

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

Interim Report



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IOSCO/EMC-CAUSES, EFFECTS AND REGULATORY IMPLICATIONS OF FINANCIAL AND ECONOMIC TURBULENCE IN EMERGING MARKETS

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Preface

The East Asian crisis materialised in the middle of 1997 with alarming force and alacrity. More accurately viewed as a period of turbulence rather than a singular event, the crisis was particularly acute in several emerging markets, which had grown accustomed to an almost continuous stretch of strong economic performance over the previous 8–10 years.

Beginning from a central point in Southeast Asia, the crisis has grown and affected, to varying degrees, other markets within the region as well as both emerging and developed markets around the world. At one particular point in time during this period, the crisis generated a significant, albeit short-lived, global impact. And although the long-term impact of the crisis on markets outside of East Asia is still not clear, turbulence continues to prevail in several markets around the world.

It is not surprising, then, that the crisis has generated a substantial amount of analysis and debate. However, much of this has tended to focus on macroeconomic issues. Issues specifically relating to securities markets have received far less attention. In order to address this situation, the following report will examine some of the main causes, effects and regulatory implications of the financial and economic turbulence in emerging markets by focusing on issues not only of more general significance but also of particular relevance to securities markets.

The Emerging Markets Committee (EMC) approved a mandate to examine the causes, effects and regulatory implications of the financial and economic turbulence in emerging markets at the 22nd annual conference of the International Organisation of Securities Commissions (IOSCO) held in Taipei during November 2nd–7th 1997.

For the purpose of collecting data and information, a survey of 17 EMC members was conducted. Among other things, the survey collected market data, views on the causes and effects of the crisis and subsequent turbulence, as well as views on policy responses and possible regulatory implications. Given that events continued to unfold in emerging markets throughout the drafting stages, it was decided to limit the scope of the report to the events, issues and implications drawn from the period January 1997–July 1998. Every effort was also made to expedite the production of the report in light of the interest it has generated and the fact that the crisis was and, at time of writing, continues to be on-going.

Results of the survey were incorporated into a preliminary report, which was presented and discussed at the EMC meeting in Kuala Lumpur held in May 1998. Comments raised at those meetings were incorporated into consultation draft that was circulated to the EMC and other members of IOSCO for their views. A final document was then prepared and presented to the EMC, which endorsed it for public release at the annual conference of IOSCO in Nairobi during September 12th–18th 1998 as an interim report of the EMC.

The contributions of various IOSCO members—in particular, the timely and highly-informative responses of those who participated in and replied to the survey—has contributed significantly to the value of this report. Respondents came from a wide spectrum of EMC jurisdictions and consisted of securities regulators from Africa, East Asia, Eastern Europe, the Middle East, South America and South Asia. Their views and comments were invaluable to this project.

1. Introduction

This report examines the causes, effects and regulatory implications of the financial and economic turbulence arising from the East Asian crisis of 1997–98. It 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.

The term “financial and economic turbulence” in the report’s title refers to, among other things, the increased volatility and protracted decline in prices experienced by several jurisdictions around the world from January 1st 1997 onwards (including the sharp global correction in stock prices during October 27th–28th 1997), as well as the severe economic downturn experienced mainly by East Asian countries over the last 12 months or so.

Although only a selection of emerging markets suffered the full impact of the crisis during the period the report was compiled, it has become clear that the regulatory issues raised by the crisis and its effects are being examined closely and with some urgency by many other regulators.

One set of issues relates to the role and functions of capital-market regulators, and the objectives of capital-market regulation. Issues cover the changing scope of supervisory regulators, the responsibilities of so-called front-line regulators such as exchanges and clearing institutions, and regulatory co-operation and surveillance both within domestic jurisdictions and among national authorities.

Another set of issues deals with systemic stability. A major theme is the importance of maintaining the integrity of the market as a whole as well as of its participants. Issues look at relevant approaches to prudential regulation and the challenges of encouraging better risk management by market participants. The protection of clients’ assets is also examined.

Not all issues raised can fit into such neat categories. One of these relates to corporate governance, in particular, the perceived and actual needs to raise standards as well as recent initiatives by several markets to boost governance standards. A second issue relates to the regulation of international investors, while a third concerns liberalisation, deregulation and market development in light of the crisis. A fourth issue, concerning the price-discovery process, received much attention during the crisis and has led to an increased interest in circuit-breakers and other market-wide trading restrictions in several jurisdictions. A fifth issue relates to the role of international organisations.

The structure of the report is as follows:

Section 2 provides an overview of the East Asian crisis of 1997–98. It identifies key events and stress-points in a selection of global markets from January 1997 onwards, focusing particular attention on those of the EMC jurisdictions. It also gauges the severity of market turbulence through several measures, including price volatility, the duration of asset-price deflation and the response of prices to shocks.

Section 3 examines the likely causes of the crisis. In particular, it attempts to identify common (market-moving) factors across jurisdictions and to distinguish them from market-specific factors. To this end, the section uses information derived from responses to our survey of selected EMC jurisdictions.

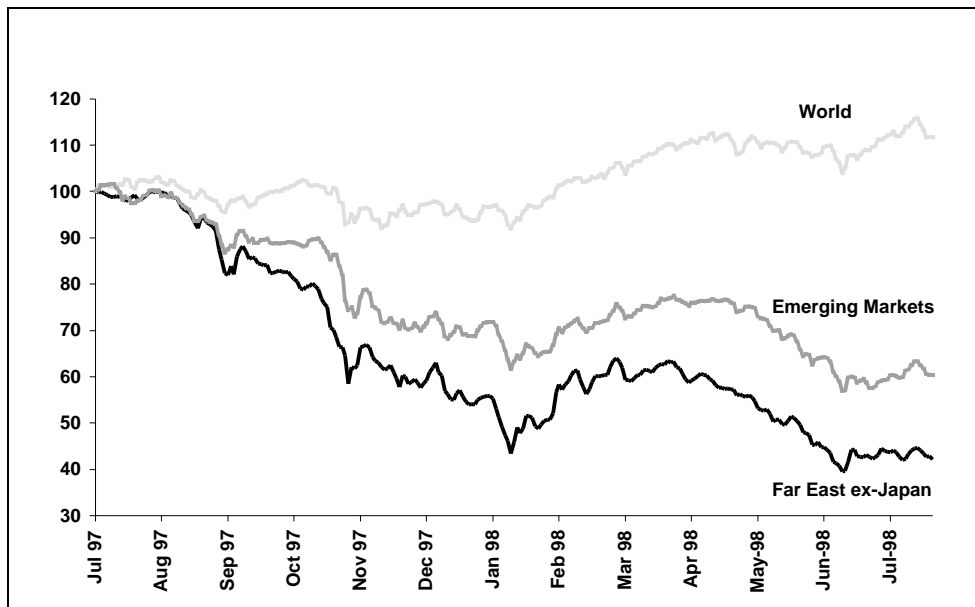
Section 4 looks at the impact of the crisis, first on the macroeconomy and on economic policy-making and then, in more detail, on capital markets. One aim of the section is to describe the broad effects that swept emerging-markets as a whole. An equally important aim is to see how and where these effects differed. Thus, like the previous section, this section makes use of the survey responses to determine the pattern and degree of effects experienced by emerging markets.

Section 5 assesses the regulatory implications of the crisis. It begins by discussing the state of debate on economic policy-making and international financial regulation. Issues include the discussion over reform of the international financial architecture. It then goes on to describe the implications that the crisis may have had on securities regulation.

2. Background to the financial and economic turbulence of 1997–98

The period following 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. In just over 12 months, the region's stock markets—once among the largest in the world—saw their market capitalisation shrink by as much as 85% in US dollar terms. Similarly, East Asian currencies depreciated sharply beyond the levels needed to maintain export competitiveness with some currencies falling by 50–80% against the US dollar by end-July 1998. East European and Latin American currencies also experienced some speculative pressure in the latter half of 1997, but generally fared much better. (See figures 1–3.)

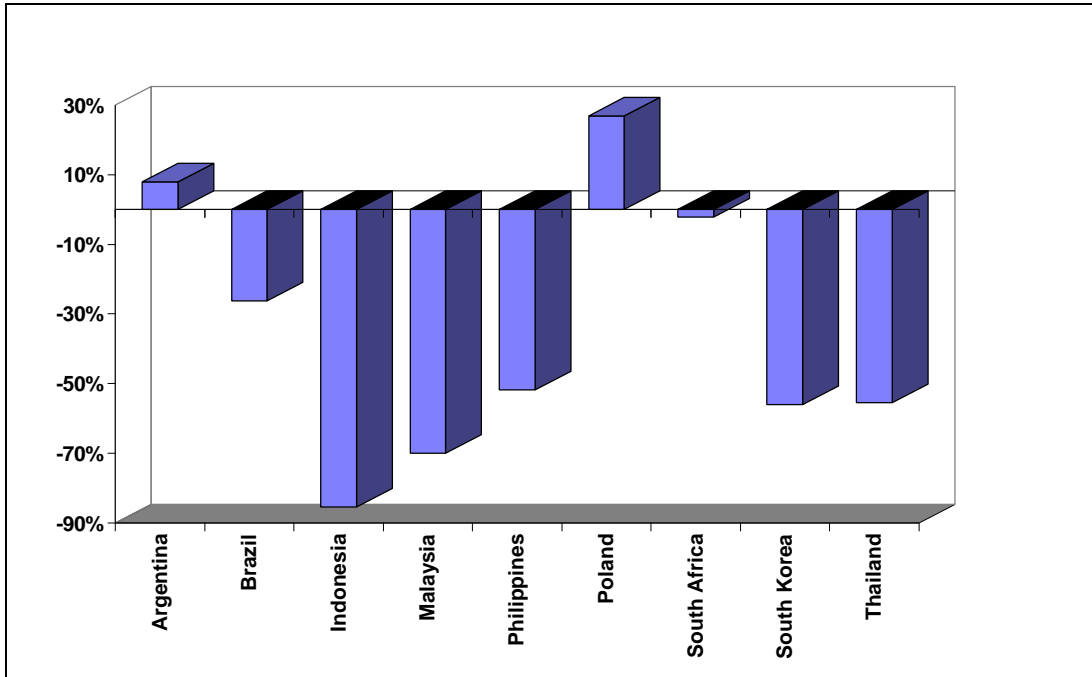
Figure 1: Performance of Far East ex-Japan, Emerging Market and World stock price indices (Morgan Stanley Capital International Indices, US\$)



Source: Datastream/ICV

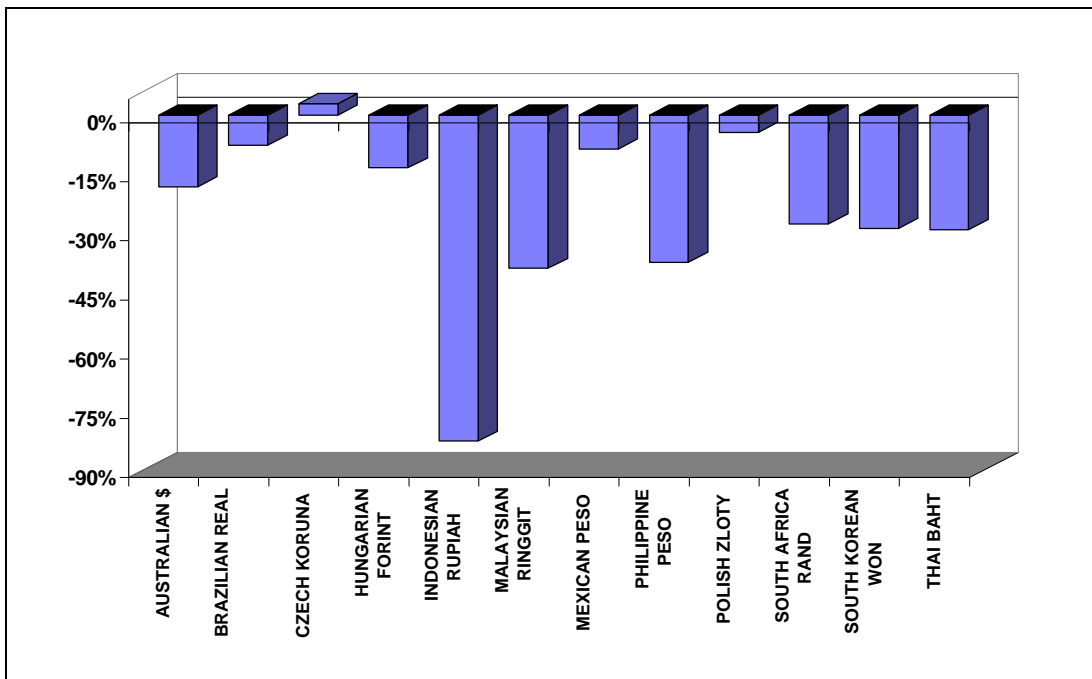
¹ *The Financial and Currency Turmoil in Asia: Origins, Contagion and Policy Responses*, a report prepared by the Asian Development Bank for presentation at the APEC Finance Ministers Working Group Meeting, 16–17 February 1998, Vancouver, Canada.

Figure 2: Changes in local stockmarket capitalisation (US\$, June 30th–December 31st 1997)



Source: Federation Internationale des Bourses de Valeurs (FIBV)

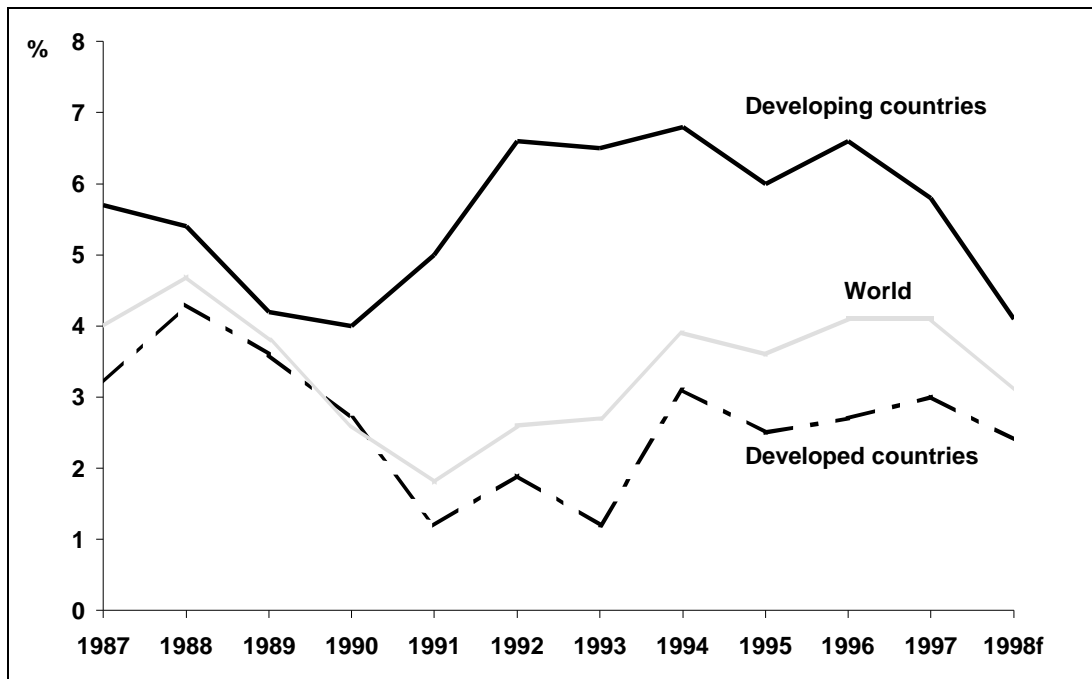
Figure 3: Performance of emerging market currencies against the US Dollar (July 2nd 1997–July 27th 1998)



Source: Datastream/ICV

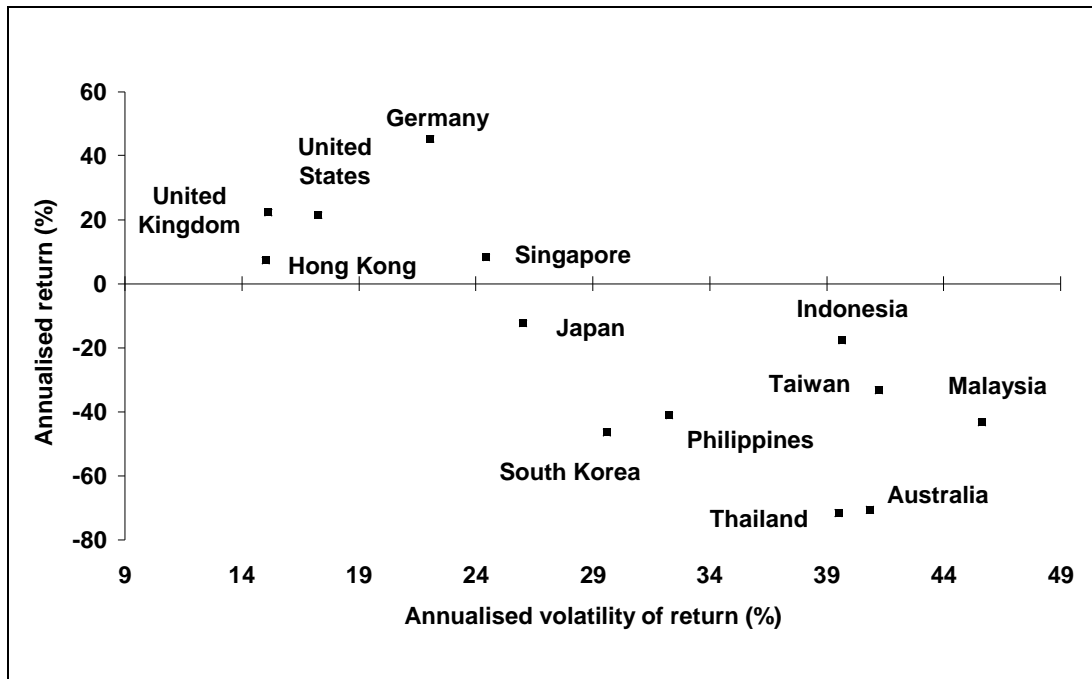
The rapid depreciation in East Asian currencies, coupled with a plunge in asset prices in these countries, led to a fall in real purchasing power as inflationary pressures took root. Concurrently, there was a marked slowdown in economic growth: Asia's real GDP growth declined to 5.8% in 1997 from 6.6% in 1996, with a further decline to 4.1% expected in 1998 (see figure 4). Emerging markets took on an increasingly high-risk low-return profile (see figure 5) as rising volatility and the deterioration in economic fundamentals led to the outflow of capital from these markets.

Figure 4: Growth of real gross domestic output



Source: International Monetary Fund

Figure 5: Risk-return profile of stockmarket indices (December 31st 1997)



Source: Datastream/ICV

Attention had been drawn to the region some 18 months before the crisis broke as rising inflation, labour-market rigidities and substantial current account deficits suggested the possibility of growing complications associated with maintaining a rapid pace of economic expansion. By early 1997, both the Thai stockmarket and the Thai baht experienced increasing downward pressure, apparently over concerns of a continued accumulation in short-term foreign debt and the onset of property deflation. The country's large current account deficit was said to have 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 were thought by some to have exacerbated the slide in its stockmarket.² Although during the initial stages of the crisis the problem was largely regarded as being confined to Thailand alone, the Malaysian and Philippine stockmarkets also began experiencing selling pressure as the conditions in Thailand deteriorated. At the same time, the South Korean stockmarket began to falter with apparent concern over external imbalances, and a sluggish and increasingly financially-strained domestic economy.

² On February 4th, leading property developer Somprasong Land became the first Thai company to default in a Euro-convertible debenture (ECD) interest payment when it failed to honour a US\$3.1 million payment due on its US\$80 million ECD issue. On Monday, March 3rd 1997, trading in the Stock Exchange of Thailand's banking and finance sectors was suspended for one day following the Bank of Thailand's call for an increase in reserve requirements for all financial institutions to re-establish flagging confidence in the financial sector. The sudden nature of the suspension forced at least one brokerage to temporarily halt all of its stock borrowing and lending activities on the Thai market. The SET president justified the unprecedented sector-wide suspension as a means of allowing investors time to analyse the implications of the new reserve requirements for the financial sector. 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, a total of 58 finance companies had their operations suspended by the BOT and MOF and were ordered to submit rehabilitation plans.

The crisis was viewed by some as a serious threat to the stability of the region's financial system. In May both foreign and local players were thought to have amassed short baht positions in anticipation of a breaking of the baht's implicit peg against the US dollar. On May 14th, the Bank Of Thailand (BOT) was reported to have jointly intervened with the Monetary Authority of Singapore to defend the baht in the spot and forward markets. The BOT reportedly spent US\$6.8b of its foreign exchange reserves in its defence of the local currency over the period January–June 1997, and another US\$23b in forward sales transactions.

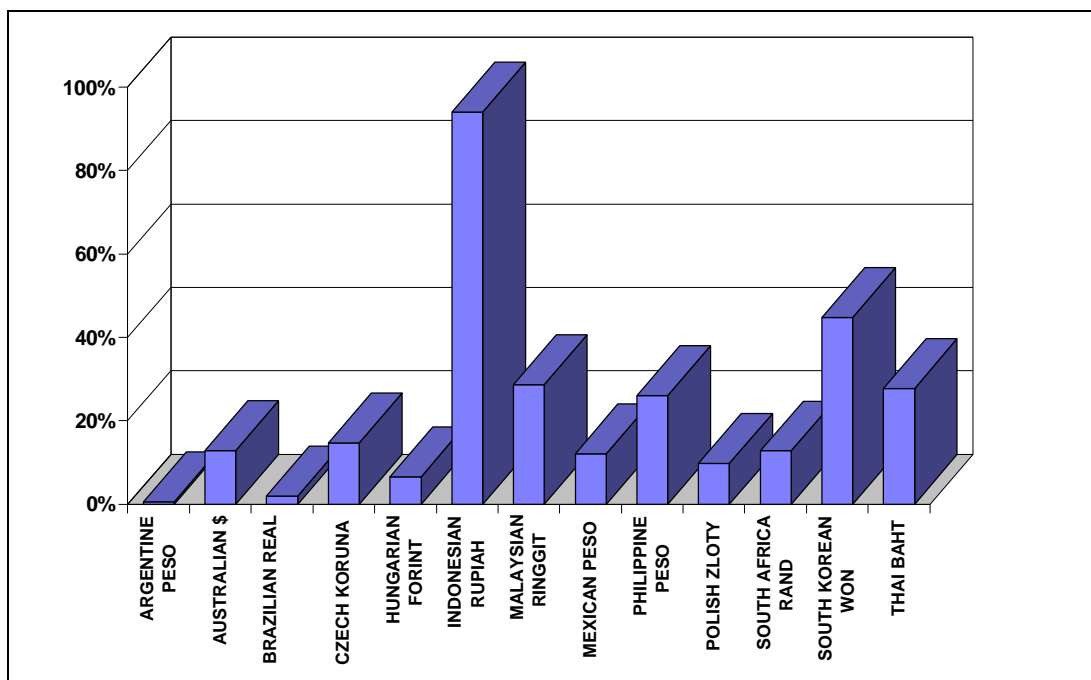
Soon after, the BOT introduced measures to discourage speculation on the baht. From May 16th domestic financial institutions were not allowed to lend or short the baht to non-residents nor buy back baht-denominated debentures before maturity. This effectively segregated the baht market into on-shore 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. After a 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 quickly spread to the other three 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-4 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 downward pressure on Czech and Slovakian currencies, although confidence in global financial markets appeared to hold steady overall. However, within the East Asian region, the Philippine peso, then the ringgit and finally the rupiah succumbed to speculative pressure in quick succession as their respective authorities eased their currency defence. Concerns over highly-leveraged corporate balance sheets was thought to have exacerbated the decline of these currencies against the US dollar. Currency and stockmarket volatility surged amidst uncertainty over these economies' exchange-rate policies (Figures 6 and 7).

On July 28th, Thailand requested technical assistance from the International Monetary Fund (IMF) and other parties; on August 20th, an agreement on a US\$17.2b rescue plan was announced. By then, the turmoil had begun spreading to other parts of the region, although spill-over effects beyond the region still remained limited. Currencies and stockmarkets in Taiwan, Hong Kong and Singapore began to experience downward pressure while yield spreads on international bonds of Asian issuers widened considerably.

Figure 6: Volatility of global currencies (July 2nd 1997–July 27th 1998, annualised)



Source: Datastream/ICV

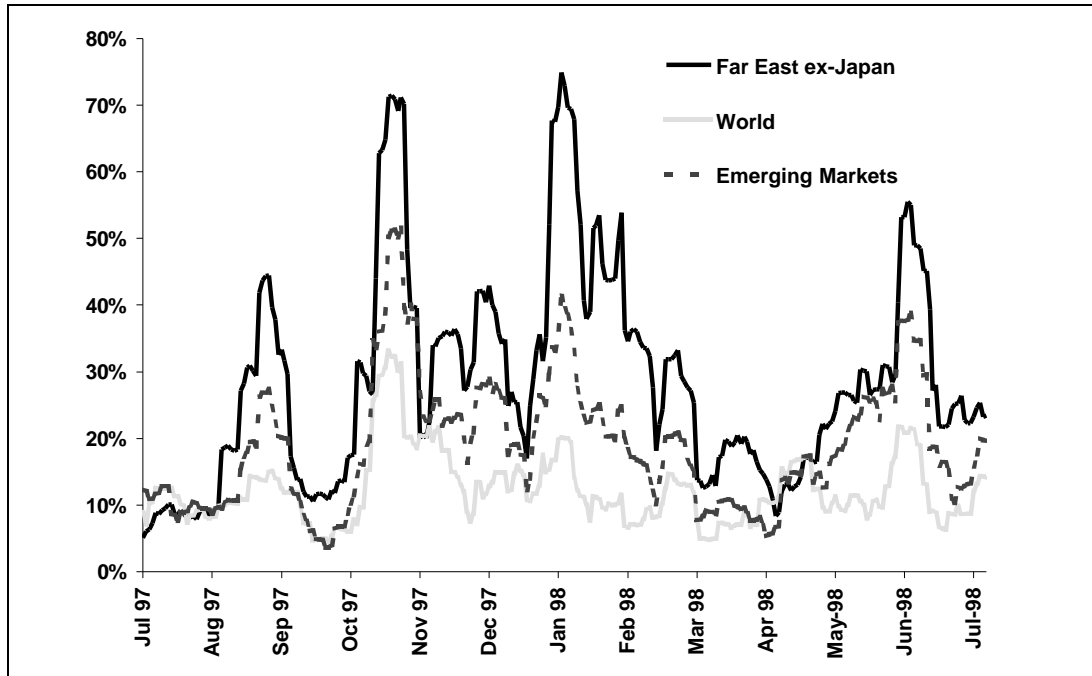
Outside the region, pressure on some currencies in Eastern Europe increased and Latin American Brady bond yield spreads grew wider. Heightened risk pushed emerging market borrowing costs sharply higher which impaired the ability of issuers to service their debt. However, other stockmarkets, especially 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 depreciation of many Asian currencies against the US dollar reinforced perceptions that other emerging market currencies were overvalued. In September–October, strong pressure mounted for the devaluation of these currencies in both spot and futures markets. The central bank of Brazil, for instance, was reported to have 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.³ 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.⁴

³ This decline in reserves however, was temporal as the decisive interest rate hike in November 1997 and the subsequent policy measures undertaken by the Brazilian authorities saw its level of foreign reserves not only recovering, but by April 1998, Brazil's foreign reserves had surpassed its pre-crisis level. At the end of September 1997, operational foreign reserves amounted to US\$61b, corresponding to 12 months of imports. The level of reserves dipped to US\$53b at the end of October but from the beginning of 1998, Brazil's stock of foreign reserves steadily increased, reaching almost US\$74b or 15 months of imports by the end of April 1998.

⁴ On November 5th, the IMF's Executive Board approved financial support of US\$9.9b to be disbursed over a three-year period. In addition, US\$26.7b was pledged by other multilateral organisations, bringing the total financial aid rendered to Indonesia to US\$36.6b.

Figure 7: Volatility of Far East ex-Japan, Emerging Market and World stock price indices (Morgan Stanley Capital International Indices, US\$)



Source: Datastream/ICV

Pressure also began to build on the Hong Kong dollar as fears grew over whether the Hong Kong Monetary Authority could maintain its currency arrangement against the US dollar. After a three-day decline in stock prices, during which the Hang Seng index lost more than 23%, these pressures eventually triggered a correction in stock prices world-wide. Concerns over the vulnerability of Hong Kong's stockmarket and currency, and the potential impact of the Asian crisis on corporate earnings in the United States was believed to have led to a 554.3-point or 7.2% plunge in the Dow Jones Industrial Average index on October 27th. The market's dramatic fall in the United States was echoed 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 stockmarkets 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 reported 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 pre-determined trigger levels. Although existing trading systems were reported to have, in general, functioned satisfactorily during this period of heightened market stress, liquidity in some emerging markets dried when excessive selling pressure emerged. Options trading on the South African exchange, for example, was said to have suffered a selling overhang as a result of surging volatility.

Developments in East Asia continued to have an affect on financial markets around the world through to December. European and American stockmarkets recovered by early December although lower bond yields and a rapidly-appreciating US dollar seemed to imply a continuing flight to safety from stocks in general.

Asian markets remained dogged by regional worries, which were now augmented 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 for a US\$57⁵ 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.⁶

The closures of Yamaichi—Japan's fourth-largest brokerage—in early November and of Hong Kong-based Peregrine Investment Holdings in January 1998 added to concerns over the impact of the crisis on the health of some of the region's financial institutions. As the possibility of more corporate failures grew, 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 1998.⁷

However, a raft of confidence-boosting measures announced by South Korea, Indonesia and Thailand in late January checked the downtrend. South Korea announced a series of liberalisation measures and financial reforms, including the closure of a third of its finance companies and a plan to allow small domestic companies to delay repaying more than US\$533 million in foreign-currency debt.⁸ In 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.⁹ On January 30th, Thailand lifted its foreign-exchange controls, which had been in place since the previous May, as part of the conditions of its emergency aid package. Investor confidence subsequently turned for the better and the region's currency and stock markets surged up. Over the period February 2nd–3rd, the MSCI Far East ex-Japan Index rose by 11.9%, while the Malaysian and Hong Kong stock exchanges, for example, recorded massive gains of 23% and 14% respectively.

But the rally was short-lived. The renewed burst of buying activity quickly petered out because of concerns over the health of the some of the region's banking sectors in the face of mounting non-performing loans and an urgent need for re-capitalisation. Other factors included rising costs of servicing private sector debt and declining property prices.

Developments in Indonesia caught the world's attention in May as social unrest escalated with rising prices. Drastic increases in fuel, transport and electricity prices sparked student demonstrations, riots and looting in Jakarta. By mid-May, the situation deteriorated to such an extent that it brought business activity to a virtual standstill, and jeopardised the ongoing negotiations with international creditors to refinance short-term debts and stabilise flows of trade credit.¹⁰ Increased demands for a change in the political leadership bred fears of further market turbulence, which made creditors increasingly reluctant to maintain their exposure to Indonesia.

⁵ This amount consists of US\$20.9b from the IMF, US\$14b from other multilateral organisations such as the World Bank and the Asian Development Bank and US\$22b from industrial countries such as Australia, Belgium, Canada, France, Germany, Italy, Japan, the Netherlands, Sweden, Switzerland, the United Kingdom and the United States.

⁶ Short-term debt constituted about 55% of South Korea's entire foreign debt burden.

⁷ The Indonesian rupiah subsequently depreciated further against the US dollar to new historic lows in June 1998.

⁸ January 30th 1998.

⁹ January 27th 1998.

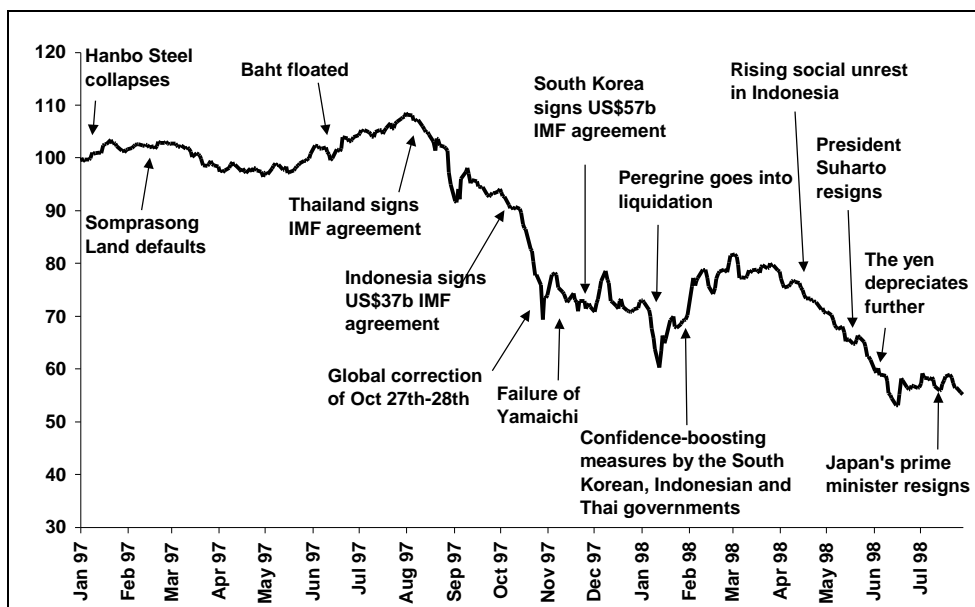
¹⁰ During this period, some brokers reported that they had stopped taking orders because of the high risk of non-settlement. On May 14th–15th, the central bank suspended clearing operations for foreign exchange transactions as its staff stayed home due to rioting and looting throughout the city. The resultant sharp decline in currency market liquidity greatly exaggerated swings in the rupiah, with the currency appreciating by as much as 15% against the US dollar in early trading on May 15th.

Together, these factors added to the financial instability in Indonesia as well as in the rest of the region. President Suharto's resignation on May 21st spurred a brief rally in regional financial markets, although a delay in the resumption of financial aid to Indonesia cast a lingering pall over the region.

Confidence waned further as continued weakness in Japan's financial sector saw the yen decline to eight-year lows against the US dollar in mid-June. Concerns over the economy's exposure as a result of Japan's strong trade links with the United States, its large volume of lending to East Asian countries¹¹ and prospects of an impending recession during the 1997/98 fiscal year were said to have pushed Japanese equity prices lower. Reports of a sharp rise in the so-called Japan premium appeared to reinforce concerns over bank profitability and credit availability in Japan.

On June 9th, 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 some concerns over the heightened pressure on the Chinese renminbi as well as on the Hong Kong dollar to devalue¹². Consequently, the United States 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 July 12th upper house parliamentary election.

Figure 8: Significant events as reflected by the regional stockmarket MSCI Far East ex Japan index, Jan 1st 1997 = 100



Source: Datastream/ICV and Securities Commission, Malaysia

¹¹ Bank of International Settlements 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.

¹² While some analysts took his remarks, the first by a senior mainland official acknowledging the damage inflicted by the weakening yen, as 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, others believed that the importance of the yen's decline was overstated.

3. Causes

This section highlights what has been identified as some of the main causes of the East Asian crisis. Various factors were at play during the crisis and it is likely that a confluence of factors were responsible for the events that occurred. The various causes presented below are not meant to be taken in isolation but have been identified as some of the more significant components that may have led to the emergence of the crisis. This section synthesises information from survey respondents, analysis by external commentators on the crisis as well as conventional economic analysis.

3.1 Macroeconomic issues

3.1.1 Introduction and background

Prior to the crisis, the emerging economies of East Asia recorded real GDP growth rates that were among the highest over a sustained period for any region in the world. Nominal GDP per capita increased at a rapid and steady rate while unemployment rates dipped to historical lows. This rapid and sustained growth was achieved with relatively modest levels of inflation (see table below).

Table 1: Key indicators prior to the crisis in a selection of developing countries

	Average nominal GDP per capita growth rate (%) from 1987–1996	Average annual inflation rate (%) from 1987–1996	Average unemployment rate (%) from 1992–1996
East Asia			
Indonesia	11.1	8.4	3.7
South Korea	14.0	6.0	2.3
Malaysia	10.5	3.2	3.1
Philippines	8.0	10.0	9.3
Thailand	14.1	4.8	2.4
Rest of Asia			
India	1.3	16.6	n.a.
Pakistan	4.6	9.7	5.1
Sri Lanka	7.3	12.2	n.a.
Africa			
Morocco	5.6	4.8	n.a.
Tunisia	6.1	6.2	n.a.
Middle and Eastern Europe			
Hungary	6.5	22.1	11.9
Poland	8.4	112.5	14.8
Turkey	6.3	71.3	7.3
Latin America			
Argentina	10.3	608.3	12.4
Brazil	9.7	1,099.5	5.3
Chile	13.1	15.6	6.5

Table 1: Key indicators prior to the crisis in a selection of developing countries

	Average nominal GDP per capita growth rate (%) from 1987–1996	Average annual inflation rate (%) from 1987–1996	Average unemployment rate (%) from 1992–1996
Colombia	8.0	25.1	9.6
Mexico	8.2	41.7	3.8
Peru	2.2	1,220.3	8.6
Venezuela	1.6	51.3	9.2

Source: Economist Intelligence Unit and Datastream/ICV

Not only did the afflicted economies register strong macroeconomic performance, the usual indicators of an imminent crisis—slowing growth, large and increasing fiscal deficits, high inflation, low saving rates and low investment rates, etc.—as highlighted in the traditional literature on financial crises were not apparent during much of the period before the crisis (see table below).¹³

Table 2: Real GDP growth and fiscal deficits in the decade prior to the crisis in a selection of developing countries

	Average real GDP growth rate (%) for the period 1987–1996	Average fiscal deficits as a percentage of nominal GDP for the period 1987–1996
East Asia		
Indonesia	6.9	-0.5
South Korea	8.4	0.1
Malaysia	8.4	-1.6
Philippines	3.7	-1.4
Thailand	9.5	2.2
Rest of Asia		
India	5.9	-6.9
Pakistan	5.2	-7.2
Sri Lanka	4.5	-8.4
Africa		
Morocco	3.1	-3.3
Tunisia	4.3	-3.8
Middle and Eastern Europe		
Hungary	-0.9	-17.2
Poland	1.2	-3.0
Turkey	4.4	-4.3
Latin America		
Argentina	2.8	-0.9
Brazil	1.9	-4.9
Chile ¹	7.2	1.7
Colombia	4.2	-0.7
Mexico	2.0	-0.1

¹³ See for example “A Model of Balance of Payments Crises” by Paul Krugman, *Journal of Money, Credit and Banking*, vol. 11, 1979, pages 311–325 and “Collapsing Exchange Rate Regimes: Some Linear Examples” by Robert Flood and Peter Garber, *Journal of International Economics*, vol. 17, 1984, pages 1–13.

Table 2: Real GDP growth and fiscal deficits in the decade prior to the crisis in a selection of developing countries

	Average real GDP growth rate (%) for the period 1987–1996	Average fiscal deficits as a percentage of nominal GDP for the period 1987–1996
Peru	1.7	-3.5
Venezuela ²	2.4	-1.2

Source: Economist Intelligence Unit and Datastream/ICV

¹ Average fiscal deficits is for 1989 to 1996, data for earlier years, not available.

² Average fiscal deficits is for 1989 to 1996, data for earlier years, not available.

However, during the period immediately prior to the crisis, some imbalances began to appear in the external sectors of the East Asian economies. These were characterised by, among other things, real-exchange-rate appreciation, slowing export growth, large current account deficits, and increasing short-term external debt.

3.1.2 Capital flow surges

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, a cyclical downturn in global interest rates coupled with the search by international investors for higher yields and diversification opportunities, among other factors, led to the start of the most recent episode of private capital flows to developing economies.

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.¹⁴ 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 line¹⁵. Specifically, according to this analysis weak 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—can result in a credit boom in the recipient economy. Existing structural weaknesses (see next section) allow this credit boom to be sustained and can also lead to the mis-channelling of capital inflows towards non-tradable and speculative sectors such as the real-estate and equity markets.

On the macroeconomic front, it is 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 maintaining a competitive export position—can cause, in the absence of sterilisation, monetary aggregates to increase.¹⁶ This can feed economic activity, inflationary expectations and real exchange rate appreciation. Moreover, excess liquidity may well be channelled into asset markets and, thus, fuel an asset price bubble.

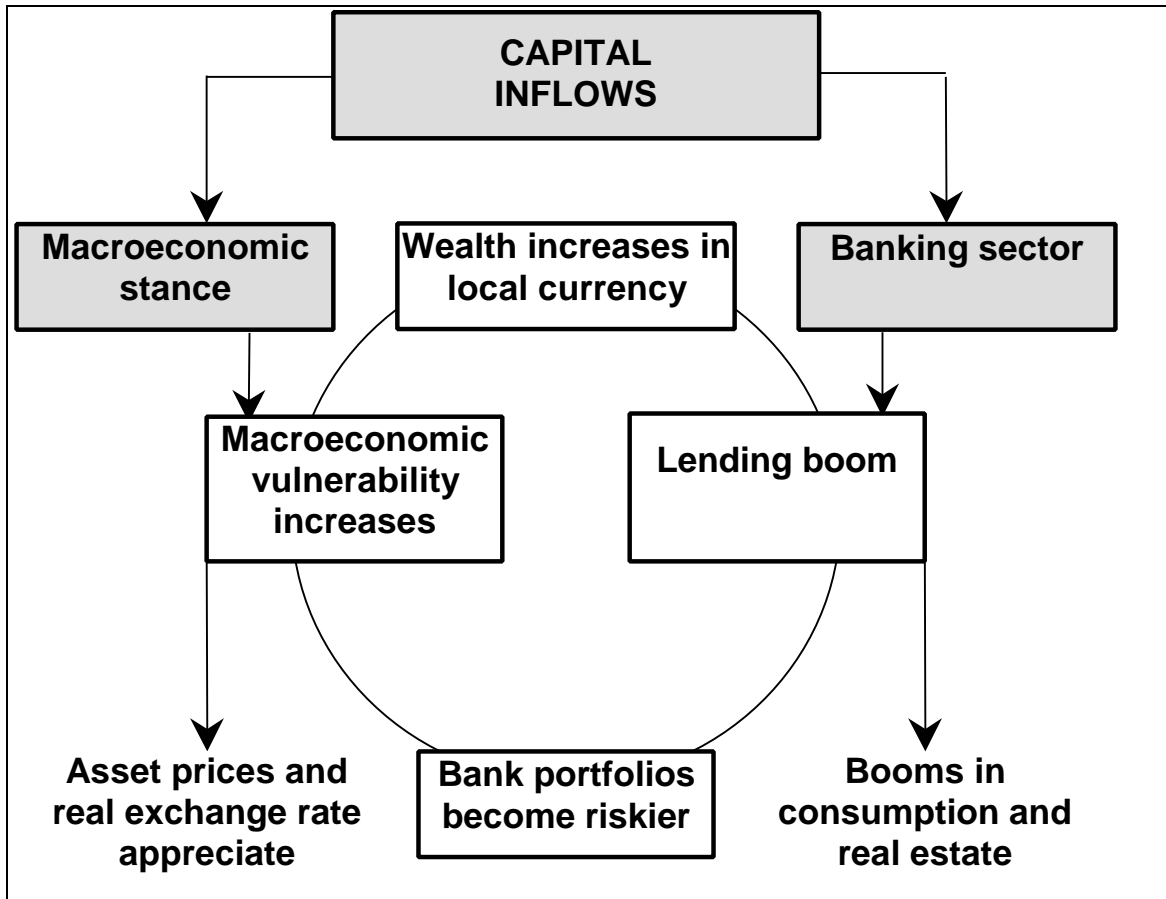
This combination of a credit boom, mis-allocated funds, lax monetary policy and an asset price bubble, driven by a surge in capital inflow, can increase the local currency denominated wealth of the economy. However, the vulnerability of the macroeconomy to sudden reversals in capital flow also increases significantly. 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 (see figure below).

¹⁴ See *Private Capital Flows to Developing Countries: The Road to Financial Integration*, a World Bank policy research report, Oxford University Press, New York, April 1997. Hereafter, World Bank (1997).

¹⁵ See World Bank (1997).

¹⁶ This assumes minimal impediments to capital flows.

Figure 9: Capital flows, lending booms, and potential vulnerability



Source: World Bank¹⁷

The figures in table 3 lend support to the framework above. Recent episodes of private capital flows have indeed resulted in significant credit booms in recipient economies. In most of these cases, structural weaknesses and implicit public sector guarantees (see the next section for further elaboration) are thought to have allowed the easy credit to channel resources to non-tradable sectors.

What this seems to suggest is that the economies receiving capital inflows were, in essence, borrowing foreign exchange and investing them in projects with significant gestation periods which earned domestic currency because they were in non-tradable sectors. This would have given rise to significant currency and maturity mismatches which significantly increased the vulnerability of the recipient economies to adverse external shocks. In one jurisdiction over-investment occurred in sectors which, even though they were traded, were experiencing declining demand. Therefore, there was significant excess capacity in those sectors.

¹⁷ World Bank (1997), page 49.

Table 3: Net private capital inflows to a selection of developing countries, 1990s
(*net long-term international private capital as a percentage of GDP*)

Country	Inflow episode ¹	Cumulative inflows/GDP at end of episode	Maximum annual inflow	Average annual monetary growth (M2) ² 3 years before inflow period	Average annual monetary growth (M2) ² 5 years before inflow period	Average annual monetary growth (M2) ² during the inflow period
East Asia						
Indonesia	1990-95	8.30	3.60	28.67	26.86	24.88
Malaysia	1989-95	45.80	23.20	7.16	19.20	17.54
South Korea	1991-95	9.30	3.50	19.50	7.05	18.76
Philippines	1989-95	23.10	7.90	13.23	12.35	22.74
Thailand	1988-95	51.50	12.30	14.60	14.63	19.35
Rest of Asia						
India	1992-95	6.40	2.70	16.87	16.80	16.20
Pakistan	1992-95	13.00	4.90	12.63	12.40	19.65
Sri Lanka	1991-95	22.60	8.20	14.77	12.78	20.10
Eastern Europe						
Hungary	1993-95	41.50	18.40	28.07	20.58	17.70
Poland	1992-95	22.30	12.00	241.47	164.40	41.68
Latin America						
Argentina	1991-94	9.70	3.80	1263.67	817.22	64.30
Brazil	1992-95	9.40	4.80	1152.23	928.46	1419.90
Chile	1989-95	25.80	8.60	29.13	33.68	23.80
Colombia	1992-95	16.20	6.20	67.13	49.88	36.20
Mexico	1989-94	27.10	8.50	69.37	62.85	50.00
Morocco	1990-95	18.30	5.00	12.43	13.48	12.11
Peru	1990-95	30.40	10.80	635.73	423.54	815.28
Venezuela	1992-93	5.40	3.30	52.00	39.24	20.90

Source: World Bank data; IMF, World Economic Outlook database; IMF, International Financial Statistic data base

¹ The period during which the country experienced a significant surge in net private capital inflows.

² Datastream/ICV (EIU Forecast)

3.1.3 Monetary policy stance that led to overheating economies

At the same time, capital inflows would have led to an expansion of monetary aggregates given the fixed or highly managed exchange rate regime that had been adopted by most of these economies.¹⁸ Many emerging markets that received large capital inflows in the early 1990s appear to have experienced a concurrent expansion in their monetary aggregates, and tried to sterilise inflows, although in many cases this was either incomplete, given the high implied quasi-fiscal cost associated with sterilisation, or it encouraged further short-term inflows.¹⁹

Table 4: Current account deficit in a selection of developing countries (US\$b)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	For the period 1987-1996 (cumulative)
East Asia											
Indonesia	-1.4	-1.1	-3.0	-4.3	-2.8	-2.1	-2.8	-7.0	-8.0	-4.8	-37.3
Malaysia	1.9	0.3	-0.9	-4.2	-2.2	-3.0	-4.5	-7.4	-5.1	-4.9	-29.9
Korea	14.5	5.4	-1.7	-8.3	-3.9	1.0	-3.9	-8.3	-23.1	-13.8	-42.0
Philippines	-1.3	-2.5	-2.7	-1.1	-1.0	-3.0	-3.0	-3.3	-3.9	-4.1	-25.8
Thailand	-1.7	-2.5	-7.3	-7.6	-6.3	-6.4	-8.1	-13.6	-14.7	-5.3	-73.3
Rest of Asia											
India	-7.2	-6.8	-7.0	-4.3	-4.5	-1.9	-1.7	-5.6	-4.1	-4.9	-48.0
Pakistan	-1.4	-1.3	-1.7	-1.4	-1.9	-2.9	-1.8	-3.3	-4.0	-3.4	-23.1
Sri Lanka	-0.4	-0.4	-0.3	-0.6	-0.5	-0.4	-0.8	-0.8	-0.7	-0.6	-5.3
Eastern Europe											
Hungary	-0.4	-0.5	0.4	0.4	0.4	-4.3	-4.1	-2.5	-1.7	-1.0	-13.3
Poland	-0.1	-1.4	3.1	-2.1	-3.1	-2.3	-0.9	5.5	-1.4	-4.8	-7.6

¹⁸ Under a fixed exchange rate or a narrow-band managed exchange rate regime and in the absence of capital controls, any capital inflow would result in the central bank increasing both its holdings of foreign exchange reserves and liabilities (currency in circulation).

¹⁹ Sterilisation in this context amounts to open market sales or the acceptance of interest earning deposits by the central bank of the recipient country to reduce monetary expansion. In conjunction with the increase in the foreign exchange reserves of the central bank arising from its initial intervention to maintain the fixed exchange rate during the capital inflow episode, such sterilisation measures essentially amount to the recipient country's central bank lending at foreign interest rates while borrowing at domestic interest rates. Given that the latter is significantly higher than the former—which is *sine qua non* for the capital inflow in the first place—by sterilising, the recipient country's central bank is incurring significant costs which would ultimately have to be borne by the government, hence the implied quasi-fiscal cost. Capital inflow can be perpetuated by sterilisation operations as the latter exert upward pressure on domestic interest rates which in turn would draw in further capital inflows. See footnote 9 for a definition of quasi-fiscal deficits.

Table 4: Current account deficit in a selection of developing countries (US\$b)

	1988	1989	1990	1991	1992	1993	1994	1995	1996	1997	For the period 1987–1996 (cumulative)
Latin America											
Argentina	-1.6	-1.3	4.6	-0.6	-5.4	-7.5	-10.0	-2.4	-4.1	-9.9	-38.4
Brazil	4.2	1.0	-3.8	-1.5	6.1	0.0	-1.2	-18.1	-24.3	-33.8	-71.5
Chile	-0.2	-0.7	-0.5	0.1	-0.7	-2.1	-0.6	0.1	-2.9	-3.1	-10.7
Colombia	-0.2	-0.2	0.5	2.3	0.9	-2.1	-3.1	-4.1	-4.8	-5.5	-16.1
Mexico	-2.4	-5.8	-7.5	-14.9	-24.4	-23.4	-29.7	-1.6	-1.9	-6.2	-117.7
Peru	-1.8	-0.6	-1.4	-1.6	-2.1	-2.3	-2.7	-4.3	-3.6	-3.3	-23.7
Venezuela	-5.8	2.2	8.3	1.7	-3.7	-2.0	2.5	2.0	8.8	5.6	19.6

Source: Economist Intelligence Unit and Datastream/ICV

A direct consequence of the monetary overhang, along with the credit boom and resultant high rates of investment rates, appear to have been rapid and sustained economic expansion. In some emerging markets, the output gap—defined as the excess of actual output over potential as a percentage of potential output—has been positive for sustained periods and which has in turn led to inflationary pressures²⁰. A substantial proportion of these pressures, however, appear to have been channelled into the stock market and also non-traded sectors with fixed supply. The rapid expansion of the economies also led many of these countries to run significant current account deficits.

²⁰ See for example “Does the Gap Model Work in Asia?” by David Coe and John McDermott, IMF working paper series, WP/96/69, July 1996.

3.1.4 Loss of competitiveness arising from exchange rate policies

In addition to the factors above, the exchange rate regime adopted by most of the afflicted countries was seen by some as having played a crucial role in the emergence of the crisis in East Asia. Many countries in the region appear to have had currencies which were either firmly pegged to or heavily managed within a narrow band against the US dollar. It has been suggested that the reason for this could be because, despite the fact that trade with Japan, Asia and Europe was significant, a large proportion of trading was conducted and denominated in US dollars. Estimates show that the implicit US dollar weights in a composite basket of East Asian effective exchange rates were extremely high (see table below).

Table 5: Implicit weights of US dollar and Japanese yen in nominal values of selected Asian currencies

Currency	Estimate A ¹		Estimate B ²	
	US dollar	Japanese yen	US dollar	Japanese yen
South Korean won	0.96	-0.01	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

Source: Reproduced from the *World Economic Outlook*, International Monetary Fund, October 1997, page 82. Original source: “The Yen and Its East Asian Neighbors, 1980–95; Co-operation or Competition?” by Shinji Takagi, National Bureau of Economic Research working paper no. 5720, August 1996.

¹ 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 Krueger, University of Chicago Press, 1994.

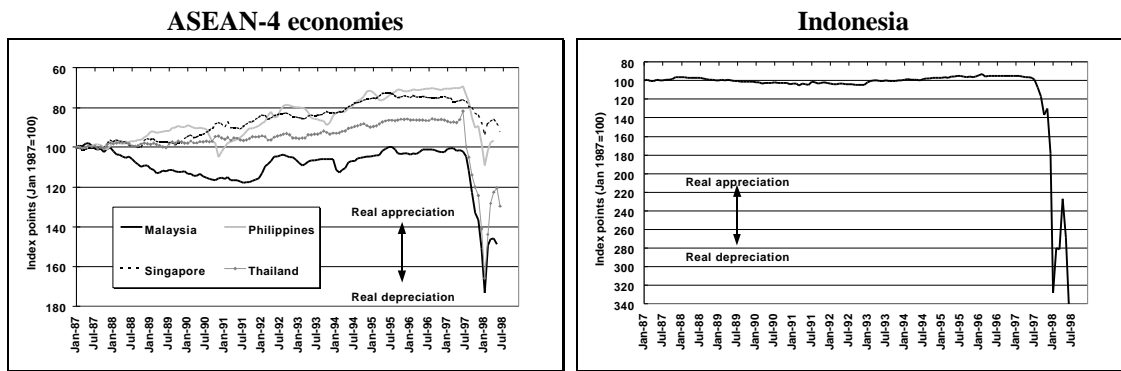
² Estimate B from “*Enken no Keizaigaku*” (“The Economics of the Yen Bloc”) by C.H. Kwan, Nihon Keizai Shiunbunsha, 1995.

A depreciation in the US dollar against major currencies in the first half of the 1990s—due to the United States’ policy of a weak dollar to reverse the cyclical slowdown in the US economy—resulted in the depreciation of the real exchange rate of many East Asian economies and hence an increase in competitiveness against other emerging markets.²¹ However, the situation started to reverse itself in 1995 when the United States stock market began to embark on its journey upwards and the strengthening of the United States’ economy heightened expectations of domestic interest rate increases. This strengthened the

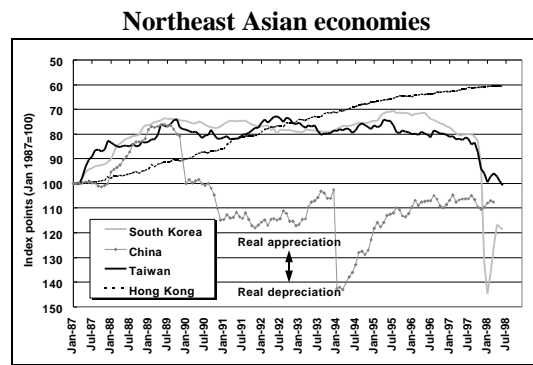
²¹ Declining interest rates in US coupled with tight interest rates in Europe saw interest differentials between US and German short-term interest rates soar to 6.5 percentage points in September 1992. In addition, the first half of the 1990s also saw a steady growth in the size of the US current account deficit without a commensurate growth in its capital account surplus. In particular, the hesitation of Japanese investors in purchasing dollar-denominated assets in 1995 saw the US dollar weakened substantially against the yen. See for example *63rd Annual Report 1992/93*, 14th June 1993, pages 182–183, and *66th Annual Report 1995/96*, 10th June 1996, pages 96–99, Bank for International Settlements.

US dollar and, with burgeoning inflationary pressures in East Asia, meant that the economies in the region experienced very significant real effective exchange rate appreciation (see charts below).²²

Figure 10: Evolution of real exchange rates pre- and post crisis



Sources for all charts: Datastream/ICV and Securities Commission, Malaysia



Sources for all charts: Datastream/ICV and Securities Commission, Malaysia

While the extent of the causal link is ultimately an empirical question, the loss of competitiveness arising from the real exchange rate appreciation was also accompanied by a decline in the global demand for key Asian exports such as semiconductors and electronics. The situation was further exacerbated by dampened demand from a sluggish recovery in the Japanese economy—a destination for a significant portion of the region’s exports. Finally, increasing competition from low-cost countries meant that East Asian countries experienced not only declining export volume but also export prices.²³

²² Given the high implicit weight of the US dollar in the composite basket, the nominal effective exchange rate for East Asian countries was effectively the nominal bilateral exchange rate with the US dollar. The real effective exchange rate is defined as the foreign price index in domestic currency per unit of domestic price index. The strengthening of the US dollar against other major currencies and the greater inflationary pressure in East Asia vis-à-vis the US meant that the real exchange rate appreciation was being fed from two different channels which reinforced one another.

²³ See “Asian Competitive Devaluations” by Liu Ligang, Marcus Noland, Sherman Robinson and Zhi Wang, Institute of International Economics working paper 98-2, Washington, January 1998.

3.1.5 Increased vulnerability to financial crises as a result of an interaction of factors

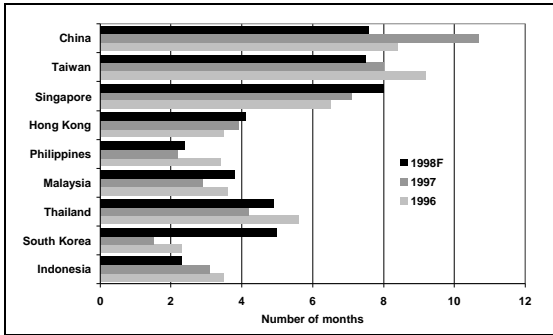
As a result of the confluence of factors above, as well as others, the current account deficits of East Asian economies grew to critical levels. While these deficits were largely financed by private capital inflows, a growing proportion began to be financed by short-term capital flows which are more volatile in nature. At the same time, declining export growth meant that the foreign exchange earning capacity of these economies declined steadily.

Although in many cases the import coverage of foreign exchange reserves was adequate by the IMF's four-month standard (see figure 11), in the presence of high capital mobility, many East Asian central banks are still benchmarking their holdings of foreign exchange reserves, by convention, against current account transactions. However, it has been argued that a more appropriate comparison would be against capital account transactions. The World Bank has noted that for developing countries, levels of foreign exchange reserves need to be established in relation to variation in the capital account rather than in terms of months of imports, since the level of gross flows is higher as they become increasingly integrated to the global financial system.²⁴

Indeed, foreign exchange reserves in most of the worst afflicted economies were generally acceptable in terms of import coverage but were critically low in terms of liquid asset coverage or short-term external debt coverage (see figures below). This situation is thought to increase a (currency) speculative attack's probability of success.

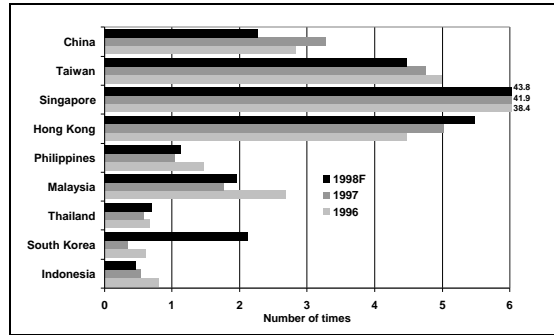
²⁴ See World Bank (1997).

Figure 11: Import coverage of international reserves



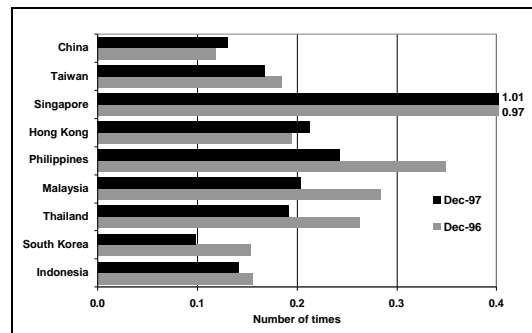
Source: Economist Intelligence Unit and Datastream/ICV

Figure 12: Short-term external debt coverage of international reserves



Source: Economist Intelligence Unit and Datastream/ICV

Figure 13: M2 coverage of international reserves



Sources: Central Bank of Indonesia, Bank of Korea, Bank Negara Malaysia, Central Bank of Philippines, Bank of Thailand, Hong Kong Monthly Digest of Statistics, Chinese Statistical Information and Service Centre, DGBAS Taiwan, Singaporean Department of Statistics, Economist Intelligence Unit and Datastream/ICV

Figure 13: In the case of Philippines, M3 data was used as M2 data was not available.

It has been argued that the apparent rigidity in nominal exchange rates of East Asian economies provided a disincentive for domestic institutions to hedge short-term foreign borrowings, ie, prior to the crisis, given the relative historical stability in nominal exchange rates, the perceived costs of not hedging were minimal. This argument differs from that which suggests a lack of risk management skills among domestic companies and financial institutions. Some commentators have suggested an ironic twist to this issue that when regional currencies started to collapse, the rush to hedge, in itself, placed further pressure on the market (see section below).

3.2 *Structural issues*

3.2.1 **Issues relating to deregulation and liberalisation of the financial sector**

Most of the economies worst-afflicted by the crisis had recently undergone financial sector deregulation and liberalisation, and also capital account liberalisation.²⁵ 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.²⁶

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 deposits. According to the Bank, deregulation and 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 also relaxed, which led banks in some of these countries to become over-exposed to single borrowers and speculative sectors such as real estate.²⁷

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 regulation. 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.²⁸

²⁵ 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.

²⁶ 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).

²⁷ See *68th Annual Report 1997/98*, Bank for International Settlements, June 8th 1998, pages 118–120. Hereafter, BIS (1998).

²⁸ See reference in footnote Radelet and Sachs (1998b).

3.2.2 Underdeveloped debt markets

It has been generally accepted that many of the worst-afflicted economies had underdeveloped debt markets and, as a result, an over-reliance on banks as the primary vehicles for financing. One consequence of this, as noted in a report by the BIS, was that the lack of a well-developed domestic debt market meant that Asian banks which had a mainly short-term deposit base found it difficult to hedge 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, this provided illusory protection to the extent that it made banks complacent to the fact that sudden, sharp and sustained interest rate increases which occurred during the speculative attacks on their respective currencies rendered many long-term borrowers insolvent thus transforming interest rate risk into credit risk.²⁹

It might be argued that, in addition to the above, an alternative channel of financing provided by a well developed domestic debt market would also have decreased the probability of sudden reversals of capital flows as these debt markets would have ensured that any initial surge in capital flows would have been more effectively intermediated and deployed into projects and/or instruments whose maturities were better-matched.

²⁹ See BIS (1998), pages 118–120.

3.2.3 Regulation and supervision of financial institutions

Another problem that has been commonly cited is weak or ineffective regulation of financial and banking institutions. Regulatory reforms were viewed to be partial and incomplete giving rise to loopholes which were exploited by firms. It has also 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 imposed³⁰. 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 its recent annual report that in spite of Asian banks operating in riskier or less well diversified environments, only three jurisdictions had ratios which were significantly higher than the minimum set by the Basle Capital Accord³¹. The factors above are also likely to have contributed to the development of a credit boom in and the rapid leveraging of several East Asian economies (as described in the section above).

³⁰ See among others Radelet and Sachs (1998b).

³¹ See BIS (1998).

3.2.4 Disclosure and corporate governance issues

Some commentators have also noted the role of disclosure and corporate governance issues in the crisis. In particular, it has been suggested that such issues contributed to the crisis in two ways.³² Firstly, it has been argued that inadequate disclosure and weak corporate governance allowed significant problems to build up in the financial and corporate sectors of many of the worst-afflicted jurisdictions. International investors and external creditors—due to a lack of due diligence on their part and also to the lack of transparency arising from inadequate disclosure and weak corporate governance on the part of domestic financial institutions and corporations—did not accurately appraise the situation. As a result, apparently questionable commercial decisions were argued to be insulated from market discipline.

Secondly, as the situation in East Asia deteriorated, the inability of international investors and external creditors to differentiate between sound financial institutions and corporations from the distressed ones resulted in the problem of adverse selection.³³ 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. It is believed that this contributed significantly to the erosion of confidence and in part exacerbated the initial virulence of the East Asian crisis.

At the financial institution level, for example, the World Bank 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.³⁴ 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.

At the corporate level, the World Bank noted that the ownership structure of public listed companies in certain jurisdictions were typically owner-managed.³⁵ It has been argued that such ownership structures do not readily promote the appropriate incentives for strong corporate governance and despite recent improvements in disclosure and other requirements there was perceived to be inadequate protection for minority shareholders. The World Bank report also highlighted that poor corporate governance was also evident in the lack of impartial audit committees and of independent directors in some of the East Asian corporations. The absence of such oversight resulted in a lapse of discipline in corporate behaviour.

In at least one jurisdiction, it was reported that the rapid growth and the massive size of some of the largest corporations resulted in them being viewed as “too big to fail” and thus encouraged excessive risk-taking on the part of those corporations. In addition, it was argued that the non-transparent system of interrelated ownership of this jurisdiction were exploited by majority shareholders to conduct favourable transfer pricing between its subsidiaries in order to cross-subsidise money-losing units within the group and also to provide implicit and explicit guarantees for bank loans. The extensive system of cross-guarantees also made it difficult for outsiders (like minority) shareholders, in particular, and the market, in general, to disentangle their respective exposures to ensure appropriate valuation of collateral offered as security for loans and the allocation of losses. This is believed to have contributed further to the erosion of investor confidence when the situation begin to deteriorate.

³² See “East Asia’s financial crisis: causes, evolution, and prospects”, chapter 2 in *Global Development Finance: Analysis and Summary Tables*, the World Bank, March 1998, pages 29–48. Hereafter, World bank (1998).

³³ 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.

³⁴ See World Bank (1998).

³⁵ See World Bank (1998), page 36.

3.2.5 Distorted lending decisions as a result of a confluence of factors

Most economists appear to agree on the presence of significant structural weaknesses which undermined the fundamentals of the region. However, it is clear that there are differences of opinion on the role of the structural weaknesses discussed above. There are currently two dominant views emerging from the current academic debate on the crisis: fundamentals or financial panic. The first view emphasises the importance of weak fundamentals arising from structural weaknesses while the second view emphasises the role of financial panic as the essential driver of the crisis.³⁶ However, as has been noted by some commentators, both of these views are not entirely inconsistent with one another.³⁷ The latter, a third view, appears to approximate reality the best.

The third view synthesises the first two by noting that a confluence of the factors listed above appeared to produce an environment where financial institutions were the main source of financing, over-guaranteed, under-regulated and faced significant competitive pressures. In such an environment, financial institutions were encouraged to make decisions not on the basis of expected returns—as they normally would—but instead on the basis of “ideal returns”—ie the value a variable would take if the lender lives in the best of all possible worlds.³⁸ It has been demonstrated that under such circumstances, a financial intermediary, due to its perception of being implicitly guaranteed by the government, 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 cost³⁹ 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.

It has been argued that once the collapse occurs, financial panic can lead to a situation in which capital withdrawal from the region became grossly disproportionate to the underlying problems.⁴⁰ This view highlights that fact that financial intermediation which relies mainly on banking-type institutions has always been plagued by the basic problem of maturity mismatches which brings along with it the attendant risk of self-fulfilling crises due to the sequential servicing constraint faced by banks.⁴¹ A corollary of this is

³⁶ See “What Happened to Asia?” by Paul Krugman, unpublished mimeo, January 1998 (available through the Internet at <http://web.mit.edu/krugman/wwwDISINTER.html>) for an example of the first view. An example of the second view is “The Onset of the East Asian Crisis” by Steven Radelet and Jeffrey Sachs, unpublished manuscript, Harvard Institute for International Development, March 1998, (available through the Internet at <http://www.hiid.harvard.edu/pub/other/eaonset.pdf>). Hereafter Krugman (1998) and Radelet and Sachs (1998a) respectively.

³⁷ See “What Caused the Asian Currency and Financial Crisis?” by Giancarlo Corsetti, Paolo Pesenti and Nouriel Roubini, unpublished manuscript, March 1998 (available through the Internet at <http://www.stern.nyu.edu/~nroubini/asia/AsianCrisis.pdf>).

³⁸ This view is credited to Krugman (1998), who describes this as the case of “heads I win, tails someone else loses”.

³⁹ The cumulative implicit guarantees by the government are regarded as quasi-fiscal costs because they would ultimately be taken to the government’s books when a bailout or rescue is needed.

⁴⁰ See Radelet and Sachs (1998a).

⁴¹ There is always a risk of self-fulfilling crisis in banking intermediation as banks typically borrow on a short-term from its depositors and lend to long-term investment projects. At anytime however, a bank would have sufficient liquidity to service typical depositors’ claims. However, if all depositors lined up to redeem their deposits at once, the bank would not be able to meet its short-term obligations. Depositors

that even a reasonably sound economy can be subject to panic and devastating runs on its currencies due to self-fulfilling rumours. According to this view, a combination of panic on the part of the international investing community, policy mistakes at the onset of the crisis by Asian governments and poorly-designed rescue programmes turned the withdrawal of capital into a full-fledged financial panic and deepened the crisis by more than was either necessary or inevitable.

knowing this realise that it is a case of “first in best dressed”. In that sense, banks face a sequential servicing constraint. See “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.

3.3 Financial market issues

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 devaluations 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 market 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 (OTC) 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. The matter is still being debated even as this report goes into print. 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 is dispute in 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 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.

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.⁴² 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.

⁴² See “Mechanics of Speculative Attacks” in *International Capital Markets: Developments, Prospects, and Key Policy Issues*, International Monetary Fund, November 1997, pages 37-38.

OTC and off-balance-sheet activity

The response of several emerging market authorities, among other factors, suggests that the use of over-the-counter instruments (in particular, derivatives) and off-balance-sheet items, while in itself unlikely to have triggered market disruption, may have contributed to the severity and dynamics of the current financial crisis. For example, financial authorities in certain Eastern European and East Asian jurisdictions are reported to have taken or have considered taking measures against a form of OTC currency derivative known as non-deliverable forwards (NDFs) that are said to have played a role in heightened volatility of domestic currencies and securities. Moreover, it has been suggested that the use of such products exacerbated both the European exchange-rate mechanism crisis of 1992–93 and the Mexican peso crisis of 1995–96,⁴³ and that their use may have had a similar effect on the recent crisis in Asia.

Survey responses have 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.

While some have argued that much OTC and off-balance-sheet activity is, in fact, prudent and proper, others have raised specific concerns relating largely to the difficulty in monitoring such activity—compared to that which takes place on-exchange for example. These concerns tend to stem from the relative ease with which such instruments can provide leverage, and hence amplify risks; their ability to facilitate complex speculative positions; and the fact that they are, by and large, opaque to accounting recognition, measurement and disclosure.

First, there is some concern that their use can exacerbate short-run price volatility. A recent report by the Basle Euro-currency Standing Committee identifies several ways in which this may occur⁴⁴. The continuous revision of hedge positions (“dynamic hedging”) of short options exposures, which requires the purchase of underlying assets when markets rise and their sale when markets fall, can accentuate an initial price-shock through positive feedback effects. Related to this, so-called “hedging overhangs”, in which hedging transactions are undertaken by many market participants simultaneously, may trigger large price movements. Volatility may also beget volatility: in times of heightened price fluctuations, margin and collateral calls on derivative-based positions may force the liquidation of both derivative and underlying positions; moreover, the strict assumptions underlying derivatives pricing and trading can become invalid during times of severe market stress, and this can lead to a reduction in market liquidity and can generate valuation uncertainties.

Second, there is some concern that certain OTC instruments facilitate excessive risk-taking by market participants. While there is some debate as to whether they *encourage* market participants to assume too much risk, it is generally accepted that such instruments make it relatively easy for users should they wish to do so. This is because, by affording leverage and low transaction costs, they facilitate the taking of speculative positions. Thus, they 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

⁴³ See “Derivatives and Financial System Soundness” by David Folkerts-Landau and Peter Garber, a paper prepared for the MAE and IMF Institute programme on “Banking Soundness and Monetary Policy in a World of Global Capital”, January 27th–31st 1997. Hereafter, Folkerts-Landau and Garber (1997).

⁴⁴ See “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.

also enable market participants to circumvent prudential regulations or controls, and thus allow them to assume more risk than they otherwise could have.⁴⁵

A third area of concern that has also been identified is that OTC instruments, through particular features such as complex pay-off structures and cross-border components, can be opaque to on-balance-sheet accounting techniques. It is argued that this makes it easier for market participants to circumvent (or at least only partially comply with) domestic capital controls, reporting requirements and prudential 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.^{46, 47}

⁴⁵ See Folkerts-Landau and Garber (1997).

⁴⁶ See Folkerts-Landau and Garber (1997).

⁴⁷ 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.

Financial contagion

If nothing else, the sequence and breadth of events in 1997 underlined a consequence of an increasingly globalised and integrated financial system. Indeed, 1997 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.

The financial turbulence may be traced through a chain of financial events that include, as a major link, the collapse of a speculative real estate bubble in Bangkok which surfaced in the guise of the default of the Somprasong Land Euro-convertible in January 1997. The countries of East Asia have experienced numerous financial crises in the modern era, but the notion of defaults on Thai property loans rocking the currencies of, among others, Korea, Estonia, and Brazil would have been regarded as fanciful less than five years ago.

The issue of contagion can be addressed at two levels. Firstly, contagion can be addressed at the cross-market level, ie, how volatility in one market is transmitted to another market within the same economy. For example, from the currency market to the securities market. Secondly, contagion can be addressed at a broader level, that is, cross-country contagion effects and the channel(s) through which it occurs.

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.

In terms of cross-country contagion, a clear consensus which appears to be emerging is that bilateral trade links and investment shares alone cannot account for the scope and the scale of the contagion. In an effort to understand the reasons for cross-country contagion effects and the channels through which it occurred, various views have been advanced.⁴⁸

One view is that the troubles in Thailand which began in the second half of 1996 and culminated in the floating of the baht on July 2nd 1998 acted as a “wake-up call” to investors who had been excessively euphoric over the fundamentals of emerging market economies.⁴⁹ Weaknesses that had been overlooked, ignored or justified on the basis of expected returns were from then on viewed with greater scrutiny. In essence, investors' risk aversion jumped by quite a few points higher and, as a consequence, any situation

⁴⁸ See for example *68th Annual Report 1997/98*, 8th June 1998, Bank for International Settlements, pages 105-110 and “The Asian Financial Crisis” by Morris Goldstein, *International Economics Policy Brief*, Institute of International Economics, 1998. Hereafter, Goldstein (1998). This document is available via the Internet on <http://www.iie.com/news98-1.htm>.

⁴⁹ A recent study found that the sharp decline in average spreads on emerging market eurobonds between the second quarter of 1996 and the third quarter of 1997 was considerably greater than could be accounted for by improved economic fundamentals in borrowing countries. While not fully conclusive, this is suggestive that financial markets were overly exuberant on the credit-worthiness of borrowing countries in emerging markets. As such, when a correction/reassessment came, markets swung to the other extreme. See “Spreads and Risk in Emerging Market Lending” by William Cline and Kevin Barnes, Institute for International Finance research paper, no. 97-1, November 1997.

in Indonesia, South Korea, Malaysia and the Philippines which bore the slightest resemblance to that in Thailand came to be viewed in the worst possible light.⁵⁰

A second view is that the differences in liquidity over time and across markets also led to what the BIS has termed “proxy hedging”.⁵¹ This occurs when equity funds, in response to a market crisis in a particular geographical region, liquidate positions in markets which are barely affected and geographically removed in order to raise liquidity in anticipation of margin calls of a significant wave of redemptions.⁵² This can aid in the transmission of the selling pressures across geographical markets which, on the face of things, would otherwise seem totally unrelated.

The third view concerning the mechanism of transmission has been defined as the “dynamics of devaluation”.⁵³ The initial devaluation of the Thai baht and some other currencies within the East Asian region resulted in real exchange rate depreciation of these economies. This however, resulted in an increase in the relative competitiveness of these economies vis-à-vis other emerging market economies. As a consequence, the currencies of other emerging markets became increasingly over-valued vis-à-vis the economies which have undergone a devaluation and hence, it is thought, came under pressure themselves to depreciate.⁵⁴

The fourth view of cross-country contagion is the so-called “demonstration effect” of profits and losses on speculative positions.⁵⁵ The realisation of profits and losses from speculative positions in the past can lead to shifting in such positions that increases the probability of another depreciation. The first wave of exchange rate volatility awakened domestic corporations with unhedged foreign currency exposure to their speculative positions and the urgency of hedging.⁵⁶ However, it has been argued that this rush to hedge only caused further depreciating pressures on the respective currencies. A widening of bid-ask spreads on the indicated prices of currency options in Asia suggested that the availability of such hedges diminished rapidly just when they were most in demand.⁵⁷

Last is the question of why some economies proved more resilient than others to the East Asian crisis. Many observers credit this to the presence of stronger financial sectors and better banking supervision in these economies. For example, their banking sectors, while competitive, tended to have little directed lending. Implicit guarantees were perceived to be minimal and supervision more effective. Credit booms,

⁵⁰ After the Mexican crisis in late 1994, investors singled economies with wide current account deficits and rigid exchange rate regimes. See also pages 108-109 of BIS (1998) for a detailed account of how similarities in the exchange rate policies of Thailand and Czechoslovakia resulted in the transmittal of speculative pressure on the baht to the koruna.

⁵¹ This essentially describes the behaviour of investors who in anticipation of thinning liquidity in a market under pressure sell portions of their portfolio in other markets where liquidity has not yet been affected. See BIS (1998) page 109.

⁵² See *International Financial Market Developments* by the Monetary and Economic Department, Bank for International Settlements, February 1998, page 8. This document is also available on the BIS World Wide Web site (<http://www.bis.org>).

⁵³ See Goldstein (1998).

⁵⁴ Correlation analysis confirms the dynamics described above; see by the BIS (1998). It was noted that despite the differences in the export composition across all Asian economies, they each compete closely with at least two other economies within the same group. The correlation analysis found that close competitors experienced a similar depreciation in their currencies against the US dollar, and hence limited change in relative competitiveness vis-à-vis one another.

⁵⁵ See BIS (1998), page 106.

⁵⁶ The fixed or rigid exchange rate regime of many East Asian economies gave domestic corporations little incentive to hedge their foreign currency exposure. Nevertheless, this does not change the fact that unhedged foreign exchange exposure are essentially speculative positions.

⁵⁷ See Bank for International Settlements, *68th Annual Report 1997/98*, Basle, Switzerland, 8th June 1998, pages 108–110.

while not altogether absent, were not fuelled to the extent that they were in other more affected economies. Lastly, institutional strength and governance in these economies are generally accepted to be stronger and more established compared to the worst afflicted economies.

Table 6: Key banking sector indicators in East Asia

Country	Bank capital as a percentage of total assets, %	Non-performing loans ratio, %	Property lending as a percentage of total lending, %	Vacancy rate for office space, %
Affected economies				
Indonesia	8.7	9.2	19.7	8.9
Thailand	6.2	18.0	12.6	23.6
South Korea ¹	3.4	17.0	8.5	n.a.
Malaysia	7.7	9.1	26.2	3.7
Philippines	13.7	5.3	13.7	2.6
Unaffected economies				
Hong Kong, SAR	10.2	2.1	21.6	6.4
Taiwan	n.a.	n.a.	n.a.	n.a.
Singapore	10.9	3.8	16.0	8.0
China ^{2,3}	n.a.	25.0	n.a.	37.4

Source: Goldman Sachs⁵⁸

¹ Based on January 1998 data.

² See “Economic and Currency Outlook for China and Hong Kong” by the Goldman Sachs Asia Economic Research Group, in *Asia Economic Analyst*, issue no. 98/15, May 26th 1998, page 6.

³ Vacancy rates are for the Shanghai region only.

⁵⁸ “Details of Asia’s Debt” by the Goldman Sachs Asia Economic Research Group, *Asia Economic Analyst*, issue no. 98/17, June 9th 1998, pages 7–8. In addition to Goldman Sachs’s own estimates, the study also drew data from the International Financial Statistics, the Asian Development Bank, the World Bank and the CEIC.

4. Effects

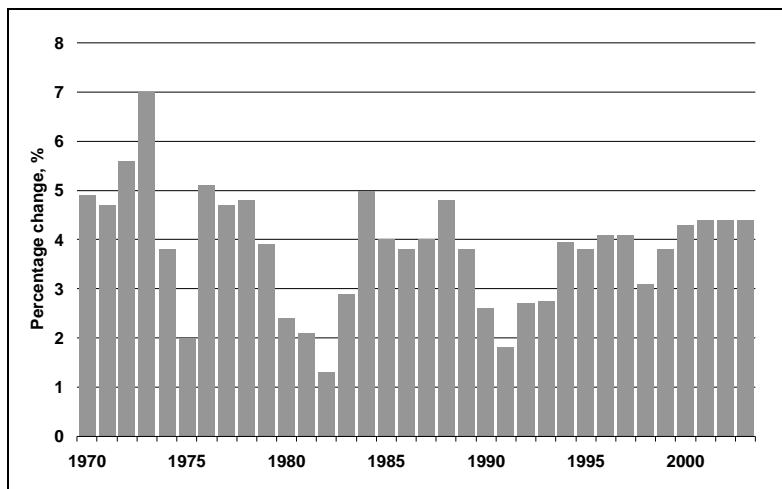
4.1 Broad economic effects

4.1.1 Global economy

The East Asian crisis and the resultant financial and economic turbulence during 1997–98 is expected to have a significant, adverse effect on global economic growth. The countries of East Asia, excluding Japan, which have been most affected by the crisis, have accounted for approximately half of the growth in world output since the early part of the decade.⁵⁹ Therefore, the expected slowdown in the region's growth arguably has the potential to offset if not overwhelm any prospective upturn in the European Union.

Forecasts for global growth were revised several times as the situation in East Asia continued to deteriorate. A recent forecast by the IMF puts global economic growth for 1998 at around 3%. This is less than its December 1997 forecast of 3.5% and much less than its October 1997 forecast of 4.3%. The IMF has noted, however, that from a historical perspective the fallout from the East Asian crisis is not expected to be as severe as the global slowdown of 1974–75, 1980–83 and 1990–91 during which growth in each period amounted to less than 2%. Nevertheless, recent developments appear to suggest that the global impact could require further downward revisions in these forecasts.

Figure 14: World economic growth



Source: International Monetary Fund

The IMF expects the East Asian crisis to exert a dampening and disinflationary effect on industrial countries. This would reduce the risk of overheating in economies operating at or near capacity such as the United States and Britain. The expected slowdown in global economic growth and ensuing lower demand

⁵⁹ These countries account for only a fifth of total world output measured by GDP.

have relieved some of the pressure on world commodity prices. Long-term interest rates are expected to pick up slightly and flatten out towards the turn of the millennium.

The exact implications of the East Asian crisis on global economic growth are difficult if not impossible to forecast as the crisis and the resultant financial turbulence continue to unfold. The more pessimistic view anticipates global deflation which would follow a collapse in the region's consumption and investment demand. Other economists see the effects of the crisis to be relatively contained within the region and effects on global economic growth to be manageable in light of the robust growth prospects for domestic demand in industrial countries.

In addition, the floating exchange rate regime currently adopted by most industrial economies—as opposed to the fixed exchange rate regime in the 1930s—presents policy makers more room to manoeuvre in averting a global deflationary spiral. Where necessary, central banks are expected to adjust monetary policy to accommodate for the adverse deflationary shocks emanating from the East Asian crisis by reducing interest rates and expanding the money supply.

The East Asian crisis is also expected to have a very significant effect on the pattern of global trade, for several reasons. First, sharp real-exchange-rate depreciation has meant that exports of the worst-afflicted countries have become significantly more competitive relative to those of other developing and industrial countries—at least to the extent that the anticipated jump in inflationary pressures in these countries does offset the real competitive gains. Second, in response to currency devaluation and slower growth, East Asian countries are expected to exploit their surplus productive capacity and be exceptionally aggressive in trying to export their way out of a recession. This surplus is the result of a rapid accumulation of capital during the 1990s. Estimates suggest that Asia accounted for about two-thirds of all capital investment in the world economy since 1990. Third, an expected slowdown in investment growth, especially of East Asian economies, would lead to a lower demand for imports.

There are some concerns that the crisis could raise tensions over global trade and possibly spur protectionism within the major economies. Studies estimate that the crisis in East Asia might add around US\$100–150b to the region's trade balance with the rest of the world, with the global impact approximately divided equally among the United States, the European Union, Japan and other emerging market economies.⁶⁰ Some however, estimate a greater impact of the crisis on the United States' economy given its large exposure to East Asia excluding Japan, where the crisis was most acute.⁶¹

⁶⁰ See for example “Impact of the East Asian Financial Crisis on Trade of Industrial and Emerging Market Economies” by Alan Zhang Xiaoming and William Cline, Institute of International Finance research paper no. 98-2, June 1998.

⁶¹ See for example “Asian Competitive Devaluations” by Liu Ligang, Marcus Noland, Sherman Robinson and Zhi Wang, working paper 98-2, Institute for International Economics. This paper was prepared for presentation at the conference entitled *China's integration into the world economy*, January 17th 1998, Harvard University. The paper reports simulation results which show that the crisis could add more than US\$50b to America's trade deficit, the effect of which would be especially severe in the light manufacturing and machinery sectors.

4.1.2 Domestic Economies

Financial turbulence led to lower growth prospects in several jurisdictions. The latest national statistics of East Asian economies, for instance, have begun to suggest the possibility of a sharp slowdown in economic growth for next year, thus confirming fears that events since mid-year have accelerated an economic weakening of the region. Since May, the IMF has twice revised sharply its forecasts of real GDP growth for several East-Asian economies (see tables below).

Table 7: Revisions to growth estimates for 1997

Country	IMF forecast as of				Consensus forecast as of ¹		
	May 97 ²	Oct 97 ³	Dec 97 ⁴	May 98 ⁵	May	October	December ⁶
Thailand	6.8	2.5	0.6	? 0.4	5.6	1.9	0.9
Indonesia	8.2	7.0	5.0	5.0	7.5	7.4	6.3
Malaysia	7.9	7.5	7.0	7.8	8.0	7.8	7.5
South Korea	5.6	6.0	6.0	5.5	5.4	5.6	5.8
Philippines	6.3	5.3	4.3	5.1	6.1	5.6	5.0
Singapore	6.6	6.0	6.2	7.8	6.9	6.6	6.6

Source: International Monetary Fund

¹ Consensus Economics and consensus forecast surveys.

² May 1997, *World Economic Outlook*.

³ October 1997, *World Economic Outlook*.

⁴ December 1997, *World Economic Outlook: Interim Assessment*.

⁵ May 1998, *World Economic Outlook*.

⁶ Forecast for the selected developing countries in Asia are from the November and October surveys, which are latest available.

Table 8: Revisions to growth forecasts for 1998

Country	IMF forecast as of				Consensus forecast as of ¹			
	May 97 ²	Oct 97 ³	Dec 97 ⁴	May 98 ⁵	May 97	Oct 97	Dec 97 ⁶	Dec 97 ⁷
Thailand	7.0	3.5	-		6.2	2.3	-	? 6.0
Indonesia	7.4	6.2	6.0		7.6	7.6	4.2	? 17.5
Malaysia	7.9	6.5	2.5		8.0	7.6	5.4	? 2.3
South Korea	6.3	6.0	2.5		6.1	6.4	5.4	? 7.9
Philippines	6.4	5.0	3.8		6.3	5.8	4.3	1.4
Singapore	6.1	5.5	4.8		7.3	7.1	5.9	? 0.5

Source: International Monetary Fund

¹ Consensus Economics and EIU consensus forecast surveys.

² May 1997, *World Economic Outlook*

³ October 1997, *World Economic Outlook*

⁴ December 1997, *World Economic Outlook: Interim Assessment*

⁵ May 1997, *World Economic Outlook*

⁶ Forecast for the selected developing countries in Asia are from the November and October surveys, which are latest available

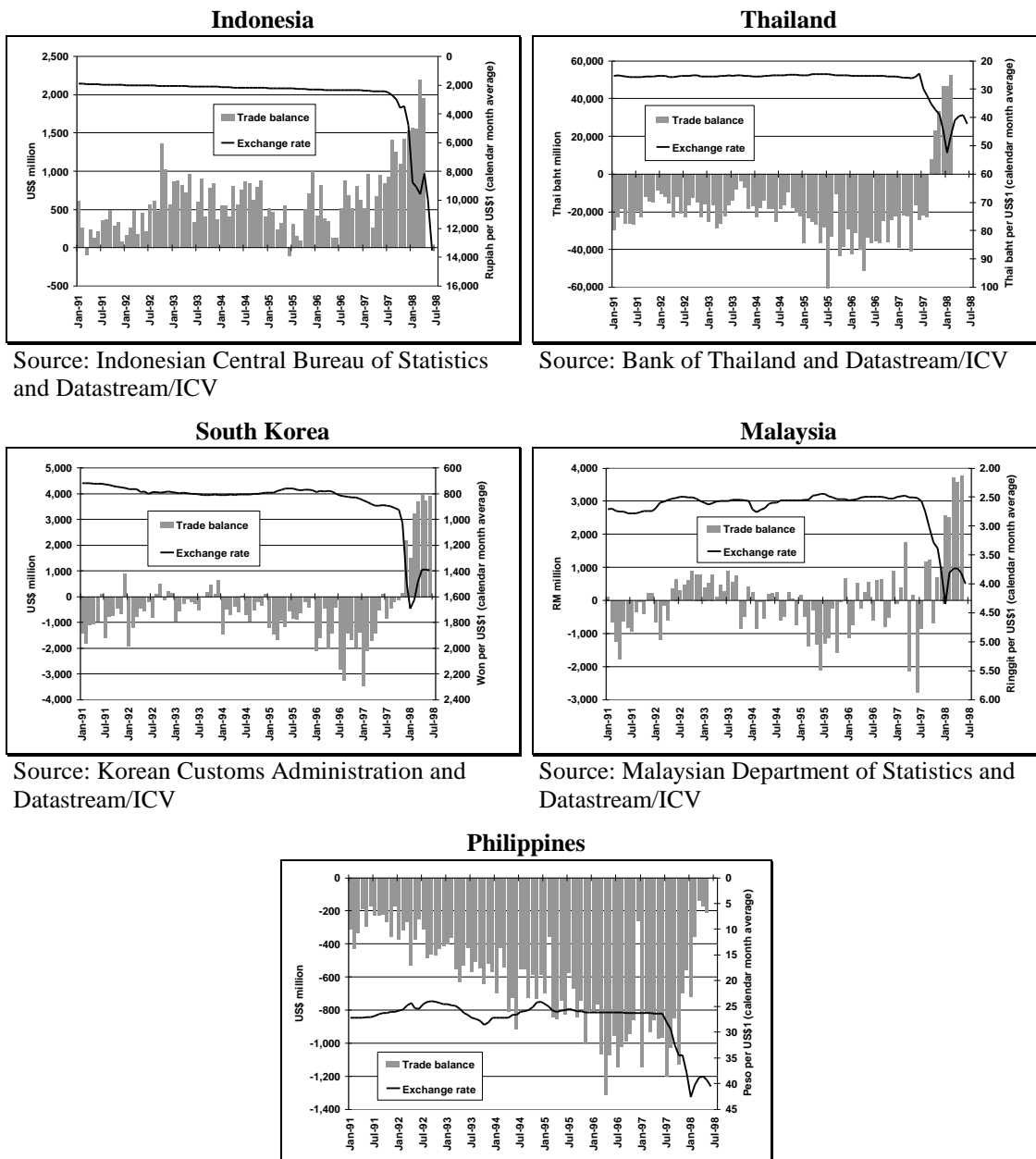
⁷ Forecasts by the EIU's country updates for August 1998 except for Indonesia where the country update is for September 1998. This data has been sourced from the EIU page in Bloomberg.

Thailand, South Korea and Indonesia were the worst hit among the affected jurisdictions. Economic activity in the three IMF programme countries was expected to either contract or remain flat for 1998 with high unemployment from the anticipated massive retrenchment and significant price increases from the greatly devalued currencies. Their neighbours Malaysia, Philippines, Singapore and Hong Kong, were similarly affected, although to a lesser degree.

The impact of financial turbulence on growth was not the same in all emerging markets however. While East Asian economies tended to be negatively affected—China being a significant exception—those in south and west Asia remained largely unaffected. Prospects in selected jurisdictions in these regions remained positive. Eastern Europe also escaped relatively unscathed. The impact on Latin American growth was mixed. One jurisdiction, for example, remained relatively insulated from global currency effects because of its convertibility regime. Others however, saw their growth prospects clouded by rising domestic interest rates rose amidst heavy speculation on their respective currencies.

Currency-devaluation led a sharp improvement in the external accounts of the worst-afflicted economies. In contrast to the experience of most industrial countries, the sharp devaluation in East Asian currencies did not result in an initial worsening of trade deficits—the so called “J-curve- effect”—but instead prompted an immediate reversal. South Korea experienced a sharp contraction in its current account deficit from US\$23.7b in 1996 to US\$8.9b in 1997. A sharp decline in the purchase of capital goods led to a contraction of the trade deficit from US\$15.3b in 1996 to US\$2.3b in 1997. Thailand, Indonesia and Malaysia shared similar experiences (see figure below).

Figure 15: The effect of the nominal devaluations on the visible trade balance



Source: Indonesian Central Bureau of Statistics and Datastream/ICV

Source: Bank of Thailand and Datastream/ICV

Source: Korean Customs Administration and Datastream/ICV

Source: Malaysian Department of Statistics and Datastream/ICV

Source: Central Bank of Philippines and Datastream/ICV

Policy responses by some of these countries are thought to be partly responsible for this phenomenon. In light of the change in economic conditions, some jurisdictions suspended selected infrastructure projects which had been contributing to their significant trade deficits. Others imposed higher taxes on luxury items which contributed to a reduction of imports.

The effect of financial turbulence on the external accounts of other economies was again mixed. At least one jurisdiction in Latin America saw its external imbalance worsened as the rate of foreign investment

needed to finance the current account deficit slowed down. By contrast, the impact on the external position of other jurisdictions in Latin America, nor in those of Eastern Europe, west Asia and the Indian sub-continent was either very little or none at all.

Monetary conditions tightened in several countries with the onset of financial turbulence. During the initial stages of the crisis, monetary authorities in several jurisdictions mounted a vigorous defence of their respective currencies. Although this was ultimately short-lived, interest rates rose sharply during the campaign and remained high throughout the rest of the year. For example, in Thailand, average daily repurchase (repo) and interbank rates nearly doubled in the second half of 1997 to 19.5% and 19.8% respectively.

In these economies, the subsequent contraction in liquidity placed a strain on the financial system and the corporate sector. The threat of corporate and financial insolvency arising from the economic slowdown became more acute with asset-price deflation while domestic banks saw non-performing loans swell as the value of their collateral rapidly-deteriorated. Higher non-performing loans and rising interest rates are believed to have also led to an adverse selection problem in the credit market, in that banks could not effectively distinguish between good and bad borrowers. This resulted in a significant credit crunch in Thailand, Indonesia, South Korea and Malaysia.

None of the other emerging markets whose monetary environment was affected experienced such drastic conditions. Some jurisdictions in Latin America did experience a shift in deposit-demand from local-currency deposits to those denominated in US dollars, while another in Eastern Europe saw a slight flattening of the inverted yield curve. However, several EMC jurisdictions did not observe any impact on liquidity at all during the onset of the crisis. In some, foreign exchange reserves grew and interest rates decreased slightly. In others, large capital inflows arising from privatisation proceeds and a relaxation in commercial banks' statutory reserve requirement in the years prior to the financial turbulence kept liquidity high and interest rates low.

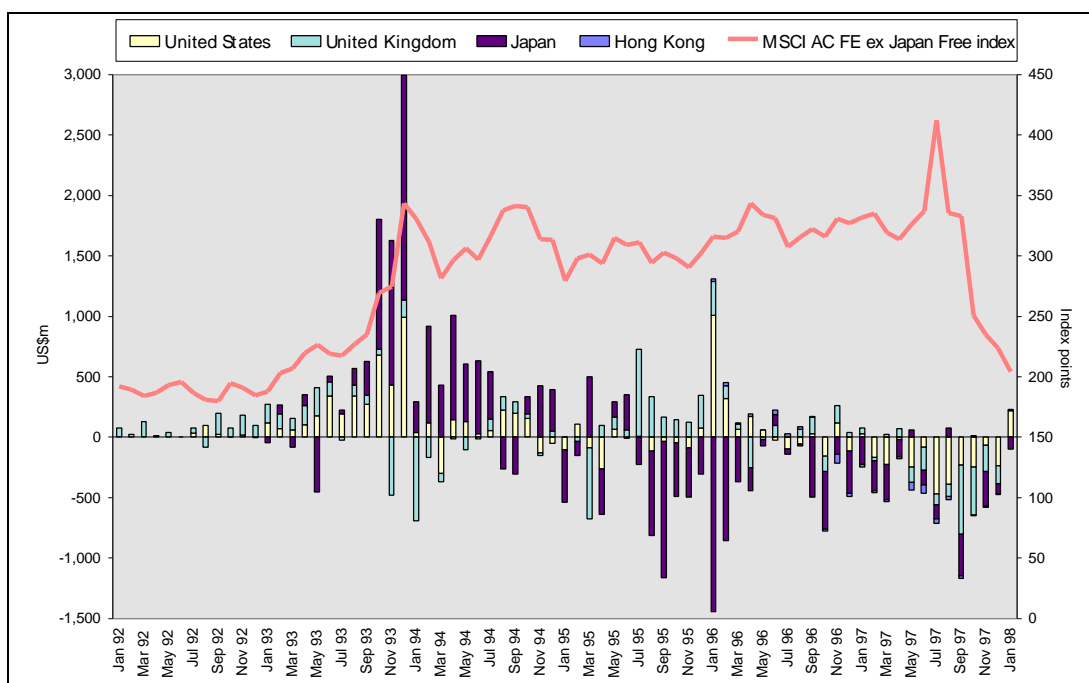
4.2 Effects on securities markets

4.2.1 Capital outflows

Another direct result of the East Asian crisis was the sharp reversal of capital flows which was observed in the second half of 1997 and the first quarter of 1998. Economies which experienced the greatest withdrawal of capital were those in East Asia, namely, South Korea, Thailand, Malaysia and Indonesia—and to some extent the Philippines

According to an early estimate, net outflows from Asian regional ex-Japan funds during 1997 (excluding offshore funds) amounted to nearly US\$6b, growing from US\$171 million in January to peak at US\$1.2b in September.⁶² Including offshore funds, the total figure amounted to just under US\$11b.⁶³

Figure 16: Net flows into Asian regional ex-Japan funds by domicile (monthly)



Source: Jardine Fleming Research

A more recent report by the Institute of International Finance estimates that the five worst-affected Asian economies—Indonesia, Korea, Malaysia, the Philippines and Thailand—experienced a withdrawal by international commercial banks and a departure of portfolio equity investments amounting to an estimated

⁶² Source: Jardine Fleming Research. Based on a monthly survey of United States mutual funds, United Kingdom authorised unit trusts, Japanese investment trusts and Hong Kong authorised unit trusts. For more details on methodology see “Herd Instinct” *Jardine Fleming Research Regional Strategy*.

⁶³ Same source as above, but based on a quarterly survey. Offshore funds include those based in Guernsey, Jersey, Luxembourg, Cayman Islands and Ireland.

US\$31.2b. ⁶⁴ Of this amount more than 86% was estimated to be due to the withdrawal of credit by international commercial banks.

Although this was partly offset by a relatively stable flow of direct investment into these economies, estimated at US\$6.4b, as well as the estimated inflow of US\$12.9b from non-bank private creditors, the five economies experienced a net private outflow of US\$11.9b. This represents a sharp reversal from the US\$97.1b of total private capital inflows registered by these five economies in 1996—a decline of almost 112%. The capital flight from these five economies alone accounted for more than 16% of the total decline in financial flows to all emerging market economies.

Table 9: External financing for five Asian economies

South Korea, Thailand, Indonesia, Malaysia and the Philippines

	1994	1995	1996	1997e	1998f
Current account balance	-24.5	-41.4	-55.2	-27.1	30.6
Net external financing	45.2	84.6	95.2	18.1	25.9
<i>Net private capital flows</i>	37.9	79.2	97.1	-11.9	-0.3
<i>Equity investment</i>	12.1	15.4	18.7	2.1	16.4
Direct equity	4.7	4.9	6.3	6.4	6.9
Portfolio equity	7.4	10.5	12.4	-4.3	9.5
<i>Private creditors</i>	25.8	63.8	78.4	-14.0	-16.8
Commercial banks	23.4	49.9	55.7	-26.9	-19.8
Non-bank private creditor	2.4	13.8	22.7	12.9	3.0
<i>Net official flows</i>	73	5.4	-1.9	30.0	26.2
<i>International financial institutions</i>	-0.4	-0.3	-2.0	22.5	23.2
<i>Bilateral creditors</i>	7.7	5.8	0.1	7.5	3.0
Net resident lending/other*	-15.2	-29.2	-21.6	-30.5	-4.6
Reserves excluding gold (- = increase)	-5.4	-14.0	-18.4	39.5	-51.9

Source: Institute of International Finance Inc⁶⁵

e = estimate.

f = forecast by the staff of the Institute of International Finance, Inc.

*Including resident net lending, monetary gold, and errors and omissions.

The role of rating agencies in exacerbating the capital flight from this region has been noted by some observers. These agencies determine, to a large extent, the investment universe of a significant segment of the international investing community. Many leading United States and European pension funds and institutional investors—who make up the lion's share of global investment funds—are barred from investing in countries or companies that are rated as “speculative” or “non-investment” grade⁶⁶.

⁶⁴ *Capital Flows to Emerging Markets Economies*, Institute of International Finance Inc, April 30th 1998. Hereafter, IIF (1998).

⁶⁵ See IIF (1998).

⁶⁶ Refer to the table 20 in the appendix for a comparison of the various rating definitions used by the leading international rating agencies.

A rating downgrade that reclassifies an issuer to speculative status can have two immediate effects. First, it can trigger heavy selling of the issuer's securities; secondly, it can immediately reduce the particular issuer's access to affordable funding by stigmatising future issues. As such, critics have argued that the severe rating downgrades of the leading international rating agencies contributed in part to the sudden capital flight from the region. They note in particular that the dramatic pre-Christmas rating downgrades of Korean, Indonesian and Thai sovereign bonds to speculative grade instruments in late 1997 were followed immediately by a sharp decline in the won, the rupiah and the baht respectively, the next day.

The BIS, however, notes that it may be misleading to consider rating changes in isolation⁶⁷. It cites, for example, that Standard & Poor's announcement highlighted the uncertainties about the willingness of foreign banks to roll over the maturing placements with Korean banks. The BIS further notes that this uncertainty could have weighed on the won and other Asian currencies. As such, the coincidence of events would make it seem that the rating downgrade actually caused the withdrawal of capital. Hence, the BIS concludes that while rating changes may at times have led the exchange market, they mostly accompany market developments.

⁶⁷ *68th Annual Report 1997/98*, Bank for International Settlements, 8 June 1998, page 110.

4.2.2 Price volatility

Sharp swings in the prices of stocks, bonds and derivatives were arguably the most obvious indication of financial turbulence in emerging markets during the crisis. At times, large price fluctuations, which were evident during the trading day, continued over a period of several days. Stockmarkets, at first immune to currency convulsions, succumbed to each downward lurch in foreign-exchange rates as equity fund managers pared their currency losses by liquidating portions of their regional equity portfolios.⁶⁸

Almost all jurisdictions reported at least one, often more, episodes of volatility spill-over from financial turbulence in other regions to their own domestic markets. The most common episode cited was the global stockmarket correction of October 27th–29th. Nevertheless, there were some markets that were relatively insulated from a large part of the tumult. For example, stock prices in some Middle Eastern jurisdictions did not experience large fluctuations at all. Rather, they rose—in some cases by over 20% over the year.

A striking feature of the crisis was the speedy transmission of volatility during periods of extreme stress, both across geographical boundaries as well as across different asset markets, notably between currency markets and stockmarkets. During times of event risk, the correlation between regional stockmarkets and between stockmarkets and regional currencies against the US dollar tended to rise sharply. Periods of high and correlated volatility also tended to be accompanied by higher trading volume.

Spill-over effects across stockmarkets were more prevalent among East Asian markets during much of the crisis. But the global sell-off (and subsequent correction) of October 27th–29th clearly showed the extent to which they can. Markets in Latin America, Africa and South Asia, as well as those in East Asia, reported significant price movements and a rise in trading activity.

Certain approaches to global asset allocation may have played a role in the transmission of volatility. One jurisdiction suggests that foreign institutional investors may have induced a geographical spill-over effect through the “equalisation” of their portfolios. This involves taking profits in better-performing markets around the world, eg, those in Latin America, to offset losses suffered in Asian markets. They also note a cross-asset impact of such actions. By repatriating their profits from portfolio-equalisation, global institutional investors may have exacerbated fluctuations of domestic currencies. And assuming that monetary authorities undertook to smooth out these fluctuations, this would have had an impact on domestic interest rates as well. But tactical allocation need not result in price declines. Some markets, in particular those in the Middle East and Eastern Europe, saw a marked rise in stock prices through increased foreign demand. Apparently, international investors switched their emerging-market portfolios away from Asia to relatively under-weighted markets.

Several jurisdictions also noted that the general activity of foreign investors tended to have a “bandwagon” effect on domestic investors which could exacerbate price fluctuations. Whether this arose because domestic investors did not have as much information as foreign investors or simply that the market impact of foreign transactions was so strong that it forced smaller domestic investors into tactical responses is unclear.

In several derivative markets, the need for greater liquidity depressed futures settlement prices further when prices plummeted in mid-October 1997. Also, many investors who entered into long positions during a brief correction in prices expecting a radical upturn in the cash market were subsequently pressured to close out their open long positions when the recovery in the cash market was not sustained.

⁶⁸ 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.

The high volatility seen in the underlying markets also made it extremely difficult for investors in emerging markets to protect their investments against an adverse turn in market developments. Hedging through structured over-the-counter (OTC) products became expensive thanks to the higher risk premium involved in issuing such products. In Hong Kong, for instance, investors who had participated in the warrant issuance boom in early 1997 subsequently saw their warrants going out-of-the-money as the cash market nose-dived in October that year. Many banks, which had earlier issued equity warrants, reported losses due to the difficulty in dynamically hedging their exposures during the violent market swings at that time. Nevertheless, jurisdictions that had established futures and options exchanges enjoyed brisk activity in equity- and interest-rate derivatives.

Volatility of derivatives themselves rose: 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 at some point during the crisis—usually around the October sell-off. For example, several derivative exchanges around the world adjusted margin levels upward as cash market price movements became increasingly erratic. When the Hang Seng index plunged 13.7% on October 28th, the Hong Kong Futures Exchange collected almost HK\$2b in margin calls on that day alone as turnover in Hang Seng and Red Chip index futures hit record highs of 83,445 and 4,148 contracts respectively. On the whole, market participants were reported to have met these calls, and clearance and settlement systems lived up to expectations. Although there appeared to be the odd instance of market-stress, authorities managed to avert any full-blown disruption to activity. On the whole, volatility spill-over from derivative to cash markets was limited. 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.

4.2.3 Disruption to price-discovery

One of the problems observed during the height of the crisis in October 1997 was that of maintaining pricing efficiency in the face of greater global market volatility, which led to greater uncertainty and a flux of disparate views on the nature and extent of the market turbulence. 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, as a result, precipitate further and more serious misalignments in asset prices.

It was argued that the trading halts activated on the New York Stock Exchange (NYSE) on October 27th 1997 contributed to a sense of panic, resulting in the selling that erupted after the resumption of trading following the first halt. Fears of being caught holding illiquid positions and being unable to execute “market-on-close” orders in the event the second trading halt was activated saw traders dumping stocks after the first trading halt ended. Thus, it was argued by some that the very existence of the price floor may have intensified selling pressure resulting in a “magnet effect”. After the first 30-minute trading halt was lifted, stocks in the United States continued their downward slide for about 25 minutes, triggering the second circuit breaker at 3.30pm Eastern standard time. This resulted in the halt in trading of all NYSE issues for the remaining 30 minutes left of the session.

Circuit-breakers and other trading restrictions on many exchanges world-wide—including Brazil, Taiwan, Malaysia, Thailand, India, Bangladesh, Japan, Argentina and Hungary—were activated as prices plummeted sharply in the wake of the Dow’s fall in October 1997.⁶⁹ One market authority acknowledged 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. This was also observed in other markets as well, as a result of the greater volatility seen in both the securities and currency markets, particularly in emerging countries. Consequently, the authorities’ efforts to smooth violent market movements and inhibit panic during times of heavy selling pressure have come under close scrutiny in view of their impact on liquidity and pricing efficiency.

In some instances, price discovery was impeded when the disruption of trading in cash markets subsequently spilled over to the futures markets. During the global stockmarket correction of October 1997, several stocks in one Eastern European index were suspended from trading when they triggered a 20% floor on individual price movements. This eventually resulted in the suspension of stock index futures contracts under exchange rules which halts futures index activity if more than 25% of index components are suspended in the underlying stockmarket. Thus, futures prices were unable to fulfil their price-discovery function and their settlement prices had to be determined based on the last trade done.

Price determination was 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. One group of Latin American stock exchanges had to delay the beginning of trading by three hours the next day. This was done in order to match their trading hours with those of the NYSE, hence

⁶⁹ Many jurisdictions surveyed 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.

enhancing the price discovery process by ensuring the continuous flow of information between the exchanges in both countries.

4.2.4 Increased threat of systemic disruption

The survey responses of many jurisdictions suggested that the financial crisis increased pressure on market integrity and, more broadly, the stability of the financial system. However, no jurisdiction appears to have succumbed to outright systemic failure, although some—in particular, those in East Asia—suffered severe stress. In most cases, stress to the system from the perspective of securities markets was most evident at the level of market intermediaries and their clients. The financial integrity of these participants was severely compromised by an onslaught of factors, many of which have been discussed above. It would be useful therefore to provide a summary of them within the context of their contribution to systemic instability.

The East Asian crisis increased the possibility of a collapse or default of key financial institutions or market intermediaries as a result of their exposure, directly or indirectly through clients, to capital markets and the broader financial system. Asset-specific and cross-asset volatility spill-over had an adverse impact on financial institutions and companies with large (often unhedged) exposures to currency and equity price-risks. Currency volatility also led to higher and more volatile interest rates as monetary authorities intervened to stabilise exchange rates. This in turn raised concerns over the integrity of the overall financial system.

Using the banking sector's involvement in the equity market as an example, banking exposure to stock markets rose in various forms. Credit was extended directly for the purchase of shares. Banks accepted shares as collateral for the credit extended—typically with a “haircut” (market risk adjustment) deemed appropriate under normal market circumstances—and extended credit facilities to brokerages.

Thus, in the face of significant adverse market movements, the banking sector experienced significant pressure as a large proportion of the credit extended for share-purchases proved to be unrecoverable. This increased the level of non-performing loans and, to that extent, reduced its earnings. Share collateral tended not to be dynamically risk-managed according to changing market conditions and sentiment. Hence, a sudden deterioration in prices forced some banks to liquidate collateral, thereby exacerbating the situation. Sharp movements in prices caused stockbrokers to activate their credit 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 situation described above is not restricted to the equity market; a sudden correction in any asset market can—and in several jurisdictions did—induce a similar response. For example, a similar chain of events is likely to occur if the property market experiences a major collapse.

Besides intermediaries, stress to the financial systems as a whole also arose at the level of market institutions, in particular those responsible for clearance and settlement. The soundness of market structure is determined to a great extent by the strength of the clearance and settlement system. A disruption within a particular set of market intermediaries can be easily transmitted to other intermediaries if the system is not robust enough to contain its effects. That said, most survey respondents indicated that, on the whole, their clearance and settlement systems were robust enough to withstand the heavy trading volume that accompanied periods of extreme market stress. However, some, like one survey respondent, said that a mass collapse of market participants increased the pressure on stockmarket integrity, and on the clearance and settlement system. In this jurisdiction's case the suspension of financial companies—one of whose areas of business is securities trading—led to some problems with the settlement of stock purchases. However, these were smoothed over by the clearing house, which had to use its credit lines with banks and clearing fund to extend short-term financing to cover these payments.

It is worth noting that several factors heightened the risks described above. One was the presence of weak market intermediaries and financial institutions. The other, which compounded the problem of weak intermediaries, was tight liquidity. As mentioned in the introduction to the report, there is broad agreement

that the relatively benign systemic effects of the stockmarket crash of October 1987 were largely due to the massive injection of liquidity by the Federal Reserve Board of the United States during and in the aftermath of the event. One result of this action was to enable cash-strapped market participants to meet their short-term financial obligations. An equally important result was that, at a time of great uncertainty, it provided an assurance to the market as a whole that the system would be able to fulfil their collective needs.

This points to a third factor which contributed to stress on the financial system as a whole during the period of crisis: a decline in market confidence. Aside from the “material” strengths discussed above, sustained confidence in the market is thought to be crucial in preserving the systemic integrity of capital markets. This is because faith in the well-being of the market can generate positive side-effects in the form of systemic stability.⁷⁰ Thus, whether or not liquidity was actually available, or whether market structures were in fact fundamentally sound, and despite the repeated assurances on many aspects of the financial system and real economy by market authorities and policy-makers, the perception in several jurisdictions of financial distress was sufficient to threaten systemic stability.

⁷⁰ See, for example, “Securities Markets, Systemic Stability and Regulation” by T.R.G. Bingham *LSE Financial Markets Group special paper series*, no. 26, London School of Economics and Political Science.

4.2.5 Higher cost of capital

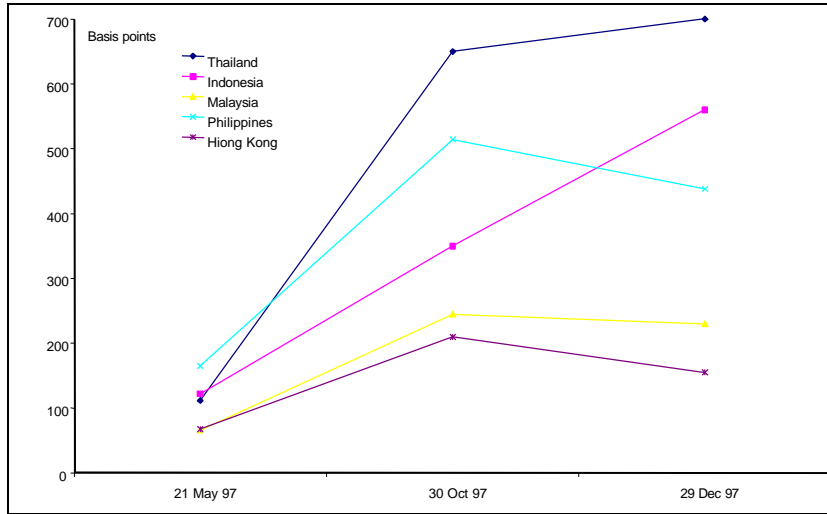
A number of factors contributed to an increase in the cost of foreign capital for many emerging-market jurisdictions. First, the international perception of greater risk with respect to emerging markets as a whole tended to worsen regardless of whether specific markets were actually caught up in the turbulence or not. This was especially true for jurisdictions in Latin America, which, in the frenzy of risk re-ratings that followed the breaking of the crisis in East Asia, were similarly tarred and feathered in the international markets. However, the rise in the spreads of Latin American international bonds was not as severe as those of East Asia.

Hence, yield spreads over the equivalent United States Treasury securities of a broad geographical range of benchmark bond issues widened as the collective emerging-market risk premia increased and credit ratings declined. The average spread against comparable United States Treasury maturities for a group of selected benchmark yankee bonds from East Asian sovereign and corporate issuers grew from 167 basis points in mid-May to 394 basis points by the end of October (see Figure 17).⁷¹ By the end of the year, the average had widened to 416 basis points: among the ASEAN-4, Indonesian 10-year sovereigns traded the highest spread, at 700 basis points (May 21st: 112bp), while Malaysia's Petronas 10-year yankees, at 230 basis points (May 21st: 66bp), traded the lowest spread. The average yield spread from a selection of Latin American issuers rose from 244 basis points to 380 basis points between May and October (a change of 137 basis points) but declined by 50 basis points by the year end.

Even if international investors were willing to carry the specific-risk of individual issuers, many were not willing to shoulder the sharply-higher foreign-exchange risk associated with the large and prolonged swings in their domestic currency values.

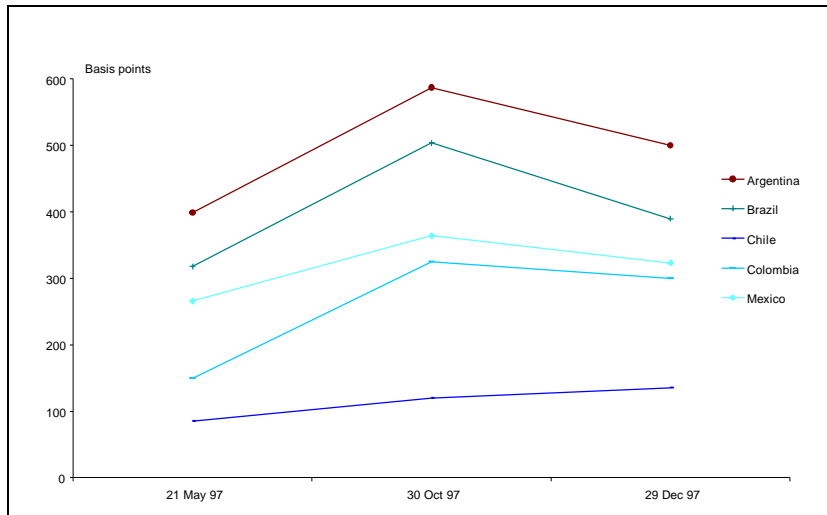
⁷¹ Source: Salomon Smith Barney. The group consists of corporate issuers from Hong Kong, Malaysia and the Philippines, and sovereign issuers from Indonesia and Thailand. See footnote of figure 17 for more details. 100 basis points = 1 percentage point.

Figure 17: Yield spreads for selected yankee bonds of East Asian sovereign and corporate issuers



Source: Salomon Smith Barney
 Thailand: Government of Thailand 2007
 Indonesia: Government of Indonesia 2006
 Malaysia: Petroliaam Nasional 2006
 Philippines: Philippines Long Distance Telephone Company 2017
 Hong Kong: Hong Kong Mass Rapid Transit 2005

Figure 18: Yield spreads for selected yankee bonds of Latin American sovereign and corporate issuers



Source: Salomon Smith Barney
 Argentina: Multicanal 2007
 Brazil: Petrobras 2006
 Chile: Enersis 2006
 Colombia: Government of Colombia 2007
 Mexico: Pemex 2007

The cost of domestic capital also increased as local sources grew short in supply. This was a particular feature of East Asian markets, where not only confidence but also the financing capacity of domestic investors declined severely. Companies typically raise capital for business expansion through public offerings. During a bull market, such offerings are especially attractive to businesses because it is argued that they can price these offerings above the intrinsic value of the shares because investors believe that the impact of speculative flows on share prices will outweigh the premia on the intrinsic value that they pay. If this the case this won't necessarily This essentially translates to cheaper funding. Conversely, the argument goes, companies in a bear market may have to price their offerings at or below the intrinsic value which effectively raises their cost of funding. In the case of an under-subscription, the company's reputation may fall with the effect that future cost of capital for that company may rise. Sharp declines in the stockmarket, therefore, serve only to dampen sentiment and increase the cost of funding for companies. This hinders capital formation and ultimately translates to a slowdown in business expansion and investment.

Hence, during the recent crisis, many issues were abandoned or postponed indefinitely on account of high price-volatility and sharply-depressed prices. 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. Several emerging markets restricted new securities issues pending the return of price stability. Even if issuers were willing, the same could not easily be said for investors. Tight liquidity made it difficult for investors to leverage on new securities issues. And for those stags accustomed to high first-day premia, the prospect of negative returns to new issues provided enough incentive to stay out of the primary market.

4.2.6 Financial weakness of market participants

Severely-weakened market intermediaries characterised the recent crisis among the worst-hit jurisdictions. Many of their problems were realised by the sharp and prolonged decline in asset prices. For one, plummeting prices eroded the value of securities pledged as collateral for margin loans. This led to a higher frequency of margin calls and forced-sales. Falling prices also aggravated the maturity-mismatch of their balance sheets. As a result, many East Asian jurisdictions reported 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 would have made it difficult for them to conduct core businesses.

Many listed companies in the region were reported to have faced similar difficulties, especially those with a high exposure to foreign-exchange and interest-rate risks. These translated into higher operating and financing costs as well as bad debt. Moreover, many of the companies in the emerging markets are dependent on high import content for their business activities. As a result, the severe devaluation of currencies in 1997 had an adverse effect on the earnings of many companies due to the high import content of their activities.

In one jurisdiction, corporate profitability was severely affected with earnings per share (EPS) contracting by some 56% in the first quarter of 1997. By the second quarter of 1997, it had shrunk by 113%. For the entire year, the EPS of domestic companies contracted by 55%. Corporate financing activities also saw a sharp decline: the total value of equity offerings shrank by almost two thirds from 1996 to 1997 while the total value of bonds issued contracted by almost 60%. In another jurisdiction, corporate insolvency resulted in the default of 60 listed companies by the end of 1997.

Often, the financial problems experienced by market intermediaries and the corporate sector were aggravated by the large number of links between securities markets, the rest of the financial system and the wider economy. The collapse and subsequent mass-suspension 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.

Emerging markets outside of East Asia did not report any significant problems. For example, one Eastern European jurisdiction reported that events during October–December 1997 did not result in any significant disruption to the operation of listed companies. Nor did they report any problems in liquidity management by market intermediaries and financial institutions. Others, in particular those in Latin America, did however note an increase in the perception of financial difficulties among certain banks, investment management companies and other financial institutions as a result of financial turbulence. These difficulties were especially apparent during and immediately after the global correction in October 1997.

4.2.7 Disruption to market development

The crisis had a tremendous effect on the pace and direction of market development in a number of jurisdictions. In the majority of cases, plans were suspended. In others, while the overall policy for market development had not been changed, all relevant issues were going to be examined closely before liberalisation and deregulation would be allowed to take place.

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.

By contrast, in the area of liberalisation and deregulation, the crisis generally led to an acceleration in market development—especially in those countries that applied for international financial assistance. Two jurisdictions 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. One of these jurisdictions is reported to be opening domestic financial institutions to foreign ownership, and allowing securities firms to use and deal in derivatives subject to rules and regulations to be introduced by the securities regulators.

5. Implications

5.1 General implications for economic policy and financial regulation

The experience of several emerging markets which were badly hit by the East Asian crisis suggests that the issues and implications raised by events of the last 12–18 months cannot be meaningfully discussed without referring to the issues regarding economic policy and financial regulation in general. Although the major implications of this report are set out in section 5.2 below, for the sake of completeness and in order to give a well-rounded background to the more specific discussions to follow, this section will highlight some of the general economic and financial ramifications of the crisis that have been drawn by various commentators in examining the issues surfacing from the East Asian crisis, and that have been borne out by some of the responses to the survey conducted for the purpose of this report.

It was commonly believed that the surveillance systems established to provide early warning of economic and financial crises immediately after the Mexican crisis of 1994–95 were sufficient and that international investors would be more discerning in their forays into emerging markets. However, the fact is that, aside from some premonitions of the inevitable slowdown in long-term growth of the region, very few if any foresaw the advent of the East Asian crisis.⁷² Observations of subsequent global developments suggest that the speed at which the crisis took shape, the ferocity with which it hit, and the extent of its persistence and coverage is now commonly seen as having profound implications for the global economy.

Foremost among these implications was that it prompted a major global rethink over the foundations of the existing architecture of the international financial system. In April 1998, a meeting was convened in Washington, DC to discuss this matter with a view of minimising the chances of another crisis such as the one which afflicted East Asia.⁷³ The Willard Group or the G-22, as members of that meeting have come to be known, identified three key areas in preventing future financial crises and contagion⁷⁴. These are:

- achieving greater disclosure of financial and economic data and information;
- strengthening of banking and financial systems; and
- dealing with the moral hazard problem by ensuring that creditors and investors bear more of the burden when economies go bad.

⁷² See Paul Krugman, “The Myth of Asia’s Miracle” in *Foreign Affairs*, 1994 and Paul Krugman, *Will Asia Bounce Back?*, speech delivered at Credit Suisse First Boston conference in Hong Kong, March 1998. The latter document is unpublished but available via the author’s website at <http://web.mit.edu/krugman/www/suisse.html>

⁷³ This meeting grew out of a pledge made by President Bill Clinton at the Asia-Pacific Economic Co-operation (APEC) forum summit held at Vancouver in November 1997. The 22 countries present at the Washington meeting were Argentina, Australia, Brazil, Canada, China, France, Germany, Hong Kong, India, Indonesia, Italy, Japan, South Korea, Malaysia, Mexico, Poland, Russia, Singapore, South Africa, Thailand, the United States and the United Kingdom. There were also representatives from international financial institutions such as the IMF, the World Bank and the BIS. This group has since come to be known as the Willard Group—after the Willard Hotel, the venue of its inaugural meeting—or simply the G-22.

⁷⁴ The G-22 is expected to present reports on these areas in the autumn of 1998.

At the Birmingham G-7 summit the following month, G-7 finance ministers presented a report entitled *Strengthening the Architecture of the Global Financial System*. Similarly, this report also identified five key areas where there was an emerging consensus on the need for reform. These were:

- enhanced transparency;
- helping countries prepare for integration into the global economy and for free global capital flows;
- strengthening national financial systems;
- ensuring that private sector takes responsibility for its lending decisions; and
- enhancing further the role of international financial institutions and co-operation between them.

There have also been some calls to consider the efficacy of global financial and economic surveillance in general. In particular, the role of international institutions and of international credit rating agencies have been singled out in this respect.⁷⁵

In the case of international institutions with surveillance mandates and privileged access to country economic data, these commentators have noted that, in some cases, these institutions were said to have failed in effectively flagging the development of weaknesses in East Asian economies, although this point is arguable. Also, the massive cost of international structural-adjustment packages are perceived to be unequally slanted in favour of private sector lenders at the expense of domestic residents. As a result, certain quarters of the international financial community are of the opinion that private sector lenders should not be allowed to free-ride on international rescue efforts and should ultimately also be involved in efforts to resolve debt crises. These comments notwithstanding, it is clearly recognised that until a more satisfactory solution is found to address the existing moral hazard issues, these international institutions will remain the sole lender-of-last-resort in the event of an international liquidity crisis.

Some commentators have also argued that international credit rating agencies have an implicit role in global surveillance as well. In the aftermath of the crisis, rating agencies were criticised for failing to provide any early warning of the East Asian crisis and then contributing to crisis' virulence with their rating downgrades.⁷⁶ However, despite the criticisms levelled at rating agencies, there is an emerging consensus that their position in the international financial system is likely to have been further strengthened rather than weakened by the crisis. This is due to the fact that in the international financial architecture as it stands, leading international rating agencies continue to provide that essential "credit passport" to countries and firms desiring to tap the international capital market.

Second, the financial turbulence has also challenged long-held beliefs about the benefits of private capital flows.⁷⁷ While such capital flows cannot fully account for the turbulence, economists and policy makers are now casting a more balanced view on private capital flows.

Third, the allegations that hedge funds triggered the crisis resulted in greater scrutiny of how the activities of such funds could be made more transparent. The IMF reported that the estimated total assets of hedge funds, proprietary traders and speculative-type mutual funds have grown to well over US\$100 billion and that these funds have at times undertaken investments that involved leveraging their capital by between 5 to 10 times.⁷⁸ The IMF and others have studied their role in the crisis.⁷⁹ Although their results provide no

⁷⁵ See "Crystal Balls in Washington", by Robert Chote, and "Tea Leaves in Jakarta", by Gerard Baker, in the *Financial Times*, April 17th 1998.

⁷⁶ See section on capital flight for details.

⁷⁷ For a review of the debate on currency controls see "Currency Controls Debated as Asian Crisis Takes Toll" by David Wessel and Bob Davis, *The Asian Wall Street Journal*, September 7th 1998. Also see "The Capital Myth" by Jagdish Baghwati, *Foreign Affairs*, May-June 1998.

⁷⁸ *International Capital Markets: Developments, Prospects, and Key Policy Issues*, International Monetary Fund, November 1997, Washington, DC, p.33. Note however, that the study by Eichengreen, et al (1998) cited below, found that contrary to popular belief, the size of these funds, even after allowing for leveraging, was relatively small in relation to other institutional investor such as pension and mutual funds.

conclusive evidence that hedge funds played a significant role in the East Asian crisis, the IMF study did note that should regulators wish to proceed with supervisory and regulatory initiatives directed specifically at hedge funds, options do exist for rendering hedge fund operations more transparent to assure policy makers that such funds are not dominating or manipulating the market.⁸⁰

Fourth, the call for rapid liberalisation of the domestic financial sectors of emerging economies has been tempered by a realisation that sequencing in financial sector reform, development and liberalisation is likely to be an important consideration if an emerging economy is to tap the benefits of being integrated into the international financial system while minimising the associated risks. For example, the most recent edition of the *World Economic Outlook* noted that “it is clear that there are important preconditions for an orderly liberalisation of capital”⁸¹.

Fifth, the contagion effect in the financial turbulence of 1997–98 has brought significant implications for the way in which countries regard and relate to each others’ affairs. The new reality of globalised markets and inter-linked economies might be viewed as somewhat analogous to the microeconomic problem suggested by Ronald Coase, the Nobel laureate.⁸² Given that the mismanagement of economies is welfare decreasing not only for the affected economy but also for its trading partners and regional neighbours, an incentive exists for macroeconomic managers to consult and confer with one another. Sovereignty issues notwithstanding, mutual surveillance and peer pressure represents within regions are thought to be an effective mechanism to ensure that economies are managed in the best interest of every nation. The Manila Framework established on November 18th–19th 1997 emphasises such a framework and promotes economic governance via peer surveillance.

The experience of several emerging markets during the crisis, which appears to reflect an increasingly global and integrated environment, suggests an urgent need to achieve greater consistency in the regulation of financial activity across different asset markets. One particular area of concern that has arisen is the perceived asymmetry in standards of disclosure and transparency among the different markets. From the point of view of regulatory supervision, it is argued that standards aimed at achieving certain universal regulatory objectives, such as market integrity, consumer protection and systemic stability, should be applied and upheld across all markets.

Finally, the financial turbulence has also highlighted the importance of institutional development and also strengthening regulatory and supervisory capacity—especially in the banking sector—prior to or at least concurrent with financial liberalisation.

⁷⁹ “Hedge Funds and the Asian Currency Crisis of 1997” by Stephen J. Brown, William N. Goetzmann and James Park, National Bureau of Economic Research working paper No. 6427, February 1998, found that the estimated net positions of the major funds were not unusual during the crash period, nor were the profits of the funds during the crisis. As such, they concluded that there was no empirical evidence to support the hypothesis that hedge funds were responsible for the crisis. The IMF did however, note that hedge funds may have played a role but the evidence was restricted only to Thailand. See Barry Eichengreen, Donald Mathieson, and others, “Hedge Funds and Financial Market Dynamics”, IMF Occasional Paper No. 166, Washington, 1998. Hereafter, Eichengreen *et al* (1998).

⁸⁰ See Eichengreen *et al*, page 18.

⁸¹ *World Economic Outlook*, International Monetary Fund, May 1998, page 9. This refers to the preliminary version of the document which is available via the Internet at <http://www.imf.org>. The published document remains the document of record.

⁸² See “The Problem of Social Cost” by Ronald H. Coase, *Journal of Law and Economics*, 3, The University of Chicago Press, 1962, reprinted in *Law, Economics and Philosophy: A Critical Introduction with Applications to the Law of Torts* by Mark Kuperberg and Charles Beitz (eds.), Rowman and Littlefield Publishers, 1983.

5.2 Implications for securities regulation

5.2.1 The role of securities regulators

It is increasingly being argued that the scope and nature of financial activity have developed beyond that of traditional regulatory structures and jurisdictions. Traditional distinctions between institutions are thought to be increasingly blurred, national financial systems increasingly interdependent and there are now clear and growing inter-linkages between markets trading in different assets⁸³.

Some of the consequences of these developments, which were apparent during the East Asian crisis, have raised concerns—particularly among emerging-market regulators—over the regulatory challenges that they pose. For example, events of the last 12–18 months suggest that markets are more prone to cross-border and cross-asset volatility spillover: such events have been observed from currency markets to stockmarkets, as well as across markets internationally.

What these developments suggest is that the environment of securities regulation no longer appears to be limited in scope. This has certain implications for securities regulators—and particularly for emerging market regulators. It is likely that they would be increasingly expected to deal with issues outside of their traditional scope of responsibilities, in particular, those involving cross-border activity, cross-asset effects and broader financial and economic policy issues. A major implication for regulators in these jurisdictions therefore, is that they will have to consider whether the regulatory framework within which they operate has sufficient capacity and appropriate structure to accommodate a wider and more complex set of objectives.

In the context of the current crisis, three areas are perhaps worth highlighting, even though some are taken up in more detail in the rest of the paper.

First, in assessing and managing the risks to their domestic jurisdictions, market authorities are likely to have to deal with a much wider range of factors that can have a significant bearing on the operational and informational efficiency of their markets. This would imply that, in order to perform their functions effectively, regulators in these jurisdictions will have to be in a position to assess the nature of activity in markets and environments beyond those in which they have traditionally been involved.

Second, all relevant supervisory agencies are likely to have to understand how and from where systemic risk arises and work together in ensuring that the financial system remains secure. Although some countries adopt an informal approach to this, largely by relying mainly on personal contacts between regulators, it might be worth considering whether a formal arrangement among agencies can facilitate systemic risk surveillance and the framing of an appropriate response should a major disruption occur.

Third, emerging markets face the unenviable task of having to develop domestically and compete internationally at the same time, both for international funds as well in providing financial services. Amidst increasing financial globalisation and integration, these markets do not have the luxury of evolution. However, the costs of hasty development can be high in terms of the issues discussed above. This suggests that emerging market regulators may have two important roles. The first is in overseeing and facilitating the

⁸³ See “Financial Regulation: Why, How and Where Now?” by Charles Goodhart, Phillip Hartmann, David Llewellyn, Liliana Rojas-Suárez and Steven Weisbrod, Routledge, London, 1998. Hereafter referred to as Goodhart *et al* (1988).

development of the securities industry. The second is in contributing to the policy framework that determines the liberalisation of financial markets under their jurisdiction.

5.2.2 The role and structure of front-line regulators⁸⁴

The East Asian crisis exposed certain fundamental and practical issues in the regulation of market intermediaries by front-line regulators, such as exchanges and other market institutions. As a result of the deterioration—and in some cases the closure—of securities houses, there was a perception in some jurisdictions that front-line regulators did not have the capacity or the capability to regulate the markets effectively and efficiently. And although the arguments for maintaining a regime of front-line regulation continue to be valid, it was thought that such a regime, in the case of some East Asian countries, led to irregularities in market regulation. In several jurisdictions during the crisis, a perceived inability of front-line regulators to perform their primary functions led to a weakening of market integrity.

In the regulatory environment under which some East Asian exchanges operated, the crisis highlighted not only deficiencies in their surveillance and enforcement capabilities but also a lack of pre-emptive action against their own members.⁸⁵ The sudden and significant deterioration of market intermediaries in these jurisdictions suggests that existing operational procedures of exchanges did not facilitate the monitoring of their members' financial conditions.

As a result of their approach towards enforcement of their rules, certain exchanges did not ensure that its members complied fully with rules on key issues such as client asset protection, large exposure to single client and securities limits. In the area of corporate disclosures, these exchanges did not appear to have assessed the quality and adequacy of the disclosures. In markets where there are a number of exchanges, there should be arrangements, in the form of explicit procedures and systems, to share information regarding market participants and their trading activities.

In several of the worst-affected jurisdictions, the onset of the crisis appeared to intensify conflicts of interest that would otherwise have been manageable under normal circumstances. Respondents reported that exchanges and clearing-houses were sometimes overly-accommodative of their members either in the run-up to or during the crisis itself. This, according to some respondents, reduced their regulatory capacity.

Strong front-line regulators can be a valuable complement to the role played by the supervisory regulator in achieving the objectives of securities regulation. This duality can accrue substantial benefits if properly harnessed. But to the extent that existing arrangements between supervisory agencies and front-line regulators (including the specific framework governing front-line regulators) need to be strengthened, the experience of some of the jurisdictions affected during the crisis suggests that it may be necessary to have an explicit framework that articulates the role and functions of the market institution as a front-line regulator. Among other things, the framework might describe the appropriate regulatory relationships between the market institution and its members, and delineate the responsibilities of the market institution from that of the supervisory regulator. An important area to specify appears to be the supervision of front-line regulators by their supervisory agencies, eg, regulatory audits of exchanges.

⁸⁴ For the purpose of this report, we use the term *front-line regulator* to describe market institutions such as exchanges, clearing institutions and securities depositories. It does not refer to industry associations and other such groups. In some jurisdictions, the term self-regulatory organisations would be used synonymously with the term front-line regulators as used in this document.

⁸⁵ This recognises that there may have been several obstacles to market surveillance and enforcement, including the reported use of offshore centres to execute trades.

However, a period of extreme market stress may not be the most appropriate time to establish such a framework. A more practical response under such conditions might be the pro-active regulation by both supervisory as well as front-line regulators. Survey responses suggest that this is indeed what happened during the recent crisis. In some jurisdictions, supervisory regulators became directly involved in the operations of exchanges and clearing houses, especially when systemic concerns mounted.

5.2.3 Regulatory co-operation

The crisis has highlighted a need for improved regulatory co-operation and surveillance of cross-border and cross-asset market activity. This view was shared by several jurisdictions who responded to the survey, many as a result of their experience during the crisis. For example, one supervisory regulator had to communicate actively with its counterpart in another national jurisdiction in order to co-ordinate the trading of equity instruments across their respective stockmarkets. For another, problems in finding out information about the foreign exposure of domestic players led another authority to suggest that, in an environment of international risks, information-sharing arrangements between regulators of different jurisdictions is no longer a luxury but a necessity.

In general, better co-operation and surveillance may be necessary because the regulatory treatment and coverage (in terms of corporate governance, disclosure and transparency of market activity) of different types of international market participants across different types of asset markets are perceived by some to be asymmetric. It may also be necessary because of concerns regarding the level of transparency in cross-border trading. Trade-routing across international boundaries has complicated the effective surveillance of financial market activity. Solutions may include formal or informal arrangements to share relevant information and to conduct some form of pro-active intermarket surveillance.

The crisis has also highlighted the importance of co-ordinating the different supervisory objectives of various *domestic* financial authorities. This would also entail establishing an appropriate set of regulatory priorities that, as much as possible, takes into account the needs of the entire domestic financial system. The survey indicated that some jurisdictions had difficulties in pursuing consistent banking and securities-market policies, and that these were partly responsible for several instances of delayed regulatory action and hasty policy formulation. Moreover, they added to uncertainty and, as a result, appeared to have a negative impact on the market.

According to the survey, overlaps in regulatory coverage lay behind much of the problem. In one case, which involved universal banks whose businesses were regulated by the respective authorities, securities regulators were said to be more circumspect when acting against universal banks' securities businesses for fear of sparking a crisis of confidence on the banking side. Banking supervisors on the other hand were reported to be more single-minded in dealing with a serious threat to depositors or to the soundness of the banking system, regardless of the impact on the securities industry.

The survey also indicated a degree of tension between macroeconomic and securities-market policy objectives. In some cases, macroeconomic objectives clearly superseded those of securities markets. Several respondents reported that certain of their markets were suspended by higher national authorities because of concerns that these markets contributed adversely to the macroeconomic environment or were simply inappropriate under the prevailing circumstances.

Such issues may have not required such drastic measures had there been sufficient consultation among banking supervisors, market regulators and the government. But to the extent that regulatory overlaps and a lack of co-ordination continue to hinder effective supervision, then there may be a need to re-look at the regulatory frameworks that govern the financial system in order to achieve some consistency.

5.2.4 Maintaining systemic stability

As described in earlier sections, disturbances in the broader financial system and macroeconomy—which involved, among other things, asset-specific and cross-asset volatility, severe weakness among financial intermediaries, tight (monetary) liquidity and a sharp decline in market confidence—adversely affected the smooth-functioning of several of the jurisdictions surveyed, which in turn worsened stress to the system in those jurisdictions even further.

What this implies is that securities regulators—especially those of relevant should consider how they would be in a position to monitor and manage the sources of systemic risk to their jurisdictions. In particular, regulators are likely to have to be in a position to handle systemic crisis in a methodical and pro-active manner.⁸⁶ Several jurisdictions that were surveyed—among them, some of those least affected by the East Asian crisis—felt it necessary to monitor sources of domestic and foreign risks actively.

This raises several issues for regulators particularly in the relevant jurisdiction to consider.

One issue is the development and implementation of crisis-management procedures for co-ordinating emergency responses to crises within a particular market or across several markets. Jurisdictions that were surveyed reported a higher degree of co-ordination in areas such as policies towards the market and public announcements.

For example, a survey respondent reported two particular instances which required significant regulatory co-ordination and co-operation with foreign regulators: the first involved a delay in the opening of domestic stock exchanges in order to match that of trading of ADRs in a foreign stock exchange; the second involved the introduction of circuit-breakers on all domestic stock exchanges. According to another respondent, financial authorities and the government in its country formed special inter-agency task-forces or created these teams within their own institutions to inspect distressed financial institutions.

Hence, securities regulators may wish to establish more formal arrangements for managing a crisis should one arise. The dangers of not doing so were seen in the case of one jurisdiction where the inadequacy of prevailing arrangements between banking and securities authorities reportedly led to some clearance and settlement problems during a period of severe market-stress.

A second issue is how well the prevailing legal and regulatory framework facilitates regulatory intervention in the event of a systemic crisis. Some jurisdictions surveyed suggested that rules and regulations must be flexible to allow for extraordinary measures to cope with financial crises. One reported the rapid reform of several pieces of legislation in order to facilitate the handling of the recent crisis.

Having said that, systemic risk management is also likely to require an ability to preserve confidence at all times. Therefore, while it may be necessary to facilitate regulatory intervention by market regulators in the event of a crisis, there may also be a need to achieve legal and regulatory certainty regarding what can and cannot be achieved through intervention. 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, and the clear identification of counterparty rights.

A third issue is the availability of relevant and timely information for making informed policy decisions during, as well as in anticipation of, a crisis. A programme for monitoring critical aspects of the system that are at risk—including market structure, controls and processes—may be necessary to provide policy-makers and market supervisors with this information.

⁸⁶ We have taken systemic crisis to mean a disturbance in one firm, sector or market that impairs the workings of other firms, sectors or markets.

Some of its components might include oversight and co-ordination in monitoring of clearing-house exposure if this is not already done, eg, daily trading cash-flows and total marked-to-market value of unsettled trading positions; an evaluation of market risks on the prevailing exposure of market participants; and the monitoring of order-flow on the integrity of trading systems. Monitoring might also include, to the extent possible, that of activity in other external jurisdictions and assets, as these were thought to have had a significant impact on domestic markets.

Although some of these activities may already be conducted by regulators, exchanges, clearing-houses and market participants, some form of co-ordinated “systemic-risk surveillance” could make them more effective. For example, in the area of intra- and inter-market surveillance, formal arrangements might help to ensure that appropriate controls are in place and to avoid any unnecessary duplication of tasks. A major objective of such arrangements would be to alert regulators of a rise in stress to critical components of the financial system.

A fourth issue is the preservation of market and investor confidence. Sometimes this can simply be a matter of managing expectations with appropriately-timed and phrased public announcements. For example, during the recent crisis, several jurisdictions made early announcements that customer money would be fully-guaranteed by supervisory authorities, usually through some form of compensation fund. None of them reported any runs on market intermediaries under their supervision. (In at least one of these cases, the costs associated with encouraging moral hazard were recognised. However, the benefits of preserving small-investor confidence were seen to outweigh such costs in the short-term. The issues related to the protection of clients’ assets is discussed further below.) But most of the time, preserving confidence is likely to require concrete steps to ensure legal and regulatory certainty and to maintain the soundness of market structure.

5.2.5 Prudential and financial 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 raise prudential capital standards, in particular, by adopting a risk-based regulatory framework.

The issue of raising prudential standards now appears to be quite well-recognised. Survey responses suggested that emerging-market jurisdictions are not unaware of the need for better prudential regulation. Many have considered raising standards of capital requirements and client-asset protection. Some have begun introducing new compliance and internal control regulations.

But it is important that securities regulators recognise the dynamic nature of markets. Indeed, trends, both locally and from abroad, suggest that securities activities will increasingly include interest-rate and derivative risks—which means that whatever standards are appropriate for prevailing practices will require further development in the future.

What these issues and the experience of the crisis may imply is that improving prudential standards in emerging markets may not be entirely about raising the stringency of regulation but also about establishing an appropriate incentive structure for achieving acceptable standards.

In the area of capital adequacy standards, there has recently been a shift in emphasis, mainly by G-10 authorities, from compliance-based supervision towards supervising the quality of banks' own risk-management systems and allowing greater flexibility in the application of prudential requirements. A major driver of this shift appears to be the fast-growing OTC and off-balance-sheet activities of international players, which has made it more difficult for regulators to obtain timely and complete data on the net risk positions of financial institutions under their charge⁸⁷.

While it is arguable for emerging-markets to adopt the state-of-the-art in capital adequacy immediately, the important point to note here is that an appropriate risk-based system of capital requirements can help to minimise the costs associated with more traditional approaches to ensuring capital adequacy.

A related point, and one also implied by the issues discussed above, is that there is an increasingly likely to need for a forward-looking framework, ie, one 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. For example, prudential standards are 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.

However, it should be recognised that this does not necessarily imply the adoption of one or other international approach. Although the development of international standards has seen much progress of late, especially in the area of capital adequacy, there remains considerable debate over several major issues, including the appropriate approach to risk measurement and to what extent minimum requirements should be set by the industry. It is more likely that the establishment of a framework will require a careful selection of relevant standards in keeping with the circumstances of a particular market jurisdiction.

⁸⁷ See Folkerts-Landau and Garber (1997) for a discussion of this issue.

5.2.6 Risk management by market participants

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 should address deeper issues—such as robust internal controls, incentives for the involvement of senior management and accountability structures, and reporting lines—in order to encourage management decisions that take all risks present into account at all times.

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.⁸⁸ 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.

⁸⁸ 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.)

5.2.7 Protection of client assets

With respect to client-asset protection, it is widely recognised that the broad objective of rules and mechanisms for client-asset protection is to ensure investor protection and market integrity so that client assets are protected from the risk of loss and insolvency of market intermediaries. The experience of several jurisdictions suggests that that it is important to ensure complete confidence not only in the clearing and settlement system but also in the segregation of client assets. While it is satisfying to note that the systems have, without exception, stood up to the sternest tests in the last twelve months, there appears to be room for improvement in the protection afforded to client assets. The experience of several jurisdictions has also shown that, without the appropriate regulatory and incentive structures, institutions can be tempted to use these assets for their private benefit, for instance, to “on-lend” them as collateral without proper or appropriate authorisation from their clients in order to raise funds.

The fall of securities houses in some jurisdictions in the course of the East Asian crisis has led to urgent calls in several of the affected jurisdictions for a review of the existing regulatory and supervisory framework regarding client asset protection in order to ensure that the latest international standards are applied. In one jurisdiction, steps are underway to identify and establish an appropriate framework for client asset protection, and for systems and controls in place to limit the risks to the business, including the explicit involvement of senior management. In a similar move, authorities in another jurisdiction have also initiated a study on margin financing. These exercises recognise that, for the most part, the confidence of clients, both retail and institutional, rests on the belief that the protection of their assets is never placed in doubt.

It has been argued that, although an important issue, the inadequacy of rules and regulations on the issue of client asset protection is less significant than the weak surveillance and enforcement of the existing rules. Unlike prudential rules such as capital adequacy rules that are perhaps more easily assessed by the regulator, client asset protection requires a more rigorous and a more comprehensive surveillance and enforcement programme. The provision of a “safety-net” such as insurance schemes for small investors is also believed to alleviate problems of asymmetric information regarding the health of market intermediaries. In this way, such facilities might be able to help avoid runs by clients when information is unavailable or costly to them. However, it can be argued that safety-nets in the form of deposit insurance and other compensation mechanisms might eliminate market discipline and encourage moral hazard on the part of both market intermediaries (by encouraging them to take on too much risk) and their clients (by providing a disincentive to monitor actively). While it may be fair to require sophisticated investors such as institutions to make their own credit assessments of market intermediaries, it may be onerous to impose such a burden on ordinary retail investors.

There appears to be, however, a real and significant cost in providing such safety nets. In jurisdictions where there are currently no such structures, the initial establishment of the funding may be onerous if market intermediaries are expected to contribute towards such a structure. In terms of incentives, such a fund may appear to “penalise” the more prudently managed market intermediaries as the fund will only have to address the needs of clients of failed market intermediaries. To counter this issue, a line of credit from government sources may also be considered in addition to the usual contribution from market intermediaries.

It has been argued by some that at the level of the clearing house, the preservation of market confidence through the integrity of the clearing and settlement system is perhaps more important than the moral hazard attached to a clearing “guarantee”. However, if a clearing fund is necessary to promote confidence in the integrity of the market, there must be provisions to make good any losses suffered to counterparties and therefore to the clearing house in the event of default by its members or any other counterparty. This can be achieved by way of security deposits lodged by clearing members for the clearing house to cover any amount owed to it by member firms. Funding by market intermediaries may also be augmented by clear

and appropriate default procedures and provisions to allow trading, clearing and settlement to continue without disruption, in the event of a member-default, for the closing-out and/or transferring of positions and property from one member to another and to impose additional financial/operational requirements and limits on members.

5.2.8 Corporate governance

There is a general perception that a lack of adequate corporate governance contributed to the crisis. While the perception may be a fair reflection on the current parlous state of the practices in some jurisdictions, attention has only been drawn to it 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.

It has been argued that in a corporate environment where owner-manager structures prevail, investor protection measures may be relatively easy to circumvent because owner-managers typically have controlling interest in their companies. The reported experience of some East Asian jurisdictions suggests that the duties and responsibilities of directors seem to have been ignored as owner-management structures appeared to encourage the override of internal/external rules and regulations. For example, during the crisis, it had been reported that minority shareholders of several companies were placed at a distinct disadvantage as a result of certain corporate exercises and inadequate disclosures. Independent directors, who are to some extent intended to act as a check-and-balance to ensure good governance, were seen to be largely ineffective. Many publicly traded companies appear to be only public in form, but not in substance because of the dominance of controlling families in large companies.

As a result of these perceptions, both public and private sectors in several jurisdictions are likely to have to promote and develop good corporate governance practices as well as higher standards of disclosure to restore investor confidence. Improved transparency and accountability would be critical in this effort, which, ideally, should involve all segments of the economy—from the government and the regulatory authorities to private-sector boards of directors, auditors, financial institution executives and management, as well as other key officers in public companies. The involvement of government and financial authorities is likely to be significant in supervising this process.

In relation to the private sector, several East Asian jurisdictions have announced initiatives since the onset of the crisis to introduce a comprehensive corporate governance reform and to afford better protection for investors by establishing, among other things, a robust corporate governance framework for investors and other interested parties to monitor the management of publicly-owned companies and by establishing international standards for auditors and other corporate advisers on whom such investors typically rely. However, to ensure an effective corporate governance framework, standards must be complemented by incentives for compliance and supplemented by effective enforcement. In addition, a shift towards an enhanced disclosure environment might go some way towards dealing with this issue and would be served by a concurrent exercise not only to promulgate and promote quality financial reporting and disclosure standards among the private sector but also to establish a regulatory framework to ensure compliance of disclosure and financial reporting standards.

It is likely that significant input would be required from the private sector and that governments and regulators alone would not be able to ensure the success of any programme to improve standards of transparency and disclosure. This would mean that the willing co-operation of the private sector and their advisers to create a culture of greater disclosure is therefore likely to be necessary. The mindset of owner-managers is perhaps key to the success of any improvement in transparency and disclosure as it is likely to be this group who will largely determine whether the change is substantive or in form alone.

As a move to encourage corporate advisers to take on greater responsibilities for their clients, one jurisdiction has come up with the idea of a publicly-available rating system for institutions offering financial advisory services for listed companies. The ratings would encourage development of better quality services

by financial institutions, and indirectly lead to improved protection of investors. In cases where corporate advisers are poorly rated, the regulators may then consider the appropriate sanctions to take.

5.2.9 Regulation of international investors

The East Asian crisis has raised calls from various quarters to re-examine the role of international investors. These calls relate to some clear regulatory themes which will be discussed below.

During the crisis, some emerging-market jurisdictions became concerned over reports that the activity of certain international investors, such as hedge funds, were having a significant impact on their markets. However, efforts to ascertain the validity of these reports and, if necessary, to frame suitable regulatory responses were hindered by an apparent lack of disclosure by these investors. In particular, the scarcity of information about their trading activity and market positions made it difficult for the regulators concerned to gauge these investors' exposure and position concentration in markets under their jurisdiction.

Such concerns prompted various studies of the role of hedge funds in particular in the East Asian financial crisis as well as in recent episodes of financial turbulence (such as the European Union exchange-rate mechanism crisis of 1992, the global bond market turbulence of 1994 and the Mexican crisis of 1994–95) during which similar concerns were voiced.

While there has been no conclusive evidence, so far, of the exact role played by hedge funds in the East Asian crisis, regulators in certain jurisdictions clearly perceive a need to re-examine the manner in which these funds are regulated. While the specific form of regulation relating to the activities of these investors still remains an issue to be considered further, the main thrust of their arguments tend to be premised on a perceived need to ensure that regulation of certain types of international investors whose investment activity and influence in international financial markets are substantively similar is done on the basis of similar regulatory principles, regardless of their form and structure.

In addition, while some have argued that investor protection issues need not apply to certain investment structures (such as those relating to the size of the investor base), it has been strongly argued that such exemptions should not be at the expense of market integrity. The IMF, while not taking a conclusive position on the role of these investors in the East Asian crisis, has suggested that options exist for policy-makers to render the operations of certain international investors more transparent for the purpose of addressing issues relating to market supervision. These options, according to the IMF, include large trade and position reporting, and more comprehensive reporting requirements for international investors. What this implies is that a clear scope exists to consider strengthening the regulation and supervision of international investors.

Another issue that has arisen and that has been noted by various commentators is that as international investors have taken on more prominence in global financial markets and the distinction between banking and securities institutions becomes less clear, there may be a need to consider improving prudential standards for certain types of international institutional investors. It is argued that the risks being borne by these institutions are increasingly similar to those facing banks, and include liquidity management problems and a higher exposure to macroeconomic effects.⁸⁹ Moreover, it is thought that these risks are greater within the context of increased financial globalisation and integration.

In this regard, liquidity management by international institutional investors has been a particular area of focus by some commentators, who have expressed concern that liquidity management in the face of heavy redemptions may become an issue not just for the mutual funds concerned but also—through market impact effects—for the markets in which they are invested. They point out that, as a result of various competitive factors, institutional investors are likely to engage in the faster settlement of redemptions. This, they

⁸⁹ See, for example, “Regulatory Challenges for Source Countries of Surges in Capital Flows”, by Stephany Griffith-Jones, paper prepared for FONDAD workshop on July 10th–11th 1997 and presented at FONDAD conference on November 18th–19th.

suggest, places a strain on these investors' ability to manage cash and thus encouraged them to liquidate their investments far more readily for the sake of raising liquidity. One view is that the large-scale pursuit of such a strategy by institutional investors might contribute to short-term excessive and rapid outflows from securities markets. Under such circumstances, it is argued that better arrangements for managing mutual funds' liquidity needs could stabilise the international flow of funds.

Although it is clearly recognised that any proposal must be carefully studied and considered, it is worth noting for the purpose of this report that there have been some proposals to address these concerns. One approach involves the establishment of a "safety-net" mechanism, although it is recognised that this is not without its shortcomings—among them, problems of moral hazard. Other approaches involve the introduction of appropriate prudential standards, in particular, some form of risk-based liquidity requirements.⁹⁰ While this has the advantage of reducing moral-hazard problems, critics argue that, aside from raising private costs, it is altogether unclear what form such requirements should take.

It has been argued that improving the regulation of international markets and of global players may, in addition to other alternative approaches and subject to the satisfactory resolution of certain issues, help contain certain risks inherent in international markets, promote gradual changes in investment holdings in response to news and thus smoothen international capital flows overall. While certain aspects of this are already being examined and recent progress has been made by various international regulatory groups, both individually or in collaboration with each other, there appears to be scope—and an urgent need—for further work. This is very likely to require a multilateral effort—ie, by regulators from both source and recipient countries in collaboration with the industry. Unfortunately, some efforts to co-ordinate international banking regulation have, in the past, faced practical difficulties. Nevertheless, these would have to be weighed against the potential problems that may be encountered by unilateral efforts, if those efforts extract relatively higher private costs to individual markets.

⁹⁰ It has been suggested that such requirements would broadly work in much the same way that banking risk-weighted capital adequacy standards do, ie, by boosting confidence in the financial strength of funds as well as facilitating the redemption of clients' shares without the need to sell-down assets. This assumes that lowering the need for mutual funds to liquidate their holdings for cash can ultimately dampen reversibility of investment flows out of markets. Nevertheless it has been recognised that the idea for mutual-fund liquidity requirements would differ from that of banking requirements in several respects. One is that they would not be placed with the central bank at zero or low interest. And, while banks' liquidity requirements tend to focus credit and market risks of investment, it has been suggested that requirements for mutual funds would have to focus on the perceived "macroeconomic" risks that are likely to dominate investment risk for funds' portfolios—eg, indicators of macroeconomic health, financial system strength, political stability, clearance and settlement systems, custodial arrangements, etc.

5.2.10 Liberalisation, deregulation and market development

The problems that emerging markets have in dealing with market development, in particular with liberalisation and deregulation, are well recognised and became evident during the recent crisis⁹¹. For example, one commentator notes that

... liberalisation has often been accompanied by bouts of financial speculation. Since the ensuing rise in asset prices is then often regarded as justified by the liberalisation programme itself—indeed some may think that asset-price increases are *theraison d'être* of liberalisation—the commercial banks may be overly prone to lend on the basis of collateral that possibly has overblown value and that certainly is likely to be highly volatile.⁹²

Hence, it was noted that when liberalisation is followed by an asset-price bubble, the financial system tends to be particularly at risk.

But there have been few—if any—suggestions that liberalisation and deregulation should be stopped or deferred just because it might be associated with financial fragility. Rather, the view tends to be that such processes must occur and continue but with caution and appropriate sequencing to mitigate the risks associated with them. In the case of the problem described above, it has been suggested that financial authorities must appreciate the potential extent of volatility in emerging markets, and that, during the early stages of liberalisation and deregulation, they should be strict and careful in authorising and monitoring market participants and financial intermediaries. This includes establishing sufficient prudential standards in light of the particular nature of risks faced by such markets and undertaking the appropriate re-regulation of financial activity alongside efforts to deregulate.

According to the survey responses, this seems to be the approach taken by one jurisdiction's drive towards strengthening its financial system. Authorities there undertook a series of major tasks during 1997 including banning illegal financial institutions and enforcing the strict separation of banking and trust businesses; prohibiting the flow of bank funds to the stockmarket; requiring state-owned enterprises and listed companies to seek approval before trading in stocks; and pursuing continuous investigation of illicit operations involving off-balance sheet activity. In what appears to be a significant development in market enforcement, financial crimes were for the first time written into law in a comprehensive and systematic way. While new laws and regulations were being worked into the regulatory framework, the enforcement of existing ones were stepped up.

The crisis has highlighted several areas on which development may need to be focused. Market breadth is one, not only to establish alternative means for raising capital but also to facilitate risk management. For example, in several emerging jurisdictions with restrictions on investments abroad, the market risk exposure of domestic portfolios was compounded by a lack of liquid secondary markets in bonds and derivatives. Domestic investors, who were restricted mainly to equity risk, were neither able to diversify into other asset classes nor hedge their risks. A second area for development is the domestic market infrastructure. A third is establishing the capacity to compete effectively for foreign funds and financial services.

In pursuing these objectives, it has been suggested that the pace and extent of market development must be carefully managed, so that the many—often conflicting—private and public concerns are given their due consideration. However, there may be factors that discourage this process, such as competitive pressure

⁹¹ For the purpose of this document, we take *liberalisation* to mean the process of opening markets to international competition and *deregulation* to mean freeing domestic markets to local competition.

⁹² Goodhart *et al* (1998), page 111.

from other regional markets. For example, some concerns have been raised over the effect of an apparent increase in the competition for regional or niche financial services in East Asia recently. If competitive pressures become too great, or if domestic markets are threatened, jurisdictions may be tempted to abandon a measured approach in favour of a more hasty, and ultimately more risky, programme in order to keep pace.

5.2.11 Circuit breakers and other trading restrictions

Almost all jurisdictions surveyed said that, as a result of the global correction of October 27th–29th, they were either examining the possibility of establishing circuit-breaker-type mechanisms or reviewing the structure of prevailing mechanisms. Even those markets where order-flow and price-discovery were not significantly hampered by the crisis said they were assessing the status of their exchanges, depositories and settlement systems in light of the experience of the worse-hit jurisdictions.

In the current context, two issues appear to merit particular consideration: the effectiveness of circuit-breakers in arresting price-decline; and the effects of circuit-breakers on market microstructure processes, including price-discovery, order-flow, liquidity and volatility.

The survey drew mixed responses over the issue of whether such mechanisms can and should be used to reinforce a falling market. Several market authorities came out in favour of circuit-breakers, suggesting that these mechanisms played an integral part in averting a meltdown by checking the slide in prices and giving market participants time to re-evaluate their positions. But the experience of others was that circuit-breakers or similar mechanisms served only to delay—but not prevent—market decline because investors perceived that the fundamentals warranted an outright sell-off.

While there is a lack of conclusive evidence on the merits of circuit-breakers, it has been suggested that there are several reasons why they should not be seen as a panacea against price deterioration and volatility, even they may be of some use in dampening short-term price fluctuations.⁹³ One reason is that their use can affect market liquidity adversely, thus accelerating price declines and creating spillover effects into substitute instruments and markets. Another is that circuit breakers need to be consistent across the different markets that trade in similar or substitutable instruments. This is especially pertinent for emerging markets, where alternative markets in their instruments may exist offshore.

A point worth noting is that there appears to be no consensus on what constitutes an optimum structure for circuit-breakers.⁹⁴ This implies a need for regulators to study the market's trading culture and market microstructure in order to assess the potential costs and benefits of implementing such measures. Markets that have mid-day breaks, for instance, may not require additional trading halts if the existing intermission can meet the primary purpose of allowing market participants time to cool-down and share information.

⁹³ See for example: "Circuit breakers and Market Volatility: A Theoretical Perspective" by A. Subrahmanyam, *The Journal of Finance*, March, vol. XLIX, no. 1, pages 237-254; "Circuit Breakers in the S&P500 Futures Market: Their Effect on Volatility and Price Discovery in October 1989" by H. McMillan, *The Review of Futures Markets*, vol. 10, no. 2, pages 248-274; "Circuit breakers" by J.T. Moser, *Economic Perspectives*, Federal Reserve Bank of Chicago, September/October 1990, pages 2-13.

⁹⁴ See for example: "Stock Market Crashes and the Performance of Circuit Breakers: Empirical Evidence" by B. Lauterbach and U. Ben-Zion, *The Journal of Finance*, December, vol. XLVIII, no. 8, pages 1909-1925; "Circuit Breakers and Program Trading Limits" by L. Harris, presented at the Brookings-Wharton conference on financial services, October 29th–30th 1997.

5.2.12 Role of international organisations

Some commentators have pointed out that if the consequences of global systemic disruption are considered so severe that ex post intervention is justified, then there is all the more reason to intervene before a crisis is reached. Given their scope and resources, multilateral agencies appear to be prime candidates for the job. But what should be done, and how, appears to be very much open to debate.

For example, commentators have asked whether there should be an international organisation with oversight of national regulatory policies.⁹⁵ If so, one suggestion is that early private recommendations should make way for public announcements if authorities do not respond to the overseer's cajoling. Such an approach, the argument goes, is preferable to one in which policy responds to the abrupt adjustments that markets are prone to make. But there are several problems with this.

One is that, prior to financial aid, national authorities are generally under no obligation to pursue recommendations by external organisations. Moreover, the very act of publicising criticism and advice can precipitate a crisis of confidence. In any case, it has been pointed out that there is no evidence that international organisations are any better at anticipating a crisis than anyone else, which has led some commentators to suggest that international organisations should strive for simple but achievable aims. Feedback from the survey suggested the establishment of a specific working group, possibly through IOSCO, might be considered in order to standardise and regulate information flows, communication and co-operation between multilateral agencies.

⁹⁵ See "Crystal balls in Washington", by Robert Chote, and "Tea leaves in Jakarta", by Gerard Baker, in the *Financial Times*, April 17th 1998.

6. 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 financial turbulence. In this section, whilst we do not intend to repeat the main causes, effects and implications that have been noted in this report, we attempt to distil what are arguably the key issues that have arisen from the crisis as well as issues that are provoking significant debate in the international financial community. These concluding comments are made based on issues synthesised from survey responses, comments by market participants and various analyses of the crisis.

The first category of issues is provided for completeness, and relate primarily to economic issues. This includes the importance of financial markets in economic development, managing international private capital flows and total debt management at the country level by governments. As for the issues that are specifically relevant to the regulation of financial markets, these include the efficacy of existing regulatory structures in light of rapidly changing dynamics in global financial markets, the appropriate systemic approach towards risk management and also issues related to the existing structure of the international financial system.

On the macroeconomic front, a simple yet important lesson that can be drawn from the East Asian crisis is that financial markets can and do affect real economic activity. While this statement may appear self-evident, policy-makers in many emerging and developing economies continue to view the financial sector as auxiliary to the real economy. Policies are often skewed towards emphasising “real” sectors such as export-based manufacturing with inadequate emphasis on the concurrent development of the financial system to ensure that the latter is able to meet the evolving demands of an increasingly sophisticated economy.

The East Asian crisis has demonstrated that financial market turbulence, if prolonged, can and will lead to a significant disruption of real economic activity in all sectors of the economy. It has shown that what were thought to be “optimal” policies in the real sector of an economy can be easily undone by a weak and underdeveloped financial system. This would suggest that any effort to develop economically requires an approach that does not dichotomise the macroeconomy into the real and nominal sectors. It is argued that there needs to be a fundamental shift in the policy thinking of many developing economies who have a tendency to leave financial sector development to the last. Therefore, in addition to industrialisation policies which attempt to shift agrarian economies up the value-added chain, it might be necessary to make a conscious attempt to formulate a concurrent financial system and institutional development agenda which would be consistent with the anticipated demands arising from an evolving economy.

The East Asian crisis has also resulted in a reassessment of how the international financial community views private capital flows and international capital mobility. It is now clear that the economic benefits of international capital mobility and private capital flows carry with them very significant economic costs should there be a sudden reversal of such flows. While there is an on-going debate as to whether the root cause of financial crises is in capital flows themselves or in poor economic management, the reality is that capital flows, because of their magnitude and mobility, can and do have devastating effects on emerging economies.

In their desire to tap the benefits accruing from private capital flows, it has been argued that policy makers should also consider the importance of the initial conditions that exist within their respective economies. National financial systems which attempt to integrate into the global financial system with little regard for the capacity of their regulatory and supervisory institutions to handle a deregulated and liberalised financial

environment are likely to potentially expose themselves to the kinds of financial and economic risks that were realised during the East Asian crisis.

Another argument suggests that policy-makers in emerging markets should consider ensuring the proper intermediation and efficient allocation of private capital flows by domestic banking systems and capital markets as one of the strategies for managing episodes of capital inflows. In certain jurisdictions in East Asia, relatively underdeveloped debt markets have meant that the banking system carried a disproportionate burden of financing activity and therefore faced an inherent maturity mismatch. The absence of a deep and liquid debt market also made it extremely difficult for the relevant economies in the region to absorb the shock of capital reversal.

It has been argued that the central role played by the private sector's short-term external debt in the East Asian crisis has discredited the common perception on the mix of public- and private-sector debt—that a country can maintain a small and manageable public-sector debt while at the same time allowing private sector debt to be market-determined. It has been noted that the crisis has brought to the fore the importance of total debt management at the country level. However, this has proven difficult due to several reasons. One reason that has been given was the lack of timely statistics on the private sector's total external indebtedness and the associated maturity structure of this debt. Another that has been given is that the use of OTC derivatives and off-balance sheet activities by the private sector which compounded the problem of ascertaining the exact short-term debt-servicing burden of many East Asian countries. It has been suggested that some of these difficulties will clearly have to be resolved if total debt management by sovereigns is to be effective.

The East Asian crisis has also provided further evidence that national financial systems are more interdependent and that links have emerged between markets trading in different assets. Clearly, global 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.⁹⁶

The challenge will arguably be in finding an appropriate regulatory structure that is flexible enough to meet the demands of this dynamic and rapidly evolving environment. Trends suggest that the regulatory structure will have to allow regulators to consider a wider and more complex set of factors than they are doing now, including the assurance of effective supervisory standards, surveillance operations and regulatory co-operation across the entire scope of financial activity. This might require financial regulators to re-establish their regulatory priorities and deal with regulatory overlaps. In doing so, they may have to consider the ability of players who are concurrently active in several markets, whether based on asset-classes or geographical, to exploit regulatory loop-holes relating to supervision and enforcement across different jurisdictions.

They are also likely to have to consider the fact that the sources of systemic risk can no longer be neatly packaged. This was apparent during the East Asian crisis. While the financial system can theoretically be dichotomised into the banking system and the capital market system, reality affords no such convenience to financial regulators. 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. It has been argued that systemic risk is, and should be, a concern to financial regulators, although the form

⁹⁶See Goodhart et al (1998).

of these arrangements may be of a second order issue.⁹⁷ A corollary of this, it could also be argued, is that effective 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 should be considered.

With respect to the international financial system, there are various issues that are increasingly being highlighted. Some of these issues have been discussed elsewhere in this report. However, several of these issues warrant further comments. The first relates to international institutions and their role *ex post* the East Asian crisis. The second has to do with the regulation of international investors while the third relates to concerns arising from asymmetric regulation of different asset markets.

The suddenness of the East Asian crisis, the rapid spread of the financial contagion and the extent of the effects of the crisis have raised calls by various quarters for a review of the role of international financial institutions. These calls have focused on several areas relating to these institutions. However, two of these are particularly relevant to this report.

The first relates to certain weaknesses in the existing global surveillance arrangements which were unveiled by the spontaneity and extent of the East Asian crisis. Emerging markets, amongst others, have called on international financial institutions to reassess their existing surveillance arrangements so that policy makers and international financial markets are given sufficient warning of an increased probability of the onset of a crisis situation. Ideally, this advance warning should surface at an early enough point in time to allow the appropriate remedial measures to be taken at a stage where they have the highest probability of averting a crisis. In addition to the timeliness of the alerts, to be effective, an early warning mechanism should address the remaining half of the equation, ie, that of ensuring proper remedial action by the relevant parties when imbalances are detected. The international financial institutions, given their resources and capacity, appear to be the most suited to undertake this task.

The second issue relates to consideration towards the setting up of effective and appropriate arrangements for international financial crisis management. The rapid spread of financial contagion in the East Asian crisis—which began life as a regional crisis and has since resulted in widely confirmed adverse consequences on even industrialised economies—raises the issue of crisis containment and management. The benefit of hindsight reveals that there is a need for international efforts to establish effective crisis management arrangements, involving not only the international financial institutions but also international groupings, which can speedily contain any nascent crisis to as small a segment of the international financial system as possible. This would no doubt prove a major challenge given the high degree of integration of the global financial markets which make up the international financial system. However, in order to ensure co-ordinated management of the effects of financial turbulence, domestic efforts need to be complemented by appropriate international efforts.

Various commentators have raised concerns over the apparent opacity in which particular international investors conducted their activity. To the extent that this was due to asymmetric standards of disclosure and transparency expected of different groups of market participants, a particular concern that has arisen is that certain market participants are subject to differing standards of regulation based on legal form even though they appear to perform substantially similar functions at a comparable level of sophistication. This difference in regulatory standards may have been established for reasons possibly related to investor protection issues or legal status but it is important that they do not unnecessarily exclude other regulatory concerns as well. For instance, the issues of market integrity and systemic stability should also be equally factored into the regulation of market participants.

It is well-recognised that international financial activity is dominated by major participants, including mutual, pension and hedge funds, insurance companies and banks' proprietary trading desks, and that their position-taking capacity both individually and collectively is substantial. Hence, there is an argument to be

⁹⁷ For a discussion on these issues, see "Systemic Risk: A Worry Shared ...", by Michael Taylor in *Financial Regulation Report*, a Financial Times publication, June 1998, pages 1–2.

made for pursuing a more consistent, “functional” approach to regulating major global investors because it is believed that issues relating to market integrity should apply equally well across all participants. Moreover, this would strengthen the supervision, regulation and transparency of international financial activity overall. A recent study by the IMF reports that only the United States supports large exposure or position-monitoring encompassing all large participants in the OTC foreign-exchange market, including those outside bank, broker and investment bank intermediaries⁹⁸. Thus, it was suggested that other markets might consider establishing or reinforcing similar large-trade and reporting-position requirements for major market participants, which, given the blurring of institutional distinctions mentioned above, might also include relevant banks, securities firms and institutional investors.

Finally, what has also been suggested is that in addition to achieving consistency in the regulatory treatment of different market participants, there should also be greater consistency in the regulation of financial activity across different asset markets. For example, the East Asian crisis has demonstrated that OTC currency trading activity displays a lack of transparency, especially when compared to exchange-traded markets. Particular concerns that have arisen are that the existing structure of currency markets results in an opaque environment which can stymie and frustrate policy-makers in their attempts to monitor market activity and take appropriate policy responses. Hence, in as much as the issues related to regulatory objectives, such as market integrity, are valid across all markets, then standards upholding such objectives should be established and enforced in those markets, whether exchange- or OTC-based.

Given the increasing propensity for cross-asset volatility spill-over, as was evidenced in the East Asian crisis, there appears to be a strong case for extending the scope of inter-market surveillance to include that of OTC activity. This is of particular significance given that an increasing proportion of financial activity is conducted over these markets. However, large-trader reporting requirements appear not to have extended to OTC derivative markets because of certain practical difficulties, in particular the complexity of data-collection. A 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. In this respect, the experience of the United States in monitoring the OTC currency market is encouraging because it has shown that, even in a large decentralised environment, reporting requirements seem capable of being applied. But it has been noted by the IMF that to be totally effective, such requirements are more likely to require a concerted international effort rather than unilateral efforts at the national level.

Given the manner in which the dynamics of international markets are being played out even as we write the concluding remarks to this report, various other issues not covered in this report are beginning to surface and pose significant questions for the international financial community, including regulators. The shortcomings of the existing structure of the international financial system have been relatively well known for some time. These shortcomings include the overshooting of markets, excessive volatility and the opacity that surrounds various aspects of global financial activity. Nevertheless, the role of international financial markets in facilitating the financing of real economic activity through capital formation and mobilisation, resource allocation, and risk transfer and transformation is not in dispute. However, there is an increasing body of opinion suggesting that the East Asian crisis and the financial turbulence that has emerged in its aftermath, as well as the financial activity currently being observed, indicates that the extent of certain activity in financial markets may have now gone dangerously beyond what has traditionally been expected of them.

More than a year after the start of the East Asian crisis, we continue to observe severe stress in financial markets all over the world and particularly in emerging markets. The financial turbulence has spread to regions as far as Africa, Latin America and Eastern Europe and Russia. We have seen severe financial turbulence—characterised by overreaction and the far removal of markets from their fundamentals—appear with such speed and voracity that, as a result, commentators and policy-makers the world over are now

⁹⁸ See Eichengreen *et al* (1998), page 11, footnote 32.

beginning to question the conventional wisdom that has justified the manner in which the international financial system continues to operate. In addition, questions are being raised as to the extent to which activity in, say, currency markets are over-speculative and, according to some, even manipulative. A leading regulator in a major financial centre, which intervened against currency speculators recently, for instance, has noted that “manipulative speculative activities threaten to undermine the ... economy” and asks that if the “strongest fundamentals can be threatened by such speculation, what hope is there for the rest of the non-industrialised and emerging markets?” Questions are also being focused on a whole host of issues that were previously considered either not significant or considered against the prevailing orthodoxy of unfettered markets and the power of pure market discipline.

That these questions are being posed and seriously considered suggests that significant concerns have arisen about the impact of major disruptions to financial markets on the real economy and society in general. For developing economies especially, whose economic foundations are arguably more susceptible to such disruption, this has serious consequences for the economic development process and on social welfare. While preventative solutions have been proffered to minimise these risks, they have commonly assumed that problems lie at the level of national economies or national financial systems. However, as events in the recent past have shown, the fervour that has accompanied financial crises has discriminated neither against industrialised nor developing countries, against economies with strong fundamentals nor those with weak ones, and have arguably arisen with increasing frequency and severity. As such, while this report has only drawn clear conclusions on areas within its scope, even at this stage of the crisis, we believe that the East Asian crisis has begun to raise additional profound issues in relation to the international financial markets that will prove a significant challenge for the international financial community.

7. Appendix

Table 10: Nominal GDP per capita (US\$)

	1990	1991	1992	1993	1994	1995	1996	1997	Average growth rate (%) from 1987–1996
East Asia									
Indonesia	591	643	694	842	928	1,043	1,155	1,044	11.1
South Korea	5,917	6,799	7,053	7,554	8,567	10,175	10,645	9,895	14.0
Malaysia	2,408	2,595	3,047	3,281	3,607	4,219	4,683	4,373	10.5
Philippines	721	722	824	828	956	1,084	1,200	1,151	8.0
Thailand	1,534	1,746	1,943	2,154	2,438	2,820	3,093	2,619	14.1
Rest of Asia									
India	357	295	272	292	331	351	368	380	1.3
Pakistan	336	373	388	400	393	444	463	447	4.6
Sri Lanka	473	522	557	587	656	727	769	826	7.3
Africa									
Morocco	1,054	1,113	1,114	1,028	1,141	1,215	1,333	1,179	5.6
Tunisia	1,511	1,564	2,828	1,687	1,774	2,016	2,136	2,031	6.1
Eastern Europe									
Hungary	3,191	3,230	3,610	3,752	4,046	4,273	4,401	4,382	6.5
Poland	1,547	2,000	2,199	2,236	2,403	3,056	3,503	3,551	8.4
Turkey	2,714	2,652	2,741	3,037	2,146	2,784	2,896	2,894	6.3
Latin America									
Argentina	4,373	5,799	6,918	7,700	8,323	8,161	8,585	9,211	10.3
Brazil	3,060	2,640	2,527	2,892	3,672	4,602	4,748	4,803	9.7
Chile	2,321	2,583	3,157	3,316	3,729	4,739	4,988	5,476	13.1
Colombia	1,137	1,143	1,333	1,487	1,800	2,071	2,169	2,366	8.0
Mexico	3,041	3,513	3,971	4,704	4,704	3,148	3,604	4,410	8.2
Peru	1,570	1,936	1,863	1,793	2,172	2,507	2,539	2,683	2.2
Venezuela	2,515	2,707	2,993	2,912	2,715	3,492	3,008	4,059	1.6

Source: Economist Intelligence Unit and Datastream/ICV

Table 11: Annual inflation rate (%)

	1990	1991	1992	1993	1994	1995	1996	1997	Average 1987–1996
East Asia									
Indonesia	7.8	9.4	7.5	9.7	8.5	9.4	8.0	7.5	8.4
South Korea	8.6	9.3	6.2	4.8	6.2	4.5	4.9	4.5	6.0
Malaysia	2.7	4.4	4.7	3.6	3.7	3.4	3.5	2.7	3.2
Philippines	14.2	18.7	8.9	7.6	9.1	8.1	8.4	5.1	10.0
Thailand	5.9	5.7	4.1	3.4	5.2	5.7	5.9	5.6	4.8
Rest of Asia									
India	138.1	13.9	11.8	6.4	10.2	10.3	8.9	6.5	16.6
Pakistan	9.1	11.8	9.5	10.0	12.4	12.3	10.4	11.4	9.7
Sri Lanka	21.5	12.2	11.4	11.7	8.5	7.7	15.9	9.6	12.2
Africa									
Morocco	7.0	8.0	5.7	5.2	5.2	6.1	3.0	0.9	4.8
Tunisia	6.5	8.2	5.8	3.9	4.8	6.3	3.7	3.6	6.2
Eastern Europe									
Hungary	28.9	35.0	23.0	22.5	18.8	28.2	23.6	18.3	22.1
Poland	553.6	76.7	45.3	36.9	33.3	26.8	20.1	15.9	112.5
Turkey	60.3	66.0	70.1	66.1	106.3	88.1	80.4	85.9	71.3
Latin America									
Argentina	2,314.4	171.6	24.9	10.6	4.2	3.4	0.2	0.5	608.3
Brazil	2,902.4	410.6	965.2	1,921.0	2,502.5	76.8	16.5	6.4	1,099.5
Chile	26.6	22.0	15.6	12.1	12.0	8.2	7.4	6.2	15.6
Colombia	29.1	30.4	27.0	22.6	23.8	21.0	20.2	18.9	25.1
Mexico	26.6	22.7	15.5	9.7	6.9	35.0	35.2	20.8	41.7
Peru	7,475.8	409.5	71.6	48.6	23.6	11.2	11.6	8.6	1,220.3
Venezuela	40.8	40.8	31.4	37.9	60.2	60.0	100.0	50.1	51.3

Source: Economist Intelligence Unit and Datastream/ICV

Table 12: Unemployment rate (%)

	1990	1991	1992	1993	1994	1995	1996	1997	Average 1992–1996
East Asia									
Indonesia	n.a.	n.a.	2.7	2.8	4.4	4.1	4.5	4.8	3.7
South Korea	n.a.	n.a.	2.4	2.8	2.4	2.0	2.0	2.9	2.3
Malaysia	n.a.	n.a.	3.9	3.6	2.6	2.8	2.6	2.7	3.1
Philippines	n.a.	n.a.	9.8	9.3	9.5	9.5	8.3	7.6	9.3
Thailand	n.a.	n.a.	2.5	1.5	2.6	2.6	2.6	4.5	2.4
Rest of Asia									
India	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Pakistan	n.a.	n.a.	5.9	4.7	4.8	4.8	5.3	5.3	5.1
Sri Lanka	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Africa									
Morocco	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Tunisia	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.	n.a.
Eastern Europe									
Hungary	1.9	7.8	13.2	13.3	11.4	11.1	10.7	10.4	11.9
Poland	6.3	11.8	13.6	16.4	16.0	14.9	13.2	10.5	14.8
Turkey	7.5	8.4	8.0	8.0	7.9	6.6	5.8	5.7	7.3
Latin America									
Argentina	n.a.	n.a.	7.0	9.3	12.2	16.4	17.0	13.8	12.4
Brazil	n.a.	n.a.	6.0	5.3	5.1	4.6	5.4	5.7	5.3
Chile	n.a.	n.a.	6.2	5.8	6.7	7.4	6.5	6.8	6.5
Colombia	n.a.	n.a.	10.3	8.6	8.9	8.9	11.2	12.2	9.6
Mexico	n.a.	n.a.	0.0	3.4	3.7	6.3	5.5	4.2	3.8
Peru	n.a.	n.a.	9.4	9.9	8.8	7.1	8.0	6.5	8.6
Venezuela	n.a.	n.a.	7.8	6.6	8.7	10.7	12.4	12.8	9.2

Source: Economist Intelligence Unit and Datastream/ICV

Table 13: Real GDP growth rate (%)

	1990	1991	1992	1993	1994	1995	1996	1997	Average 1987–1996
East Asia									
Indonesia	7.2	7.0	6.5	6.5	7.5	8.2	8.0	6.6	6.9
South Korea	9.5	9.1	5.1	5.8	8.6	8.9	7.1	6.0	8.4
Malaysia	9.7	8.7	7.8	8.3	9.1	9.5	8.2	7.0	8.4
Philippines	3.2	-0.7	0.3	2.1	4.4	4.8	5.7	4.9	3.7
Thailand	11.2	8.5	8.1	8.3	8.7	8.8	6.7	0.4	9.5
Rest of Asia									
India	5.7	0.4	5.3	5.0	7.6	7.3	6.8	5.3	5.9
Pakistan	4.5	5.5	7.8	1.9	3.9	5.1	4.1	3.4	5.2
Sri Lanka	6.2	4.6	4.3	6.9	5.6	5.4	3.8	5.7	4.5
Africa									
Morocco	3.8	5.9	-4.0	-1.0	11.6	-7.6	12.0	-2.5	3.1
Tunisia	7.1	3.9	7.8	2.2	3.3	2.4	6.9	5.6	4.3
Eastern Europe									
Hungary	-3.5	-11.9	-3.1	-0.6	2.9	1.5	1.3	4.0	-0.9
Poland	-11.6	-7.0	2.6	3.8	5.2	7.0	6.1	6.9	1.2
Turkey	9.4	0.3	6.4	8.1	-6.1	8.0	7.1	6.0	4.4
Latin America									
Argentina	-1.3	10.5	10.3	6.3	8.5	-4.6	4.3	8.4	2.8
Brazil	-4.3	0.3	-0.8	4.2	6.0	4.2	3.0	3.2	1.9
Chile	3.3	7.3	11.0	6.3	4.2	8.5	7.2	6.3	7.2
Colombia	4.3	2.0	4.0	5.4	5.8	5.4	2.1	2.9	4.2
Mexico	4.4	3.6	2.8	0.7	3.5	-6.2	5.1	7.6	2.0
Peru	-3.8	2.9	-1.7	6.4	13.1	7.2	2.6	7.4	1.7
Venezuela	6.9	10.4	7.3	0.7	-5.2	3.7	-0.4	5.1	2.4

Source: Economist Intelligence Unit and Datastream/ICV

Table 14: Fiscal deficits as a percentage of nominal GDP (%)

	1990	1991	1992	1993	1994	1995	1996	1997	Average 1987–1996
East Asia									
Indonesia	0.4	0.4	-1.4	-0.6	0.3	0.8	1.2	0.7	-0.5
South Korea	-0.7	-1.6	-0.5	0.6	0.3	0.3	0.1	-0.1	0.1
Malaysia	-3.0	-2.0	-0.8	0.2	2.3	0.9	0.7	1.3	-1.6
Philippines	-3.5	-2.1	-1.2	-1.5	1.1	0.6	0.3	-0.6	-1.4
Thailand	4.5	4.7	2.8	2.1	1.9	2.8	2.2	-0.5	2.2
Rest of Asia									
India	-8.1	-5.8	-5.7	-7.5	-6.3	-6.3	-5.2	-4.8	-6.9
Pakistan	-5.4	-7.6	-7.9	-8.9	-6.9	-6.5	-6.1	-6.0	-7.2
Sri Lanka	-7.8	-9.5	-5.4	-6.8	-8.5	-8.3	-7.8	-3.9	-8.4
Africa									
Morocco	-2.2	-2.1	-1.4	-2.3	-3.1	-5.1	-4.0	-3.0	-3.3
Tunisia	-5.4	-5.9	-3.1	-3.2	-1.4	-3.2	-3.2	-3.8	-3.8
Eastern Europe									
Hungary	-0.1	-4.6	-6.5	-5.8	-6.1	-5.7	-1.9	-4.1	n.a.
Poland	0.4	-3.7	-9.8	-2.8	-2.7	-2.6	-2.5	-1.9	-3.0
Turkey	-2.6	-3.9	-4.3	-6.7	-3.9	-4.0	-8.3	-8.7	-4.3
Latin America									
Argentina	-0.2	-1.2	-0.4	0.9	-0.4	-1.0	-1.8	-1.3	-0.9
Brazil	-26.9	-1.5	2.2	-0.3	-1.3	4.9	3.9	3.2	-4.9
Chile ¹	0.8	1.5	2.2	1.9	1.7	2.5	2.2	1.1	1.7
Colombia	-0.3	0.1	-0.3	0.4	1.0	-0.7	-1.9	-3.7	-0.7
Mexico	0.0	0.0	1.5	0.3	-0.7	-0.6	-1.2	-1.5	-0.1
Peru	-4.4	0.6	0.6	-2.7	-2.6	-2.7	-1.0	-0.9	-3.5
Venezuela ²	0.9	4.4	-3.6	-2.9	-4.2	-3.7	1.0	2.3	-1.2

Source: Economist Intelligence Unit and Datastream/ICV.

¹ Average is for 1989 to 1996, data for earlier years, not available.

² Average is for 1989 to 1996, data for earlier years, not available.

n.a. = not available.

Table 15: International rating on Thailand's long-term bonds and notes

Date	Duff & Phelps	Fitch IBCA	Moody's	Standard & Poor's	Japan Rating & Investment	Japan Credit Rating
1 Aug 1989	<i>Not rated</i>	<i>Not rated</i>	A2 <i>Rating assigned</i>			
Dec 1992				A- <i>Current rating</i>		
29 Dec 1994				A <i>Upgrade</i>		
13 Feb 1997			A2 <i>On review for possible downgrade</i>			
8 Apr 1997			A3 <i>Downgrade; with stable outlook</i>			
17 Jun 1997					A+ <i>Downgrade from</i>	
3 Jul 1997					AA- <i>Confirm</i>	
4 Jul 1997	Baht is floated as the Bank of Thailand abandons support, S&P says no need to review rating					
1 Aug 1997				A <i>Negative watch</i>		
13 Aug 1997	Thai Government seeks IMF assistance					
3 Sep 1997				A- <i>Downgrade; negative outlook</i>		
9 Sep 1997			A3 <i>On review for possible downgrade</i>			
13 Sep 1997						AA- <i>Assign</i>
1 Oct 1997			Baa1 <i>Downgrade, with negative outlook</i>			
22 Oct 1997			Baa1 <i>On review for possible downgrade</i>			
24 Oct 1997				BBB <i>Downgrade; negative outlook</i>		
4 Nov 1997	Prime Minister Chavalit Yongchaiyudh resigns					
8 Nov 1997						A+ <i>Downgrade</i>
15 Nov 1997					A- <i>Downgrade</i>	
27 Nov 1997			Baa3 <i>Downgrade with negative outlook</i>			

Table 15: International rating on Thailand's long-term bonds and notes

Date	Duff & Phelps	Fitch IBCA	Moody's	Standard & Poor's	Japan Rating & Investment	Japan Credit Rating
13 Dec 1997						BBB+ <i>Downgrade</i>
21 Dec 1997			Ba1 <i>Downgrade</i>			
25 Dec 1997						BBB <i>Downgrade</i>
8 Jan 1998				BBB- <i>Downgrade;</i> <i>negative outlook</i>		

Source: *White Paper: Moody's Rating Record in the East Asian Financial Crisis* by Moody's Investor Services, May 1998; *After Asia: some lessons of the Crisis*, Sovereign Comment 13 by Fitch IBCA, January 1998; and 'Rating Agencies: Risks beyond measure' in *The Economist*, December 13th 1997.

Table 16: International rating on south Korea's long-term bonds and notes

Date	Duff & Phelps	Fitch IBCA	Moody's	Standard & Poor's	Japan Rating & Investment	Japan Credit Rating
18 Nov 1986			A2 <i>Rating assigned</i>			
4 Apr 1990			A1 <i>Upgrade</i>			
1 Jan 1992				A+ <i>Current rating</i>		
1 May 1995				AA- <i>Upgrade</i>		
27 Jun 1996		AA- <i>Rating assigned</i>				
1 Feb 1997		AA- <i>Confirmed</i>				
8 Jun 1997						
23 Jun 1997			A1 <i>Negative outlook</i>			
15 Jul 1997		AA- <i>On review</i>				
23 Aug 1997					AA+ <i>Assign</i>	
13 Oct 1997					AA <i>Down</i>	
21 Oct 1997		AA- <i>Confirmed</i>				
22 Oct 1997	Finance Minister announces small scale bank bail-out and government take-over of failed Kia Motors					
24 Oct 1997				A+ <i>Downgrade- negative outlook</i>		
11 Nov 1997		A+ <i>Downgrade</i>				
22 Nov 1997						Aa <i>Downgrade from AA+</i>
25 Nov 1997				A- <i>Downgrade; negative watch</i>		
26 Nov 1997		A <i>Downgrade</i>				
27 Nov 1997			A3 <i>Downgrade</i>			
2 Dec 1997					A <i>Down</i>	
3 Dec 1997	South Korean Government signs Letter of Intent to the International Monetary Fund					
9 Dec 1997	A <i>Rating assigned</i>					
10 Dec 1997			Baa2 <i>Downgrade; on- review- downgrade</i>			
11 Dec 1997		BBB- <i>Downgrade negative watch</i>		BBB- <i>Downgrade negative watch</i>		
12 Dec 1997					BBB <i>Down</i>	
16 Dec 1997	A <i>Negative rate watch</i>					

Table 16: International rating on south Korea's long-term bonds and notes

Date	Duff & Phelps	Fitch IBCA	Moody's	Standard & Poor's	Japan Rating & Investment	Japan Credit Rating
21 Dec 1997			Ba1 <i>Downgrade</i>			
22 Dec 1997				B+ <i>Downgrade;</i> <i>negative watch</i>		
23 Dec 1997	BB <i>Downgrade;</i> <i>negative watch</i>	B- <i>Downgrade</i> <i>negative watch</i>				
9 Jan 1998			Ba1 <i>Downgrade on</i> <i>review-possible</i> <i>downgrade</i>			
16 Jan 1998				B+ <i>On review;</i> <i>uncertain</i>		
21 Jan 1998		B <i>Positive Watch</i>				
2 Feb 1998		BB+ <i>Upgrade;</i> <i>positive watch</i>				
16 Feb 1998				BB+ <i>Upgrade</i>		

Source: *White Paper: Moody's Rating Record in the East Asian Financial Crisis* by Moody's Investor Services, May 1998; *After Asia: some lessons of the Crisis*, Sovereign Comment 13 by Fitch IBCA, January 1998; and 'Rating Agencies: Risks beyond measure' in *The Economist*, December 13th 1997.

Table 17: International rating on Indonesia's long-term bonds and notes

Date	Duff & Phelps	Fitch IBCA	Moody's	Standard & Poor's	Japan Rating & Investment	Japan Credit Rating
1 Jul 1992	<i>Not rated</i>			BBB- <i>Current rating</i>		<i>Not rated</i>
14 Mar 1994			Baa3 <i>Rating assigned</i>			
1 Apr 1995				BBB <i>Upgrade</i>		
4 Jun 1997		BBB- <i>Current rating</i>				
10 Oct 1997				BBB- <i>Downgrade</i>		
27 Oct 1997			Baa3 <i>Negative outlook</i>			
17 Dec 1997		BBB- <i>Negative watch</i>				
21 Dec 1997			Ba1 <i>Downgrade</i>			
22 Dec 1997		BB+ <i>Downgrade; negative watch</i>				
31 Dec 1997				BB+ <i>Downgrade; negative outlook</i>		
8 Jan 1998		BB- <i>Downgrade; negative watch</i>			BBB-/A2 <i>Confirm</i>	
9 Jan 1998			B2 <i>Downgrade</i>	BB <i>Downgrade; negative watch</i>		
13 Jan 1998					BB-/A3 <i>Downgrade</i>	
21 Jan 1998		B+ <i>Downgrade, negative watch</i>				
27 Jan 1998				B <i>Downgrade; negative watch</i>		

Source: *White Paper: Moody's Rating Record in the East Asian Financial Crisis* by Moody's Investor Services, May 1998; *After Asia: some lessons of the Crisis*, Sovereign Comment 13 by Fitch IBCA, January 1998; and 'Rating Agencies: Risks beyond measure' in *The Economist*, December 13th 1997.

Table 18: International rating on Malaysia’s long-term bonds and notes

Date	Duff & Phelps	Fitch IBCA	Moody’s	Standard & Poor’s	Japan Rating & Investment	Japan Credit Rating
18 Nov 1986	<i>Not rated</i>	<i>Not rated</i>	Baa1 <i>Rating assigned</i>			<i>Not rated</i>
12 Mar 1990			A3 <i>Upgrade</i>			
1 Jan 1992				A <i>Current rating</i>		
11 Mar 1993			A2 <i>Upgrade</i>			
29 Dec 1994				A+ <i>Upgrade</i>		
20 Jan 1995			A2 <i>On watch for possible upgrade</i>			
15 Mar 1995			A1 <i>Upgrade</i>			
8 Mar 1997					AA/A1 <i>Assigned</i>	
14 Jul 1997			Malaysian ringgit falls as central bank abandons support			
1 Sep 1997				A+ <i>Negative outlook</i>		
7 Nov 1997					AA-/A1 <i>Downgrade</i>	
21 Dec 1997			A2 <i>Downgrade</i>			
23 Dec 1997				A <i>Downgrade; negative outlook</i>		
6 Feb 1998			A2 <i>Negative outlook</i>			

Source: *White Paper: Moody’s Rating Record in the East Asian Financial Crisis* by Moody’s Investor Services, May 1998; *After Asia: some lessons of the Crisis*, Sovereign Comment 13 by Fitch IBCA, January 1998; and ‘Rating Agencies: Risks beyond measure’ in *The Economist*, December 13th 1997.

Table 19: International rating on Hong Kong's long-term bonds and notes

Date	Duff & Phelps	Fitch IBCA	Moody's	Standard & Poor's	Japan Rating & Investment	Japan Credit Rating
9 Dec 1988			A2 <i>Rating assigned</i>			<i>Not rated</i>
8 Nov 1989			A3 <i>Downgrade</i>			
7 Dec 1992				A <i>Current rating</i>		
24 Nov 1996		A+ <i>Current rating</i>				
10 Feb 1997	A+ <i>Rating assigned</i>					
14 May 1997				A+ <i>Upgrade</i>		
26 Jun 1997					Aa/A1+ <i>Confirmed</i>	
27-28 Oct 1997	Stock market plunges as speculators attack the Hong Kong dollar					
30 Oct 1997			<i>Downgrades Hong Kong banks on concerns about property exposure</i>			
5 Nov 1997				A+ <i>Confirmed</i>		
21 Dec 1997			A3 <i>Confirmed</i>			
19 Feb 1998			A3 <i>Negative outlook</i>			

Source: *White Paper: Moody's Rating Record in the East Asian Financial Crisis* by Moody's Investor Services, May 1998; *After Asia: some lessons of the Crisis*, Sovereign Comment 13 by Fitch IBCA, January 1998; and 'Rating Agencies: Risks beyond measure' in *The Economist*, December 13th 1997.

Table 20: Comparative long-term debt rating definitions of a selection of international rating agencies

Classification	Duff & Phelps Credit Rating	Fitch IBCA	Moody's Investors Service	Standard & Poor's	Japan Rating & Investment Information	Japan Credit Rating Agency
Investment grade	AAA	AAA	Aaa	AAA	AAA	AAA
	AA+	AA+	Aa1	AA+	AA+	AA+
	AA	AA	Aa2	AA	AA	AA
	AA-	AA-	Aa3	AA-	AA-	AA-
	A+	A+	A1	A+	A+	A+
	A	A	A2	A	A	A
	A-	A-	A3	A-	A-	A-
	BBB+	BBB+	Baa1	BBB+	BBB+	BBB+
	BBB	BBB	Baa2	BBB	BBB	BBB
BBB-	BBB-	Baa3	BBB-	BBB-	BBB-	
Non-investment, speculative or 'junk bond' grade	BB+	BB+	Ba1	BB+	BB+	BB+
	BB	BB	Ba2	BB	BB	BB
	BB-	BB-	Ba3	BB-	BB-	BB-
	B+	B+	B1	B+	B+	B+
	B	B	B2	B	B	B
	B-	B-	B3	B-	B-	B-
		CCC+	Caa1	CCC+		
	CCC	CCC	Caa2	CCC	CCC	CCC
		CCC-	Caa3	CCC-		
		CC		CC	CC	CC
		C	C	C	C	C
		DDD				
DD	DD					
	D		D		D	

Source: *DCR Long-Term Debt & Preferred Stock Rating Scale*, Duff & Phelps Credit Rating Co.; *Rating Definitions*, Fitch IBCA; *Rating Definitions*, Moody's Investors Service; *Rating Definitions* by Sovereign Rating Service, Standard & Poor's, March 1998; *Rating Definitions*, Japan Rating and Investment Information Inc.; and *Rating Definitions*, Japan Credit Rating Agency Ltd.