a check-and-balance to ensure good governance, were seen to be largely ineffective.

Besides the particular nature of prevailing ownership structure, commentators have also noted corporate governance was not served by a lack of institutions and approaches that enable dispersed shareholders to monitor firm management, and to exercise their voting power to discipline or replace management. These include access to dependable, comprehensive and timely information, as well as some mechanism to aggregate shareholders' votes to enable effective intervention in the management approach of the firm. Some of these may include having an effective market for corporate control that facilitates take-overs; banks as an important monitor of corporate management; and the activism of institutional investors.

The absence of shareholder voting power as a functional discipline on management during the run-up to the financial turmoil suggests that the mechanisms through which shareholders aggregate their voting rights did not operate effectively in the crisis economies. Most of the crisis countries did not have a tradition of an active market for corporate control or a strong and independent institutional investor lobby. In Korea, for example, despite its high number of broadly owned firms, domestic institutional investors that own some 22% of shares on the stock exchange are often part of local conglomerates

[18] See "East Asia: The Road to Recovery", World Bank, September 1998, page 36.
[19] Scott, Kenneth E. (1999), "Corporate Governance and East Asia", World Bank/Brookings Conference on Preventing Crises in Emerging Markets.

or *chaebols,* thus making effective minority shareholder governance of their parent companies difficult.

Hence, apparently questionable commercial decisions were argued to be insulated from market discipline, and this may have allowed significant problems to build up in the financial and corporate sectors of many of the worst-afflicted jurisdictions. The situation appears to have contributed to the evaporation of investor confidence as the crisis unfolded, which would then have translated into a decline in valuation of many public-listed companies. Empirical evidence from nine East Asian economies suggests that companies where there appeared to be the greatest incentive for managers to indulge in rent-capture saw relative under-valuation compared to companies where such incentives were not as apparent.[20]

Nevertheless, it should be noted that while the perception of poor corporate governance may be a fair reflection on the state of practices in some jurisdictions, attention was only drawn to these issues as the crisis unfolded. In other words, there appears not to have been a sudden deterioration in these practices, and that, rather, in a bullish environment, investors seem to have been prepared to accept certain apparently questionable related party transactions in the knowledge that the ultimate economic benefit of such transactions would probably outweigh the increased costs resulting from such related party deals.

2.1.6 Inadequate disclosure and lack of transparency

Several commentators have argued that poor disclosure by the corporate sector as well as within the banking system exacerbated the impact of the crisis by eroding confidence. However, it should be noted that all of the crisis economies adhered to the accounting and reporting requirements set by their national standard-setting bodies. Of the five worst-affected countries, one had officially adopted the International Accounting Standards (IASs) and prepared its national accounting standards in line with the international standards. In the other four countries, the national accounting standards followed the generally accepted accounting principles (GAAP), but the application of IASs by accountants and auditors varied.[21] Many companies met the minimum requirements of the international standards but differed widely with regard to their conformity to the underlying principles of good corporate governance and disclosure. For example, in some of these countries where the accounting conventions for classifying bank assets as non-

[20] Claessens *et al* (1999) investigate the effect of control structures on the market valuation of firms in nine East Asian countries. They find that markets do not punish firms with a high concentration of cash flow rights. They do find, however, that where there is a large divergence between the control rights and cash flow rights of the controlling bloc—that is, where there is the greatest incentives for managers to indulge in rent-capturing—markets apply a stiff valuation discount. A ten percentage points increase in control rights/cash flow rights ratio brings about a five percent decline in valuation. This result is suggestive of market perception of widely practised expropriation of minority shareholders by controlling shareholders.
[21] PricewaterhouseCoopers, "*Progress Report on the APEC-ABM Bond Project*", March 17th 1999.

performing were based on payment status rather than on credit-evaluation and collateral market value, banks could make bad loans look good by lending more money to troubled borrowers: a practice known as “evergreening”. Consequently, the uneven classification of bad loans, compounded by poor compliance with prudential regulations and credit guidelines in some cases, fed uncertainty over the possible extent by which official asset adequacy figures were underestimated.

Thus, as the situation in many East Asian economies deteriorated, the problem of adverse selection emerged because international investors and external creditors were unable to differentiate between sound financial institutions and corporations from the distressed ones.[22] Consequently, creditors became reluctant to role over maturing short-term debt and international investors became reluctant to hold domestic currency-denominated securities for fear of an imminent correction. The World Bank has noted that that the lack of transparent and timely balance sheet and other information in most of the East Asian economies led many banks to base credit decisions on the availability of collateral rather than on an analysis of cash flows.[23] As highlighted above, this over reliance on collateral resulted in distorted lending decisions by domestic and foreign financial institutions and increased the vulnerability of their respective portfolios to downturns in the region’s asset markets.

In addition to adverse selection problems, commentators have also suggested that opacity in corporate shareholding structures, which hid a system of interrelated ownership, allowed some majority shareholders to pursue questionable financial practices, such as favourable transfer-pricing between company subsidiaries in order to cross-subsidise money-losing units within the group. A lack of transparency is also thought to have made it possible for companies to undertake implicit and explicit cross-guarantees for bank loans. Such cross-guarantees made it difficult for other (minority) shareholders to disentangle their respective corporate exposures, and thus to ensure appropriate valuation of collateral offered as security for loans and the allocation of losses. This situation is believed to have contributed further to the erosion of investor confidence when the crisis worsened.

Besides poor disclosure standards and lack of transparency arising from particular corporate (cross-shareholding) ownership structures, there is also some concern that the use of OTC instruments may have contributed to difficulties in ascertaining the financial exposure of companies and banks. It has been argued, for instance, that the opacity of OTC exposures given on-balance-sheet accounting techniques—through particular features such as complex pay-off structures and cross-border components—made it easier for market participants in some jurisdictions to circumvent (or at least only partially comply with) domestic capital controls, reporting requirements and prudential

[22] Adverse selection refers to a problem that arise from the inability of one trader to assess the quality another makes it likely that poor quality traders will predominate. The classic reference for this is “The Market for Lemons: Quality Uncertainty and the Market Mechanism” by George Akerlof, *Quarterly Journal of Economics*, volume 89, 1970, pages 488–500.
[23] See World Bank (1998).

regulations, thus effectively hiding the financial system's true exposure to market and liquidity risk from authorities. It has also been suggested that the use of such off-balance-sheet products has complicated the distinction between traditional measures of long- and short-term foreign debt exposure, as well as of direct and portfolio investment from abroad. [24, 25]

2.1.7 Poor risk management leading to build-up in risk exposures of corporate and banking balance-sheets

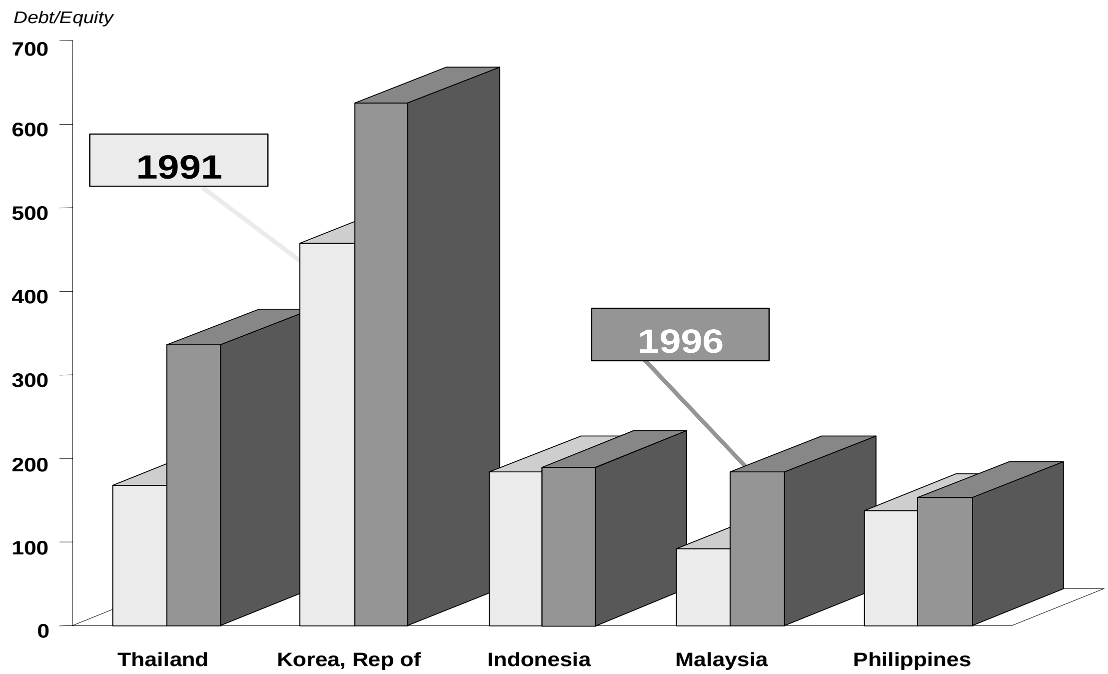
A lack of risk management by companies, financial intermediaries and market participants was also noted in several jurisdictions during the crisis—specifically, many companies apparently failed to take sufficient account of their exposure to currency and market risks, and made poor judgements in their evaluation of counterparty credit risk. Moreover, it has been suggested that by diversifying into areas in which they had little expertise, firms became overly exposed to operational risk which, in many cases, was not managed effectively.

As mentioned earlier, among many of the worst-affected economies, the balance sheets of domestic banks, other financial lenders, and the companies to whom they lent accumulated excessive risks, which included currency and maturity mismatches, as well as heightened credit risks. And as described in section 2.1.1, such risks made these economies, through their financial systems, vulnerable to changes in asset prices.

Without adequate risk management, corporate-sector vulnerabilities, in the form of higher leverage without a commensurate rise in the level of interest cover (in fact, cover fell prior to the crisis), increased. Indeed, corporate leverage within several East Asian economies during the early 1990s soared to more than that of developed economies such as the United States (90%) and Germany (58%), while short-term debt of some companies by 1996 amounted to nearly 60% of total debt, and as much as three times the value of equity.

[24] See Folkerts-Landau and Garber (1997).
[25] There are, of course, other reasons why caution is needed in interpreting measures of long- and short-term capital flows. See IMF (1997), page 64, for a brief but useful discussion of this.

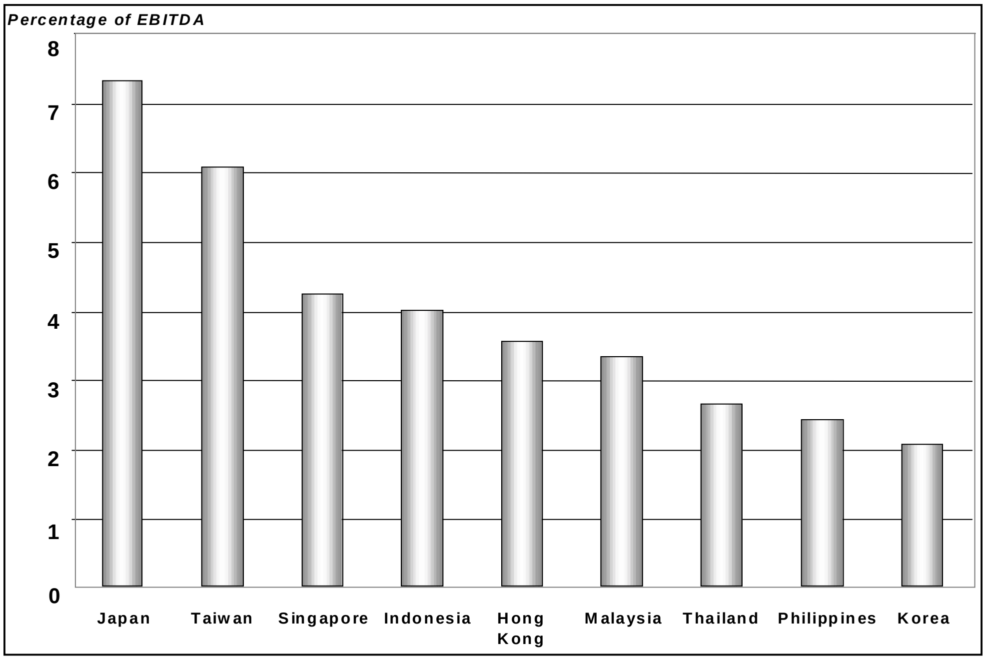
Figure 6: Corporate leverage of selected Asian countries, 1991-1996



Source: World Bank

Along with the increase in leverage, aggregate levels of interest cover appeared to worsen between 1991 and 1996. Figure 7 shows that the interest coverage ratios for some economies were less than three, which means that non-financial firms used more than one third of their operating cash flow to service debt. Weak corporate balance sheets would have meant that the loan portfolios of banks were also vulnerable to changes in financial circumstances. In such a risky operating environment, one argument suggests that declared levels of bank capital were probably insufficient for the level of risks to which banks were exposed.

Figure 7: Interest cover in six Asian countries 1996



Source: Claessens, Djankov and Lang (1998)
Note: The interest coverage ratio is defined as firms' operating cash flow over their interest payments. Earnings before interest, taxation, depreciation and amortisation (EBITDA) are used as operating cash flow. The lower the ratio the more vulnerable a firm is to liquidity problems when interest rates rise.

Given the vulnerabilities described above, a shift in market assessment or other circumstances, leading to changes in interest rates, exchange rates or the availability of credit, is thought to have triggered widespread liquidity problems. One view is that currency and maturity mismatches, compounded by credit risk, made the balance sheets of banks and corporations vulnerable to sharp changes in financial markets. Under this view, falling currencies triggered liquidity and solvency problems in firms with large foreign currency exposures; rising interest rates hit those firms with low levels of interest cover, while an unwillingness to roll over short term debt pushed firms with high short-term leverage to the brink of bankruptcy; and a collapse in the real estate and traded securities markets adversely affected balance sheets with such assets.

The conditions described above arguably reflect the parlous state of risk management in many of the worst-hit companies during the crisis. Some have blamed the absence of a corporate risk-management culture within the region, noting that boards of directors and senior management did not appear to be sufficiently aware or concerned about the risks inherent in their companies' operating environment. Deeper issues of risk management—such as robust internal controls, incentives for the involvement of senior management and accountability structures, and reporting lines—appear not to have been considered, while many companies seemed to lack systems for recognising, quantifying and managing their risks. In relation to financial intermediaries, one argument suggests that poor risk management on their part derived from limited institutional development. Commentators have pointed out, for instance, that much lending was done on the basis of (highly-inflated) collateral rather than on cash-flow, which tended to lessen the need to assess the risk-return characteristics of projects.

Nevertheless, it is worthwhile highlighting what appeared to have been a seeming lack of incentives for prudent behaviour. In relation to the overall economy, exchange-rate rigidities, as discussed earlier, are thought to have had a significant role in driving the perception of reduced currency risk, and in suppressing incentives to hedge external borrowing. In the corporate sector, it was reported that the rapid growth and massive size of some of the largest corporations in certain jurisdictions resulted in them being viewed as "too big to fail" and thus encouraged excessive risk-taking on the part of those corporations. In the case of financial intermediaries, it has been argued, for instance, that financial deregulation in several economies led to a general reduction in the franchise value of financial institutions, which then prompted them to pursue more risky opportunities in the search for higher profits. A particular concern that arose during the crisis was that certain OTC instruments had been used by banks and their clients to facilitate excessive risk-taking. While there is some debate as to whether such instruments actually encouraged market participants to assume too much risk, it is generally accepted that, by affording leverage and low transaction costs, as well as through their off-balance-sheet nature, they make it relatively easy for users who wish to do so.[26]

Some have argued that financial intermediaries that financial institutions may have been over-guaranteed and under-regulated relative to the risks they assumed, and that this provided further disincentive for prudent behaviour. In certain instances, lending decisions concerning third- or related-party interests may have been driven by factors other than objective financial considerations such as cash-flow projections, realistic sensitivity analyses and recoverable collateral values. In more formal terms, financial institutions were encouraged to make investment decisions not on the basis of expected returns but on the basis of an "ideal return", perhaps arising from an implicit guarantee by a third party.[27]

Under such circumstances, a financial intermediary, due to its perception of being implicitly guaranteed, would be willing to bid on the price of an asset based on "ideal returns" rather than expected future returns. This leads to asset prices being bid up by over-investment. The distortion, the argument goes, will persist for as long as the financial intermediary continues to believe it will be insured against the investment failing to yield the "ideal" value. However, at some stage, the cumulative quasi-fiscal

[26] OTC derivative instruments can amplify the risks associated with holding them for the potential of much higher rewards. Moreover, it has been argued that if designed in particular ways, such instruments might also enable market participants to circumvent prudential regulations or controls, and thus allow them to assume more risk than they otherwise could have. For example see Folkerts-Landau and Garber (1997).

[27] This view is credited to Paul Krugman, who describes this as the case of "heads I win, tails someone else loses". See "What Happened to Asia?", unpublished paper, Massachusetts Institute of Technology, January 1998. Hereafter Krugman (1998).

cost of these implicit guarantees becomes too large to be sustained and the government is either forced to withdraw support or is perceived to be forced to do so. Should this occur or if the financial intermediary believes that this is likely to occur, the ideal return collapses and asset prices will fall rapidly leading to loan defaults and losses.

2.1.8 Issues concerning financial sector and liberalisation

Most of the economies worst-afflicted by the crisis had recently undergone financial sector deregulation and liberalisation, and also capital account liberalisation.[28] Some economists have argued that these attempts, which were aimed at enhancing the financial sectors of these economies, in fact exposed them to certain risks arising from the integration with the international financial markets when they were not prepared to face such risks.[29]

As noted above, capital account liberalisation allowed domestic institutions access to the international capital market. While not bad in itself, it is argued that this can have adverse consequences if coupled with weak or ineffective regulation of financial and banking institutions. Economists have suggested that the experience in some jurisdictions revealed that deregulation and liberalisation without the requisite re-regulation resulted in excessive risk-taking and also encouraged an over-accumulation of short-term external liabilities by the banking and corporate sector.[30] Nevertheless it has also been suggested that similar problems arose where regulatory reforms were partial and incomplete, thus giving rise to exploitable loopholes.

Besides the existence of sufficient regulation and legislation, one view is that the absence of a strong culture of enforcement and accountability led to prudential limits being breached on a regular basis without penalties being imposed.[31] This coupled with the fact that financial institutions were now operating in more demanding and liberalised environment proved a potent mix. The BIS noted in a recent annual report that only three jurisdictions had ratios which were significantly higher than the minimum set by the Basle Capital Accord.[32]

The BIS suggests that, prior to deregulation and liberalisation, intermediation through banks was typically kept profitable by limits on allocation and the volume of bank lending and also interest rate ceilings on sits. According to the BIS, deregulation and

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[28] For the purpose of this report, *liberalisation* refers to the process of removing barriers to foreign participation while *deregulation* refers to that of freeing domestic barriers to competition.
[29] See "The East Asian Financial Crisis: Diagnosis, Remedies, Prospects" by Steven Radelet and Jeffrey Sachs, unpublished manuscript, Harvard Institute for International Development, April 1998 (available through the Internet at http://www.hiid.harvard.edu/pub/other/bpeasia2.pdf). Hereafter, Radelet and Sachs (1998b).
[30] See reference in footnote Radelet and Sachs (1998b).
[31] See among others Radelet and Sachs (1998b).
[32] See BIS (1998).

liberalisation however, saw banks operating in a more competitive environment where their interest margins narrowed significantly. In addition, quantitative limits on exposure to single clients and sectors were breached, lead some banks in several of these countries to become over-exposed to single borrowers and speculative sectors such as real estate.[33]

A recent study of the relationship between banking crises and financial liberalisation in 53 countries during 1980–95 appears to provide some support for many of the views above.[34] Specifically, the study's results show that banking crises were more likely to occur in liberalised financial systems with a weaker institutional environment, eg, in relation to the rule of law, corruption and contract enforcement. The behaviour of bank franchise values following liberalisation, as well as the relationship between financial liberalisation, banking crises, financial development and economic growth within the context of the countries and timeframe reviewed by the study suggests that the level of development of institutions providing effective enforcement of laws and contracts, and effective prudential regulation and supervision has an important bearing on the risks arising from financial sector liberalisation. Moreover, other observers have noted that differences in the vulnerability of countries during the crisis were influenced significantly by the sequencing process of financial liberalisation.

2.2 Triggers and crisis dynamics

2.2.1 Investor behaviour within liberalised international capital markets

The speed and voracity of the East Asian crisis as well as the turbulence that ensued in other regions of the world have focused attention on the behaviour of investors, and have led to growing recognition of the role played by increasingly globalised and liberalised financial markets in the crisis. It has been noted that in addition to initial views on the crisis, which tended to look upon domestic structural factors as key drivers of the crisis (notably fundamental weaknesses in Asian economies, moral hazard and policy decisions by governments), more recent views have also focused on the role of investor behaviour within an environment of liberalised international financial markets in triggering and exacerbating the crisis.[35] Indeed, some regulators have expressed the view that the implications of investor behaviour for emerging securities markets are very important for the development of appropriate policy responses in those markets.

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[33] See *68th Annual Report 1997/98*, Bank for International Settlements, June 8th 1998, pages 118–120. Hereafter, BIS (1998).
[34] See "Financial Liberalisation and Financial Fragility" by Asli Demigurc-Kunt and Enrica Detragiache, in *Annual World Bank Conference on Development Economics 1998*, edited by Boris Pleskovic and Joseph Stiglitz, World Bank, April 1999.
[35] See "What Have We Learned, So Far, From the Asian Financial Crisis?" by Steven Radelet and Jeffrey Sachs, unpublished manuscript, Harvard Institute for International Development, April 1998 (available through the Internet at http://www.hiid.harvard.edu). Hereafter, Radelet and Sachs (1999a).

These issues had, in fact, been recognised by several emerging market authorities and academics early into the crisis, and have recently been echoed by other commentators, including those who had initially tended to emphasise the so-called "fundamentalist" view of the crisis.[36] The general thrust of these views is that the depth and severity of the crisis, and the fact that it occurred in so many countries simultaneously, cannot be explained by domestic weaknesses alone. Rather, it is argued that certain weaknesses within the international financial system, which encouraged the overwhelming participation of and abrupt exit by international investors, and which facilitated excessive speculation, were also to blame.

Several commentators have suggested that, in addition to the domestic and international factors highlighted in section 2.1.1 above, a degree of herding on the part of creditors and portfolio investors contributed significantly to the increased participation of globally-active financial institutions in emerging markets, which led to a surge of capital inflows in emerging markets during the first half of the1990s. The IMF, for instance, notes that while herding behaviour has traditionally been regarded as irrational behaviour, recent literature suggests that herding may be indeed rational if certain conditions are met.

- First, so-called pay-off externalities may exist whereby the pay-off of a particular investment strategy to one investor increases with the number of other investors who also adopt that strategy; for instance, improved liquidity in securities markets as a result of increasingly larger issues following the participation of institutional investors may prompt even more investors to enter the market, thus adding to liquidity.

- Second, under conditions of imperfect information, investment managers may "hide within the herd" to avoid evaluation or "(free-)ride the herd" to improve their reputation; reports suggest that investors entered the market because they did want to be "left behind". [37]

- Third, again in the presence of information asymmetry or imperfection, so-called uninformed investors follow the actions of others, who are perceived to have more or better quality information than their own; for example, it has been noted that second-tier institutions, eager to participate in what was increasingly seen as highly-profitable activity, entered the international market for syndicated lending to emerging markets on the assumption that other larger and more experienced members of the syndicate had done all the groundwork.

[36] See, for example, Krugman (1998) and "The Return of Depression Economics" by the same author in *Foreign Affairs*, 78-1 (January/February 1999).
[37] It has been noted that information imperfections may arise when disclosure is poor, which can hinder the ability of investors to differentiate between bad and good credits or markets, thus increasing the likelihood that they withdraw.

In relation to the abrupt withdrawal of participants from emerging markets, one interpretation suggests that crises can arise through self-fulfilling pessimism of investors and creditors, in much the same way a bank-run takes place, leading to financial panic. Under this view, high costs of acquiring information at the international level prompts otherwise rational investors to follow the market—in particular, the so-called "smart" investors who are perceived to have more or better quality information than the rest of the market. Provided the relevant incentives exist, this may result in the pulling of funds by almost all investors, despite an otherwise healthy economy, just because some investors are doing the same. [38]

Several commentators have argued that this behaviour can—and did—apply equally to domestic as well as foreign investors. For instance, South Africa has reported that domestic institutions played a large part in the decline of its equity market, while some others have noted that domestic investors may have had a role in exacerbating price declines. In the case of herding by international investors, it has been suggested that a major condition for such "runs" is appearance of a high-level of short-term foreign liabilities relative to short-term foreign assets such as that which characterised several East Asian economies before the crisis. In the event of a general withdrawal of foreign capital, such a condition suggests that the last short-term foreign creditor to withdraw their funds will not receive timely repayment. This prompts each creditor to flee a country ahead of other creditors, thus causing a sudden sharp withdrawal of capital from the economy.

Several observations appear to support these views. One is that capital markets did not appear to evaluate and price the credit risks associated with different borrowers in a timely manner. Several commentators have argued that market risk assessment of emerging markets prior to the crisis did not incorporate information that was available at the time. Despite some signs of growing vulnerability in certain developing economies, including public data pointing to a degree of macroeconomic imbalance, as well as well-known structural problems within their financial sectors, international market participants and analysts failed to anticipate the likelihood of a crisis. For instance, market expectations prior to the crisis did not foresee recession or higher currency volatility in the short-term, nor known vulnerabilities reflected in emerging market risk premia and sovereign-bond ratings of international credit rating agencies.[39]

Another observation is that fundamental explanations for the depth of the crisis are still hard to come by, leading some to suggest that investors over-reacted in several instances. Empirical evidence from the East Asian crisis shows that some of the largest daily swings

[38] A wholesale withdrawal by investors from capital markets can be a rational response if fundamental economic imbalances arise, for instance, when currency arrangements—in particular an exchange-rate peg—becomes vulnerable as a result of an unsustainable current account imbalance.
[39] "The East Asian Crisis: Was It Expected?" by Daniel Kaufman, Gil Mehrez and Sergio Schmukler, mimeograph, World Bank, 1998.

cannot be substantially explained by news. Moreover the evidence appears to suggest that herding behaviour is accentuated by the release of bad news during crisis periods.[40]

Other observations include the fact that the crisis tended to hit countries in a particular vulnerable position. For example, some economies that may have had comparable or more inferior banking systems and governance standards than some of the worst-hit countries were relatively insulated from the direct effects of the crisis. Moreover, the crisis hit several countries with broadly different sets of macroeconomic fundamentals, and financial and corporate structures, all within a very short period of time. Prior to the crisis, many of the worst-affected economies had arguably less in common than during and after the crisis unfolded. Commentators also noted that the crisis eased after about a year, even though several fundamental conditions, such as the health of the corporate and financial sectors, had yet to recover or, in some cases, show any significant signs of improvement.

Besides the tremendous participation of global investors and their subsequent abrupt and wholesale withdrawal, several observers have argued that excessive speculation on the part of certain global financial players during the crisis played a major part in transmission and severity. For instance, complex trading strategies involving futures were thought by some authorities to have exerted a destabilising influence on market performance in their jurisdiction. It has been suggested that in August 1998, currency speculators pursued a so-called “double play” aimed at playing off the Hong Kong currency board system against the administration’s stock and futures markets. Concerns over such plays led authorities to intervene in the stock and futures markets in an effort to deter any such activity.[41]

It has been acknowledged for instance that speculation was driven in part by a large number of diverse globally active players, including hedge funds and proprietary trading desks of commercial and investment banks. Critics have highlighted what, in many cases, appears to be their seemingly singular pursuit of trading profit which is argued to have prompted several speculative attacks around the region. Moreover, it has also been

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[40] See “What Triggers Market Jitters? A Chronicle of the Asian Crisis” by G.L. Kaminsky and S.L Schmukler, *Journal of International Money and Finance*, 18-4, August 1999, pages 537–560.

[41] According to senior officials, hedge funds were seen accumulating large short positions in both the equity as well as the stock index futures markets during this period. To avoid being squeezed by high interest rates, they pre-funded themselves by swapping US dollars for Hong Kong dollars with multilateral institutions that had raised Hong Kong dollars through the issue of debt. They then sought to engineer extreme conditions in the money market by dumping huge amounts of Hong Kong dollars. Because of the currency board mechanism, the resulting pressure on the foreign exchange market would cause interest rates to rise. This would in turn reduce stock prices, allowing speculators to gain handsomely on their short positions on securities and futures markets. With an estimated 80,000 short Hang Seng index futures contracts held by hedge funds alone, for every thousand-point fall in the stock market index they stood to profit HK$4b. The Hong Kong Monetary Authority estimated that the hedge funds involved had amassed in excess of HK$30b in currency borrowings, at an interest cost of around HK$4m a day. If they could have engineered a 1,000-point fall in the Hang Seng index within 1,000 days they would have broken even. If they achieved it within 100 days they would have netted HK$3.6b (Yam, J., “Coping with Financial Turmoil”, Inside Asia Lecture 1998 organised by The Australian, Sydney, November 23rd 1998).

suggested that in addition to their own proprietary positions, global intermediaries may have encouraged similar position-taking by their clients as well, thus contributing the pressure in the market. This simultaneous and interrelated involvement of a large number of players not only appears to have raised the potential for systemic risks during the recent period of turbulence, as illustrated by the events surrounding the collapse of LTCM, but also arguably contributed to the spread and severity of crisis incidents.

2.2.2 Currency market activity

One of the most significant features of the East Asian crisis has been the rapid and severe round of currency devaluation experienced by the South East Asian countries. The speed and ferocity with which these devaluation were transmitted from one currency to another have stirred heated and controversial debate as to the exact role played by currency market activity in the East Asian crisis.

Most initial views generally fall into two categories. The first views the growth in currency market activity as an inevitable development of the international financial system with increasing capital mobility. According to this school of thought, any profit opportunities presented by inconsistent and unsustainable economic policies or exchange rate regimes would be quickly taken advantage of and hence, traded away. In that sense, it is argued that the forces of demand and supply in the currency market exerts “market discipline” on policy makers.

While this view concedes that excessive volatility in the currency market may indeed cause exchange rates to over-shoot their equilibrium values as implied by economic fundamentals, it is argued that the impartiality of the forces of demand and supply are such that no prolonged state of over-shooting would persist. Over time, excessive under- or over-valuation of a particular currency would be eliminated by the fundamental forces of demand and supply.

The second view attributes fundamental responsibility for the crisis to the nature of currency market activity. Firstly, it highlights the fact that the volume of currency trading far exceeds the volume of international trade in goods and services suggesting that a majority of the volume of currency trading is accounted for by the trading of currencies themselves as assets. Secondly, it notes that most of the participants in the currency markets often have capitalisation levels which dwarf the stock of foreign exchange reserves of most, if not all, monetary authorities.

From the latter two points, this school of thought proceeds to argue that volatility in the currency market presents natural profit opportunities to market participants. Given the deep pockets of market participants and the over-the-counter structure of currency trading, there exists potential, ability and incentives for currency market participants to move markets in their favour. As such, notwithstanding the fact that independent speculative activity may help markets equilibrate, this view argues that there are strong incentives for rational traders to “herd” and in the process make significant gains by following the direction of the market.

The strength of both views lies in the fact that both capture some aspects of reality from different perspectives, although the matter still appears to be under debate. However, there are some aspects with regard to the role of currency market activity in the crisis that are not in dispute.

Among these is the fact that volatility from the currency market spilled over to domestic equity markets and subsequently unsettled the real economy in many of the crisis-stricken economies of East Asia. In this sense, the East Asian crisis was, in part, caused by the sharp devaluation of regional currencies. The prolonged weakness and instability of regional currencies is believed to have unnerved portfolio managers with an exposure to the region. These managers would have shifted their portfolios into currencies of “stronger” economies, in this case the US dollar, from some of the perceived “riskier” emerging markets which had limited capabilities to support their currencies. This reallocation effectively created a sharp downward spiral in the currencies which ultimately drew in fresh impetus in the form of domestic corporations buying foreign currencies to hedge their respective foreign currency exposures.

Another aspect of currency markets that has raised concerns is the perception of a lack of transparency in currency market activity. While there are some who dispute the relative importance of currency market activity in the unfolding of the crisis, there are strong views being expressed over the existing structure of currency markets, in light of their largely over-the-counter nature, that arguably result in an opaque environment which stymied and frustrated policy makers in their attempts to monitor market activity and take the appropriate policy response. In relation to this, there has also been concern that the impact of such OTC currency activity is likely to be substantial because of its sheer scale of late. According to the BIS, notional amounts of interest-rate and currency-related OTC derivative positions are comparable to the total cash positions in banking and securities markets.[42]

The final aspect of currency trading which is also well accepted is that the mechanics of currency speculation coupled with the fixed or heavily managed exchange rate regimes adopted by many emerging markets essentially render these economies vulnerable even if they have relatively sound macroeconomic fundamentals. This is because the classic defences against such speculative attacks can have crippling effects on the domestic economy.[43] The East Asian crisis has shown that currency market participants who have sufficient funds can defeat or critically weaken even the most determined monetary authorities.

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[42] As highlighted in “Derivatives: the black hole”, by John Plender, *Financial Times*, 21 July 1999.
[43] See “Mechanics of Speculative Attacks” in *International Capital Markets: Developments, Prospects, and Key Policy Issues*, International Monetary Fund, November 1997, pages 37-38.

2.2.3 *Financial contagion*

The sequence and breadth of events during the period under review underlined a consequence of an increasingly globalised and integrated financial system. Indeed, they provided striking evidence of the power of financial contagion in today's environment. While there have been various factors identified as potentially specific causes of the crisis, the scope and the extent of the East Asian crisis cannot be adequately addressed without examining the role of financial contagion.[44] The appendix contains an account of the contagion that arose out of each of these crisis episodes, as well out of the Brazilian crisis of January 1999.

Recent studies showing evidence of increased currency pressure among 10 economies during the East Asian crisis, as well as in 13 economies during the Russian debt crisis of 1998, are in keeping with the notion that currency crises tend to occur in clusters. For instance, studies of past crises have shown that, for instance, 16 countries experienced substantial currency pressure within six months of the European exchange rate mechanism crisis of 1992, while nine economies experienced similar pressure during the Mexican crisis of 1994–95.[45] However, the East Asian crisis also seemed to display increased equity market pressures across a diversity of markets, perhaps most notably in the form of higher correlation among emerging stockmarket indices with the onset of the crisis, as well as volatility spill-overs across currency and equity markets.

Hence, the issue of contagion can be addressed at two levels, that is, (1) at the cross-country level and (2) at the cross-market level (ie, the transmission of price volatility from one asset market to another asset market within the same economy, eg, from the currency market to the securities market. At the cross-market level, the speculative pressure in the currency markets of some EMC jurisdictions were so severe that central banks there resorted to imposing restrictions on swap transactions. However, this inadvertently translated the demand for domestic currency to selling pressure in the equity market as currency speculators—in a bid to circumvent the central banks' restrictions—used the equity market to raise the funds needed to cover their respective short-currency positions. Another channel through which the volatility in the currency markets spilled over onto equity markets was via central banks' operations to defend the domestic currency by raising interest rates. The rapidly collapsing currencies and rocketing interest rates coupled to erode the portfolio values of equity investors.

Thus, it has become clear that currency and securities considerations cannot be entirely disentangled when assessing contagion during the recent crisis. It has been argued that because cross-country financial transactions usually involve currency risk, the contagion that was observed would have been partly driven by currency concerns.

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[44] It has been argued however that contagion is unlikely to inflict permanent damage in the absence of underlying structural weaknesses.

[45] See chapter III of *World Economic Outlook*, International Monetary Fund, April 1999.

Although real linkages such as common shocks and trade effects can explain some of the clustering, the co-movement among asset prices has often exceeded predicted levels. This occurred in a dramatic fashion during the crises discussed in this report, which illustrated the power and complexity of contagion. In particular, the massive spillover effects cannot be to be explained by the extent of trade and financial links across the economies involved. It would therefore be useful to review the factors that are potentially responsible for the clustering of pressure in currency and securities markets. Five can readily be identified:

- **Trade linkages.** The initial devaluation of the Thai baht and other East Asian currencies mounted to real exchange rate depreciation, making these economies more competitive vis-à-vis the economies with whom they compete in global and regional product markets. As a consequence, the currencies of other emerging markets became increasingly over-valued and came under pressure themselves to depreciate. This view is confirmed by correlation analysis conducted by the BIS. A country's economy can also be affected when a major trading partner runs into economic difficulty and import demand is reduced. These linkages might also explain the striking role of geography in many contagion episodes.

- **Common shocks** such as steep rises in world interest rates, changes in commodity prices and changes in major exchange rates can affect several countries at once. The canonical example of a common shock is the role of rising US interest rates in precipitating the Latin American debt crisis of the 1980s. As explained above, at least one common shock played an important role in the clustering of crises in East Asia. The appreciation of the dollar against the yen by more than a quarter in the two years leading up to March 1997 made all the Asian currencies tied to the dollar less competitive.

- **Liquidity pressures.** As a crisis flares up in one market, a fund may liquidate positions in markets that are barely affected and geographically removed in order to raise liquidity in anticipation of margin calls or redemptions. This can aid in the transmission of the selling pressures across seemingly unrelated markets. Studies have found that countries that share common creditors or investment groups with a crisis country have a higher chance of falling prey to the crisis. One explanation for this finding is liquidity-driven transactions. Another plausible explanation is the factor that follows.[46]

- **Portfolio rebalancing and risk management.** As asset values and correlation change, institutions may need to rebalance a portfolio containing the assets of crisis economy. Portfolio management would require that assets that have kept their value need to be reduced. Were the historical record of increased correlation between securities in times of crisis taken into account, an additional rebalancing away from countries as yet untouched by the crisis may also occur. Ironically, as the crisis

[46] See chapter 3, "International Financial Contagion", part III, *World Economic Outlook*, April 1999, International Monetary Fund.

unfolded these considerations seem to have prompted sell-offs of relatively more liquid emerging market securities. For instance, some market participants point to the massive 1997–1998 sell-off of South African government bonds, which are arguably among the most liquid emerging economy paper in the world, as an example.

- **Shifts in market assessment/investor sentiment.** One view of the contagion within Asia is that the troubles in Thailand acted as a “wake-up call” to both foreign and domestic investors. Weaknesses that had been overlooked or justified on the basis of expected returns were viewed with greater scrutiny. Investors’ perception of risk increased, as did their sensitivity for parallels with the countries already in crisis. In making these assessment, investors sometimes display herd behaviour, particularly in the face of poor information.

  It has also been suggested that a shift in investor perceptions of emerging markets risk may explain the contagion following the Russian crisis. A key that has been noted in this particular instance is that Russia was not bailed out. It has been argued that the resolution of the Mexico crisis of 1994–through a large international assistance programme led to an expectation that that the international community to step in again to avoid default of a major developing economy. That this intervention did not occur in the case of the Russian crisis may have been behind the subsequent reaction by markets.

Other views of possible mechanisms behind contagion have also been mooted. They include what the BIS has termed “proxy hedging”, in which differences in liquidity needs over time and across markets lead to a transmission of selling pressures across geographical markets which would otherwise seem totally unrelated. Under the “dynamics of devaluation” view, the initial devaluation of the Thai baht and some other currencies within the East Asian region is thought to have resulted in relative appreciation in the real exchange rates of other emerging market economies, which may have ultimately led to increased pressure for them to depreciate. A third view, the so-called “demonstration effect” of profits and losses on speculative positions, is thought to lead to shifting of such positions that increases the probability of another depreciation. Hence, the first wave of ex-change rate volatility may have awakened some East Asian corporations with unhedged foreign currency exposure to their speculative positions and the urgency of hedging. It has been argued that this rush to hedge only caused further depreciating pressures on the respective currencies.

Recent events highlight the view that the speed and force of contagion will increase in a world of increasingly integrated product and capital markets. The three episodes of contagion that occurred in the last two years, and which are discussed in the appendix, also indicate that not all countries suffer from the same level of contagion. After the Brazilian crisis many countries experienced only a short burst of volatility. In other cases, such “imported” volatility set off a chain reaction ending in crisis. The difference may be due to differences in real economic linkages such as trade, although that clearly is not a full explanation. Part of the answer lies elsewhere and possibly includes, among other factors, structural weaknesses within recipient economies as well as swings in market sentiment.

3 Effects of the Turbulence

This section traces the effects of the turbulence during the period following the devaluation of the Thai baht and ensuing contagion on both the region's financial markets as well as global markets. The rapidity and intensity with which the turbulence struck the East Asian region had profoundly adverse repercussions not only on financial markets, but also on the broader economic and societal levels closely intertwined with the financial health of these countries. Compounding the problem was the fact that costs of dealing with these repercussions escalated in line with the increased uncertainty and volatility of the markets, making it difficult for sovereign economies to disentangle themselves from the spiral of unremitting downward pressure in the midst of widespread turbulence.

In some cases, it is difficult to draw a clear demarcation between the causes and the effects of the aforesaid turbulence, given the cyclic nature of the triggers and dynamics underlying the crisis. The discussion in this section focuses on the immediate and longer-term responses of markets, and market authorities and regulators, to the pressures and issues arising from the turmoil. The issues presented in this section concentrate on two broad aspects: first, the macroeconomic effects of the crisis—which is a central factor to the deterioration of confidence in the fundamentals underlying the securities markets in the affected countries—and second, the effects on securities markets themselves. While some of these themes had been already identified before, there is substantial scope for a fresh examination of the developments that have emerged—with the benefit of greater hindsight—over the months since its publication, as well as the emerging consensus with regard to these issues.

3.1 Macroeconomic effects

3.1.1 Deterioration of macroeconomic fundamentals

Monetary and fiscal policies were initially tightened as countries struggled to cope with the financial panic that had induced a run on their currencies. The outflow of capital in 1997 required huge adjustments to maintain positive current account balances, which were achieved primarily through import reduction and diminished income, rather than through export growth. Because over 65% of the exports in East Asia are intra-regional, the temporary collapse in growth within the region caused a significant loss in export volumes. Although the export slowdown actually was already underway by early 1996, this was considerably worsened by the sharp fall in global consumption, protectionist measures in some countries to boost domestic trade balances, and the significant price declines for major export products for some countries in the region.

Table 2: Macroeconomic indicators: GDP, Inflation, Three-month Interest Rates and Exchange Rates

	GDP (%)				Inflation (%)			
	1997	1998	1999f	2000f	1997	1998	1999f	2000f
China	8.8	7.8	8.2	8.4	2.8	-0.8	-1.6	0.5
Hong Kong	5.3	-5.1	-1.0	1.5	5.7	4.1	-2.7	1.0
India	5.0	5.8	5.8	5.8	4.7	7.0	5.8	7.0
Indonesia	4.9	-13.7	-1.8	2.4	6.6	58.4	23.8	13.0
Korea	5.0	-5.8	7.0	5.0	4.4	7.5	1.1	2.2
Malaysia	7.5	-7.5	3.0	5.0	2.7	5.3	3.2	3.4
Philippines	5.2	-0.5	2.4	4.0	5.1	9.7	7.2	7.9
Singapore	8.0	1.5	4.0	4.8	2.0	-0.3	0.5	1.2
Taiwan	6.8	4.8	4.5	4.9	0.9	1.7	0.4	1.5
Thailand	-1.3	-9.4	1.5	3.0	5.6	8.1	0.4	1.8

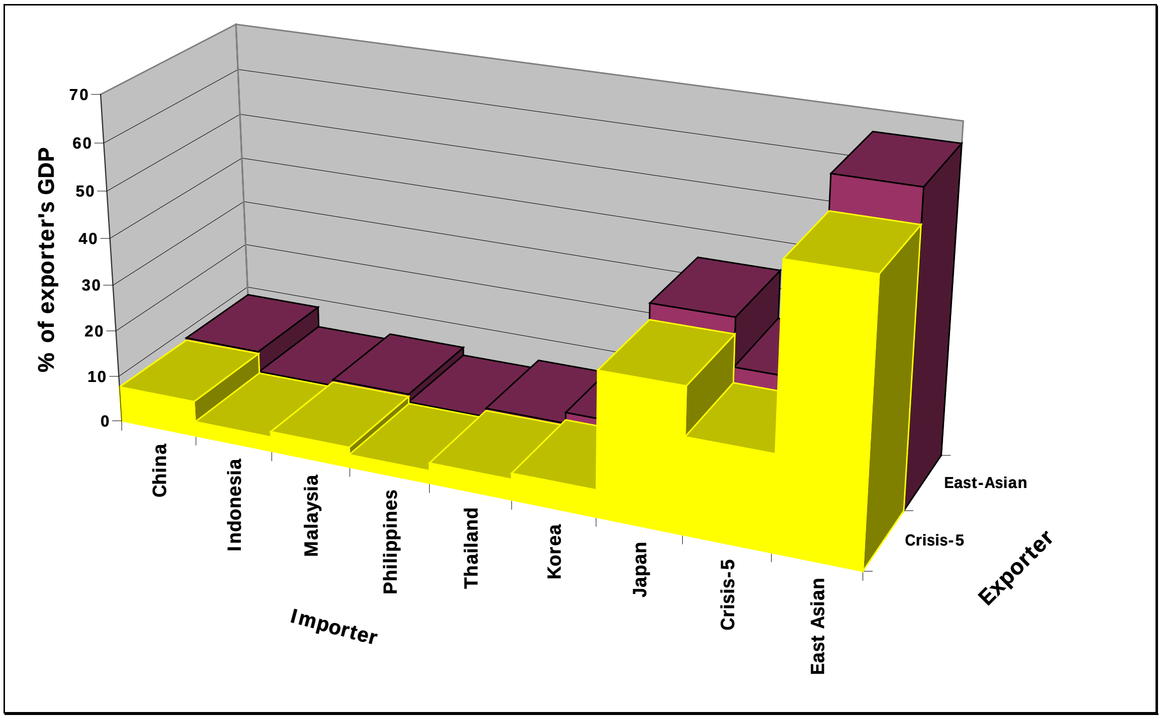
	Three-month Interest rates (%)				Exchange Rates			
	1997	1998	1999f	2000f	1997	1998	1999f	2000f
China	-	-	-	-	8.3	8.3	8.3	8.3
Hong Kong	9.3	5.4	5.8	6.0	7.8	7.8	7.8	7.8
India	7.0	9.5	9.1	9.9	39.3	42.5	44.8	46.9
Indonesia	14.2	38.3	12.9	14.1	4650.0	8100.0	7167.0	7792.0
Korea	25.0	7.7	6.0	6.3	1415.0	1200.0	1075.0	1025.0
Malaysia	8.7	6.4	4.1	5.2	3.9	3.8	3.8	3.9
Philippines	17.7	13.5	8.4	9.2	39.9	39.2	39.3	41.6
Singapore	7.2	1.6	3.2	4.3	1.7	1.7	1.7	1.6
Taiwan	8.5	5.5	4.8	4.8	32.6	32.2	32.0	32.0
Thailand	16.8	7.4	6.1	6.6	48.2	36.7	36.0	36.0

Source: Goldman Sachs

The impact on national output and income has been severe, even when compared to earlier banking crises. During 1998 alone, Indonesia's real gross domestic product fell by almost 14%, while Thailand, Malaysia, Korea and the Philippines experienced declines of 9%, 8%, 6% and 1% respectively. In per capita terms, output for Korea, Malaysia and Thailand has been pushed back to the levels of 1994–95 and for Indonesia to the levels of 1992–93.

To some extent the deceleration in growth was cyclical following the rapid expansion in global demand in previous years. However, the fall in world export growth from its cyclical peak of about 20% in 1995 was the largest in the past 15 years, to a mere 4% in 1996 and 1997. The decline in consumption was aggravated by the yen's continued weakness against the US dollar, given that Japan represented both a major consumer as well as competitor of East Asian exports.

Figure 8: East-Asian Intra-Regional Exports by Country, 1997 (% of exporter's GDP)



Source: International Monetary Fund

In all the affected economies, interest rates initially rose as the monetary authorities attempted to inhibit the heightened pressure for the further depreciation of their respective currencies. Thailand, Indonesia and South Korea entered into agreements with the IMF and other parties to secure aid, resulting in the establishment of IMF-endorsed policy frameworks to facilitate restructuring activity in these economies. The IMF's economic strategy was two-pronged. One was macroeconomic in nature, centred on tighter monetary and fiscal policies to restore financial market stability. The other dwelt on substantial structural reforms to restore confidence. These came in the form of major banking system overhauls, the disintegration of monopolies, the removal of barriers to trade and substantial improvements in corporate transparency. Unfortunately, the demanding targets set out by these programmes had the opposite effect to that intended in some cases, triggering unhappiness among the locals over the difficulties in their implementation. Social unrest in some of these economies was exacerbated by uncertainty over the tenuous political situation at that time, as well as the severe demand-tightening measures required by the terms of the IMF aid package.

Although in hindsight it can be seen that some of the initial policies recommended by the IMF could have been better-advised, most of the targets set under its aid programmes would not have been strongly contractionary had projected assumptions about economic growth been realised. However, as the depth of the recession became apparent, both the IMF as well as independent governments eased their approach to macroeconomic and structural reforms—particularly when it became evident that the sharp depreciation of regional currencies were not having a substantial multiplicative effect on export volume. Fiscal and monetary policies in most of the worst affected jurisdictions became increasingly expansionary. In Indonesia, for instance, the IMF relaxed its initial requirement of a budget surplus in 1997 to allow for a sizeable budget deficit. Similar relaxations were sanctioned in the cases of Korea and Thailand, where interest rates have also since come down substantially.

Nevertheless, it will take some time for these measures to bear results. Recovery is expected to take longer in East Asia than in the Latin American crisis in 1994–95 because of both the extent of corporate and bank restructuring needed, as well as the regional scope of the recession, including Japan. Thailand, Korea and Malaysia have fallen off their growth trajectory and experienced sharp economic contraction in 1998. The Philippines and Singapore have fared somewhat better, but these economies still experienced lower rates of growth in 1998. Because of protracted uncertainty over the socio-political scene in Indonesia, the archipelago remains the only major economy within the region expected to experience a second successive year of negative growth.

Nonetheless, prospects for 1999 and beyond generally appear brighter than initially forecast a year ago, given the progress seen thus far in restructuring activity and economic reforms in these countries. However, continued concerns over the effects of yen’s strength against the US dollar, the state of the Japanese financial and corporate sectors, heightened political tensions among the North Asian economies, and the untrammelled strength of the US market remain pertinent factors overshadowing the region’s outlook.

Table 3: Real GDP Changes During the Latin American Crisis and the East Asian Crisis (% change y-o-y)

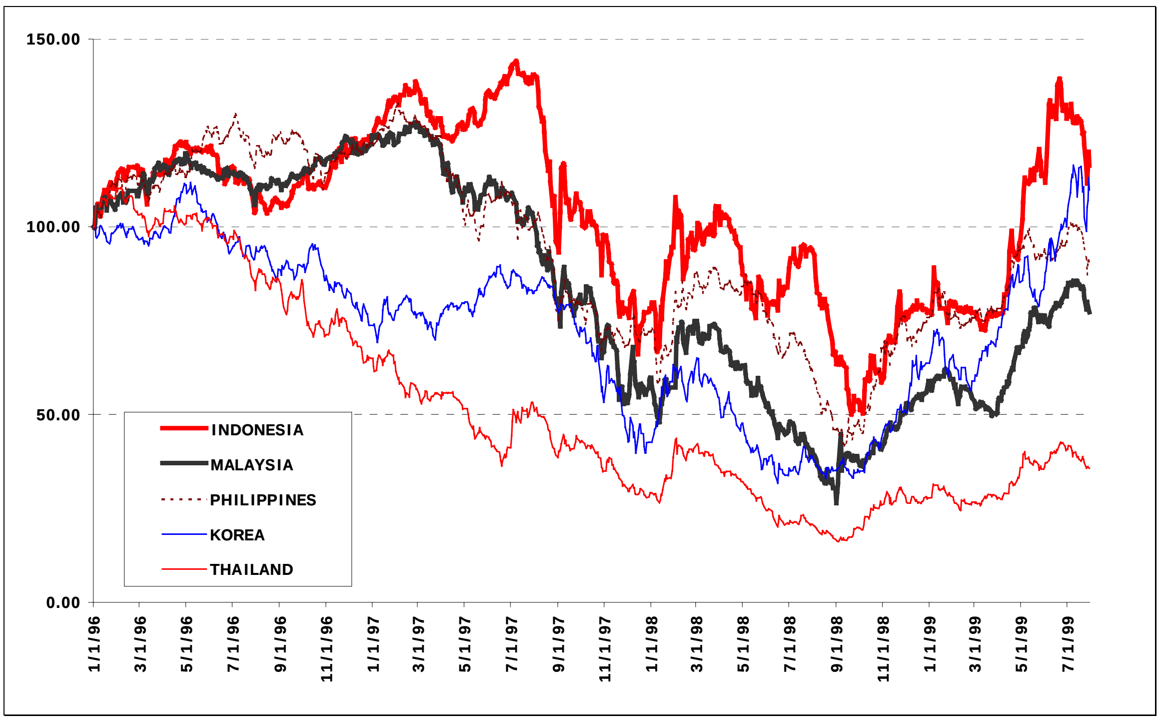
The Latin America crisis	**T-2**	**T-1**	**T**	**T+1**	**T+2**
Argentina (1995)	5.70	8.00	-4.00	4.80	8.60
Mexico (1995)	2.00	4.50	-6.20	5.20	7.00
Turkey (1995)	6.40	8.40	-5.00	6.70	7.30
Venezuela (1994)	7.30	0.30	-2.90	3.40	-1.60
The East Asian crisis	**1995**	**1996**	**1997**	**1998**	**1999f**
Indonesia	8.2	7.8	4.9	-13.7	-1.8
Malaysia	9.4	10.0	7.5	-7.5	3.0
Korea	8.9	6.8	5.0	-5.8	7.0
Thailand	8.6	5.5	-1.3	-9.4	1.5

Source: Sachs, J. D., Woo, W.T., "The Asian Financial Crisis: What Happened and What is to be Done", 1999; Goldman Sachs, "Asia Economics Analyst", July 1999.
Note: T = year of panic (shown after country).

3.1.2 *Slump in domestic asset prices*

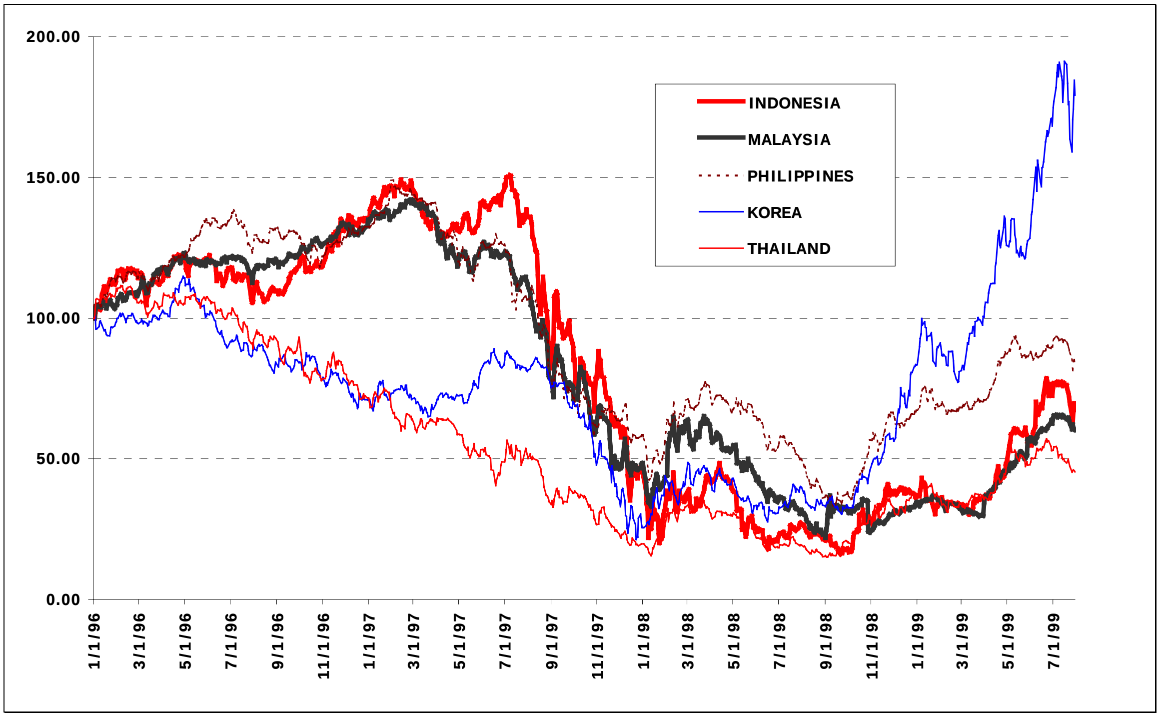
Declining asset prices were characteristic of the markets that succumbed to the sharpest effects of the turbulence. Although stock prices had already begun to weaken from their highs by early 1997, they fell precipitously as a series of event-driven shocks heightened downward pressure on their financial markets. Equity market capitalisation in the crisis countries fell in US dollar terms by between 50% (in the Philippines) and 85% (in Indonesia) during the second half of 1997 alone.

Figure 9: Relative Performance of Regional Benchmark Stock Indices (Jan 1st 1996=100)



Source: Datastream/ICV

Figure 10: Relative Change in Market Capitalisation of Regional Stock Markets (Jan 1st 1996=100; US dollar terms)



Source: Datastream/ICV

In addition, property prices dropped significantly in the crisis economies due to the property glut arising from declining occupancy rates and—in some of these countries — the oversupply of real estate, particularly that targeted for commercial use. The financial crisis also contributed to the decline in primary commodity prices, as currency devaluations and the demand collapse in East Asia reduced world demand and encouraged increased supply originating the crisis countries. Cheaper production costs in the production of some regional export commodities have led to increased supply of, for example, rubber, timber and rice. According to World Bank estimates, food prices ended 1998 about 21% lower from their peak in April 1996. The 16% drop in non-fuel primary commodity prices in 1998 was the largest decline since 1986, while the 32% drop in oil prices was the largest since 1975.[47] While prices of internationally traded manufactured goods and services also fell in 1998, their decline was considerably less than that of primary products. In view of expectations of continued sluggish world demand conditions, the forecast for 1999 is a further decline of 6% in non-fuel commodity prices.

[47] The sharp increase in oil prices, in addition to the dual factors of slowing demand and rising production, was also partly attributed to the failure of the Organisation of Petroleum Exporting Countries (OPEC) to cut production further. International Monetary Fund, "*World Economic Outlook*", May 1999, pp. 2 and 54.

Table 4: Performance of Commodity Markets (%y-o-y change in nominal US dollars)

	1998	1999f	2000f	2001f
World trade volume	4.8	4.2	5.9	6.2
Non-oil commodity prices	-15.7	-6.3	1.7	5.0
Agriculture	-16.2	-5.2	1.8	3.3
Metals and Minerals	-16.2	-10.3	2.0	12.2
Fertilisers	2.0	-5.2	-4.1	0.0
Petroleum	-31.8	-8.2	25.0	6.7
Manufacturers export unit value[1]	-3.9	1.3	2.6	2.7

Source: World Bank

[1] Unit value of manufactured exports from G5 (Canada, France, Italy, Japan, UK and US) to developing countries

The rapid decline in East Asian currencies drove the prices of the region's major export products lower, with the electronics sector—already on a weakening trend prior to the crisis—among the most severely affected. Korea was particularly hard hit by the price decline in 16Mb DRAM chips, which accounted for a large share of its exports, from a peak of US$150 per unit in 1993 to below US$10 per unit in 1997.[48]

3.1.3 Decline in the standard of living

The impact of the turmoil of 1997-1998 can be measured by the impact on the income and livelihood of the affected societies. Household incomes have plummeted and in many countries unemployment has soared to twenty-year highs. Unemployment levels have doubled in Indonesia and Brazil, and tripled in Korea and Thailand (to levels of 5–6% of the labour force in the latter two countries).[49] Even in the moderately affected Philippines, the ranks of the unemployed have swollen by one million. The rising joblessness, together with a shift to low wage employment, has lead to a dramatic fall in per capita consumption. World Bank estimates suggest that a 10% decline in aggregate consumption or income could lead to poverty doubling in Indonesia, and increasing by 35–50% in the Philippines, Thailand and Malaysia.[50]

The quality of life has diminished markedly, most dramatically for the poor in the crisis countries. At the same time, the ability of governments to provide assistance has been limited by declining revenues, mounting interest bills and large resolution costs. Reduced

[48] World Bank, "East Asia: The Road to Recovery", 1998, p.22.

[49] Although these unemployment levels are still far below those in many developed countries, it must be noted that the developing countries contain a larger population percentage who live just above the US$1-a-day poverty line. Sharply reduced income or consumption such as that seen in the crisis economies would significantly raise the number of people living in poverty.

[50] World Bank, "East Asia: The Road to Recovery", 1998, p.83.

public funding and lower family incomes have led to lower school enrolment among the poor. The workload on mothers has increased, and children have left school prematurely to enter the work force. In the case of Indonesia, the government estimates the number of pupils dropping out of primary and secondary schools to be 890,000 and 640,000 respectively.

The cost of medication has been pushed up by weaker currencies. Again taking Indonesia, perhaps the worst hit country, ethical drug prices have increased two- to three-fold. As higher income households have returned to public sector facilities, public budgets have been placed under further pressure. The budget pressures may have potentially negative long-term ramifications as public health programmes such as immunisation were cut.

In some countries, increased economic stress has led to instances of increased domestic and community violence. Under the economic strain, more people have resorting to illegal activities such as the drug trade and prostitution. Fewer urban employment opportunities have also influenced migration patterns within the region, such as the repatriation of labour among neighbouring countries and the return of industrial labourers to rural areas and agricultural activity.

Nevertheless, efforts are already underway to ease the pressures on the affected societies. More expansionary domestic macroeconomic policies, for one, have helped to stem rising unemployment numbers by creating incentives for greater consumption and development. Programmes by non-governmental organisations and multilateral agencies to assist the poor and most vulnerable have been put into motion to address the immediate problems faced by those on the lowest income strata and help extenuate the large differential between the rich and the poor in some economies.

3.2 Effects on securities markets

3.2.1 Large reversals of capital flows

Sharp reversals of capital flows from emerging market economies were observed from mid-1997 to the latter half of 1998. The countries that experienced the greatest withdrawal of capital were those in East Asia, namely, South Korea, Thailand, Malaysia and Indonesia—and, to some extent, the Philippines.

In general, it was found that the decline in external financing to East Asia was generally attributable more to increases in capital outflows rather than declines in long-term inflows. Net long-term inflows to the five economies mentioned above fell by US$15b y-o-y to US$52b in 1997. In comparison, these countries experienced an estimated US$36b in combined net capital outflow in 1997 alone, in contrast with a net capital inflow of US$76b the previous year. Commercial banks withdrew about US$26b from the crisis-affected countries in 1997, after lending them about US$63b in 1996.[51] Net long term flows to developing countries from bonds, bank lending and portfolio equity fell by nearly 90% from US$136b in 1997 to US$72b in 1998, the lowest level since 1992.

Capital outflows were intensified as equity fund managers met redemptions by liquidating portions of their regional equity portfolios.[52] Widespread uncertainty further exacerbated the crisis in confidence. To some extent, as highlighted in section 2, herd behaviour appears to have been partly responsible for the drastic pullback in funds seen at several junctures during the crisis.

Fortunately, the resilience of foreign direct investment (FDI) into the East Asian economies helped to partially offset the effects of the withdrawal by banks and portfolio investors. FDI flows to Thailand and Korea rose in 1998 despite the severe recession in both countries, while flows declined slightly to Malaysia and the Philippines. Indonesia was the hardest hit, with FDIs falling drastically from US$6.2b in 1996 and US$4.7b in 1997 to US$1.3b in 1998.

In response to the deleterious effects of sudden shifts in portfolio flows, some jurisdictions took drastic steps to control capital mobility in their economies. Malaysia, for one, introduced wide-ranging capital controls in September 1998, including restrictions on the repatriation of proceeds from the sale of domestic securities, disallowing domestic credit facilities to foreign banks and brokerages, and more stringent controls over the management of foreign funds deposited in the country. This eventually led to the exclusion of Malaysian stocks from several international investable indices, causing some difficulties for foreign funds benchmarked against these indices.[53]

Although concerns over the advisability of capital controls remain, the apparent dangers of unrestricted capital flows on developing markets have led to greater recognition of the merits of policies to stabilise such capital flows, particularly in emerging economies, given their vulnerability to destabilising forces. However, it should be noted that there remains no consensus regarding the application of such controls, with some emerging markets maintaining a stance of no restrictions on the movement of foreign portfolio capital.[54] Nevertheless, to some extent, the East Asian experience has led to greater caution and political vigilance in relation to the liberalisation of capital accounts for some transition economies. For example, it now appears that India will not be moving forward as rapidly as earlier expected on the Tarapore Committee's recommendations toward furthering capital account liberalisation.[55]

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[51] Asian Development Bank, "*The Financial Crisis in Asia*", Asian Development Outlook 1999, p.28.

[52] It has also been suggested that the close relationship between stocks and currencies was due to speculators selling in the equity market in order to raise local currency for shorting or to create risk-neutral positions spanning both currency and equity (futures) markets.

[53] However, they have since been reinstated or are in the process of reinstatement in most of these indices following the substitution of the initial restrictions with an exit tax effective February 15th 1999.

[54] South Africa, for example, maintains a policy of no restrictions on foreign capital flows as a cornerstone of its inward investment policies.

[55] World Bank, "*Global Development Finance 1999*", March 1999, p. 35.

Credit rating agencies (CRAs) were also severely criticised by the international financial community for failing to provide any early warning of the East Asian crisis and then exacerbating the capital flight from the region with rating downgrades. Some commentators have noted, as an example, that the drastic rating downgrades of Korean, Indonesian and Thai sovereign bonds to speculative grade instruments in late 1997 were followed immediately by sharp declines in the won, the rupiah and the baht respectively, the very next day. This inference is corroborated by a World Bank study that finds that announcements of changes to debt ratings are among the primary factors triggering extreme market movements.[56] Nevertheless, it may be misleading to consider rating changes in isolation. A Bank for International Settlements report cautions that while rating changes may at times have led the exchange market, their effects should not be confused with coincidental market developments.[57]

3.2.2 Price volatility

Sharp fluctuations in the prices of financial instruments were a predominant feature of financial turbulence during the crisis. Notably, during periods of extreme stress volatility transmission occurred both across geographical boundaries as well as across different asset markets, particularly between currency markets and stock markets. Spillover effects across stock markets were largely confined among East Asian markets during the first part of the crisis. However, the sharp price declines of October 1997 and August 1998 transcended regional boundaries with markets in Latin America, Africa and South Asia, as well as those in East Asia, recording significant price fluctuations and increased trading activity.

To some extent the heightened volatility was augmented by the investment styles practised by some investors. Portfolio "equalisation" by foreign institutional investors saw some markets, in particular those in the Middle East and Eastern Europe, experiencing a marked rise in stock prices during phases when international investors switched their emerging-market portfolios away from Asia to relatively under-weighted markets.[58] Asset reallocation strategies were also blamed for having severe negative effects on relatively liquid emerging markets. South Africa's highly liquid government bond exchange, for instance, suffered massive sell-offs during the crisis period, in some cases motivated by liquidity needs sparked off by losses elsewhere.

The sharp drop in global equity markets and the historically high levels of volatility in the underlying markets also made it difficult for market participants to hedge their investments, owing to their reduced liquidity and higher risk premium. Heightened

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[56] Kaminsky and Schmukler (1998).

[57] Bank for International Settlements, *68th Annual Report 1997/98*, 8 June 1998, Basle, Switzerland, page 110.

[58] "Portfolio equalisation" refers to the practice of taking profits in better-performing markets around the world to offset losses suffered in poorer-performing ones.

volatility also drove up the cost of obtaining structured notes on emerging market instruments and made their valuation problematic. One East Asian firm reportedly paid an exorbitant premium to obtain a 30-year hedge on the Chinese renminbi—an unusually lengthy duration for an emerging market product— to protect itself against a possible devaluation of the currency. In several jurisdictions, investors who had participated in the warrant issuance boom from the mid-1990s to early 1997 subsequently saw their warrants going deeply out-of-the-money as the cash markets plunged. Many issuers of equity warrants reported losses due to the difficulty in dynamically hedging their exposures during the violent market swings, as well as the non-materialisation of warrants proceeds to pay off debt obligations of corresponding maturities. To address this problem, some jurisdictions subsequently allowed the extension of such warrants' term to expiration.

Bond markets experienced heightened volatility as well. In the immediate aftermath of the Russian debt moratorium in August 1998, for example, other emerging market debt prices plunged precipitously as highly leveraged speculators sold emerging market bonds to meet collateral requirements.[59]

In general, volatility spillover from derivative to cash markets was limited. From our earlier survey, some jurisdictions said that they had found no evidence of it at all; others observed intermittent and short-lived instances of intra-day transmission from stock-index futures to cash, as well as the other way around. The majority of respondents with markets in those instruments reported that their clearing institutions increased futures margins or made a number of intra-day margin calls as cash market price movements became increasingly erratic. On the whole, market participants were reported to have met these calls, and clearance and settlement systems lived up to expectations. In its study of the 1997 turmoil, the financial authorities of the Hong Kong SAR concluded that the region's active futures exchange could have actually reduced volatility in cash markets during the financial turbulence.[60]

However, on at least one occasion complex trading strategies involving futures were found to have exerted a destabilising influence on market performance. Following the extreme pressures exerted by currency speculators in August 1998 in pitting the Hong Kong currency board mechanism against the equity and futures markets—leading to the government's direct intervention in these markets—the Hong Kong Monetary Authority (HKMA) instituted a package of technical measures to strengthen the currency board system and reduce its vulnerability to manipulation. These included measures to improve liquidity management in the interbank market. At the same time, steps were also taken to strengthen market discipline in the equity spot and futures markets, where regulations were introduced to increase the cost of speculative activity.

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[59] World Bank, "*Global Development Finance 1999*", March 1999, p. 28.

[60] The report states: "Bearing in mind the risk management principles of most institutional investors, there are reasons to believe that index-based derivative contracts actually reduced volatility on the cash market during the most volatile of trading days by providing a means to market participants to reduce their exposures to stock at times when the stock market had become relatively illiquid but extremely volatile." [from FSB paper. Source?]

3.2.3 Market panic and disruption to price discovery

One of the problems observed during the crisis was maintaining pricing efficiency in the face of intense market volatility. This is a vital issue since the timely dissemination of information and the provision of greater access to liquidity remain major reasons for organised exchanges. Distortion of the price discovery process, particularly during periods of greater uncertainty, can rob investor confidence and precipitate further misalignments in asset prices.

From the onset of the crisis in mid-1997, East Asian markets experienced sharp swings in prices as widespread uncertainty saw contagion effects materialise rapidly. The volatile intra- and inter-day price changes transformed from a localised phenomenon to a globalised one when international stock markets plunged sharply on October 27th-28th, 1997, precipitated by the US market's fall of 554 points on October 27th; its biggest point fall in history. On that day, the 350- and 550-point circuit breakers on the New York Stock Exchange (NYSE) were activated for the first time as the Dow Jones Industrial Average (DJIA) tumbled by 7% amid concerns over the dampening impact of the Asian crisis on US corporations' earnings. Some commentators argued that the trading halts contributed to a sense of panic, intensifying selling pressure after the resumption of trading following the first halt and resulting in a "magnet effect" as the benchmark index approached key trigger levels.

Most stock and derivatives markets reported a sharp increase in volumes in the wake of the Dow's plunge despite the fact that price limits, trading halts and other forms of restrictions were activated in many exchanges—including Brazil, Taiwan, Thailand, India, Bangladesh, Japan, Argentina and Hungary—as prices plummeted.[61] Although all surveyed jurisdictions that imposed circuit breakers have indicated that they were successful in slowing down market momentum, whether these efforts succeeded in inhibiting volatility over the medium to longer term, or perhaps even had perverse effects in certain cases, is still a matter of contention.

In some instances, price discovery was impeded when the disruption of trading in cash markets subsequently spilled over to the futures markets. In several markets, it was observed that the extraordinarily high volatility observed as a result of the regional contagion led to the frequent disruption of the price discovery process in the cash and futures markets, because price limits were breached too frequently. Asymmetric trading

[61] Many jurisdictions in our earlier survey reported that they had some form of trading restriction in place at the time of the global correction of October 27th–29th 1997, either on the market as a whole or on individual stocks. Some were formal: in Hungary, for example, trading in a stock is suspended for 15 minutes if the stock's price falls by 10% from the previous day's closing price, and for the rest of the trading day if the price fall exceeds 20%. Others took a more informal approach: for example, in one jurisdiction regulators evaluate any transaction in which prices fluctuate by more than 5% a day.

limits on equity and related futures markets in at least one Eastern European market also reportedly disrupted the price discovery process.

Price determination was also hindered by the imposition of trading restrictions on securities trading in multiple jurisdictions. For instance, when the markets in the United States closed early on October 27th, trading in American depository receipts (ADRs) of Latin American stocks stopped as well. Thus, at a time when the greater uncertainty might have been alleviated with information on the details of such trading activity, some Latin American stocks were unable to take their cue from ADR prices when their markets opened the next day. Consequently, Brazilian stock exchanges, for one, delayed the beginning of trading by three hours the next day in order to match their trading hours with those of the NYSE, hence enhancing the price discovery process by ensuring the continuous flow of information between the exchanges in both countries.

Consequently, the authorities' efforts to smooth violent market movements and inhibit panic during times of heavy selling pressure have come under close scrutiny. US securities market authorities and regulators have since implemented revisions to their circuit breaker mechanisms amid general consensus that the decline of October 27th was not the type of extraordinary decline that circuit breakers were meant to address.[62] In some emerging markets, the authorities are re-examining the advisability and effectiveness of mechanisms to address the problem of excessive volatility in view of the difficult trade-off between destabilising price movements and restrictions on liquidity and price discovery.

3.2.4 Financial weakness of market intermediaries

In the worst hit jurisdictions the turbulence led to severely weakened market intermediaries. The damage to their financial positions stemmed from their exposure to troubled corporations as well as the broader financial markets. Plummeting asset prices eroded the value of securities pledged as collateral for margin loans, leading to a higher frequency of margin calls and forced sales.

In the face of significant adverse market movements, the banking sector came under pressure as a large proportion of the credit extended for share-purchases proved to be unrecoverable. In many of these countries share collateral tended not to be dynamically risk-managed according to changing market conditions and legal remedy for the foreclosure of collateral was not well developed. Hence, a sudden deterioration in prices forced some banks to liquidate collateral, thereby exacerbating the situation. Unfortunately, sharp movements in prices caused stockbrokers to activate their credit

[62] Testimony of Arthur Levitt Jr., Chairman, US Securities and Exchange Commission, on Circuit Breakers before the Subcommittee on Securities, Committee on Banking, Housing, & Urban Affairs, US Senate, January 29th 1998.

facilities at a time when banks were most likely either to reduce or withdraw these facilities for fear of being caught in a potential market meltdown.

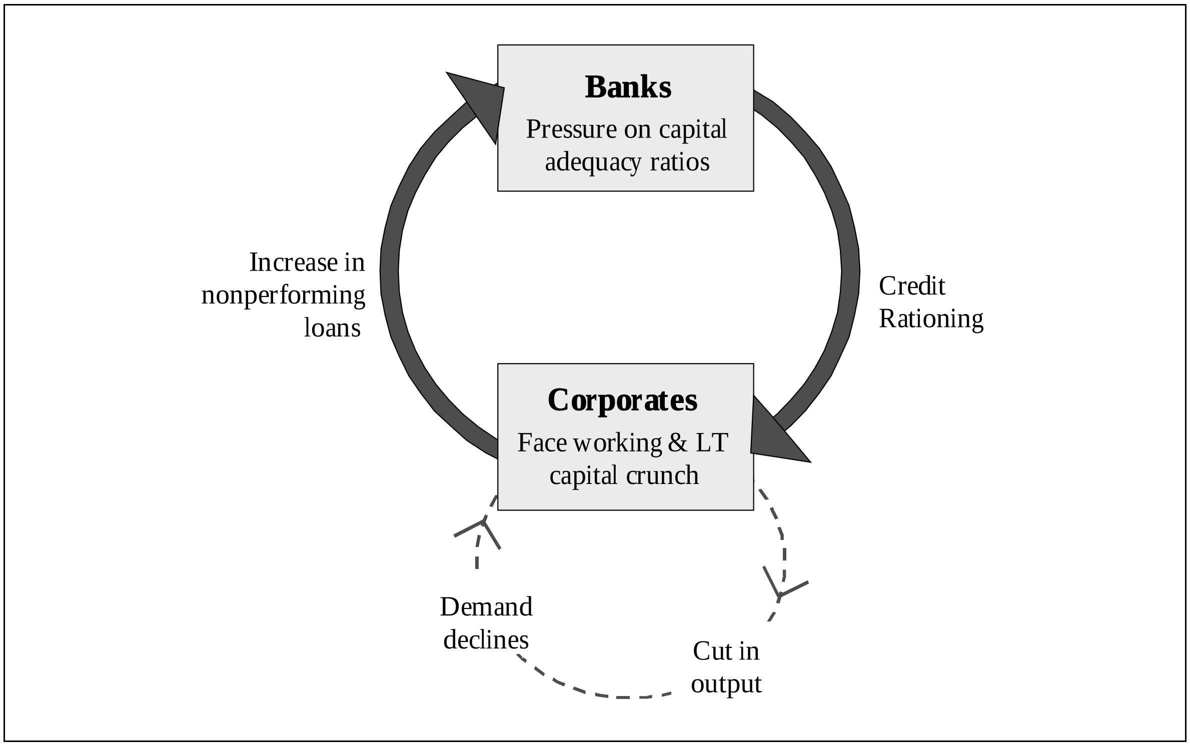
The severe weakening and, in some cases, mass suspension and failure of financial institutions increased the pressure on market intermediaries. For example, stockbrokers in one jurisdiction suffered a credit squeeze after the suspension of domestic finance companies. Balance sheet maturity mismatches also saw East Asian, Eastern European, Latin American and African jurisdictions reporting that their market intermediaries had difficulty in maintaining minimum prudential requirements and in financing their daily operations and short-term obligations throughout the crisis. This, in turn, precipitated the further erosion of investor confidence, making it even more difficult for the intermediaries to conduct their core businesses.

In short, the sharp deterioration in collateral values and cautionary restrictions on credit led to the increased possibility of a collapse or default of key market intermediaries. In certain cases, the lack of proper risk management and poor internal controls proved to be pressing problems as well. The systemic concerns attached to the failure of market intermediaries was apparent from the sharp declines in regional markets following the closures of Yamaichi—Japan's fourth-largest brokerage—in early November 1997 and of Hong Kong-based Peregrine Investment Holdings in January 1998. The near-collapse of a major hedge fund, Long-Term Capital Management, in September 1998 further highlighted the heavy toll the financial turbulence had exacted on securities market players and the systemic risks associated with their failure.

3.2.5 Corporate and financial sector restructuring

Higher interest rates under the initial contractionary monetary policies saw a sharp increase in non-performing loans, forcing a credit crunch in the corporate sector. The sudden outflows of foreign capital also had a profoundly adverse impact on domestic corporations that had been highly leveraged, compounding the strains that heightened interest costs were already exerting on their balance sheets. One argument suggests that as currencies and asset prices fell, and interest rates surged, banks lost money on their trading accounts and saw loan performance weaken. Hence, trading losses and non-performing loans had to be written off against capital and many banks' ratios of capital to assets fell below regulatory requirements. Capital adequacy ratios can be restored by raising more capital (usually in the form of subordinated debt) but that was difficult to achieve in the midst of financial turmoil. More frequently, assets that require capital to be held against it, such as corporate loans, were sold off or called in.

Figure 11: A credit rationing cycle



Source: Genesis Analytics

In some of the crisis countries, the corporate sector's lack of access to credit became the driving force of a vicious circle. By squeezing firms, the lack of credit caused a reduction in both output and demand, which further worsened loan performance. The increase in non-performing loans compounded losses in the banking sector. As capital and sources of funding dried up, banks had no choice but to continuing to withhold credit. By then firms were starved of both long-term and working capital. Thus, a liquidity crisis turned into an insolvency crisis, causing permanent damage to the productive base of the economies involved. Cash flows had to be diverted away from day to day operations to pay back loans and to service the higher interest charges. Unfortunately, the relatively lax risk management culture and fledgling derivatives industries in many of these economies meant that a substantial portion of private sector debt was unhedged at the time the crisis broke out.

As a result of these accumulated pressures, bankruptcies have soared since the onset of the crisis. According to World Bank estimates, approximately 65–70% of Indonesian firms, one out of three firms in Korea and one out of five firms in Thailand are technically insolvent. For the banking sector alone, the cost of re-capitalising banks may be as high as US$167 billion for Korea, Indonesia and Thailand. Some estimates suggest that non-performing loans may amount to 25–30% of all loans outstanding in Indonesia, Korea and Thailand, and 15–25% in Malaysia.[63]

Thus far the crisis countries have had varying degrees of success in the restructuring process. Banking sector reforms have generally made substantial progress in most of crisis economies. At the initial stages of the crisis, most of the governments in the affected countries provided assurances as to the integrity of their depository systems. Indonesia, for example, guaranteed all deposits and creditors of financial institutions under their jurisdiction, while Korea guaranteed a substantial amount of external debt incurred by merchant banks and other financial institutions. Since the onset of the crisis, most of these authorities have also introduced measures to strengthen prudential regulation through enhanced disclosure requirements, accounting standards, loan classifications and provisioning rules. Nationalisation of certain critical domestic institutions has also been considered, with Japan, for instance, allowing the nationalisation of several banks as part of a comprehensive framework for dealing with the problems in its banking sector.

Financial restructuring institutions have been set up in Thailand, Indonesia, Korea and Malaysia. Indonesia, for one, has already closed down 16 banks and has put another 54—including several of its largest banks—under the control of its bank restructuring agency. Korean authorities have shut down 16 of the country's 30 merchant banks, and have taken control of two insolvent commercial banks, recapitalised them, and expect to sell them to foreign investors in the near future. Thailand has allowed greater foreign investor equity participation in domestic commercial banks while simultaneously accelerating its bank recapitalisation and NPL restructuring programmes, while Malaysia is in the process of rationalising its banking sector through a comprehensive merger programme.

[63] J. P. Morgan estimates.

Table 5: Recapitalisation of East Asian banks (billions of US dollars)

	Estimated amount needed to recapitalise the banking system	Estimated amount of funds already used in the recapitalisation process	Estimated % completed
Korea	110.5	42	38%
Indonesia	35	14	40%
Thailand	21.3	12	56%
Malaysia	5.2	1.2	23%
Taiwan	1.6	0.6	38%
Philippines	1.5-2	n.a.	n.a.
Total	175.1-175.6	69.8	

Source: World Bank

Table 6: Bank consolidation in 5 East Asian Crisis Economies as of September 1998

	Number of financial institutions				
	Before the crisis	Closed or suspended	Nationalised or under supervision	To be merged	Bought by foreigners; joint ventures
Indonesia	222	16	54	4	0
Korea	169	16	2	5	0
Malaysia	90	0	4	31	0
Thailand	142	53	18	0	4
Philippines	56[1]	2	0	0	0

Source: World Bank

[1] Excludes thrift and rural banks

Unfortunately, progress on corporate restructuring has been comparatively slower and more difficult compared with banking sector restructuring. The net debt/equity ratio of the top 20 firms in the affected economies is estimated to be at 590% for Indonesia, 64% in the Philippines, and 230% in Thailand. Reducing the debt/equity ratios in the 60 largest firms in these countries to 60% is projected to require US$31 billion in asset sales, debt-for-equity swaps, debt forgiveness and new capital. In Indonesia and Thailand, the cost is equal to the market capitalisation of these firms or more. As of July 1999, only one Indonesian firm had signed a tripartite agreement with the Indonesia Debt Restructuring Agency and its creditors while Thailand's Corporate Debt Restructuring Advisory Committee has restructured just over 15% of estimated total non-performing loans.[64]

[64] According to Reuters and Goldman Sachs estimates, "*Asia Economics Analyst*", July 13th 1999, p. 4.

Despite the role of the debt restructuring agencies, the lack of adequate mechanisms for the orderly workouts of corporate and bank debt, and limited experience among the local workforce in this area of expertise, have made the task of corporate restructuring a difficult one. The multiple creditors involved have also compounded these difficulties.

Nevertheless, steps have since been taken to address these deficiencies. Thailand revised its bankruptcy law in March 1998, Indonesia adopted a new bankruptcy code in August the same year, and Korea introduced some revisions to its corporate reorganisation procedures in February 1998. In many of these countries, technical assistance from multilateral agencies and international experts has been obtained in expediting the restructuring process. For instance, one of the G-22 working groups has recommended that bond contracts be modified to facilitate restructuring by including collective action clauses, such as the collective representation of creditors, binding majority decisions, and protocol for sharing the costs of workouts in all sovereign bond offerings.[65]

Table 7: Costs of Reducing Debt/Equity Ratio to 60% in Top 60 Firms

Economy	Cost	% of Market Capitalisation
Indonesia	US$13.9 billion	98
Philippines	US$200 million	1
Thailand	US$17.6 billion	154

Note: Costs are based on exchange rates of 10,000 Rp/US$, and 40 Bt/US$.
Source: Jardine Fleming

3.2.6 Higher cost of capital

A number of factors contributed to an increase in the cost of foreign capital for many emerging market jurisdictions. First, the loss of confidence on the part of international investors led to a sharp increase in the required return on capital. This severely affected the ability of firms in these countries to service their debts and access new financing. From a net inflow of US$97b to the five worst affected East Asian economies in 1996, foreign capital dropped to a net outflow of US$12b in 1997.

Primary bond spreads for emerging market sovereign issues rose by hundreds of basis points over equivalent US Treasury securities, particularly in the aftermath of the Russian debt moratorium. Emerging market spreads on the secondary market rose sharply as well as investors fled to the safer havens of liquid developed market bonds. Average spreads on Brady bonds, for example, leapt from a historic low of 350 basis points at the end of September 1997 to 600 basis points only a month later. Subsequently, the announcement

[65] "Report of the Working Group on International Financial Crises", October 1998.

of the Russian debt moratorium in August that year sent spreads on emerging market bonds soaring across the board, with the increase in sovereign eurobond spreads markedly higher in Russia, Indonesia and Brazil. However, debt flows began to recover in October 1998, supported by signs of recovery in East Asian markets, the formation of the Brazilian aid package, and interest rates reductions in the US and Europe. Although the devaluation of the Brazilian peso in January 1999 saw secondary market spreads on Latin American sovereign bonds rising again by about 100 basis points, the impact on other developing market debt markets was relatively muted.

Table 8: Secondary market spreads[1] on emerging market sovereign bonds (change in basis points from beginning to end of period)

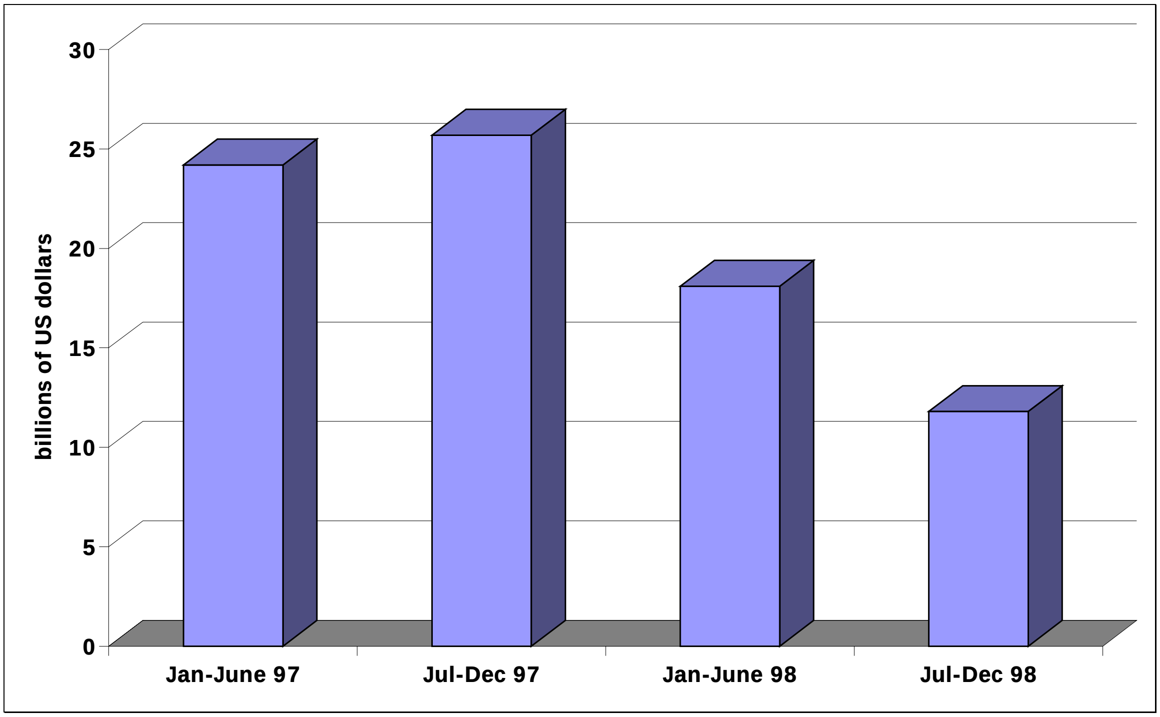
	1997	1998			
Country	Jul-Dec	Jan-Apr	May-Jul	Aug-Sept	Oct-Dec
Indonesia	357	51	211	901	(749)
Korea, Rep. Of	-	-	102	317	(444)
China	46	(6)	29	50	(35)
Philippines	271	(109)	73	-	(251)
Thailand	388	(222)	147	205	(377)
Argentina	195	(89)	(52)	407	(93)
Brazil	172	(136)	26	968	(749)
Mexico	89	(47)	41	349	(190)
Venezuela	133	10	345	345	(140)
Hungary	68	(57)	(9)	26	(23)
Poland	32	(11)	-	95	(68)
Russian Federation	170	(75)	1,161	5,672	(508)

Source: Bloomberg and World Bank
[1] spreads calculated in basis points over equivalent US Treasuries

Second, the cost of domestic capital also increased as liquidity decreased. Unprecedented exchange rate volatility aggravated the hedging costs and credit risk associated with these markets. Underwriters were not keen to become involved in what were now highly risky primary-market ventures, especially at a time when many of them faced financial difficulties of their own. Reduced demand drove up the cost of funds for emerging market instruments. As such, emerging markets as a whole faced a sharp deterioration in their financing capability, with average bond issues and loan commitments dropping to US$12b per month in the second half of 1998 compared with US$19b in the first half.[66]

[66] World Bank, "*Global Development Finance 1999*", March 1999, p. 26.

Figure 12: Average monthly capital market financing to all developing countries via bond issues and loan commitments (billions of US dollars)



Source: Euromoney Bondware/Loanware, World Bank

Third, the higher interest rates imposed at the initial stages of the crisis to counter further devaluation and prevent hyperinflation also made it difficult for investors to leverage on new securities issues. Hence, during the height of the crisis, many issues were abandoned or postponed indefinitely on account of high price-volatility and sharply-depressed prices. Several jurisdictions, including Malaysia and Brazil, placed temporary restrictions on new securities issues pending the return of price stability. Developing countries' equity issues on international markets fell to less than US$1b a month in the first seven months of 1998 compared to US$2b a month in 1997, and then practically disappeared after the Russian debt moratorium in August that year.[67]

However, when the difficulties in capital mobilisation were eventually found to lead to extreme contractionary pressure on the corporate sector, the financial authorities subsequently shifted to more expansionary policies that saw most of these restrictions on capital raising being relaxed, and greater foreign equity participation being permitted. Stimulus measures to facilitate capital raising had a positive effect on corporate sector revitalisation in most of the affected economies, which in turn supported the recovery in related equity and currency markets. In one jurisdiction, the recovery of its currency vis-

[67] Op. cit.

à-vis the US dollar was such that state-run businesses were requested to delay or scrap plans to raise foreign capital for the year in view of the authorities' concern that an overly strong domestic currency would make the country's exports too expensive.

3.2.7 Disruption to market development

In a number of jurisdictions, progress in market development experienced a severe setback as resources were diverted to other more pressing needs and demand for new markets and instruments shrivelled. In some cases, plans for the launching of new instruments were put on hold while in others, greater scrutiny was given to the pace of liberalisation and deregulation under existing policies for market development.

The expansion of market breadth, especially in East Asia, met with severe difficulties. Plans to rejuvenate domestic secondary bond markets were disrupted largely because tight monetary conditions and financial-sector disruption made it virtually impossible to implement the establishment of a benchmark yield curve. Further development of established markets also fell through. In East Asia, one jurisdiction's stock exchange had to defer foreign listings and postponed the freeing of limits on membership seats. Permission for domestic finance and securities firms to operate foreign-exchange businesses were also deferred. Moreover, certain market services such as short-selling and securities-borrowing provisions were suspended in light of market disruption, thus cutting off a source of revenue to several market participants. According to some commentators, this hindered the aim of bringing unregulated offshore activity onshore and arguably raised the cost of risk management.

However, with the easing monetary conditions and gradual upward re-ratings of emerging market credit, issuers have begun to tap both international and domestic debt markets again for funds. In some cases, the lack of a vibrant market for traditional capital raising instruments have led to more innovative structured products. Hybrid debt and convertible instruments, such as convertible bonds with attached rights or warrants as "sweeteners" to attract takers, have experienced renewed popularity in some jurisdictions. In most economies, regulatory and tax incentives have been proposed or ratified to promote greater product innovation, institutional involvement in the securities markets, and the growth of strategic areas in the securities industry such as the development of bond markets, venture capital and the market for high-technology firms. Thailand, for example launched its secondary market for small and medium sized firms in July 1999, while Taiwan announced that mutual funds would be permitted to hedge with futures the same month.

In the area of liberalisation and deregulation, the crisis generally led to an acceleration in market development. Singapore and Korea, for example, hastened many aspects of their securities market liberalisation programme and added others that were not in the initial plans. These encompassed bond and money markets, brokerage industries and derivatives activity. Deregulation has also progressed rapidly, particularly in those countries that applied for international financial assistance. Indonesia, for instance, opened up 26 industrial sectors to foreign investors in September 1998, and already allows foreigners to hold up to 99% of banks.

The crisis has highlighted two interesting trends in market development within the region. First, although some plans for new markets or regulations have been put on hold until a more propitious time, the attitude towards such plans now take on greater consideration of the dangers of improperly sequenced liberalisation and deregulation, and the risks volatile free capital flows pose to emerging markets. To a certain extent this relates to the "integration trilemma" referred to by US then-Deputy Secretary of the Treasury, Lawrence Summers.[68] The trilemma denotes the problem of reconciling the three goals of greater global integration, proper public management and national sovereignty in economic policy-making.

Second, market authorities in some jurisdictions have also made determined efforts to streamline and revitalise capital market development in the aftermath of the turbulence by launching comprehensive plans to map their strategic repositioning as premier financial centres in the region. To the extent that the crisis appears to have sharpened the competitive focus of these markets, this should augur well for the development of mature and efficient markets within the region.

[68] "*Reflections on Managing Global Integration*" by Lawrence H. Summers, Deputy Secretary of the Treasury, Annual Meeting of the Association of Government Economists New York, January 4th 1999.

4 Implications of the turbulence

The experience of several emerging markets that were badly hit during the East Asian crisis has pertinent implications for a broad spectrum of sectors, encompassing not only economic policies and financial regulation, but also areas such as social welfare and national security. While these topics are closely integrated and recognised as crucial to the successful recovery from the crisis, the discussions in this section will focus primarily on the effects of the crisis on securities markets and the corresponding implications for these markets.

The crisis has drawn attention to a broad range of issues that need to be seriously considered by securities market regulators. For one, it has been recognised that emerging markets cannot afford to ignore the challenges of an increasingly integrated global society given the potential for severe disruptions to their national financial systems should existing or potential vulnerabilities not be addressed. To the extent that a sound financial sector and efficient securities markets can instil confidence among market participants and mitigate the adverse effects of sudden price changes, the turbulence has highlighted specific areas in the financial system that should be strengthened in order to achieve this objective. To synthesise the key implications that have arisen from the crisis, the discussion in this section thus focuses on two broad areas: enhancing the detection and management of crises, and structural issues that are necessary preconditions for robust securities markets.

It has been noted that IOSCO's *Objectives and Principles of Securities Regulation*, which were drafted against the unfolding of the financial market turbulence of 1997–98, would provide a useful framework for analysing the implications of the turbulence for securities regulators.[69] Where relevant this report will identify and refer to those principles which arguably apply to the various issues discussed below.

4.1 Crisis surveillance and management

4.1.1 Global surveillance and detection of crises

The crisis has underscored the severity of the global systemic disruption that can result from relatively isolated sources. In light of this, *ex ante* introspection points to the

[69] The principles are based on three broad objectives, namely: the protection of investors; ensuring that markets are fair, efficient and transparent; and the reduction of systemic risk. See *Objectives and Principles of Securities Regulation*, IOSCO, September 1998. Available on the Internet at http://www.iosco.org.

significant benefits and cost reductions of addressing incipient problems before they reach crisis proportions.

There are various types of surveillance. Given their scope and resources, multilateral agencies appear to be the best candidates to carry out cross-border surveillance and crisis detection activity, given their comparative advantage in accessing the relevant authorities and information. For example, traditional macroeconomic indicators—fiscal balances, monetary aggregates, current account deficits, exchange rates, interest rates, etc—are already monitored by international agencies such as the IMF. Sector-specific indicators such as banking exposures and trade flows are monitored by agencies such as the BIS and WTO respectively. However, the segregated nature of these resources, as well as calls for a more centralised yet non-intrusive monitoring of countries' financial conditions have led to the notion of a possible regional initiative to enhance surveillance among closely-linked jurisdictions.

In view of this, finance and central bank deputies from 14 economies in the Asia-Pacific region gathered in Manila in November 1997 to formulate a regional response to the Asian financial crisis. The Manila Framework—aimed at enhancing Asian regional co-operation and promoting financial stability—included a call for a mechanism for regional surveillance to complement the IMF's global surveillance. Regional surveillance, which broadly encompasses information gathering, consultation, analysis, and policy prescription and implementation, was envisioned to improve policy performance and prevent crises. However, the modalities for implementing this provision still need to be worked out and a fully operational structure is unlikely to crystallise for some time to come.

Commentators have stressed that a central principle of any regional surveillance effort should be to supplement rather than duplicate the international financial institutions' output, given that the monitoring function of the international financial institutions is already built into the existing financial infrastructure. However, given that there is no evidence that international organisations are any better at anticipating a crisis than anyone else, there may be little justification to anticipate that non-intrusive peer surveillance groups can offer substantial additional value. An alternative answer may be the establishment of a specific working group—possibly through IOSCO or the IMF—to standardise and regulate information flows, communication and co-operation between multilateral agencies, as suggested by a number of jurisdictions surveyed.

Effective detection of crises requires timely, relevant and reliable data so that problems can be identified early enough for policy adjustments to have optimum effect. On the international surveillance front, the IMF has already developed codes covering the compilation and publication of key macroeconomic and financial data (the General and Special Data Dissemination Standards).[70] However, as noted above, various other bodies

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[70] The IMF has also prepared a code on fiscal transparency to help the public judge the impact of national policies better, while a code on monetary and financial policy transparency is expected to be ready for formal adoption by October 1999.

also play important roles in the monitoring of financial markets. Therefore, there may be distinct benefits to be gleaned from pooling resources to collect a range of data, such as the external debt data of 176 international economies jointly published quarterly by the BIS-OECD-WB-IMF. With regard to confidential transaction data, arrangements for the bilateral exchange of information may be more practical.[71] This will assist in the efficient reporting and monitoring of individual economies, and provide a co-operative framework for fulfilling the common objective of averting contagion where possible.

It should be noted that the role of the private sector is also important in the detection of crises. It is patently unreasonable to expect supervisors to work alone to avert market mishaps given that the rapid evolution of the markets means that the authorities will inevitably be "behind the curve" in at least some areas of development. A surveillance framework must address the difficulties posed by institutional complexity, market volatility and geographical dispersion.

To this end, economists, analysts and credit rating agencies play an important role in highlighting potential fault lines in the corporate and financial sectors. That credit rating agencies could have done a better job at predicting the crisis, for example, points to the need for more effective early warning systems. To this end, it has been suggested that co-operative linkages between domestic rating agencies, and among domestic and international rating agencies, may be beneficial. Among the areas that may merit regular and comprehensive examination are institutional control mechanisms and risk management systems, asset concentration and exposures, disclosure requirements, activities requiring specific approval, and accounting and regulatory standards compliance.

4.1.2 International crisis management

Admonition of potential crises arguably counts for relatively little without the appropriate means of dealing with their symptoms or their effects, in the event that they could not be prevented. The increased frequency with which financial crises have occurred in the last decade, as well as the nature of the most recent crisis—its suddenness, depth and wide geographical impact—have focused attention on this particular issue. Recent developments have arguably revealed a need for more effective and appropriate arrangements for the management of international financial crises. The broad purpose of such arrangements would be to contain any nascent crisis, in a speedy manner, to as small a segment of the international financial system as possible. Given the increasing degree of integration of financial markets that make up the international financial system, this

[71] For instance, the *Declaration on Co-operation and Supervision of International Futures Exchanges Clearing Organisations*, jointly signed by 55 derivatives exchanges and clearing houses signed in Boca Raton, Florida in March 1996, defines specific events that will trigger a request for information from another exchange or clearing house. These events include a large decrease in a member's capital position, large cash flows in proprietary or customer accounts, or a concentration of positions in any futures or options contract.

implies the need for international efforts that involve not only the international financial institutions but also international groupings.

While it is acknowledged that there is no substitute for ensuring domestic macroeconomic resilience and maintaining a robust financial system, such arrangements are nevertheless increasingly seen as being a necessary complement to domestic efforts. Financial markets are widely known to be particularly prone to failures, especially in relation to information inefficiencies, which give rise to at least two concerns, namely: that, left unattended, financial systems are subject to bouts of instability; and that amid the increasing globalisation—and yet incomplete integration—of financial activity, such instability can generate negative externalities, including adverse spillover effects and financial contagion. In light of the nature of recent crises, it might be argued that the thrust of efforts to improve crisis management ought to be in identifying suitable arrangements, through international co-operation and co-ordination, that would, in a timely manner, restore market confidence, maintain financial and macroeconomic stability, and restore economic growth. It should be highlighted that the promptness of international responses is likely to be a very significant factor in ensuring the effectiveness of such arrangements.

However, there appear to be several fundamental obstacles in establishing these arrangements at present, not least of which is the seeming lack of consensus on what constitutes an appropriate response to financial crises. For instance, there has been considerable debate on the issue of resolving liquidity crises. On the one hand, it is widely recognised that bailing out governments and international investors through globally co-ordinated "rescue packages" can lead to longer-term problems such as moral hazard arising from shielding investors against losses and reduced incentives for governments to embark on any changes to policy in the event that particular policy stances may have contributed to the crisis occurring. On the other hand, the potential economic and social costs of allowing events to "run their course" may well be unacceptable and impossible to ascertain at the outset of a crisis. Proposals to resolve this issue have ranged from those that extend contingent credit lines to countries in distress (for example, establishing an international lender of last resort facility either through enhancing the role of international financial institutions or by creating an entirely new institution), to those that favour increased burden sharing by the private sector, ie, the so-called bailing-in approach.[72]

One area in which a formal mechanism may be more easily established is currency market intervention, which monetary authorities have pursued implicitly and explicitly in the past. Noting that currency market stress has been a major part of several recent crises, including that involving the European exchange rate mechanism in 1992, the Mexican peso crisis of 1994–95 and the baht crisis of 1997, several commentators and policy-makers have acknowledged that it might be necessary to consider the possibility of

[72] See "The Financial Crisis in Asia" by the Asian Development Bank, [details to be inserted], and "Toward a New International Financial Architecture: A Practical Post-Asian Agenda" by Barry Eichengreen, Institute for International Economics, February 1999, for a discussion of these issues.

regional mechanisms to defend currencies against speculative attacks. One that had recently been discussed [and implemented? – to check] within the context of East Asia is the establishment of bilateral repo agreements involving regional monetary authorities. However, such arrangements are only likely to be useful against short-run intervention and even then, not in the event of more severe market stresses, such as severe regional or global shocks and broad contagion.

Besides the question of what constitutes an appropriate crisis response, international crisis management need also consider the manner in which such a response is to be organised. Efforts by an ad hoc selection of countries may suffer from uncertainty surrounding their commitment to a particular scheme, likely delays arising from negotiations of their respective involvement, and problems in policy co-ordination. Given their resources and capacity, international financial institutions may therefore be in a better position to co-ordinate crisis responses. However, this in turn raises the question of whether such responses are more effectively pursued by regional financial institutions rather than financial institutions with a global mandate like the IMF. One argument is that regional institutions would be more receptive to a regional crisis given its information advantage and geographical proximity compared to a global institution. Such a view has been among those behind recent calls for the establishment of an Asian Monetary Fund for instance.

An important issue for consideration in any international-led response is the diversity of priorities and circumstances, as well as different stages of development, among various economies that may have succumbed to crisis, either on their own or, through contagion, as a group. The arbitrary distinction between so-called mature and emerging markets belies a large variation spanning the range of political, economic and financial spectra. One implication of this is that crisis-management efforts must, as far as it is possible, go beyond a one-size-fits-all approach and take cognisance of these differences. More importantly, all parties must have an equal opportunity to participate in and present their views on these efforts.

4.1.3 Domestic crisis management

Although it is hoped that significant progress will be made, over time, on the successful detection and prevention of crises, it would be unrealistic to assume a crisis-free world. In essence, it should be recognised that financial crises—and, consequently, international or domestic rescues—are unlikely to disappear as the market continues to evolve. What market regulators and market participants can attempt to do is to anticipate areas of potential vulnerability and address them in advance so as to prevent or mitigate the effects of such shocks to their financial systems, and to ensure their speedy and effective resolution.

To complement the role of the international community in managing crises, domestic authorities may need to consider the possibility of having in place a formal crisis management framework to facilitate the timely and appropriate response to market shocks. Pre-planned remedial action and exit procedures will help alleviate uncertainty and mitigate adverse results when a widespread crisis hits, as delays can magnify the cost of resolving a crisis. Such a programme would entail coherent procedures to be followed in the event of a crisis or potential crisis.

However, it should be emphasised that no formula or predetermined procedure can be applicable to every crisis situation. Sufficient flexibility must be maintained to be able to adapt the course of action to that which best deals with the problem at hand. Nevertheless, it may be helpful to consider having a comprehensive set of principles to avoid haphazard supervision of crises, which would ultimately have a negative impact on investor confidence. Key priorities to be considered in the planning of a crisis management framework should be to (i) increase market confidence; and (ii) minimise the long-run costs of crisis resolution.

The crisis has underscored the desirability of preventive rather than curative medicine in addressing financial market problems. To this end, regular consultations with key market participants can help securities market authorities to determine when there is evidence that market confidence is declining. Such consultations could encompass possible policy actions and likely market responses. This would assist private sector participants in assessing their positions, and provide them with an avenue for contributing constructive policy suggestions. These discussions could facilitate a convergence of both public and private sector views on the pragmatic steps that can be taken by the various parties concerned following the identification of nascent problems.

Once markets have succumbed to turbulence, a clear tactical response agenda can ensure co-ordinated policy responses and minimise ambiguity as to the appropriate lines of responsibility. There should be clear channels of communication between the various authorities that are, as much as possible, unimpeded by unnecessary red tape. Among the critical needs that may need to be addressed in the event of a financial crisis are:[73]

(i) ***Availability of liquidity***. Securities firms finance much of their proprietary positions with short-term funds; their clients partake in "contra" trades with margin extended by their brokers. Most of these funds come from the money markets. Hence, both securities firms and their clients are more susceptible to a rapid loss of confidence than banks, whose funds come from retail deposits and are covered by, in some case, deposit insurance and access to a lender of last resort. Their situation is made worse if, given their rapidly-changing financial needs, credit lines from banks to securities firms and from securities firms to their clients are inflexible;

(ii) ***Integrity of settlement systems***. The inability of a clearing house to withstand the late payment or outright default of a large clearing member could undermine confidence in a market and lead to a rush by participants to close out their

[73] Some of these issues have been culled from the Organisation of Economic Co-operation and Development's (OECD) 1991 report on "*Systemic Risks in Securities Markets*".

positions. Disorderly trading in one market could spill over to related markets due to panic, a breakdown in price discovery and burgeoning liquidity needs;

(iii) ***Policy co-ordination***. In several cases for the East Asian crisis, the authorities have chosen to create special agencies to deal with the problems of bank recapitalisation, non-performing loans and corporate debt restructuring. In some cases where the government comes to control substantial assets (whether through asset management companies, the takeover or nationalisation of insolvent banks, or direct intervention in the stock market), a single body can co-ordinate the auctioning of assets with a view to avoiding a sudden swamping of the market. Consequently, there may be a need for the identification of a lead agency to oversee the overall management and resolution of the crisis to enhance accountability, and harmonise policy responses and public announcements.

In the aftermath of the immediate panic and pressures of the crisis, certain restructuring efforts may need to be undertaken in order to rebuild a sustainable investing environment for the future. To this end, a contingency restructuring programme can help streamline reorganisation efforts in line with the twin aims of correcting the problems that led to or aggravated the crisis, as well as placing the affected corporate and financial institutions on sound footing again.

Resolving corporate sector, financial sector, and external debt problems requires a comprehensive and integrated approach. The East Asian experience has demonstrated that governments can play a constructive, yet informal, role in facilitating an orderly workout of debts (sometimes referred to as the "London approach").[74] This may include closing or restructuring firms to improve efficiency, imposing temporary limits on asset growth to conserve liquidity, exercising licensing power and reforms to promote sound ownership and strategic industry restructuring, and adjusting regulatory restrictions on permissible activities to enhance diversification and profitability where deemed appropriate. Significantly, such mechanisms should be structured to minimise the costs of crisis resolution on the government itself, involving, where possible, the "bailing in" of private sector stakeholders in conducting triage for the affected firms.

To effectively carry out the restructuring process, both private sector participants as well as official agencies must possess sufficient legal as well as monetary wherewithal. Existing institutional structures, including tax policies, foreign participation limits and bankruptcy procedures may need to reviewed to ensure that they facilitate and do not impede recovery efforts. Several jurisdictions had found, for instance, that their legal and regulatory framework did not provide sufficient scope for efficient workouts and limited recourse for stakeholders in the event of a default or bankruptcy. In all cases, the timing of any policy moves must take into account the prevailing conditions. A period of

[74] This approach, used in the UK since 1989, has been designed to help bring together debtors and creditors and facilitate negotiations. Many East Asian countries have adopted, or are adopting, a similar framework to facilitate and encourage corporate restructuring that includes using new bankruptcy provisions as an incentive for creditors and debtors to negotiate.

extreme market stress may not be the most appropriate time to establish such a framework, in view of the fragile investor sentiment present at such a time. Given that there is no one-size-fits-all approach, the challenge for policy-makers is to undertake comprehensive reform that lays the foundation for sustainable recovery.

4.2 Structural implications in relation to securities markets

4.2.1 Sequencing of deregulation and liberalisation[75]

The East Asian crisis has shown the dangers that can arise when national financial systems attempt to integrate with the global financial system before their regulatory and supervisory institutions have achieved the appropriate capacity to handle the kinds of financial and economic risks that exist within a deregulated and liberalised financial environment. In this respect, commentators have argued that policy makers should carefully consider two related factors in their pursuit of financial sector development in general and of policies designed to tap the benefits that accrue from private capital inflows in particular. One factor concerns the so-called initial conditions existing within their respective economies, which relate to, among other things, the range of financial services and instruments available; the extent of competition within the financial sector, as well as the level of protection afforded to certain participants or groups; and sources of fragility and poor risk management. The other factor is that of "sequencing", which has been likened by one commentator to a particular path taken in order to reach an agreed ultimate destination. The importance of sequencing in relation to achieving the specific goals of deregulation and liberalisation, according to this view, lies in the idea that "…the road one takes makes a great deal of difference concerning the likelihood of getting there."[76]

In relation to initial conditions, it is widely acknowledged that a robust financial system is necessary for an economy to withstand adverse shocks from within the domestic system as well as from external sources. In particular, financial systems must be capable of absorbing the impact of asset price shocks and highly-volatile capital flows. It has been argued that this requires, among other things, an appropriate combination of greater transparency and disclosure, effective supervision and timely market discipline.[77] Moreover, high standards of prudential regulation are also necessary, to ensure that financial and market intermediaries have both the ability and the right incentives to price

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[75] For the purpose of this report, *liberalisation* refers to the process of removing barriers to foreign participation while *deregulation* refers to that of freeing domestic barriers to competition. The text will be explicit when using these words in other contexts.
[76] Joseph Stiglitz in a speech entitled "Building Robust Financial Systems", key note lecture at "Private Capital Inflows: What Have We Learned?", Bogota, Colombia, October 1st 1997.
[77] See IOSCO principles 14 and 27.

and manage the risks they face. It has also been argued that, in addition to these factors, a sufficient level of human capital would also be necessary.

However, given the limited pace at which the financial sector can be strengthened, it has been suggested that an orderly approach to liberalisation is necessary. In this respect, policy-makers would have to ensure the appropriate sequencing of deregulation and liberalisation in order to avoid creating distortions and to minimise vulnerability to external shocks. It has been noted for instance that the sequencing and process of financial liberalisation of crisis-affected East Asian countries influenced the extent of their vulnerability. While the exact sequencing process for an economy will obviously depend on the particular circumstances of each country, observations of the East Asian crisis suggest that:

1. Adequate financial supervision, including though not limited to higher standards of prudential supervision, should precede capital account liberalisation.

2. A higher degree of vigilance is likely to be needed during any period of liberalisation that implies the entry of institutions, foreign and domestic, into markets with which they are not entirely familiar.

3. The currency regime of a country may call for particular regulatory consideration. For example, nominal currency peg regimes, which as discussed earlier arguably encouraged private participants to build up foreign exchange liabilities, might require special vigilance.

4. Regulators need to ensure that market systems and participants have the capacity to handle the kinds of risks that can arise in an integrated global capital market.[78]

Some commentators have drawn attention to the possibility that sequencing of the deregulation and liberalisation in emerging markets might be influenced by external factors, including conditionalities imposed by international lending institutions. This, they argue, may give rise to recommendations for a modification of the current approaches by these institutions towards capital market and financial market reforms, and have suggested that further research might be conducted in this area.

With respect to financial liberalisation in particular, some commentators have argued that the broad order of liberalisation should begin with longer-term foreign direct investment, because such inflows are unlikely to immediately reverse in response to a reduction in market confidence, let alone a short-term or crisis-induced deterioration in macroeconomic or financial conditions: the costs of liquidating tangible assets is thought to lessen the tendency for precipitating a crisis. The argument then suggests that only once this foundation for stable capital has been laid should barriers to offshore funding through the banking system be removed. Nevertheless, other commentators have noted

[78] See IOSCO principles 22 and 23.

that while simple rules such as these may be conceptually appealing, the application of such rules face significant practical challenges, especially in view of the fungibility of capital.[79]

As alluded to earlier, the sequencing process relevant for a particular economy will depend on the relative benefits, costs and risks associated with that economy's circumstances and policy objectives. A significant political dimension to the process, given that financial reforms invariably have an effect on wealth and income distribution, has also been noted. In evaluating different sequencing strategies, some have suggested that a starting point in choosing particular sequencing alternatives would be to identify those that contribute most to improving the efficiency of resource allocation and mobilisation whilst promoting—at least not undermining—financial and macroeconomic stability. In general, it has been pointed out that efficiency-improving processes might be those that, among other things, introduce new technology, skills and risk management capabilities; strengthen capital structures and promote competition. Processes that might have a detrimental impact on efficiency might include those that support monopolistic structures, that encourage greater concentration in asset-holdings, funding sources and that hamper the diversification of portfolio risks. Many of the issues raised in the previous sections of this report point to specific areas in which the sequencing process might focus, including capital market development, the establishment of appropriate incentive structures to encourage risk management and so on.

4.2.2 International capital flows

The East Asian crisis has resulted in a re-assessment of how the international financial community views private capital flows and international capital mobility. As described in earlier sections, it has become clear that the economic benefits of international capital mobility and private capital flows are tempered by the very significant economic costs that arise in the event that they suddenly reverse, such as that which occurred among emerging markets in general and the East Asian region in particular in the period between July 1997 and August 1998. As the volume of capital flows have increased, especially during the 1990s, and the financial crises with which they have been associated rise in number, commentators and policy-makers have begun to examine the issues raised and the possible policy responses implied by these developments.

A major issue concerns the relative lack of timely data on international capital flows and the relatively poor understanding that policy-makers and researchers alike have of capital-flow dynamics. Given the volatility in net portfolio investment flows in the last 24 months alone, the issue has become all the more urgent. It has been argued that improving the transparency of capital flows through increased surveillance of international financial activity is a key area to consider. And in this regard, some have

[79] See for instance "Sequencing Capital Account Liberalizations and Financial Sector Reform" by R. Barry Johnston, *IMF Paper on Policy Analysis and Assessment*, International Monetary Fund, July 1998.

suggested, the possibility of extending large-trade and position-reporting requirements—as currently practised in exchange-traded markets—to cover global asset markets and market participants. The rationale behind such arguments is that, in the same way that timely and accurate information facilitates decision-making in financial markets, so would transparency in market structure and operations enable authorities to perform their regulatory functions effectively. In addition, improving the availability of such information arguably reduces certain information asymmetries.[80]

However, it is widely acknowledged that financial markets tend to contain intrinsic information asymmetries that cannot realistically be eliminated and that can continue to give rise to certain problems. While there appears to be broad agreement that longer-term flows, such as foreign direct investment, are valuable (bringing with them, in addition to capital, positive spill-overs such as technology and training), it has also been recognised that some short-term capital inflows, in particular the so-called "hot money" flows, can be associated with negative externalities. The problem of herd-behaviour was described earlier; another is that no single company or bank takes into account the effect their borrowing has on the overall financial stability of the country.[81]

In light of such problems, the scope for official intervention—in particular, for pursuing policies to influence the volume of capital flows directly—appears to be increasingly recognised.[82] For instance, authorities may need to review their tax, regulatory or policy stances in order to minimise any distortions that may be giving rise to vulnerabilities, such as an over-dependence on short-term external debt. There may also be a need to raise prudential requirements in order to discourage the build-up of certain risk exposures. Moreover, as suggested by research undertaken by the IMF, domestic authorities might wish to intervene to inhibit or counteract the excesses of herd behaviour.[83]

It has even been suggested that these measures may not go far enough and that some form of capital controls may be required. However, it is not clear at this stage whether such controls are more effective in relation to inflows or to outflows. While it has been argued that inhibiting short-term inflows has the benefit of lengthening the maturity structure of foreign capital in an economy and, hence, reducing certain vulnerabilities, the experience of some countries during the recent crisis suggests that inhibiting hot-money outflows during a period of financial panic and general withdrawal can afford authorities a degree of "breathing space" in which to pursue measures aimed at restoring macroeconomic and financial stability. Nevertheless at this juncture it would appear that the jury remains undecided on the issue.

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[80] See IOSCO principle 27.

[81] Taken from "Building Robust Financial Systems", by Joseph Stiglitz, key note lecture at "Private Capital Inflows: What Have We Learned?", Bogota, Colombia, October 1st 1997.

[82] See, for example, "Boats, planes and capital flows" by Joseph Stiglitz, *Financial Times*, March 25th 1998, as well as the paper below.

[83] See "Liberalizing Capital Movements: Some Analytical Issues" by Barry Eichengreen *et al*, *Economic Issues*, number 17, International Monetary Fund, February 1999.

At the international level, efforts in addressing problems arising from capital flows might be directed towards several areas. One that has been suggested is the improvement in data concerning international credit flows, especially in relation to flows from major capital markets to developing economies, in order to alert lenders and borrowers, as well as relevant authorities, to excessive concentrations of short-term debt. It has also been suggested that greater accuracy in banks' risk-assessment of interbank lending might encourage greater conservatism in their setting of lending limits, thus reducing the potential for contagion in the event of a crisis. However, this approach must bear in mind that such limits can be influenced by other factors, including competitive pressures, which may instead encourage greater risk-taking. Finally, although so-called Tobin-tax proposals, aimed at "throwing sand" in the wheels of international financial activity have re-surfaced in light of the recent crisis, practical difficulties concerning such schemes have meant that they have limited scope in tempering speculative activity under the current environment.

4.2.3 Development of securities markets[84]

Securities markets play a critical part in the mobilisation, allocation and monitoring of capital in modern economies. In the crisis countries, better functioning securities markets would have reduced the impact of the crisis. Meaningful global investors would have greater confidence in investing in countries that possess strong, efficient and liquid national markets. A larger share of intermediation through well-functioning securities markets would have improved market discipline over firm balance sheets, led to more effective allocation of capital, and discouraged the generalised withdrawal from markets.

Bond and derivative markets play crucial roles in strengthening financial systems. For one, they allow firms to match earnings-expense and asset-liability maturities and hedge against adverse price movements that may have an impact on their financial viability. Furthermore, they increase the generation of information and facilitate more efficient price discovery, consequently providing greater incentives for domestic institutional investment and reducing the recycling of capital through foreign markets.

It was generally found that the absence of well-functioning corporate bond markets in most of the worst affected jurisdictions deprived financial systems of the large amounts of public domain credit information generated by such markets on a continuous basis and added to the weakness of the financial systems. It has been suggested that local corporations are reluctant to issue public debt because they are not prepared to meet disclosure requirements and do not want to be embarrassed by "unflattering" ratings. Also, the lack of liquidity was apparently compounded by the low supply of investment-grade paper and the slow development of pricing tools such as benchmark bond yield

[84] Many of the issues discussed in this part relate in the main to IOSCO principles 15–30, although it might be argued that principles 6–7 may also have relevance.

curves and market makers. An insufficient number of intermediaries and high trading costs from fixed brokerage commissions have also been cited as disincentives to the development of bond markets in many of these countries.[85]

Traditionally, the banking system and to a lesser extent the equity market have been the main mobilisers and providers of financing for the private sector in most of the East Asian economies. To a certain extent, the high degree of reliance on these well-entrenched markets have stunted the development of market breadth in many of these securities markets. For instance, the lack of sufficient incentive structures have, in some cases, suppressed demand for bonds, consequently arresting the development of the critical mass needed to facilitate an active secondary bond market. This points to the need for governments to review their existing regulations to discern how these might distort the incentives of issuers, investors and other market participants to move forward in developing the securities industry.

The need for more liquid derivatives markets has been raised as well. Most of the crisis economies had none or relatively illiquid futures markets, thus limiting the hedging opportunities of market participants. Inadequate understanding of the uses and trading of derivatives has been widely identified as one major obstacle hindering the development of the fledgling derivatives industry in these countries.

In view of the need to develop the range and liquidity of financial products in the crisis countries, the World Bank and the Asian Development Bank have put in place development programmes to support the development of the emerging capital markets. It is hoped that, with such investment of multiple resources and the promotion of greater investor awareness and sophistication, a comprehensive and mature investing environment will be the *sine qua non* of these markets in the future.

4.2.4 Corporate governance[86]

The essence of good corporate governance is about how stakeholders of firms can ensure that the firm's assets are used efficiently and in their best interests by managers delegated with powers to operate those assets. Key to this is the availability of timely, relevant and accurate data, and the use of such data by the relevant parties to govern corporate actions. In the course of the East Asian crisis, institutional disclosure was clearly found to be lacking in some of the worst affected jurisdictions. Among them the problems was found to be the prevalence of hidden exposures to foreign exchange, interest rate and equity risks among financial institutions, market intermediaries, the corporate sector and even the central bank within several emerging-market jurisdictions. Their eventual discovery or confirmation significantly added to the financial turmoil through sharp revisions in market expectations and, in some cases, required a sharp change in policy direction.

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[85] PricewaterhouseCoopers, "*Progress Report on the APEC-ABM Bond Project*", March 17th 1999.
[86] IOSCO principles 14–16 are of particular relevance to the discussion in this part.

Although the need to improve corporate governance was recognised in a number of Asian countries before the crisis, efforts in the region to address the issue generally lagged behind those in other parts of the world. But while poor corporate accountability was unarguably present in some of the jurisdictions, they received relatively little censure during the bullish environment that existed prior to the outbreak of the crisis. The subsequent focusing of attention on this area as the crisis unfolded fed perceptions that there was a sudden deterioration in these practices, which there was not. The significant progress already made in strengthening corporate governance in many other regions of the international economy saw a widening gap between corporate governance practices in Asia and other parts of the world. The implication is that countries in the Asian region urgently need to catch up in this effort, and must be clearly seen to have achieved those standards in order to compete successfully for funds in the years ahead.

For most of the recovering East Asian economies, improving corporate governance is an essential component of policy and structural reforms aimed at both reviving investor confidence as well as repositioning themselves for sustained and robust growth. For instance, the crisis highlighted a lack of transparency in accounting and auditing standards in a number of countries, which reduced the reliability of the available financial information. Subsequently, in their declaration of October 1998, the G7 Finance Ministers and Central Bank Governors endorsed the recommendation of the G22 Working Group on Transparency and Accountability that the IMF should prepare, for each member country, a transparency report summarising the degree to which it met internationally recognised standards.[87]

However, it should be noted that all of the crisis economies adhere to the accounting and reporting requirements set by the national standard-setting body of the respective countries. Of the five worst-affected countries, one has officially adopted the International Accounting Standards (IASs) and does prepare its national accounting standards in line with the international standards. In the other four countries, the national accounting standards follow the generally accepted accounting principles (GAAP), but the application of IASs by accountants and auditors do vary.[88] Many companies meet the minimum requirements of the international standards but differ widely with regard to their conformity to the underlying principles of good corporate governance and disclosure. As such, effective enforcement is key to good corporate governance. This may be achieved by promoting greater awareness of the role of stakeholders and the board of directors in making company management accountable for decisions that affect the company's value and reputation. There already is wide recognition among market participants of the need for greater shareholder activism, in comparison with the more laissez-faire approach taken by investors in the past.

[87] The IMF has already embarked on a programme of producing and publishing transparency reports, focusing on the degree to which a country meets standards related to disclosure and accountability. The first two reports on Argentina and the UK, along with Australia's self-assessment report, were published on April 22nd, 1999.
[88] PricewaterhouseCoopers, "*Progress Report on the APEC-ABM Bond Project*", March 17th 1999.

Several international groups have undertaken to collate a set of key principles of corporate governance aimed at helping in the recovery of emerging markets from the crisis. This builds on the existing work done by organisations such as the OECD, which has produced corporate governance principles targeted primarily at publicly listed companies in its member countries. The World Bank, for one, is preparing a paper that will focus on the specific issues and challenges that arise in fostering effective corporate governance in developing economies, and highlight the principles that can assist reform.

All of the crisis economies have already undertaken corporate governance reforms within their own jurisdictions. In Indonesia, these efforts include the dismantling of state-sponsored monopolies and strengthening of competition laws; in Korea, policies focused on strengthening shareholders' rights, eliminating government intervention in bankruptcy procedures and corporate activity, and restrictions on cross-guarantees. In Thailand, substantial emphasis has been on the privatisation of public enterprises while Malaysia has established a comprehensive corporate governance framework, supported by the recommendations of a committee comprising public and private sector representatives. In all these jurisdictions, steps have been taken to enhance the quality, frequency and timeliness of financial, as well as the rights and legal recourse available to shareholders. Nevertheless, there must be greater cognisance among market participants' of their responsibilities in order for voluntary codes of conduct and market discipline to take result in better policing of business practices.

4.2.5 Systemic risk management

From the standpoint of systemic risk, the East Asian crisis was noteworthy for several reasons. First, as a result of asset-specific volatility and cross-asset volatility spillover, capital-market and currency exposures of key financial institutions or market intermediaries led—possibly for the first time in the region—to the increased possibility of their collapse or, in some cases, their default. Some intermediaries had difficulty in meeting minimum prudential requirements and in financing daily operations. Jurisdictions in Asia, Latin America, Africa and Eastern Europe reported that the turbulence led to a significant threat of financial failure of intermediaries, including brokerages, investment banks and mutual funds. Second, that this exposure severely compromised the financial integrity of many market participants put substantial pressure on clearing and settlement systems within the region (although systems proved robust enough to withstand these stresses). This in turn raised major concerns over the integrity of many of the region's financial systems.

Moreover, some have argued that the broad-based disturbances experienced by some of the worst-affected East Asian economies were the latest occurrence of a new form of system-wide crisis that first appeared in the form of the Mexican crisis of late 1994—an event that had been referred to as "the first crisis of the 21st century". In addition to the occurrence of severe stress across the entire financial system (including the banking sector, currency markets and capital markets), key characteristics of this new crisis include: the incidence of spillover effects across markets of countries perceived to be under similar circumstance; an abrupt reduction or loss of access to global capital markets by affected countries; and increased risks that these problems would have severe global repercussions, not only for other emerging markets but also for developed financial markets as well.

A key implication of this is that all relevant supervisory agencies are likely to have to understand how and from where systemic risk arises, and to have to work together in minimising the threat of systemic disruption should one arise. It is worth noting that, in the past, systemic risks were considered to arise from within the banking sector—in particular, the payments system—and that the responsibility for maintaining systemic stability was largely that of monetary authorities. However, it has become increasingly recognised that as securities firms grow in importance and increasingly take on activities that can pose both domestic and global systemic risks, securities regulators will need to need to weigh such risks more heavily in their policy decisions. Moreover, it has also been argued that banking supervisors must also take greater account of the increasing involvement of banks in securities activities.[89] Indeed, the issue is considered of such relevance to securities regulation that reducing systemic risk has been included as one of three core objectives of securities regulation by IOSCO and is covered by several of the IOSCO principles of securities regulation.[90]

Financial authorities are likely to have to consider several issues in relation to systemic risk management. A key issue relates to appropriate institutional arrangements. It has been argued, however, that the exact nature of the institutional framework is arguably not as important as having the appropriate procedures in place to ensure the effective monitoring of sources of systemic vulnerability and management of systemic threats when they arise. Indeed, it has been argued that the exact location of supervisory authority over certain sectors is not nearly as important as the ability of supervisors to exchange information about current issues concerning the financial system and about the specific circumstances of those sectors in times of crisis.[91] The important points here are that (1) authorities must maintain communication-channels with each other, such as those provided by special ad hoc inter-agency task forces established by one jurisdiction during the crisis in light of increased systemic threats; and (2) that domestic regulators and their foreign counterparts must exploit these channels for greater co-operation and co-ordination when the level of systemic risks increase.

A second major issue involves the exact role of lead regulators in managing systemic risks, given that many aspects of systemic risk surveillance and management may already be pursued—especially by market institutions such as clearing houses. In such cases, lead regulators should arguably conduct more broad-based surveillance of systemic risks,

[89] "International Capital Markets: Developments, prospects and Key Policy Issues", *World Economic and Financial Surveys*, International Monetary Fund, September 1998, page 143.
[90] See IOSCO principles 22–24.
[91] "International Capital Markets: Developments, prospects and Key Policy Issues", *World Economic and Financial Surveys*, International Monetary Fund, September 1998, page 143.

which might include monitoring and overseeing the specific arrangements of market institutions. This might entail, for instance, requiring market institutions to submit regular submissions specifically in relation to their assessments of the current level of various systemic threats. Moreover, to the extent that systemic risks may arise from longer-term structural changes, such as industry restructuring and product development, then lead regulators will also have to consider systemic issues in approving development proposals.

An important point is that authorities are likely to require relevant and timely information in relation to systemic threats if they are to make informed regulatory decisions during and in anticipation of a crisis.[92] A programme for monitoring critical aspects of the market microstructure and its processes might be necessary in this respect. Oversight of market institutions has already been mentioned earlier; monitoring might also include that of the external environment and the possible impact that it may have on domestic markets.

Finally, authorities are also likely to have to ensure that the legal and regulatory framework can facilitate the management of a systemic crisis, bearing in mind that this may have contradictory objectives. On the one hand, there is likely to be a need for regulatory and legal certainty: in the event of a market participant failing, for instance, it is important that the law allows for the prompt closure and transfer of positions and property, as well as the clear identification of counterparty rights. On the other hand, however, jurisdictions surveyed earlier had also suggested that the regulatory framework ought to have scope for the pursuit of extraordinary measures if needed.

4.2.6 Risk management[93]

A lack of risk management by corporations, financial intermediaries and market participants was also noted in several jurisdictions during the crisis. One reason that has been suggested for this is the absence of a risk-management culture within these jurisdictions. If so, then a first step towards better risk management is the development of a risk management culture that permeates from the top down. The board of directors and senior management must realise that there are returns to be made not only by excelling at their core activities; benefits also accrue to those who equally adept at recognising, quantifying and managing the risks inherent in the environment.

Much attention has focused on the management of market risk. But risk management is recognised as going beyond the mere hedging of such exposure—and thus beyond the use of derivatives. Lessons from past financial imbroglios suggest that risk management

[92] Indeed, the issue is anticipated by IOSCO principles 21–23 as well as principle 24, which states that there should be procedures for dealing with the failure of a market intermediary in order to minimise damage and loss to investors and to contain systemic risk.

[93] IOSCO principles 21–23 apply to the discussion in this section although principle 29, ie, that regulation should aim to ensure the proper management of large exposures, default risk and market disruption, appears to be of particular relevance.

should address not just market risks, but also credit risks and operational risks. In this regard, the establishment of robust internal controls, incentives for the involvement of senior management and accountability structures, and reporting lines are necessary to ensure that management decisions take all risks present into account at all times. The crisis has shown that management must be especially vigilant not to assume certain risks away simply because of perceived guarantees or other factors that appear to lower the likelihood of risks being realised. While this is arguably influenced to a large extent on prevailing policies, the dangers of not taking full account of possible risks can be substantial.

Several industry groups and commentators have attempted to provide some guidance on the preferred features of a robust risk-management and control framework. While there is currently no single definitive set of benchmarks for best-practice in risk management, several principles have been established.[94] They are based on four underlying themes, ie

- the ultimate responsibility for risk management must be with the board and driven top-down by those with responsibility for running the business
- the board and executive management must recognise a wide variety of risk types and ensure that these have adequate coverage in the risk-control framework
- support and control functions, eg, back- and middle-offices, internal audit, compliance, legal, IT and human resources, should be an integral part of the risk-management framework
- risk-management objectives and policies must be a key driver of business strategy and must be implemented through supporting operational procedures and controls

The principles relate to the major aspects of risk management and control, namely: risk management strategy; the risk management function; risk measurement, reporting and control; operations; and risk management systems. A point worth emphasising is that, ideally, the risk management function must be independent of business units, where there would be a clear conflict of interest over the implementation of policies on risk.

While the discussion above places the responsibility for risk-management on market participants themselves, there appears to be a significant role for regulators in the relevant jurisdictions to encourage and develop the necessary attitude within the industry under their purview. Education is likely to be an essential tool in this effort, as will the introduction of certain types of regulatory incentives. For example, some jurisdictions have pointed out that part of the motivation for their adoption of risk-based capital requirements is to introduce market participants to higher risk-management standards as well as to compel a greater awareness of their responsibilities in this area.

[94] For an elaboration on the state-of-the-art, see *Generally Accepted Risk Principles* by Coopers & Lybrand, London, 1996. (Note: the firm is now known as PricewaterhouseCoopers as a result of a merger.)

4.2.7 Transparency in market activity[95]

One key feature observed during the East Asian financial crisis was that the problem regulators faced in responding to extreme market volatility was compounded by the lack of information regarding the activities of some market participants. This posed a serious threat to overall market integrity as the authorities and regulators could not target their policies effectively if they did not possess sufficiently comprehensive or reliable data on the sources and nature of activity in their markets. Greater transparency and disclosure would have permitted more informed investment decisions on the part of market participants as well.

Calls for greater transparency on the part of highly leveraged institutions (HLIs) have also gained increasing support since the publication of the interim report. Concerns on this issue relate to two points: one is the potential for large HLIs to launch speculative attacks using securities markets, and the other is the potential systemic risk of an HLI default. While the evidence regarding the role of HLIs strategies in propagating market volatility has been mixed, there is a need for market authorities and regulators to consider the potential and the costs of such activities. This is particularly relevant to emerging countries where the costs of disruption are arguably greater for their national financial systems, which are relatively small compared to developed countries.

Concerns over the potential risks arising from default by an HLI have gained more attention following the near collapse of Long-Term Capital Management in September 1998. HLIs pose certain risks to the market, particularly in instances where the rapid unwinding of their portfolios becomes necessary. While leverage that supports the reallocation of risks provides benefits, it can be fragile. High degrees of leverage combined with poor transparency and little or no prudential supervisory oversight can raise concerns for counterparties, particularly when such institutions practice high-frequency dynamic trading with portfolios that change in value and composition very rapidly. The lack of transparency prevents counterparties from properly assessing the leverage employed in the risk-taking activities of hedge funds and of understanding the concentrations of positions and trading strategies. It is the leverage size and use of dynamic treading strategies that can greatly magnify exposure to the risks of trading, particularly during periods of market stress.

A number of initiatives have been discussed in various international fora and organisations to explore possible ways of addressing the issues related to HLIs. Notably, the recently established Financial Stability Forum has set up a Working Group that will take stock of all the work being done on HLIs in different fora, to identify issues that have not yet been adequately covered in existing work and to propose suitable procedures for dealing with them. Although differences remain as to the types of reforms needed, there is generally broad consensus—at least on the part of financial regulators and

[95] The discussion in this section can refer to IOSCO principles in relation to issuers (nos. 14–16) and in relation to disclosure and transparency in secondary markets (nos. 25–30).

national authorities—of the need for greater disclosure by HLIs. This was seen at the recent conclusion of the G7 summit of finance ministers at Cologne in June 1999, which called for measures to improve the quality and timeliness of public disclosure in relation to relevant information regarding HLI exposures.

There have also been calls for improved disclosure of exposures in OTC instruments and off-balance-sheet items. Concerns about the role of OTC instruments relate to the impact they had in exacerbating volatility in financial markets and the ease with which these instruments can provide leverage and hence facilitate the taking of speculative positions. In addition, liquidity in OTC markets tend to dry up more quickly in times of stress than in exchange-traded markets, thus amplifying the risks of default or "fire-sale"-style liquidation during such periods.[96] Furthermore, OTC instruments with complex pay-off structures and cross-border components can be opaque with respect to on-balance-sheet accounting techniques, making it difficult for investors and authorities to ascertain an accurate picture of the risks inherent in such positions. A particular problem is in being able to identify the net risk positions of individual institutions. These positions tend to change rapidly and are obscured by the presence of hedges and other offsets.

Securities regulators in Asia, Africa, Latin America and Eastern Europe also noted that cross-border activities of financial institutions necessitated improved access to information held by foreign regulators. Information was needed to assess the impact of off-shore OTC trading in domestic securities, and to obtain evidence about possible transgressions.

Given the global scope—and hence global implications—of activity related to HLIs, OTC instruments and off-shore markets, the formulation of sound principles and practices for monitoring their operations should aim for a balance between comprehensiveness and adaptability.[97] Where possible, maximum use should be made of existing arrangements, institutions and procedures in order to optimise existing resources and minimise disruption. The formulation of industry-driven codes of conduct and international best practices aimed at promoting professionalism and fairness should also be considered. Although the ultimate responsibility for the success of the policies is expected to rest with national governments and financial authorities, the principles should be developed by consensus in a consultative manner.

It should be noted that such principles should ideally not differ greatly between countries as a proliferation of standards could lead to regulatory arbitrage, i.e. a competition in laxity. Consistency in the regulation and supervision of international investors is highly desirable in order to achieve greater transparency of international trading activity. For example, requirements for the management of investor money on offshore investment and hedge funds are far less stringent than those imposed on onshore fund management

[96] See for instance "Macroeconomic and Monetary Policy Issues Raised by the Growth of Derivative Markets" by a working group established by the Euro-currency Standing Committee of the central banks of the Group of Ten countries, *Bank of International Settlements*, 1994.
[97] See IOSCO principles 11–13 for a possible basis to this.

companies, although the issues of investor protection, business abuse and professional conduct apply equally well in both cases.

One possible step towards greater transparency would be to place the onus back on market participants to disclose fully the nature and size of their positions in these markets. However, the cross-border and cross-asset characteristics of such markets may prove to be an obstacle to effective enforcement and would likely require a concerted international effort. Given that a number of parties are currently involved in examining these issues, a key challenge will be to ensure that their recommendations are consistent. Joint efforts—such as that released by the BCBS and IOSCO in February 1999 on recommendations for public disclosure of trading and derivatives activity—would be helpful in ensuring such consistency while taking advantage of cross-sector expertise. Collaborative efforts should include the active participation of emerging market economies, given that the increasing integration of financial markets means that systemically significant markets on the global level are now no longer confined to mature markets alone.

4.2.8 Enhanced regulatory and supervisory standards[98]

The crisis has highlighted the importance of ensuring that the regulatory framework of developing financial markets remain relevant and effective amid the increasing interdependence of national financial systems and inter-linkages between different asset markets. A major task facing emerging market authorities will be in finding an appropriate regulatory structure with sufficient flexibility to meet the demands of this more dynamic and rapidly evolving environment. The structure would have to allow authorities to consider a wide and complex set of factors, and to ensure that regulatory standards, monitoring and supervision and enforcement are not compromised, despite having to cover an increasing scope of financial activity and regulatory circumstances.

An important area where regulators may have re-assess their current approach is that of prudential regulation. Events during the crisis showed that, in several jurisdictions, many risks from the activities of market intermediaries, such as margin-financing and proprietary trading, were not backed by sufficient capital. In some cases, capital adequacy requirements were not reflective of the prevailing risks that were being borne by industry participants. When markets fell, the risks from the exposures of these under-capitalised intermediaries were realised. This suggests a need to improve prudential capital standards.

But while the issue of improving prudential regulation appears to be quite well-recognised among emerging-market regulators, it is important that such regulation

[98] The discussion in this section can refer to IOSCO principles in relation to enforcement (nos. 11–13) and in relation to responsibilities, powers and processes of the regulator (nos. 1–5).

recognises the dynamic nature of markets.[99] For instance, trends suggest that securities activities will increasingly include interest-rate and derivative risks—which means that whatever standards are appropriate for prevailing practices will need to reflect such risks in the future. Prudential regulation is also likely to have to accommodate the expanding scope business activities of securities market intermediaries, including agency and proprietary trading in exchange-traded instruments; fund management; margin financing; corporate advisory; writing OTC derivatives; and underwriting.

What these issues suggests is that it, in setting prudential regulation, authorities must anticipate such issues and, as far as possible, adopt a forward-looking framework that is sufficiently modular to incorporate future changes as the activities for the industry change. An important element of this is to ensure that prudential regulation is continually reviewed and revised to ensure its relevance in an innovative market place. To the extent that it is not possible for regulation to fully anticipate all future developments, the enhancement of prudential regulation in emerging markets may not be entirely about raising the stringency of requirements but also about establishing an appropriate incentive structure for achieving acceptable standards.

Another important area where emerging market authorities are likely to have to re-assess current standards is that of enforcement and supervision. In certain instances, problems seemed to arise not so much because of poor regulatory standards but rather because of weak or ineffective enforcement of financial institutions and market intermediaries. For instance, it has been suggested that the absence of a strong culture of enforcement and accountability led to prudential limits being breached on a regular basis without penalties being imposed. A major issue highlighted by the crisis is that enforcement has an important bearing on market confidence—indeed, in several jurisdictions during the crisis, the perception that some regulators did not have the capacity or capability to effectively and efficiently enforce regulation appeared to contribute to a weakening of market integrity.

In this regard, strong front-line regulation by market institutions—such as exchanges, clearing houses—can play a valuable complementary role to the efforts of supervisory regulators. However, it had been noted that in the regulatory environment under which some East Asian market institutions operated, the crisis highlighted deficiencies in enforcement and surveillance, as well as a lack of pre-emptive action against their members. A major implication of this is that market institutions must guard against becoming overly-accomodative of their members. They must ensure that their members comply fully with rules on key issues such as client asset protection and large exposure limits. In the area of corporate disclosures, exchanges must assess the quality and adequacy of disclosures. And in markets where there are a number of exchanges, enforcement and supervision would be facilitated by arrangements in the form of explicit procedures and systems to share information regarding market participants and their trading activities. To the extent that the existing regulatory structure does not sufficiently

[99] That emerging market regulators were aware of the need to improve prudential regulation was highlighted in the interim report.

accommodate the role of front-line regulators, it may be necessary for supervisory authorities and market institutions to re-examine existing arrangements and redefine their regulatory relationship.

5 Concluding Remarks

This report has outlined the causes of the East Asian crisis, the effects of the resultant financial turbulence on emerging markets and the global economy, and finally, the regulatory implications arising from such turbulence. The crisis, which has involved severe and prolonged stress in financial markets all over the world—particularly in emerging markets—has raised several issues, many of which continue to provoke significant debate within the international financial community. The purpose of these remarks is to highlight some of the more pertinent ones relating to the scope of this report, in particular, those concerning the international financial system, changing regulatory structures, systemic risk management, and the relevance of financial markets within the broader context of macroeconomic management and economic development.

The crisis raised important issues concerning the interaction between financial markets and the real economy, including the role and significance of financial markets in economic development, the management of international private capital flows and private and public debt management. In this regard, the strength of the financial system is seen to be a critical issue, with the crisis showing that what were thought to be "optimal" policies in the real sector of an economy could easily be undone by a weak and underdeveloped financial system. It should be emphasised, however, that the important role of financial markets in facilitating the financing of real economic activity—through the mobilising of capital, allocation of resources, and transferring and transforming of risk—is not in dispute. Indeed, events over the last two years imply that policy-makers in many emerging and developing economies cannot view the financial sector as auxiliary to the real economy, and must ensure that strategic development of the financial system takes place concurrently with the real sector. Specifically, efforts to develop economically will require an approach that does not dichotomise the macroeconomy into the real and nominal sectors.

In light of rapidly changing market dynamics, commentators as well as policy-makers have also begun to re-assess the efficacy of existing regulatory structures and the appropriate systemic approach towards risk management. Ultimately, attention is being focused on the conventional wisdom behind the manner in which the international financial system continues to operate. As this report has noted, the East Asian crisis has provided further evidence that national financial systems are more interdependent and that links have emerged between markets trading in different assets. Clearly, financial activity has become increasingly complex and dynamic. This evolving landscape has resulted in a blurring of previously convenient distinctions between institutional arrangements and financial activities. As a consequence, the scope and nature of financial activity is increasingly being seen to have developed well beyond that of traditional regulatory structures and jurisdictions. Commentators of financial regulation have argued that regulators today are faced with a whole host of issues and challenges that were either not as apparent before or were non-existent.

For one, securities regulators are being increasingly called upon to find an appropriate regulatory structure that is flexible enough to meet the demands of this dynamic and rapidly evolving environment. The regulatory structure should arguably allow regulators to consider a wider and more complex set of factors, including the assurance of effective supervisory standards, surveillance operations and regulatory co-operation across the entire scope of financial activity. This report has focused on several critical areas that were highlighted by the crisis, including the appropriate sequencing of deregulation and liberalisation, the enhancement of corporate governance, greater transparency in market activity and an improvement in regulatory and supervisory standards. What this appears to suggest is that financial regulators need to re-establish their regulatory priorities and deal with regulatory overlaps.

In addition to regulatory structure, systemic risk is also becoming an increasingly significant issue for securities regulators. The East Asian crisis showed that although theory suggests that the financial sector might be dichotomised into the banking system and the capital market system, reality affords no such convenience to financial regulators; in several jurisdictions, a disruption in one sector foreshadowed problems in the other. Hence, it is increasingly recognised that at both the domestic and international level, banking, securities and possibly even insurance regulators will have to co-ordinate their activities and co-operate on joint surveillance of the entire financial system in order to successfully contain any threats to systemic stability.[100] In this regard, early-warning systems at both the micro and macro level, as well as the appropriate protocols for managing systemic disruption within one or across several jurisdictions, for instance, might be considered.

A major development has been that the financial turbulence has prompted commentators and policy-makers to re-assess the conventional wisdom behind the manner in which the international financial system continues to operate. As this report has noted, the contribution of external factors has been acknowledged and has prompted recent efforts in the area of international financial reform. This has, for instance, resulted in work by several international regulatory organisations as well as by domestic groups in areas such as hedge funds, capital flows and risk management. The past year has also seen, among other developments, the establishment of a Financial Stability Forum to promote international financial stability through information exchange and international co-operation in financial supervision and surveillance.[101]

In spite of these developments, some commentators have taken issue with the process and speed by which such reform is taking take place, arguing that the progress of international financial reform may not be fast enough given the urgency of the problems facing the global financial system. Others have pointed out however that the very nature of these problems, which involve many national and sectoral interests, mean that the

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[100] Nevertheless some have argued that the exact form of these arrangements may be of a second order issue. See for example "Systemic Risk: A Worry Shared …" by Michael Taylor in *Financial Regulation Report*, a Financial Times publication, June 1998, pages 1–2.
[101] See the Financial Stability Forum website for more details at http://www.fsforum.org.

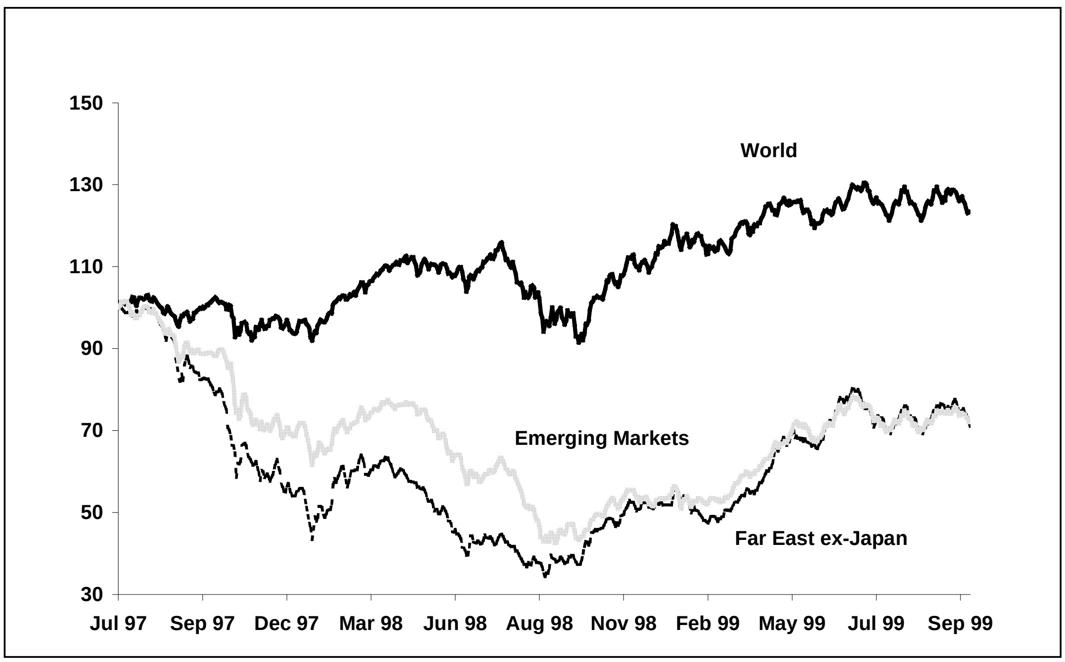
reform process is more likely to be evolutionary than revolutionary. Moreover, some have also advocated that whatever solutions these efforts eventually proffer must respect the diversity of circumstances and priorities of different markets and economies at different stages of growth and development. A corollary of this is that reform efforts requires the active involvement of developing countries and, among other things, an exchange of views on the development of reform proposals with their more industrialised counterparts if they are to achieve a framework that promotes stability in financial markets.

6 Appendix

6.1 Background to the financial and economic turbulence of 1997–99

The period immediately after the devaluation of the Thai baht on July 2nd 1997 witnessed a sudden and unprecedented collapse in asset prices, corporate and financial fragility, and a drastic economic slowdown in East Asian markets (Figure 1). Within a little over two years year, the region's stock markets—once among the largest in the world—saw their market capitalisation shrink by as much as 60% in US dollar terms (Figure 2). East Asian currencies likewise depreciated sharply beyond the levels needed to maintain export competitiveness (Figure 3),[102] with some currencies falling by 30–70% against the US dollar by end-September 1999.

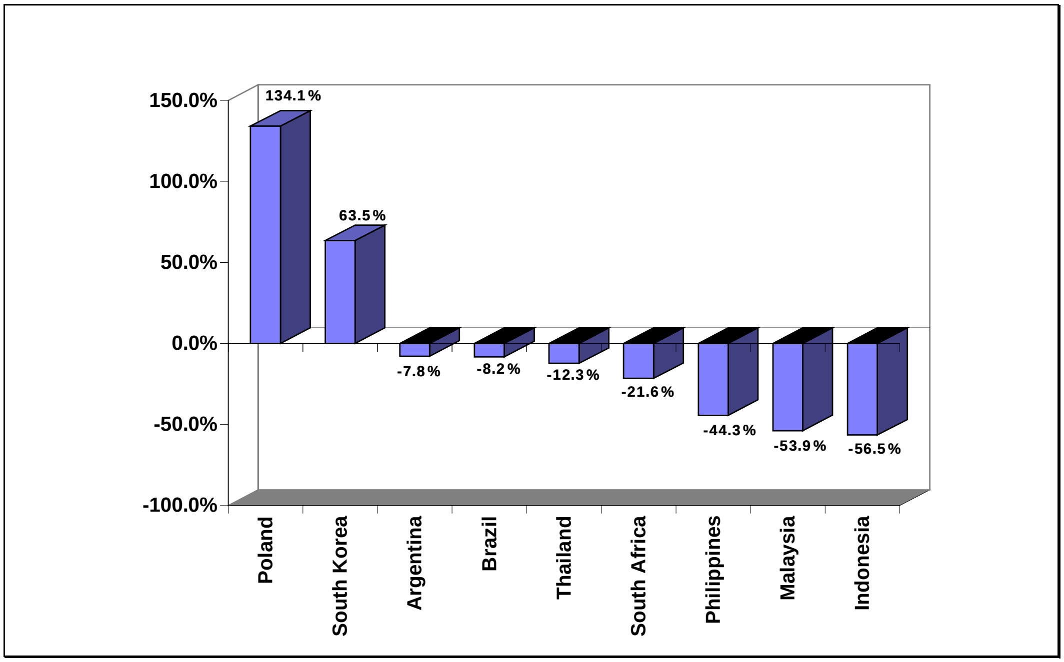
Figure 13: Performance of Far East ex-Japan, Emerging Market and World Stock Prices (Morgan Stanley Capital International Indices, US Dollars)



Source: Datastream/ICV

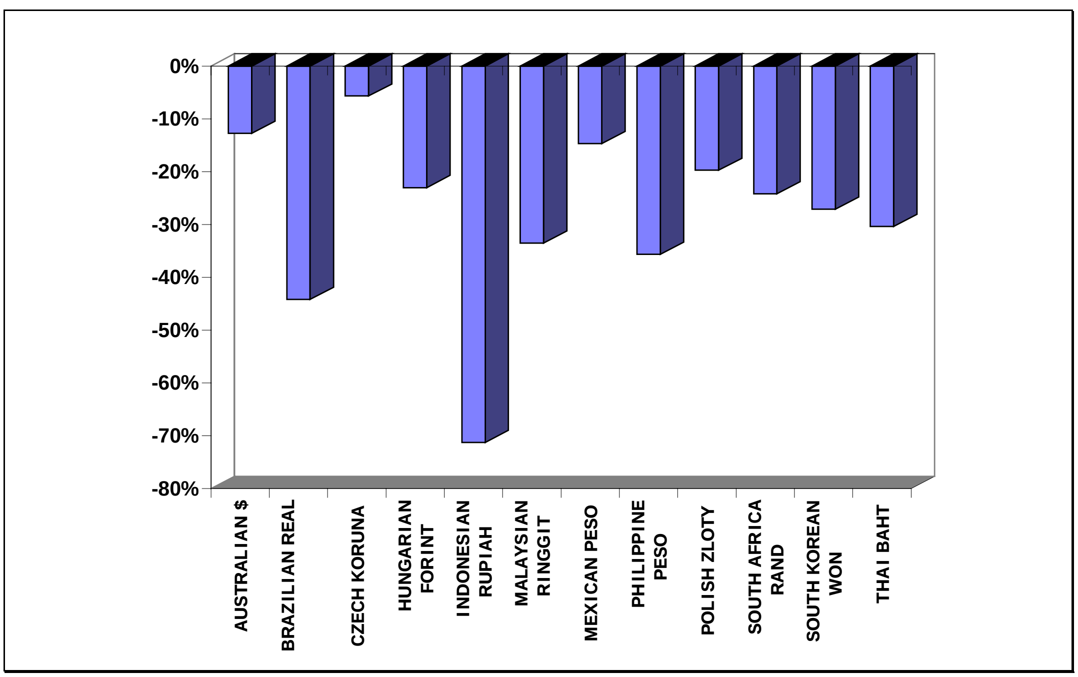
[102] Asian Development Bank, *The Financial and Currency Turmoil in Asia: Origins, Contagion and Policy Responses*, prepared for presentation at the APEC Finance Ministers Working Group Meeting, 16–17 February 1998, Vancouver, Canada.

Figure 14: Changes in Local Stock Market Capitalisation (US Dollar, June 30th 1997–August 31st 1999)



Source: Federation Internationale des Bourses de Valeurs (FIBV)

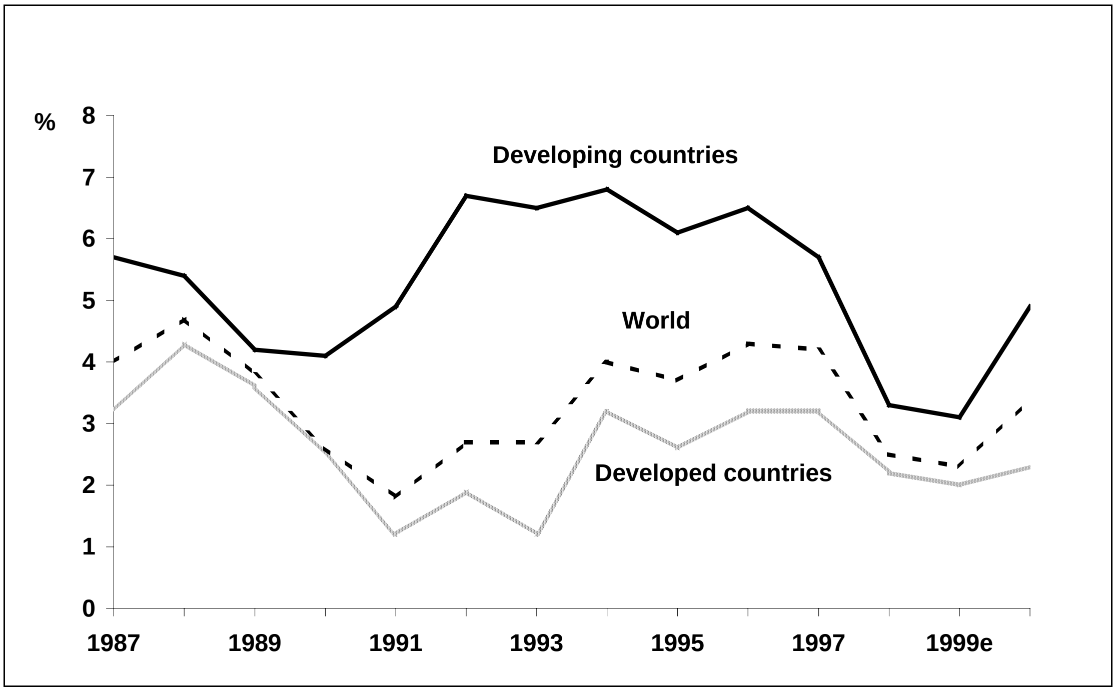
Figure 15: Performance of Emerging Market Currencies against the US Dollar (July 2nd 1997–September 28th 1999)



Source: Datastream/ICV

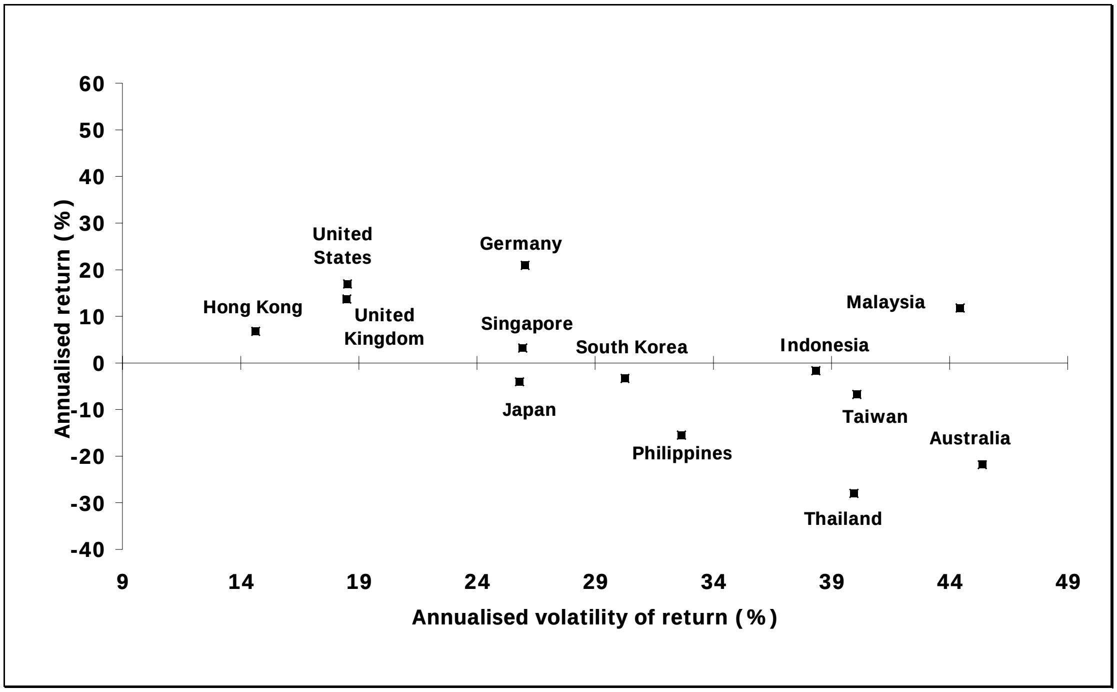
The rapid depreciation of the East Asian currencies, coupled with the plunge in asset prices in these countries, resulted in a fall in real purchasing power as inflationary pressures took root. Concurrently, there was a marked slowdown in economic growth as developing countries' real GDP growth declined to 3.3% in 1998 from 5.7% in 1997 and 6.5% in 1996 (Figure 4). Emerging markets took on an increasingly high-risk low-return profile as rising volatility and the deterioration in economic fundamentals led to the outflow of capital from these markets (Figure 5).

Figure 16: Growth of Real Gross Domestic Output



Source: International Monetary Fund

Figure 17: Risk-Return Profile of Stock Market Indices (September 28th 1999)



Source: Datastream/ICV

The severity of the crisis was accentuated by the rapidity with which the contagion spread throughout the region's financial markets, particularly in the wake of these countries' persistently successful economic performance over the last decade. The push for rapid expansion had resulted in greater financial liberalisation and, consequently, an increasing influx of foreign capital into these economies. Foreign direct investment into the region in the late 1980s was followed by portfolio capital into the equity, bond and property markets in early 1990s. Several countries established exchange-rate arrangements that maintained close links with the US dollar, which helped to boost the international competitiveness of their countries during periods of dollar-weakness.

The value of asset markets in these countries grew in tandem with their strong economic performances. The incorporation of regional blue-chips into major global benchmark indices further encouraged portfolio investment into the region.

However, this did not come without its costs. Even 18 months before the crisis broke, rising inflation, labour-market rigidities and substantial current account deficits had already drawn attention to the growing complications associated with maintaining the rapid pace of economic expansion. By early 1997, both the Thai stock market and the baht were already experiencing increasing downward pressure on concerns over the continued accumulation of short-term foreign debt and the onset of property deflation. The country's large current account deficit raised urgent concerns that the baht would not be able to maintain its US-dollar peg in the face of speculative pressure, while the nascent problems in the local financial and property sectors exacerbated the slide in its stock market.[103] Although during the initial stages of the crisis the problem was largely regarded as being confined to Thailand alone, the Malaysian and Philippine stock markets also began experiencing selling pressure as the conditions in Thailand deteriorated. At the same time, the South Korean stock market began to falter as a result of external imbalances, and a sluggish and increasingly financially-strained domestic economy.

The crisis began to emerge as a serious threat to the region's systemic stability in May 1997 as both foreign and local players amassed short baht positions to speculate against the Thai baht's implicit peg against the US dollar. On May 14th, the Bank Of Thailand (BOT) jointly intervened with the Monetary Authority of Singapore to defend the baht from a speculative attack in the spot and forward markets. To avoid increasing the country's debt burden, the BOT spent US$6.8 billion of its foreign exchange reserves in its failed defense of the local currency over the period January–June 1997. It also committed another US$23 billion in forward sales transactions.

The BOT introduced measures to prevent foreign speculators from obtaining baht to cover their speculative positions. From May 16th domestic financial institutions were not allowed to lend or short the baht to non-residents nor buy back baht-denominated debentures before maturity. This effectively segregated the baht market into on-shore and off-shore tiers. On June 10th, the BOT went a step further and requested custodian banks and finance companies to remit foreign-currency proceeds from sales of securities belonging to foreign investors, and to transfer securities out of foreign investors' portfolios only for the settlement of sales transactions and not for securities lending purposes.

However, speculative pressure on the baht did not abate but rather intensified as market participants sensed that the central bank was nearing the end of its resources. Given the massive depletion of its foreign reserves, on July 2nd, the BOT abandoned its efforts to defend the baht and allowed the currency to be traded under a managed float.

Contagion effects quickly spread to the rest of the so-called ASEAN-4 countries, namely, Indonesia, Malaysia and the Philippines. The de facto devaluation of the baht drew attention to the viability of exchange-rate arrangements in other ASEAN countries. The Malaysian ringgit and the Philippine peso in particular, which had been subject to only minor speculative pressure prior to the float, began to weaken significantly against the US dollar under intensified selling activity. This phase saw the first signs of global contagion in the appearance of downward pressure on Czech and Slovakian currencies

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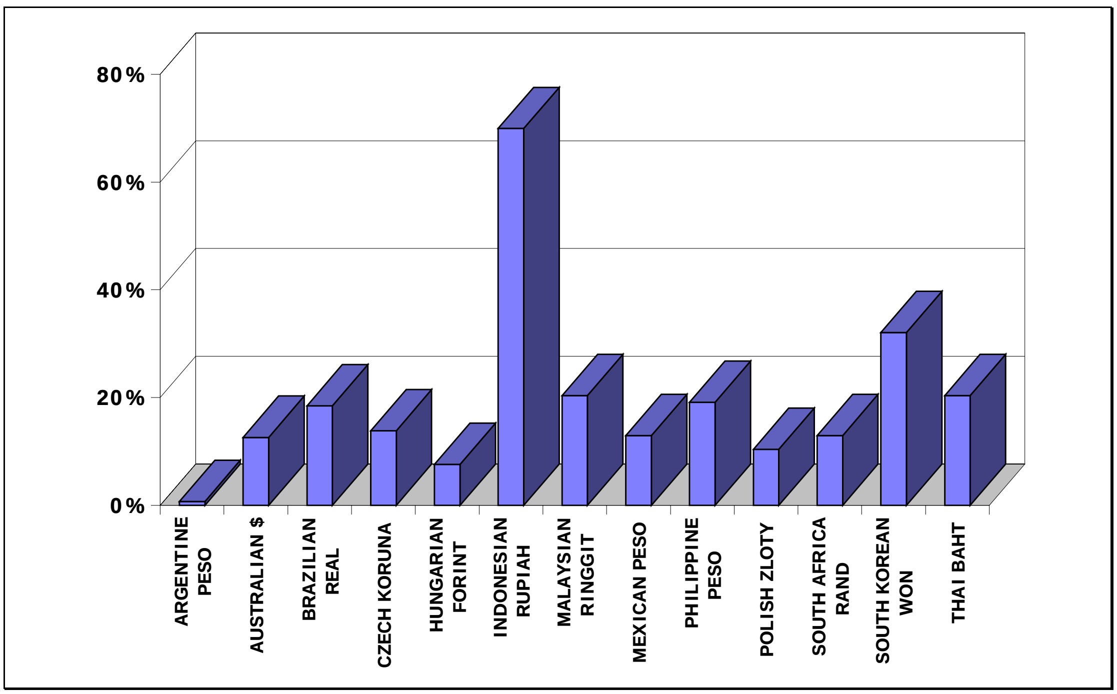
[103] On February 4th, leading property developer Somprasong Land became the first Thai company to default in a Euroconvertible debenture (ECD) interest payment when it failed to honour a US$3.1 million payment due on its US$80 million ECD issue. On March 3rd, trading in the Stock Exchange of Thailand's broad finance sector was suspended for one day as trade in these stocks could not be guaranteed. Seven days later, the BOT and Thai Ministry of Finance (MOF) ordered ten financial institutions facing insolvency (including Finance One, the country's largest finance company) to raise additional capital within 10 days. Over the period June–August 1997, a total of 58 finance companies had their operations suspended by the BOT and MOF and were ordered to submit rehabilitation plans.

but suggests that confidence in global financial markets held steady overall. In quick succession first the peso, then the ringgit and finally the rupiah succumbed to speculative pressure as their respective authorities relaxed their tight—but ultimately futile—defence of their currencies. Concerns over their highly-leveraged corporate balance sheets exacerbated the decline in the value of regional currencies against the US dollar. Currency and stock market volatility surged amidst uncertainty over these economies' exchange-rate policies and fears of the imposition of further capital controls (Figures 6 and 7).

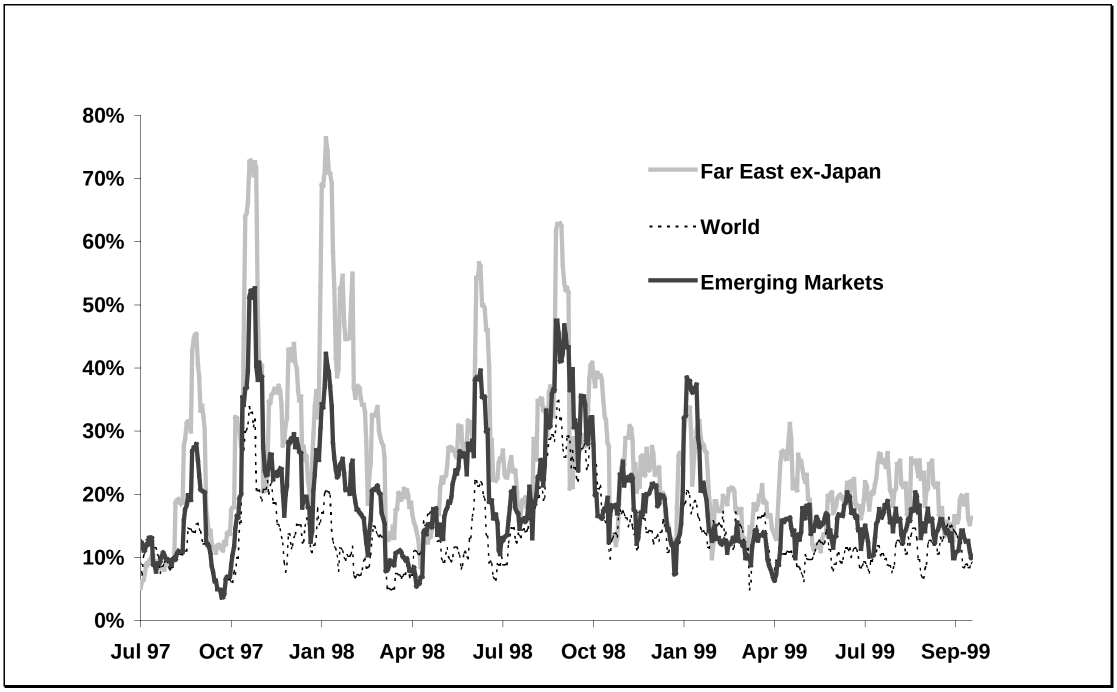
On July 28th, Thailand requested for technical assistance from the IMF and other parties; on August 20th, an agreement on a US$17.1 billion rescue plan was announced. By then, the turmoil had begun spreading to other parts of the region, although spill-over effects beyond the region remained limited. Currencies and stock markets in Taiwan, Hong Kong and Singapore began to experience downward pressure while yield spreads on international bonds of Asian issuers widened considerably.

Figure 18: Volatility of Global Currencies (July 2nd 1997–September 28th 1999, annualised)



Source: Datastream/ICV

Figure 19: Volatility of Far East ex-Japan, Emerging Market and World Stock Prices (Morgan Stanley Capital International Indices, US Dollars)



Source: Datastream/ICV

Outside the region, currencies in Eastern Europe became particularly vulnerable and Latin American Brady bond yield spreads grew wider as well. Heightened risk pushed emerging market borrowing costs sharply higher, resulting in a credit crunch which severely impaired issuers' ability to service their debt. However, western hemisphere stock markets, especially those in the United States and Britain, continued to rise strongly despite a short-lived rise in global bond yields due to fears of a rise in European interest-rates.

The US dollar's appreciation against most Asian currencies reinforced perceptions that other emerging market currencies were overvalued. In September–October 1997, strong pressure mounted for the devaluation of these currencies in both spot and futures markets. The central bank of Brazil, for instance, spent US$8.3b of its foreign reserves over this period to keep the real's exchange rate within its trading band under the crawling peg system. Faced with a plummeting rupiah and a corporate sector encumbered by a large short-term debt burden, the Indonesian government announced on October 8th its intention to seek financial support from the IMF and other multilateral organisations in an attempt to restore confidence in its economy.[104]

Pressure also began to build on the Hong Kong dollar as fears grew over whether the special administrative region could maintain its currency board arrangement involving the US dollar. After a three-day decline in stock prices, during which the Hang Seng index lost more than 23% of its level, these pressures eventually triggered a correction in stock prices world-wide. Concerns over the vulnerability of Hong Kong's stock market and currency, and the potential impact of the Asian crisis on US corporate earnings led to a massive 554.3-point or 7.2% plunge in the Dow Jones Industrial Average index on October 27th. The US market's dramatic fall reverberated around the world, with most major markets consequently registering sharp falls that day or, in the case of the Asian markets, the next trading day. Emerging bond and stock markets suffered heavy losses as monetary authorities in several countries, including Brazil, Greece, Mexico and Russia, raised domestic interest rates sharply.

Most stock and derivatives markets report a sharp increase in volumes during this period, despite the fact that price limits, trading halts and other forms of trading restrictions were activated in many exchanges as prices and index levels fell below predetermined trigger levels. Although existing trading systems generally functioned satisfactorily during this period of heightened market stress, liquidity in some emerging markets dried up at stages when excessive selling pressure was met by a shortage of buyers. Options trading on the South African exchange, for example, were seriously affected by the selling overhang when surging volatility made the options too expensive for buyers. The reduction in liquidity was compounded by the high interest rates prevalent at that time.

Developments in East Asia continued to affect financial markets around the world through to December 1997, as global markets came under the dampening influence of Asian contagion risk. However, European and American stock markets recovered by early December although lower bond yields and a rapidly-appreciating US dollar reflected a continuing flight to safety from stocks.

Asian markets, however, continued to be dogged by regional worries, now made worse by developments in South Korea and in Japan. Concerns increased over South Korea's difficulties in resolving its corporate debt overhang and in rolling-over financial-sector foreign debt. Shortly after the Korean government signed an agreement with the IMF on December 3rd 1997 for a US$57b[105] aid package which placed tough conditions on economic reforms, it was revealed that the country's short-term foreign debt—at more than US$100b—was nearly twice as large as previously perceived.[106]

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[104] On November 5th, the IMF's Executive Board approved financial support of US$9.9 billion to be disbursed over a three-year period. In addition, US$26.7 billion was pledged by other multilateral organisations, bringing the total financial aid rendered to Indonesia to US$36.6 billion.
[105] This amount consists of US$20.9b from the IMF, US$14 b from other multilateral organisations and US$23.3b from bilateral parties.
[106] Short-term debt constituted about 55% of South Korea's entire foreign debt burden.

The closures of Yamaichi—Japan's fourth-largest brokerage—in early November and of Hong Kong-based Peregrine Investment Holdings in January 1998 further eroded confidence in the health of the region's financial institutions. As the possibility of more corporate failures grew increasingly certain, East Asian currencies succumbed to intensified selling pressure and subsequently many of them—including the Malaysian ringgit, the Philippine peso, the Thai baht and the Indonesian rupiah—were driven down to historic lows by mid-January 1998.[107]

However, a raft of confidence-boosting measures by the three economies most-affected by the crisis—South Korea, Indonesia and Thailand—which were announced in late January 1998 checked the downtrend. South Korea announced a series of liberalisation measures and financial reforms, including the closure of a third of its finance companies[108] and a plan allowing small domestic companies to delay repaying more than US$533m in foreign-currency debt.[109] On a similar vein, the Indonesian government proposed a temporary freeze on the servicing of private debt, in a bid to stem the rising number of bankruptcies and ease fears of further financial failures.[110] On January 30th, Thailand lifted its foreign-exchange controls, which had been in place since May 1997, as part of the provisos in the emergency credit package arranged by the IMF in August 1997. The subsequent rejuvenation of investor confidence in the management of the region's economies sent their currency and stock markets surging higher. Over the period February 2nd–3rd alone, the MSCI Far East ex-Japan Index rose by 11.9%, with the Malaysian and Hong Kong stock exchanges, for example, recording massive gains of 23% and 14% respectively over that interval.

The rally was short-lived, however, as the renewed burst of buying activity quickly petered out. This was largely because of concerns over the health of the banking sector in the face of mounting non-performing loans and the need for urgent re-capitalisation. Other factors included the rising cost of servicing private sector debt and declining property prices.

Developments in Indonesia came into global focus in May 1998 as escalating prices and social unrest there threatened to throw regional markets into renewed disarray. Drastic increases in fuel, transport and electricity prices as part of the reforms pledged to the IMF sparked student demonstrations, riots and looting in Jakarta. By mid-May, the deteriorating situation brought business activity to a virtual standstill, placing the ongoing negotiations with international creditors to refinance short-term debts and stabilise flows

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107 The Indonesian rupiah subsequently depreciated further against the US dollar to new historic lows in June 1998.
108 January 30th 1998.
109 January 26th 1998.
110 January 27th 1998.

of trade credit in serious jeopardy.[111] Mounting demand for a change in the political leadership bred fears of further market turbulence, which made creditors increasingly reluctant to maintain their exposure to Indonesia.

These factors combined augmented the growing instability not only in Indonesia but also throughout the region. Although President Suharto's resignation on May 21st 1998 spurred a brief rally in regional financial markets, the IMF's decision to delay the resumption of financial aid to Indonesia until the political uncertainty there was resolved cast a lingering pall over the region.

Confidence waned further as continuing strain on Japan's financial sector saw the yen weakening to eight-year lows against the US dollar by mid-June. Given Japan's strong trade linkages and large volume of lending to East Asian countries,[112] coupled with prospects of an impending recession for the 1997/98 fiscal year, Japanese equity prices fell while the "Japan premium" rose sharply, which in turn reinforced concerns over bank profitability and credit availability.

On June 9th 1998, China's central bank governor warned that the falling yen was having a "very negative impact" on China's foreign trade, capital inflows and economic restructuring, raising concerns over the heightened devaluationary pressure on the Chinese renminbi and the Hong Kong dollar peg.[113] Consequently, the US and Japanese governments jointly intervened to interrupt the yen's depreciation on June 17th. However, political uncertainty took hold when Prime Minister Ryutaro Hashimoto resigned from Japan's ruling party's presidency following its poor showing in the crucial July 12th upper house parliamentary election. The Japanese electorate's disappointment over the country's protracted economic malaise sent a clear signal to successor-designates that a comprehensive, unambiguous approach to stimulate the economy was needed. Consequently, cautious optimism over the country's prospects saw the yen—and other regional currencies—stabilise slightly. Nonetheless, on August 11th, after an initial period of stability in the dollar-yen exchange rate, the yen resumed its downtrend and breached the 147 yen-to-a-dollar level for the first time in eight years, prompting fresh concerns of another round of competitive devaluations in emerging markets.

The unfolding of the Russian crisis further exacerbated global financial market pressures as the Russian government announced a de facto devaluation of the ruble and a 90-day moratorium on foreign credit payments in the middle of August 1998. This gave rise to

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[111] During this period, some brokers reported that they had stopped taking orders because of the high risk of non-settlement. On May 14th–15th, the central bank suspended clearing operations for foreign exchange transactions as its staff stayed home due to rioting and looting throughout the city. This greatly exaggerated swings in the rupiah, with the currency appreciating by as much as 15% against the USD in early trading on May 15th.

[112] BIS data indicate that Japanese bank lending to the five most affected countries stood at about US$100b at end-June 1997, equivalent to about 3% of the banks' risk-weighted assets.

[113] His remarks, the first by a senior mainland official acknowledging the damage inflicted by the weakening yen, gave an indication of the high cost borne by the Chinese economy due to its earlier pledge to the G-7 governments not to devalue the renminbi at that juncture in time.

fresh concerns in financial markets not only about macroeconomic instability in Russia, but also of default by other emerging market countries and the possibility of a global credit crunch.

As a consequence of these developments, many international investors, including hedge funds, suffered substantial losses, which in turn gave rise to margin calls and a rush to raise liquidity that exacerbated the decline in prices of financial assets. This widespread flight to quality and liquidity gave rise to a severe tightening of credit conditions and renewed currency and capital market volatility. These difficult conditions subsequently led to two significant developments: the imposition of selective exchange controls by Malaysia and the near collapse of hedge fund Long Term Capital Management.

On September 1st 1998, Malaysia introduced several exchange control measures to insulate the domestic economy from international financial volatility, to stem capital flight and speculation against the ringgit, and to eliminate offshore transactions in the domestic economy. The next day, the ringgit was fixed to the US dollar at a rate of RM3.80/US$1 to further protect the country from adverse currency fluctuations.

In the same month, heightened concerns about liquidity and counterparty risk emerged following news of difficulties in, and ultimately the near failure of, US hedge fund Long Term Capital Management, which reportedly had several highly leveraged positions across a broad range of markets. Although a private rescue of LTCM was announced on September 23rd 1999, market reverberations intensified in the ensuing weeks as previous positions were unwound, prompting concerns about the extent of financial damage this might have on other financial institutions.

Nonetheless, several positive developments in late September 1998 provided some support for the global economic outlook, including the US Federal Reserve's move to trim interest rates by a quarter of a percentage point on 29 September and by another 25 basis points on 13 October 1998. This move, combined with Japan's resolve to introduce new policy measures to address banking sector, helped to stabilise financial markets.

In early 1999, the Asian crisis spread to yet another region—Latin America. Growing doubts about Brazil's fiscal adjustment programme, the decline in private capital inflows and the weakening of commodity prices in international markets forced the Brazilian government to widen, and subsequently abandon, its crawling exchange rate regime in mid-January 1999. The abandonment of the peg saw the Brazilian real depreciating by more than 40% below its end-1998 value in terms of US dollar in early March 1999. However, the impact of the Brazilian crisis on East Asia was muted amid signs of a turnaround in several Asian economies since the fourth quarter of 1998.

Nevertheless, the problems that have surfaced as a result of the crisis have yet to be fully resolved. The large number of corporate insolvencies, the daunting task of recapitalising the banking sector and the recent weakness in several currencies, among others, remain serious concerns in the affected countries. In Thailand, it was revealed that in the first quarter of 1999, state-controlled Krung Thai Bank's non-performing loans were almost

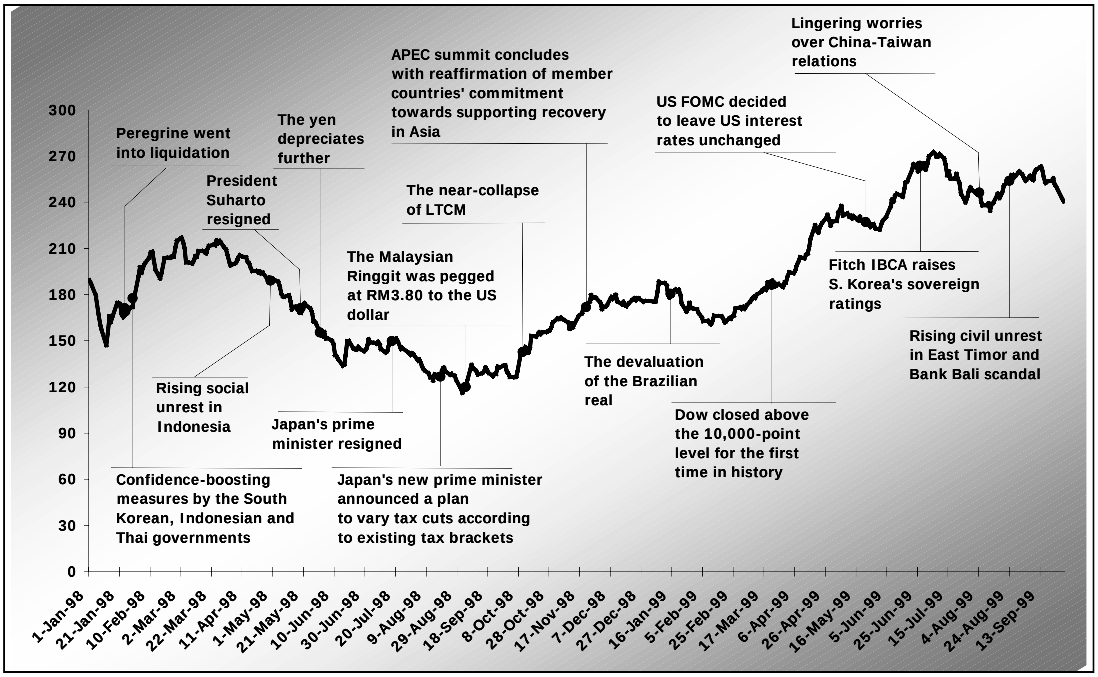
72% of total loans extended. The financial position of Krung Thai Bank and that of Bank of Ayudhya exacerbated concerns about the stability of the domestic banking sector, prompting significant depreciation of the Thai baht against greenback. There have also been reports that attributed the depreciation of the Thai baht to renewed “speculative attacks” by hedge funds, although these remain unsubstantiated. The restructuring of South Korean conglomerates is proving to be a daunting and complicated task despite the recovering economy. Daewoo Group, for instance, is thought to be saddled with debts amounting to US$47.4 billion, which would pose significant risk to the recovering economy.

There also appear to be fresh signs of instability in Ecuador and Argentina, as the former had recently defaulted on its Brady bond payments and the latter is saddled with a huge amount of debt—expected to be as high as 40% of GDP in 1999.

The yen has been appreciating steadily against the US dollar since July 1999 on the back of improving Japanese economic indicators. The appreciation of the Japanese yen also prompted some concerns about Japan’s nascent economic recovery, which is heavily dependent on the export sector. This, in turn, may have adverse consequences on growth in the rest of the East Asian region if Japan’s demand for regional imports wanes.

Thus, the so-called Asian crisis can be more accurately viewed as period of turbulence than a singular event, which was marked by spates of sentiment-driven selling activity within the region’s financial markets. The erosion of confidence that has spread across geographical boundaries has, however, raised a new challenge to developing market authorities to put in place sound regulatory infrastructure and macroeconomic policies in order to help these markets weather future crises without compromising their development.

Figure 20: Significant events as reflected by the regional stockmarket MSCI Far East ex Japan index, Jan 1st 1997 = 100



Source: Datastream/ICV and Securities Commission

6.2 *Analysis of the Russian and Brazilian crises*

6.2.1 Structural weakness in Russia and Brazil

In both Russia and Brazil financing large government debt with short-term funds provided by foreigners appeared to be the core structural weakness, amplifying the effects of trigger events such as market volatility and shifts in commodity prices.

In Russia, an inability to build the institutions required for a market economy was at the root of the problem. In particular, tax administration was characterised by widely granted de facto tax exemptions and the tolerance of tax arrears. At a federal level, tax revenues did not exceed around ten percent of GDP, too low to fund government expenditures swollen by overspending and subsidies to unviable firms. At the same time a raft of structural impediments to smaller firms hampered growth in the tax base.

Government deficits were financed by the issue rouble denominated paper. By May 1998 non-resident investors held about one-third of domestic treasury securities (a face value of around $20 billion). Along with the sheer volume and foreign provenance of debt, its maturity structure left the Russian government vulnerable to market shifts. To that was added currency risk: as rouble interest rates climbed, the government increasingly issued eurobonds denominated in U.S. dollars.

The bunching of redemptions and coupon payments in the second half of 1998, much of it owed to foreign investors provided a test for both the fiscus and the country's foreign exchange resources. Rising interest rates and falling oil export receipts hastened the moment when the government's debt servicing obligations became unsustainable. In August 1998 the government placed a moratorium on the principal payments on private external debt, announced a compulsory restructuring of government debt and abandoned the rouble peg. These measures caused a virtual collapse of the Russian banking system.

In Brazil, structural weaknesses did not reside in banks or other elements of the private economy, but in public sector imbalances. The Real Plan, while achieving dramatic success in reducing inflation, did not address growing public sector deficits that reached 8% of GDP in 1998 and contributed to rising current account deficits (reaching 4.5% of GDP in 1998).

Much of Brazil's public debt was held by foreigners. In addition, the maturity structure of the public debt made the country extremely vulnerable to changes in interest or exchange rates. At the start of 1999 the average maturity was only eight months. Two-thirds of public debt was indexed to the overnight interbank rate and one-fifth to the U.S. dollar.

This debt structure made Brazil vulnerable to changes in market assessments. These duly occurred. During the period under review the Brazilian economy would subjected to three bouts of sudden reassessments. Two of these were contagion related (from Asia and Russia respectively). It was the third, triggered by the possible default of the state of Minas Gerais to the central government, that led to the abandonment of the exchange rate peg.

6.2.2 Crisis dynamics: the role of banking in Russia and Brazil

In both the Russian and Brazilian crises banking appeared to play a smaller role in the provision of credit to the private sector than in the East Asian crisis. And in Brazil pre-crisis reforms had strengthened the banking sector.

Following the August 1998 crisis, Russian banks found their vast foreign obligations had ballooned in rouble terms while their assets, mainly government securities, were in default. The banking sector virtually collapsed. Yet the impact on the real economy was somewhat less severe than might be expected. This is due to the peculiar nature of the Russian banking system. Russian banks are characterised by a relatively low exposure to the private sector. Compared to Asia the share of credit to the non-bank financial sector as a share of GDP is very low, in 1996 only 10 percent of GDP.

There are appear to be several reasons for this. First, the Russian Central Bank suspends banking licences of institutions with weak portfolios. Second, banks lack longer maturity deposits required for longer-term loans. Third, Russian banks lack the managerial skills to adequately assess creditworthiness, instead acquiring high-yield government paper constituting 74 percent of total bank credit. As a result, the observable effect of the banking collapse on Russian non-financial firms has been limited.

Brazil's banks appear to have weathered the stresses arising from the crisis despite dramatic rises in short-term interest rates. Non-performing loan ratios and capital adequacy ratios remained at safe levels. At the time of writing it was not known whether levels of foreign-currency borrowing would present problems for some institutions.

The relative health of the Brazilian banking sector through the course of the crisis appears to be partly the result of considerable reforms in the sector in recent years. In addition to that, the role of banks in the Brazilian economy is smaller than in the Asian crisis economies.

These factors seem to explain why the crisis dynamic that operates through retrenchments in the provision of bank credit may not be as important in these countries as it has been in the East Asian crisis countries.

6.3 Contagion episodes during 1997–1999

The first episode involved contagion within and from Asia during 1997. Following the floating of the baht by the Bank of Thailand on July 2 1997, contagion quickly spread as market participants began to question the viability of other exchange rate mechanisms within the region. In quick succession the Philippine peso, Malaysian ringgit and Indonesian rupiah succumbed to speculative pressure. Hong Kong's Hang Seng stockmarket index lost 23% in three days, which some analysts say subsequently triggered a global fall in equities prices. Financial conditions in Korea worsened dramatically, as stock prices and the currency fell and interest rates shot up. East Asian currencies were driven to historic lows by mid-January 1998.

Emerging markets around the world, particularly in Asia and Latin America, saw a sharp slowing of capital inflows from the third quarter of 1997, while emerging market bond spreads increased from the historic lows of mid-1997 by about 250 basis points. The economies worst-hit by the crisis rallied in the first quarter of 1998, but as the damage done to financial systems, and hence the real economy, became apparent asset prices fell again.

Some have argued that Russia's debt crisis was hastened by the reversal of foreign investor sentiment following the Asian crisis. Investors, noting Russia's deteriorating policy environment, demanded higher sharply higher interest rates, thus rendering the country's debt servicing burden unsustainable.

The second episode involved contagion from Russia in August 1998, during which Russian authorities abandoned the rouble/dollar peg, defaulted on domestic government debt and ceased trading short-term debt instruments widely held abroad and by Russian banks. Multilateral institutions signalled that they would not extend a rescue package without progress towards policy reforms. Domestically, the result was a paralysis of the payment system, virtual collapse of the banking system, a crash in Russian securities markets and substantial loss in the value of the rouble with respect to the US dollar.

The knock-on effects in other financial markets were widespread and severe. A sudden deterioration in the global perception of credit as well as liquidity risk affected both developed as well as emerging securities market, and had a major impact on off-the run US treasuries. Developing economies were particularly hit. Their currencies weakened significantly during the next month, while emerging equity markets fell by between a quarter and a third. Short-term interest rates in these economies, which had begun to recover from the levels of a year earlier, rose sharply and sovereign yield spreads widened. The average spread over US treasuries indicated by a benchmark emerging markets bond index more than doubled to 1,700 basis points.

Among Latin American markets, Brazil appeared to be particularly vulnerable to turbulence emanating from the Russian crisis. In August and September its economy saw capital outflows of US$12 billion and US$19 billion, respectively. Authorities successfully protected the currency peg at first by increasing official interest rates to 42%, although the cost on the real economy was high. Industrial production suffered a sharp decline in September and the economy soon dipped into recession. Despite international financial assistance in November 1998, Brazil was not able to sustain its currency peg in the face growing concerns about economic prospects and public indebtedness; in January 1999 the real was floated against the dollar.

These events provide a background to the **third episode, involving contagion from Brazil in January 1999**. The impact of this contagion in relation to other Western Hemisphere countries has been limited, with no currency in the region depreciating by more than 5% against the dollar at the time of writing. It has been suggested that financial spillovers to other countries in the region tended to reflect the size of trade linkages. For instance, Argentina, a major trade partner and fellow member of the Mercosur trade pact, saw its economy slow the most, while Chile and Mexico, with smaller trade links, experienced very limited eventual fall-out. Ecuador and Venezuela’s financial markets were affected more by changes in oil prices than by events in Brazil. In contrast to the other bouts of contagion, this one seems to have been driven by real economy linkages.

The Brazilian crisis of January 1999 did not generate strong global spillovers. Initially, emerging stock markets and currencies in Asia, Eastern Europe and Africa became more volatile and bond spreads rose sharply, but the effects were short-lived. Currencies strengthened, stock markets recovered and bond spreads improved within a matter of weeks. Unlike the Russian fall-out, there was little impact on financial markets in industrialised economies.