Part I

The Global Implications of Financial Crises in Emerging Market Economies (From Mexico to Korea)

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The Financial Crisis in Korea and Its Lessons for Reform of the International Financial System

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I Introduction

Korea's financial crisis has been as dramatic as it has been unexpected. In fact, over a two-month period, from October to December 1997, Korea was reduced from being the world's 11th largest economy to an economy surviving on overnight loans from the international money markets. What was so surprising about this crisis was that as late as October 1997, no one, including the international credit rating agencies, could have predicted that only two months later the foreign exchange market would collapse. Nor that the Korean won would fall by more than 50% against the US dollar between November 19, 1997, when Korea decided to approach the IMF for a rescue plan, and December 24, 1997. During the same period, the stock price index (KOSPI) tumbled to almost 350 from 498, and the short-term market rate of interest shot up to 40% per annum.

Despite the IMF's rescue package and Korea's commitment to the clearing of non-performing loans and the restructuring of troubled financial institutions together with other badly needed economic reforms, Korean banks suddenly found themselves cut off from the international financial markets. During the last week of December, Korea was on the verge of defaulting on its foreign debts. It narrowly avoided that fate by working out a last minute emergency loan package put together by the IMF and several of the G-7 countries.

Although Korean banks have been able to roll over some of their short-term debts and market sentiments have seemingly once again begun to turn in Korea's favour, much work remains for Korea in terms of normalising its ties to the international financial markets. At the time of my writing, the IMF programme has not been as successful as originally expected in terms of improving the markets' confidence in the Korean economy.

1 Earlier versions of this paper were presented to the conference on the International Financial System under Stress on January 26-27 in New York and to the G-24 Ministerial Meeting on February 7-8 in Caracas, Venezuela. Rudi Dornbusch and Jack Boorman of the IMF gave valuable comments on an earlier draft.

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The purpose of this paper is to analyse both the internal and external factors responsible for, and the consequences and policy responses to, the financial turmoil plaguing Korea today. Section II describes the buildup to the crisis, focusing on the process of financial liberalisation and its effects on domestic investment. Section III discusses a series of developments which culminated in the foreign exchange crisis in November and December of 1997. Lessons and implications of the crisis for reform of the international financial system are analysed in Section IV. Concluding remarks can be found in the last section.

II Buildup to the Crisis

Korea rebounded strongly from its slowdown in growth in 1992 and 1993. It did not experience the kind of double-digit growth that it had during the period of 1986-89, but the economic growth from 1994 to the beginning of 1997 was almost 8% on average per annum. It peaked in 1996 at nearly 9% (see Tables 1 and 2).

Table 1 Major Indicators of Korean Economy[1]
(in percentages)

	1991	1992	1993	1994	1995	1996	1997[1]	1998[2]
GDP	9.1	5.1	5.8	8.6	8.9	7.1	6.1	0.7
Consumption	9.3	6.8	5.3	7.0	7.2	6.9	5.0	-1.8
Fixed Investment	12.6	-0.8	5.2	11.8	11.7	7.1	-2.1	-12.1
Construction	13.0	-0.6	8.9	4.5	8.7	6.3	0.9	-6.1
Equipment	12.1	-1.1	-0.1	23.6	15.8	8.2	-5.9	-20.8
Commodity Exports	12.2	10.9	9.7	14.6	25.3	14.5	24.2	14.5
Commodity Imports	19.4	4.0	5.6	21.8	21.3	13.9	6.5	2.0
Gross Savings/GDP	35.9	34.7	35.1	35.2	35.9	34.3	34.2	34.8
Gross Investment/GDP	38.9	36.6	35.1	36.1	37.0	38.2	36.1	34.1
Increase of Stocks/GDP	0.5	0.0	-0.9	0.3	0.5	1.4	–	–
Current Account/GDP	-2.8	-1.3	0.3	-1.0	-1.8	-4.8	-1.9	0.7
Terms of Trade	0.6	0.0	4.4	1.2	-3.6	-12.3	-10.3	–
Consumer Price Index	9.3	6.2	4.8	6.3	4.5	4.9	4.4	10.1
Producer Price Index	4.7	2.2	1.5	2.8	4.7	2.7	3.8	21.1

Notes:
1 Averages from the first quarter to the third quarter.
2 Korea Institute of Finance forecasts.

Source:
The Bank of Korea, *National Income*, various issues.
The Bank of Korea, *Balance of Payments*, various issues.
The National Statistics Office, *Consumer Price Index*, various issues.

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Table 2 Balance of Payments
(in billions of dollars and percentages)

	1996	1997								1998[1]
		I	II	III	IV					
					Oct.	Nov.	Dec.			
Current Account	-23.7	-7.4	-2.8	-2.1	-0.7	0.5	3.6	3.4	-8.9	3.0
Trade	-15.3	-5.4	-0.7	-0.0	-0.0	0.7	2.7	3.4	-2.8	10.9
Exports	128.3	30.6	35.6	34.6	12.1	12.1	12.6	36.8	137.5	147.8
(%)	(4.1)	(-2.9)	(9.3)	(16.3)	(7.7)	(4.8)	(7.5)	(6.7)	(7.2)	(7.4)
Imports	143.6	36.0	36.3	34.6	12.1	11.4	9.9	33.4	140.4	136.7
(%)	(12.2)	(5.7)	(1.7)	(-2.0)	(-7.0)	(-11.0)	(-21.8)	(-13.3)	(-2.3)	(-2.6)
Invisible Trade	-7.6	-1.8	-2.0	-1.9	-0.7	-0.2	0.2	-0.7	-6.3	-8.6
Transfers	-0.8	-0.2	-0.1	-0.2	-0.0	0.0	0.8	0.8	0.3	0.8
Capital Account	17.0	4.8	5.8	1.5	0.0	-2.0	–	–	–	–

Note:
[1] Korea Institute of Finance forecasts.

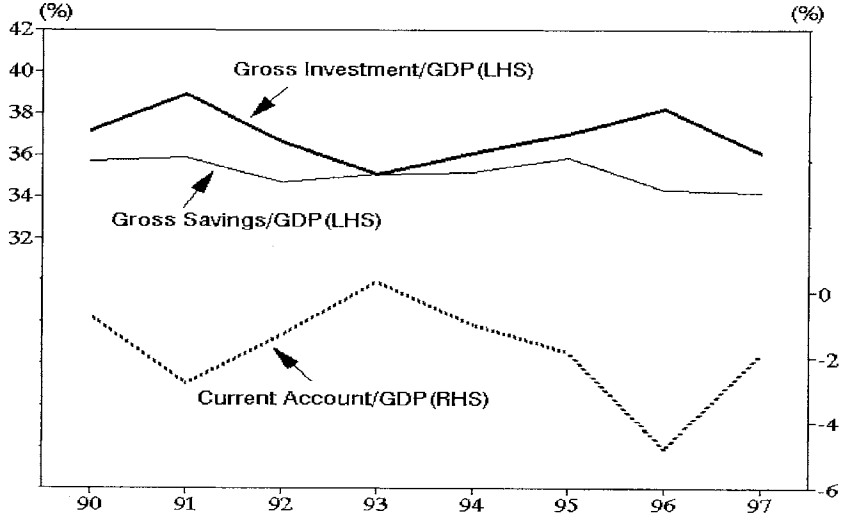
Source: The Bank of Korea, *Balance of Payments*, various issues.

Like the earlier periods of high economic growth, the economy was once again being fueled by exports. What was different during the 1994-96 period was that the high growth was also spurred by high investment. In many respects, this high investment was a positive development as the economy was coming out of a mild contraction during the 1992-93 period. However, it was also responsible for a sharp increase in the current account deficit and the financial and foreign exchange crisis in which Korea finds itself today. Why exactly did Korean firms embark upon such an investment spree? Two major developments were responsible: (i) the strengthening of the yen; and (ii) the financial liberalisation and market opening, which increased the availability of low-cost foreign credit.

High Yen, Financial Opening and Investment Boom

The appreciation of the yen brought about a sharp increase in the export earnings of East Asian countries, as they were becoming more competitive vis-à-vis Japan in exports of manufactures. This, in turn, encouraged a great deal of investment throughout East Asia. Korea benefited most out of all the East Asian countries from the high yen because it competes directly with Japan in many industries where Japan has been a predominant exporter.

Figure 1-A Savings/GDP, Investment/GDP and Current Account/GDP



Source: The Bank of Korea, *National Income*, various issues.
The Bank of Korea, *Balance of Payments*, various issues.

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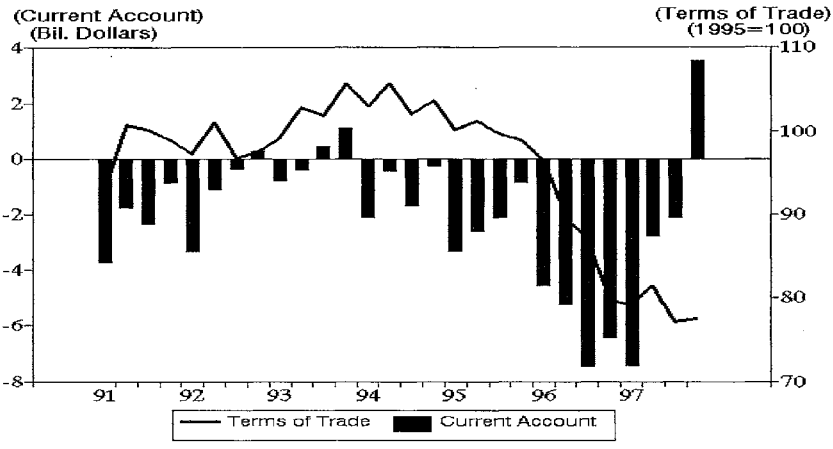
Figure 1-B Terms of Trade and Current Account



Source: The Bank of Korea, *Balance of Payments*, various issues.

During the third quarter of 1995, however, the Japanese yen reversed itself and began to decline. Since then, the yen/dollar exchange rate has continued to depreciate. At about the same time, the terms of trade moved against Korea's favour and continued to deteriorate for the next two years. The terms of trade shock, which in part reflected the stagnation in demand for Korea's major export products, worsened the current account deficit and triggered a deceleration of the economy (see Figures 1-A and B).

Despite these adverse developments, the Korean policymakers were not prepared to make any substantial adjustment in the won/dollar exchange rate. As a result, the real, effective (trade adjusted) exchange rate appreciated for more than a year from the third quarter of 1995 and thereafter remained relatively stable until November of 1997, when the current financial crisis broke out. The reason for the Korean policymakers' reluctance to devalue the won during this period was not altogether clear. It is speculated, however, that the policymakers, who were then preoccupied with industrial restructuring, believed that a strong won would help facilitate the shifting of resources away from those industries such as light manufacturing, where Korea was losing its competitiveness.

If this was indeed their policy objective, much of the effect of a strong won was more than offset by a large increase in foreign capital inflows facilitated by the deregulation of capital account transactions. This increase in foreign capital inflows helped maintain a relatively strong won,

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but because the domestic interest rate was more than twice the level of interest rates in international financial markets, the strong currency could hardly deter Korean firms from expanding their investments.[2]

Between 1994 and 1996, net foreign capital inflows amounted to $52.3 billion, more than three times the total net inflows for the 1990-93 period (see Table 3).[3] Much of the inflows, which consisted of short-term liabilities of domestic financial institutions and firms, were then channelled to finance investment in Korea's major export-oriented industries: electronics, automobiles, iron and steel, shipbuilding, and petrochemicals. As a result, investment jumped to 38.2% of GDP in 1996, from about 35% three years earlier, which caused a large increase in the current account deficit, reaching almost 5% of GDP (see Table 1).

Although the economy began to decelerate during the second half of 1996, largely due to the sharp decline in the prices of Korea's major export products, including semiconductors, the large industrial groups, or *chaebols*, which dominate Korea's manufacturing sector, were unable or unwilling to adjust their production and investment. Their inventories were piling up, but commercial banks were becoming less willing and more selective in extending credit to these groups, as they were increasingly concerned regarding these groups' growing losses and accumulating debts. Denied sufficient credit from commercial banks, the industrial groups had to secure high-cost, short-term loans from merchant banks. They also turned to foreign financial institutions and markets for their financing of fixed investment and inventories.

Industrial groups not only expanded their investment in domestic industries, but also in foreign countries. In 1994, Korea's total foreign investment rose to $2.3 billion from less than $1.3 billion a year earlier. Over the next two years, it grew 33 and 36%, and much of this investment went to Southeast Asia and Europe, no doubt financed by foreign credits.

While the available data are rather sketchy, foreign debts of domestic firms amounted to $35.6 billion at the end of 1996. This figure jumped to $43.2 billion a year later. Private foreign debts, as defined by the Korean government, do not include the liabilities of the foreign subsidiaries and branches of Korean firms, unless the payments of these debts are guaranteed by their parent firms. The exact amount of these liabilities was not

2 During the 1995-96 period, the short-term money market rates in Korea fluctuated between 13 and 14%, while the Libor on 90-day US dollar deposits remained below 6% per annum.

3 During the 1986-89 period, the capital and financial accounts generated a surplus on the order of $16 billion.

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Table 3 Long-Term and Short-Term Capital and Financial Accounts Transaction (in billions of dollars and percentages)

	1986-89	1990-93	1994-96	1994	1995	1996	Jan-Oct 97
Total Capital Account Balance (A)	-5.4	5.2	17.4	11.6	17.4	23.2	14.3
Long-Term Capital Balance (B=C-D)	-4.4	3.4	7.2	4.1	6.9	10.7	11.5
(B/A, %)	(82.0)	(65.2)	(41.6)	(35.7)	(39.4)	(46.2)	(81.0)
Inflow(C)	-3.5	3.9	11.8	6.4	12.3	16.9	16.6
(Foreign Direct Investments)	(0.7)	0.7	1.3	0.8	1.2	2.0	1.9
(Foreign Securities Issued by Firms)	n.a.	1.7	3.4	3.3	3.4	3.7	4.9
(Foreign Securities Issued by Fin. Institutions)[1]	-0.6	1.1	5.3	2.0	5.5	8.5	7.3
Outflow(D)	0.9	0.5	4.6	2.2	5.4	7.1	5.0
(Overseas Direct Investments)	0.2	1.1	3.0	2.1	3.1	3.9	3.0
Short-Term Capital Balance (E=F-G)	-1.0	1.8	10.1	0.7	10.6	12.5	2.7
(E/A, %)	(18.0)	(34.8)	(58.4)	(6.4)	(6.1)	(5.4)	(1.9)
Inflow(F)	-0.4	4.4	18.1	13.8	18.7	21.8	6.9
(Portfolio Investments)[2]	n.a.	2.2	3.5	2.5	2.9	5.1	2.8
(Short-Term Trade Credit)	0.0	0.5	3.8	2.7	4.0	4.8	3.5
(Short-Term Borrowings of Financial Institutions)[3]	0.5	0.5	6.0	4.1	7.6	6.3	-1.1
(Inter-Office Accounts)[4]	0.4	0.4	2.5	2.5	2.1	2.9	3.0
Outflow(G)	0.6	2.6	7.9	6.4	8.1	9.3	3.2
(Portfolio Investments)[5]	0.0	0.1	0.6	0.5	0.4	0.9	1.2
(Assets of Deposit Money Banks)[6]	0.2	1.8	4.8	4.1	5.4	5.0	1.4
(Assets of Merchant Banks and Develop. Inst.)[7]	0.1	0.0	0.9	0.2	0.5	2.0	0.4

n.a. = not available

Notes

1 Domestic financial institutions include deposit money banks, foreign bank branches in Korea, development institutions, and merchant banks.
2 Portfolio investments in domestic securities by foreign investors.
3 Include short-term liabilities of merchant banks and development institutions and commercial paper and other short-term securities issued by deposit money banks.
4 Borrowings of foreign bank branches in Korea from their home offices.
5 Portfolio investments in foreign securities by domestic investors.
6 Changes in foreign currency assets of oversea branches of domestic deposit money banks.
7 Changes in foreign currency assets of oversea branches of domestic merchant banks and development institutes.
8 Annual average of the period.

Source: "Capital Account Liberalization and the Structural Change of the Capital Account in Korea", In: *Monthly Bulletin*, Bank of Korea, December, 1997.

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known, but it was estimated to be over $51 billion at the end of June 1997.[4]

Why were Korea's industrial groups so inflexible and slow in adjusting their investment and output in response to the changes in the internal and external environment? The answer lies in some of the salient characteristics of the Korean *chaebols*. One such characteristic has been their tendency to compete more for market share than for profits. This feature is often attributed in part to the Japanese model of government-led economic development, but it was largely the consequence of an industrial policy geared towards obtaining scale economies in major export industries at the early stage of their development. Every major *chaebol* was pursuing business in only the tried and proven industries. Therefore, profits were driven down, forcing them to carve out the largest market shares that they possibly could and to also diversify at the first opportunity into new industries which promised high profits.

As a result, all of the largest *chaebols* went on to expand their investment in Korea's major industries so as not to lose their relative positions in the economy. Furthermore, the rigid and bureaucratic management system, where the decisionmaking was concentrated at the top, made it difficult for the *chaebols* to adjust their investment and production to changes in market conditions as rapidly as they should. Because practically all of the *chaebols* are family owned, they were reluctant to issue equities, as doing so could dilute their management control. These characteristics, together with the underdevelopment of the domestic capital markets, have caused the *chaebols* to become highly leveraged. A recent survey shows that the average debt-equity ratio of the 30 largest *chaebols* was more than 380% in 1996, four times as high as that of Taiwan.[5] As it turned out, the high leverage of the corporate sector proved to be the Korean economy's greatest structural weakness. Much of the expansion in investment could only be possible by taking on enormous amounts of debt, and the rapid debt accumulation by the *chaebols* meant that the economy as a whole became more susceptible to a slowdown in growth and a financial crisis.

The new government that came to power early in 1993 mounted a campaign of market deregulation and opening, as it was determined to rely more on the market for the management of the economy. The WTO agreement did not leave much room for industrial policy, and market liberalisation took away what was left of the government's control of the pro-

4 Since a large amount of private foreign debts will come due in the spring of 1998, it is feared that the inability of private firms to service their foreign debts could destabilise the financial markets once again.

5 Economic Review No. 29, Korea Institute of Economic and Technology, December 29, 1979.

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duction and investment activities of the large conglomerates and enterprises. The deregulation efforts succeeded in freeing the *chaebols* from the government, but without instituting either internal or external mechanisms of monitoring and controlling their management to replace the government's former role. Small stockholders have never had much voice in the management of the *chaebols*. The government, unlike during previous decades, was suddenly unable to control or coordinate the investment activities of the *chaebols*. The *chaebols* were free to do whatever they believed was in their best interests.

Financial Deregulation with Inadequate Supervision

From the 1960s and through the 1980s, capital account transactions had been tightly regulated. Many restrictions on capital movements in and out of the country were put in place to facilitate the government's industrial policy and to minimise the destabilising effects of short-term capital flows on the economy. All of this began to change in the early 1990s. By this time, the effectiveness and viability of Korea's interventionist regime had come into question due to the increasing complexity of the economy. Korea had also come under increasing pressure from developed countries, led by the US, to liberalise its financial sector, so Korea found itself beset by necessity to pursue liberalisation from both within and without. Financial market deregulation and market opening began in earnest in 1993, immediately after the inauguration of the current administration, and it was accelerated by Korea's accession to the OECD as its 29th member. Less than five years have elapsed since then, but the Korean experience demonstrates, as have many other cases of financial market opening, that unless financial market opening in emerging market economies is properly managed, with adequate supervision, it could easily lead to a boom and bust cycle during the transition period.

Although the market deregulation and opening in Korea had been carried out in a gradual and piecemeal manner, it led to a surge in foreign capital inflows during the 1994-97 period, much of which were short-term and speculative. With the acceleration in financial liberalisation, domestic financial institutions were allowed greater freedom in managing their assets and liabilities, in particular in borrowing from international financial markets. This greater freedom, together with the moral hazard inherent in the Korean financial system, also weakened their discipline in lending, in particular to large industrial groups, and in managing market risk. In fact, Korean financial institutions took much greater risks in their investment in foreign securities with borrowed short-term funds than prudent management would have permitted, thereby exposing themselves to the problem

of balance sheet-mismatch. These developments made the Korean economy highly vulnerable to the speculative currency attack and liquidity crisis.

In retrospect, Korean financial institutions were not adequately prepared for the financial market opening because they had not yet developed expertise in credit analysis, risk management, and due diligence. They had had little experience in foreign exchange and securities trading and with international banking in general. The supervisory authorities were not monitoring and regulating their international financial activities as much as they should have, because they were pressured to overhaul the regulatory system to make it more compatible with a liberalised system. They eliminated and relaxed many restrictions and control measures, but failed to install in their place a new system of prudential regulation needed to safeguard the stability and soundness of financial institutions.

During the three-year period from 1994-96, total capital flows (inflow plus outflows) rose to 47% of GDP from less than 30% during the preceding three-year period (see Table 4). Net inflows during the same period amounted to $52.2 billion, and unlike in the 1980s, the bulk of these inflows consisted of short-term borrowings with maturities less than one year, accounting for 62% of total net inflows, compared to 37% during the 1990-93 period (see Table 3).

Short-term capital inflows included foreigners' portfolio investment (mostly equity investment), trade credit, short-term borrowings by banks and other financial institutions, as well as borrowings by Korean branches of foreign banks from their headquarters. The aggregate as well as individual ceiling on foreigners' investment in equities have gradually been raised since 1992. This relaxation, together with the favourable prospects of the Korean economy, induced a surge in foreigners' equity investment during the 1994-96 period. However, compared to other forms of short-term capital inflows, the amount of portfolio investment was modest. The inflow in the form of trade credit jumped more than seven-fold, bank borrowings eleven-fold, and borrowing of Korean branches of foreign banks from their home offices more than seven-fold between the two sub-periods.

There were several reasons for the large increase in short-term capital inflows. One reason was the rapid growth in trade volume which required an equal increase in import and export-related credits. However, the growth in short-term capital inflows outpaced the expansion in trade. This discrepancy can be explained by the use of trade credit facilities as the routes of capital inflow which, in turn, were induced by the high interest rate differentials between the domestic and foreign financial markets in the context of stable foreign exchange rates. Deregulation of trade credits led to a lengthening of the periods of deferred and installment payments for imports ranging from six months to three years. Exporters were also

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Table 4 Capital and Financial Accounts of Korea
(in billions of dollars and percentages)

	1986-89	1990-93	1994-96	1994	1995	1996	Jan-Oct 97
Total Capital Inflow (A)	87.1	188.6	342.3	82.8	117.4	142.1	119.2
(average annual growth rate)	(3.8)	(2.5)	(33.4)	(37.4)	(41.8)	(21.0)	(4.2)
Total Capital Outflow(B)	108.4	169.0	290.1	71.1	100.1	118.9	104.9
(average annual growth rate)	(9.1)	(19.9)	(28.1)	(24.9)	(40.7)	(18.8)	(10.0)
Total Capital Transactions (A+B)	195.5	357.7	632.5	153.9	217.5	261.0	22.45
(average annual growth rate)	(6.0)	(22.0)	(30.9)	(31.4)	(41.3)	(30.0)	(6.8)
((A+B)/GDP)	(31.8)	(29.8)	(47.3)	(40.4)	(47.6)	(53.9)	–
Capital Account Balance[1]	-21.5	20.9	52.2	11.6	17.4	23.2	14.3
Current Account Balance	33.7	-15.0	-37.2	-4.5	-8.9	-23.7	-23.2

Notes:
1 Capital account balance is different from total capital inflow (A) minus total capital outflow (B) because of the statistical errors resulting from reclassifying the capital account balance.

Source:
"Capital Account Liberalization and the Structural Change of the Capital Account in Korea", In: *Monthly Bulletin*, Bank of Korea, December, 1997.

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allowed to offer suppliers' credits to foreign importers with longer maturities ranging from one to two years. The ceilings on export advances and export downpayments were also raised. These changes contributed to a large increase in trade credit. Commercial banks, for their part, had to increase their foreign currency borrowings to accommodate the growing demand for export and import financing; that is, to purchase the growing volume of export bills and to finance imports on credit.

There was another reason for the surge in short-term bank borrowing. Beginning in 1994, the ceiling on foreign currency loans by commercial banks was lifted, but the ceiling on commercial banks' medium and long-term borrowings from international financial markets was not. As a result, commercial banks were forced to raise short-term credits to finance long-term loans at home. Commercial banks were also attracted to short-term financing because the costs of short-term borrowing were lower than for issuing medium and long-term securities, largely because they had not established sufficiently high credit ratings to borrow from the long-term capital markets.

The external liabilities of commercial banks consist mostly of trade related refinance, bank loans, and securities issued, including commercial paper. Although commercial banks traditionally borrow at the short end of the financial market and extend short-term loans, the rise in their short-term indebtedness was alarming; the share of the short-term in total external liabilities jumped to 79% in 1994 from less than 65% a year earlier (see Table 5-A).[6] Much of the increase came from the issuance of commercial paper. Over the next two years, the share of short-term liabilities remained well over 70%, but instead of issuing commercial paper, commercial banks were relying on credit lines and loans for subloans, and other short-term loans as the major sources of short-term foreign credit. Although precise data and reliable information are not available, they were likely making long-term foreign currency loans to their customers with lending resources secured from the short-term money market, thereby creating a mismatch problem. In retrospect, the mismatch problem made the management of the financial crisis much more difficult than necessary.

Why did the Korean policymakers let banks and other financial institutions borrow so much from the short-term money markets? Why did they not open the domestic bond market and liberalise long-term external financing? Perhaps they may have ignored the management of short-term liabilities, because these liabilities do not add to the stock of foreign debts

6 The share of short-term in total external liabilities at merchant banks is relatively lower, though the accuracy of their balance sheet figures have been questionable (see Table 5-B).

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Table 5-A External Liabilities of Domestic Deposit Money Banks in Korea[1]
(end of period, millions of dollars and percentages)

	1992		1993		1994		1995		1996	
External Liabilities	7,220	(100)	6,554	(100)	10,941	(100)	18,942	(100)	26,708	(100)
Short-Term Liabilities	4,813	(66.7)	4,222	(64.4)	8,077	(78.9)	14,642	(77.3)	19,582	(73.3)
Deposits	68	(1.0)	92	(1.4)	80	(0.7)	127	(0.7)	177	(0.7)
Call Money	399	(5.5)	467	(7.1)	1,062	(9.7)	1,581	(0.8)	2,026	(7.6)
Borrowings from Banks	4,346	(60.2)	3,663	(55.9)	7,493	(68.5)	12,934	(68.3)	17.,379	(65.1)
(Due to Banks)[2]	3,818	(52.9)	3,210	(49.0)	6,935	(63.4)	10,177	(53.7)	11,295	(42.3)
(Other Borrowings)[3]	528	(7.3)	453	(6.9)	558	(5.1)	2,757	(14.6)	6,084	(22.8)
Long-Term Liabilities	2,407	(33.3)	2,332	(35.6)	2,306	(21.1)	4,300	(22.7)	7,126	(26.7)
Borrowings from Banks	1,470	(20.4)	1,503	(23.0)	1,159	(10.6)	1,129	(6.0)	758	(2.8)
Foreign Securities Issued	666	(9.2)	572	(8.7)	778	(7.1)	2,872	(15.2)	6,141	(23.0)
Inter-Office Accounts	138	(1.9)	119	(1.8)	220	(2.0)	115	(0.6)	57	(0.2)
Others	133	(1.8)	138	(2.1)	149	(1.4)	184	(1.0)	170	(0.6)

Notes:
1 The figures in parentheses are percentages of total external liabilities.
2 The external liabilities due to banks include credit lines from the foreign banks and borrowings for sub-loans.
3 Other borrowings include commercial paper, CDs, and other short-term securities issued by the deposit money banks.

Source:
The Bank of Korea, *Foreign Exchange Statistics*, various issues.

From: Regulatory and Supervisory Challenges in a New Era of Global Finance
FONDAD, The Hague, 1998, www.fondad.org

Table 5-B External Liabilities of Merchant Banks in Korea
(end of period, millions of dollars and percentages)

	1992		1993		1994		1995		1996	
External Liabilities	1,774	(100)	1,450	(100)	1,820	(100)	3,872	(100)	5,942	(100)
Short-Term Liabilities	606	(34.2)	303	(20.9)	654	(35.9)	1,966	(50.7)	3,190	(53.7)
Deposits	28	(1.6)	19	(1.4)	0	(0.0)	0	(0.0)	0	(0.0)
Call Money	5	(1.6)	1	(7.1)	46	(2.5)	56	(1.5)	58	(1.0)
Borrowings from Banks	573	(32.3)	283	(55.9)	608	(33.4)	1,910	(49.3)	3,132	(52.7)
Long-term Liabilities	1,168	(65.8)	1,147	(79.1)	1,166	(64.1)	1,906	(49.2)	2,752	(46.3)
Borrowings from Banks	730	(41.2)	727	(50.1)	491	(27.0)	435	(11.2)	327	(5.5)
Foreign Securities Issued	437	(24.6)	419	(28.9)	674	(37.0)	1,470	(38.0)	2,388	(40.2)
Others	1	(0.1)	1,000	(0.1)	1	(0.1)	1	(0.0)	37	(0.6)

Note:
The figures in parentheses are percentages of total external liabilities.

Source:
The Bank of Korea, *Foreign Exchange Statistics*, various issues.

as they mature and are paid off within a year, whereas long-term liabilities do. The Korean authorities have not regulated short-term external credit transactions of banks and the financial institutions because these transactions are tied to the international financial services they provide. They may have overlooked the possibilities that short-term loans could be rolled over continuously and that short-term credit facilities could be abused as means of financing long-term investment.

Although the deterioration in the quality of assets and prevalence of short-term external financing were clearly visible, the supervisory authorities did not order the financial institutions to take corrective measures. They did not do so, because nurtured in the old tradition of direct control and bank examination, they had neither the resources nor experience in monitoring and exercising regulatory power to maintain overall soundness and profitability of financial institutions. Long relegated to the role of supporting manufacturing industries under the control of government, banks and other financial institutions had become accustomed to accommodating much of the credit needs of the industrial conglomerates without necessarily checking their creditworthiness. In fact, many commercial banks were competing among themselves to win over these *chaebols*, as they were regarded as prime customers with little credit risk.

As in Japan, Korean banks also consider it important to establish long-term relationships with their customers by serving as their main banks. This device is often alleged to be an efficient means of collecting information and dealing with the information asymmetry problem. However, the long-term relationship could be counterproductive in that banks often find it difficult to keep their long-term customers at arm's length, in particular if their customers are powerful *chaebols*. During the 1994-96 period, it appears that banks failed to deal prudently with these conglomerates as if they were in an implicit partnership and so were not able to curb their excessive investment. This partnership also explains why the banks were taken by surprise when their foreign customers and creditors severed ties with them as the financial crisis unfolded. The banks never had expected the foreigners to cut them off.

A search for the clues to the ongoing financial crisis in recent periods has led to the auditing and examination of the asset and liability management of financial institutions, including commercial banks. A preliminary report of the examination is alarming, revealing how reckless these institutions were in investing in foreign securities, engaging in the operation of offshore funds, and in dealing in financial derivative products. According to a recent report by the Securities Supervisory Board, Korean securities firms and investment trust companies incurred heavy losses in their operations of offshore funds established in Malaysia, Ireland, and France. At the

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end of 1997, the total losses amounted to about $1.1 billion. Twenty-eight Korean securities firms established 89 offshore funds and leveraged them two to five times the capital base. Of the total investment of $2.6 billion, $1.1 billion was their own capital and the remainder consisted of borrowings from foreign sources. Disguised as foreign institutional investors, they invested heavily in Korean stocks and high-risk securities issued by firms and financial institutions in Southeast Asia. Other revelations show how inept and inexperienced Korean financial institutions were in investing in financial derivatives. Their investments became total losses.

According to a recent newspaper report, Korean merchant banking corporations, which have been permitted to engage in international finance in recent years, had borrowed $20 billion from the short end of the international financial market by the end of October 1997. Not surprisingly, they had invested their funds in highly risky securities issued by firms in Southeast Asian countries. About 5% of their investments in October were classified as non-performing assets.

III The Crisis in Full Force

Financial Market Developments in 1997

The investment boom supported by foreign credit could not last very long, but locked in market share competition. Unable to lay off workers, the *chaebols* were unwilling to adjust their production and hoped that the government would come in at a certain stage to rescue them, but it could not. The number of corporate bankruptcies began to soar and so did the volume of non-performing loans at financial institutions. Over a six-month period from December 1996 to June 1997, non-performing credits as a proportion of total credits almost doubled (see Table 6). The first major casualty of the slowdown in export growth and the terms of trade shock in the second half of 1996 was the Hanbo group. Specialised in iron and steel, it was the nation's 14th largest *chaebol.* As Hanbo was unable to meet the payments of the principle and interest on its loans, the decision was made to restructure it through a workout programme organised by its creditor banks rather than to liquidate it. A few months later, it was placed under court receivership because the workout programme did not succeed.

The investigation into the Hanbo collapse revealed that many loans to this group had been made under political pressure, loans which Korean financial institutions would not have granted on their own. The revelations of the extent of the unholy ties between politicians and industry and the scale of corruption shocked both the Korean people and the foreign in-

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Table 6 Non-Performing Credits of Financial Institutions
(in trillions of won)

	December 1996	June 1997	December 1997
Commercial Banks			
Total credits (A)	311.7	360.8	375.4
Non-performing credits (B=C+D)[1]	12.2	21.9	22.6
Substandard credits (C)[2]	9.7	16.0	12.6
Bad credits (D=E+F)[3]	2.5	5.9	10.1
Doubtful credits (E)[4]	2.0	4.9	9.6
Estimated loss (F)[5]	0.5	1.0	0.5
Non-performing credit ratio (B/A, %)	3.9	6.1	6.0
Bad credit ratio (D/A, %)	0.8	1.6	2.7
	December 1996	October 1997	November 28, 1997
Merchant Banks			
Total credits (G)[6]	79.9	85.7	84.5
Non-performing credits (H)[7]	1.3	3.9	5.1
Non-performing credit ratio (H/G, %)	1.6	4.5	6.0

Notes:
1 Non-performing credits include bad credits (which include the credits classified as doubtful or estimated loss) and the credits classified as substandard.
2 Substandard credits are the credits out of total credits expected to be collected by selling collateral extended to customers who have been in arrears for no less than six months or to the issuer of dishonoured bills and checks, or to the firms which are under court receivership.
3 Bad credits include the credits classified as doubtful or estimated loss.
4 Doubtful credits are the portions of credits out of total credits to customers in excess of the amount expected to be collected classified as substandard that are expected to be a loss, but have not yet been realised as such.
5 Estimated loss is the portion of credits out of total credits to customers in excess of the amount expected to be collected classified as substandard that must be accounted as a loss, because collection is not possible in a foreseeable period.
6 Credits at merchant banks include the CP discounting and factoring.
7 Non-performing credits at merchant banks include notes discounted and dishonoured; notes discounted and dishonoured by firms under legal management; dishonoured notes paid by the firms instead; and loans overdue by more than six months.

Source:
The Bank of Korea and the Association of Merchant Banks.

vestors. The pervasiveness of corruption discovered in Korea this past year has been one of the major factors in foreign institutional investors' loss of confidence in the government and in the economy in general, which no doubt helped to bring about the crisis.[7]

7 For brevity, foreign institutional investors will be referred to as foreign investors.

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More high-profile bankruptcies followed, but the one debacle which no doubt caused the government to lose a great deal of its credibility more than any other was the near-bankruptcy of the Kia Group in July. At first, it was decided that the Kia Group, which is the nation's 8th largest *chaebol*, would also be covered by a workout programme, but this soon proved impossible. Debate then raged as to whether or not the Kia Group should be placed under court receivership, a prospect which the management of Kia strongly opposed. Weeks passed by without any decisive action by the government towards resolving this problem. Unable to find new investors or to merge it with either of the other automakers, Kia was finally put into liquidation proceedings in October.

By the first week of September, six *chaebols* including Kia had been placed under a workout plan or had become insolvent. They accounted for about 10.4% of the total assets of the 30 largest *chaebols*, not a large enough amount to threaten the stability of the economy, but their demise made the economic outlook more pessimistic than before. By this time, the Korean public had become by and large disillusioned with the ineptness of the current administration, which became a lame duck government. There seemed to be no end to the bankruptcies and the economic slowdown had already dragged on for nearly two years. Therefore, whatever economic control the government had still held after liberalisation was now even further compromised. With the next presidential election to be held in December, there was no way the current administration was going to be able to take any serious action to restore stability to the Korean financial markets. The foreign investors knew this all too well, prompting some of them to begin withdrawing their funds from the Korean stock market and out of Korea in early September.

The behaviour of the government in its management of exchange rate policy in the last three months leading up to the crisis did not help and, in fact, exacerbated the financial problems. Exchange rate policy was rather inconsistent and unpredictable, suggesting to foreign and domestic investors alike that the government was at a serious loss as to how to deal with the deteriorating financial situation. The won had been under strong depreciatory pressure since the early months of 1997. Time after time throughout the year, the government would publicly state that it would defend the won at a certain level, only to be forced to retreat and attempt defending the won at a new level. When the won/dollar exchange rate approached the psychologically important level of 1000 won per dollar, the government made a goal line stand, intervening heavily in the market, but then gave up suddenly several days later.

Between June and November, the central bank's reserve holdings fell by $10 billion, as shown in Table 7. During the same period the central bank

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Table 7 Foreign Reserves of the Bank of Korea
(end of period, billions of dollars)

	1996	1997					1998
		March	June	Sep.	Oct.	Nov.	Dec.	Jan.
Official Foreign Reserve (A)	33.2	29.2	33.3	30.4	30.5	24.4	20.4	23.5
Deposits at Overseas Branches (B)	3.8	8.0	8.0	8.0	8.0	16.9	11.3	11.0
Other (C)	–	–	–	–	0.2	0.2	0.2	0.2
Usable Reserves (A-B-C)	29.4	21.1	25.3	22.4	22.3	7.3	8.9	12.4

Note:
Official foreign reserve holdings are based on the IMF definition. Deposits at overseas branches are those deposits made by the Bank of Korea at overseas branches of domestic commercial banks. In November, when the domestic commercial banks were unable to repay their loans from the foreign banks, the Bank of Korea supported them by making foreign currency deposits at their overseas branches.

Source:
The Bank of Korea.

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sold $12 billion in the spot market and made forward sales amounting to $7 billion in order to defend the won. The government further strained investors' credulity during this time by failing to divulge the Bank of Korea's actual level of foreign reserves or its forward market commitments. It asserted that the Bank of Korea held about $30 billion dollars in reserves, a figure which investors found implausible. The actual level of usable reserves had already dropped below $22 billion in March. By the end of November, it fell to $7 billion dollars.

Toward the end of October, it became clear to policymakers as well as to market participants that the financial situation was getting out of control. Foreign investors moved out of the stock market in droves and Korean banks were increasingly unable to roll over their short-term foreign loans. In order to avoid default, they were forced to turn to the Bank of Korea for liquidity or to resort to the foreign overnight loan markets. Yet, the authorities still failed to take any action, ignoring the growing clamour for much-needed financial reform, as well as for the restructuring of industry and the *chaebols*. On November 19, the government announced a reform package which included measures for disposal of non-performing loans and widening of the exchange rate fluctuation band. Under normal circumstances, the package would have been seen as taking a serious step toward restructuring the economy, but with the sense of panic rising by the day, the market hardly noticed it.

Three days later, unable to control the situation, the government made public its decision to approach the IMF to ask for assistance. The negotiations between the Korean government and the IMF were completed in a record time of only 10 days, ending on December 3. The IMF agreed to provide a total of $21 billion to be disbursed in 11 installments over a three-year period from its emergency financing and other facilities. It also secured financial commitments totalling $36 billion from the World Bank, the Asian Development Bank, the United States, Japan, Germany, Canada, the United Kingdom, Australia, and other countries, as well as from international organisations, which would serve as a second line of defense. The IMF's conditions required a tight monetary policy, a fiscal surplus, sweeping financial reform, further liberalisation of the financial markets, and also two conditions which were unusual to an IMF programme: greater flexibility in the labour market and restructuring of the *chaebols*.

Contrary to expectations, the swift and successful conclusion of the negotiations did little to allay fears and stabilise the financial markets including the foreign exchange market. The won/dollar exchange rate continued to depreciate. On many trading days, it actually hit the daily fluctuation band, which had been widened to plus/minus 10% on November 20. Interest rates began to soar while the stock price index went into a nose-

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dive. On December 16, the 10% band was lifted, and a free floating exchange rate system was introduced. A few days later, the 25% interest rate ceiling was also abolished, as it had become clear that interest rates had to rise well above that level. Most of the capital controls were also abolished. The limit on aggregate stock ownership by foreigners was raised to 55%, the market for corporate bonds with maturities longer than three years was opened up, and the short-term money market would also be deregulated for foreigners' investment. The IMF financing package, together with the conditions it set, did not help change the markets' sentiment. Many thought that Korea might not be able to comply with the structural reforms mandated by the IMF and that the extremely tight monetary and fiscal policies required of Korea under the IMF programme would depress economic activity so much that, in fact, they would in the long run undermine Korea's ability to service its foreign debt. This would clearly defeat the purpose of the IMF programme. The rollover rate at commercial banks fell to about 10%, market interest rates shot up to the dizzying height of 40%, and the won/dollar exchange rate continued to depreciate, reaching 1,995 won per dollar on December 23.

The financial situation was clearly unsustainable and rumours began to circulate among the foreign investors that Korea might have to declare a debt moratorium. The IMF and US Treasury clearly had to take stronger measures to stop further haemorrhaging of the Korean economy. On Christmas eve, the IMF and the G-7 countries came up with a $10 billion emergency financing programme, drawing $8 billion from their second line of defense.

The new package succeeded in turning market sentiment around as it demonstrated the resolve of the IMF and G-7 to rescue Korea from financial collapse. It would actually seem that a new watershed has been reached, as the IMF has clearly served as a lender of last resort in the East Asian financial crisis.

In retrospect, sovereign credit ratings by credit rating agencies have also complicated the management of the Korean crisis (see Table 8). In January

Table 8 Korea's Sovereign Credit Ratings

Moody's		S&P	
Jan. 97	A1	Jan. 97	AA-
Nov. 28, 97	A 3	Oct. 24, 97	A+
Dec. 11, 97	Baa2	Nov. 25, 97	A-
Dec. 22, 97	Ba1	Dec. 11, 97	BBB-
		Dec. 22, 97	B+

Source: Internet Websites of Moody's and Standard and Poors.

1997, Moody's gave Korea a sovereign credit rating of A1 and Standard and Poors (S&P) gave it AA-. On November 28, Moody's lowered its rating to A3, and on October 24, S&P downgraded Korea to A+. Thus, Moody's readjusted its rating downward twice and S&P three times before the end of 1997. Whenever the sovereign rating was downgraded, the premium on Korean securities in the international financial markets rose. Foreign banks then refused to roll over their short-term loans to Korean financial institutions. As a result, the foreign exchange rate depreciated further and the markets' sentiment worsened. Reflecting the deterioration of the markets' confidence in the Korean economy, the rating agencies adjusted their sovereign ratings downward again, thereby deepening the crisis even further. The rating agencies were in fact generating a vicious cycle of declining ratings and market sentiment.

The immediate effects of the IMF programme were a sharp increase in the domestic interest rates and a substantial depreciation of the won/dollar exchange rate. The squeeze in the supply of money together with the requirement to meet the 8% BIS capital adequacy ratio before April dried up the availability of bank credit, especially to small and medium-sized firms. In December 1997, the rate of loan defaults jumped to 1.49% from 0.14% a year earlier, and the number of business failures was almost five times as high as the figure for December 1996.

In 1998, the level of fixed investment is expected to decline by more than 30% and consumption by almost 10%. Due to the domestic slump, aggregated demand is expected to fall by more than 5%, despite an expected 7% rise in exports. The currency depreciation, together with the decline in domestic demand generated a current account surplus of $3.6 billion in December 1997 and another surplus to the order of $3 billion in January 1998. A surplus of over $15 billion is forecast for all of 1998. Annual inflation, in terms of the CPI, will soar to about 10%, while the unemployment rate is expected to exceed the 5% level. Recent forecasts suggest that at least two years will pass before Korea manages to recover from the current crisis.

Contagion and Warning Signs

Warning Signs

While there is ample evidence that the Korean economy has been adversely affected by the Southeast Asian crisis, this does not mean that the Korean government and Korean borrowers were not at fault. As discussed in Section II, they mistakenly believed until the very end that Korea's strong economic fundamentals would safeguard the economy from a crisis.

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In many respects, Korea looked quite different compared to the Southeast Asian economies, particularly with regard to its economic fundamentals. For example, during the 1991-96 period, Korea ran a budget surplus, monetary expansion was moderate, the savings rate was one of the highest in the world, and capital inflows – which totalled no more than 2.7% of GDP – were primarily channelled to the non-manufacturing sector for its fixed investment. A recovery in the export-oriented industries, such as the semiconductor and automobile industries, could easily sustain the entire economy and thereby lessen the strains which the excess of non-performing loans and the current account deficit were exacting on Korea. Moreover, the real exchange rate remained relatively stable during this time, indicating no sign of currency overvaluation. Neither the government nor Korean financial institutions and corporations ever took any serious action which could have prevented this crisis.

Table 9 Korea's Total External Liabilities
(end of period, billions of dollars)

	1995[1]	1996	1997			
			June	Sep.	Nov.	Dec.
Long-Term Liabilities (A)[2]	33.1	57.5	60.7	66.6	72.9	86.0
(A/C, %)	(42.2)	(36.5)	(37.1)	(39.0)	(45.0)	(55.7)
I. Financial Institutions	–	41.5	43.4	47.6	53.2	50.3
1. Domestic Financial Institutions	–	38.3	39.7	43.8	49.4	46.3
Domestic	–	24.5	27.9	31.3	31.0	29.9
Offshore	–	8.5	9.6	9.6	9.6	9.2
Foreign Branches	–	5.3	2.2	2.9	8.8	7.3
2. Foreign Financial Institutions	–	3.2	3.7	3.8	3.8	4.0
II. Domestic Firms	–	13.6	15.1	16.9	17.6	17.6
III. Public	–	2.4	2.2	2.1	2.0	18.0
Short-term Liabilities (B)	45.3	100.0	102.8	104.0	88.9	68.4
(B/C, %)	(57.8)	(63.5)	(62.9)	(61.0)	(55.0)	(44.3)
I. Financial Institutions	–	78.0	77.7	78.3	63.1	43.8
1. Domestic Financial Institutions	–	65.2	63.5	62.0	45.9	28.9
Domestic	–	26.2	28.5	23.6	18.7	11.7
Offshore	–	12.7	13.0	13.1	11.3	8.7
Foreign Branches	–	26.4	22.0	25.3	16.0	8.5
2. Foreign Financial Institutions	–	12.8	14.2	16.3	17.2	14.9
II. Domestic Firms	–	22.0	25.1	25.8	25.8	24.7
Total Liabilities (C)	78.4	157.5	163.5	170.6	161.8	154.4
(%)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)

Notes:
1 The figures for 1995 represent external debts as defined by the World Bank definition.
2 Long-term liabilities are those with maturities longer than one year, while short-term liabilities are less than one year.

Source:
Ministry of Finance and Economy

However, there had been warning signs of an impending financial crisis in Korea and Southeast Asia as early as August 1996. The deterioration of the current accounts of Indonesia, Malaysia, Thailand, and Korea in 1996 raised the question of whether these countries could sustain their current account deficits and whether they were immune to financial crises like those that have plagued Latin American economies. In the case of Korea, the sharp deterioration in a number of liquidity indicators was an especially clear danger signal, but this was overlooked.

By the end of 1996, the share of short-term debt as a percentage of Korea's total foreign liabilities rose to 60.7%, suggesting that Korean financial institutions and firms were increasingly borrowing at the short end of the market (see Tables 5A, 5B and 9). Other liquidity indicators also deteriorated. The ratios of external liabilities to exports and GDP almost doubled between 1995 and 1996, and the ratio of short-term foreign liabilities to GDP more than doubled during the same period. The short-term foreign liabilities of financial institutions, during that time, were three times as large as the foreign reserve holdings of the Bank of Korea. Foreign liabilities as a percentage of total liabilities at financial institutions rose to 11.9% in 1996 from less than 8.9% a year earlier. By then, Korean commercial banks were already paying 50 basis points above the Eurodollar rate for their short-term borrowings. It is not a surprise then that a few foreign investors began to nervously ask themselves if further financial meltdowns, such as those in Mexico, could be in the making.

Early in 1997, the Korean policymakers were indeed concerned about the sharp increase in the current account deficit that had occurred in the preceding year. But at the same time, they were also very optimistic that the terms of trade, the deterioration of which had primarily been responsible for the growing imbalance, would turn around in favour of Korea and ease the current account burden. However, the terms of trade did not improve and neither did the current account. The volume of non-performing loans at banking institutions rose to 6.1% of total loans by June 1997, up from 4.2% six months earlier, with the increasing frequency of business failures. This, together with the capital losses on their holdings of equities, cut into their earnings. By international standards, many of Korea's financial institutions were not sound and therefore became vulnerable to financial crisis.

Contagion Effects

Despite all of Korea's policy and other mistakes, the Korean experience raises the question of whether the foreign investors should be held in part responsible for creating the crisis. There is the suspicion that too many

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foreign banks and institutional investors may not have upheld due diligence in their lending to East Asian economies during the 1990s. Returns were low all over the world, except East Asia. Portfolio investment in the region had become fashionable, so foreign investors jumped on the bandwagon and threw vast sums of money at the highest returns in Asia, all too often without really knowing what they were investing in.

What developments have made foreign investors so drastically change their expectations as to the future prospects of the Korean economy? Journalistic accounts, for example, suggest that foreign investors were increasingly dismayed by and concerned with the structural weaknesses of the Korean economy. This made Korea a highly risky place for portfolio investment and bank lending. At a certain point investors were simply fed up and left. It is true that they have long known and complained about the lack of transparency in corporate management in Korea. They always questioned the reliability of balance sheets and income statements of large corporations and banks, and warned about the risks involved in the cross-ownership and cross-debt guarantees between the affiliates of Korea's major conglomerates.[8]

These problems, however, were not serious enough for them to contemplate a sudden withdrawal from Korea before the Southeast Asian currency crisis erupted. In fact, even well into the month of November 1997, according to a survey by the Korea Development Institute,[9] many foreign investors were "optimistic" about the future of the Korean economy. Only two weeks later would they become so negative and then leave all at once, thus causing a bank-run problem where everyone divests from a country or a region at the same time, taking their money out of their investments, almost regardless of whether those investments were good or bad.

The chain of events leading up to the crisis in November therefore shows that Korea has been adversely affected by the contagion of the Southeast Asian crisis and, in particular, that the Hong Kong stock market crash sparked off the exodus by foreign banks and institutional investors out of Korea. Given the relatively strong economic fundamentals, would Korea not have come under speculative attack had proper measures been taken to contain the Southeast Asian crisis?

To answer this question, one must identify the various channels of contagion and their relative significance in the East Asian context. In many

8 Banks and other financial institutions lent large sums of money to the conglomerates. When these are netted out, the cross-guarantees mean that in many cases the loans to the *chaebols* are not backed by any collateral or payment guarantees, giving rise to greater risks than otherwise. Foreign investors had long been aware of this but thought nothing of it until the last minute.

9 See the November 18, 1997, Korea Herald.

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historical instances, the effects of a currency crisis in one country are transmitted to other countries through a variety of channels such as trade, capital markets, and flows of speculative money (Kindleberger, 1966, Chapter 8). A recent study by Park and Song (1997) suggests that the institutional investors' channel may have been the main route through which the Thai crisis has been spread to other Southeast Asian economies.

It was suggested in Section II that foreign equity investors may have precipitated the financial crisis in November as they began withdrawing their funds as early as the first week of September. A simple Granger causality test was run to examine whether their behaviour leads to changes in the prices of Korean stocks or is passive in that they respond to price changes with a lag. Our results are inconclusive; depending on the sample periods chosen, the test results vary substantially. This means that as far as the pattern of investment is concerned, domestic investors are not likely to behave differently from foreign investors. Unlike domestic stockholders, however, foreign investors could set a foreign exchange crisis in motion when their fund withdrawal puts depreciatory pressure on the foreign exchange market, causing reserve losses, as has happened in Korea.

IV Lessons and Reform of the International Financial System

The financial crisis in Korea has demonstrated that both domestic borrowers and foreign lenders are clearly to blame for bringing on the crisis, and that the IMF has not been as effective as hoped in restoring stability. Borrowers – usually taking the lion's share of the blame for crises – with their disregard for prudence and ignorance of risk management, especially with regard to exchange rate risk, need to be controlled in some way. Lenders need to be curbed as well. With little else driving them but short-term profit considerations and the herd mentality, they are capable of disturbing an economy in a catastrophic way as they withdraw their investments and exit at the first sign of serious danger. These investor characteristics may call for international regulatory mechanisms to be put into place. In an increasingly integrated world economy, better means for managing crises once they erupt need to be worked out, although any reform of the international financial system at this stage would be difficult indeed.

1. Overshooting and Moral Hazard

Why has the Korean crisis been so severe in the absence of a large economic shock and any measurable deterioration in economic fundamentals?

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What developments triggered the crisis? According to Eichengreen and Wyplosz (1996), there are three types of distortions that could give rise to a financial crisis. One type of distortion is asymmetric information and the herd behaviour on the part of foreign investors and financial institutions. Another is moral hazard in both the domestic and international financial systems. The third is any distortion, including a political one, that could lead to multiple equilibria in the foreign exchange market. All of these distortions were present in Korea. Not well-informed investors display, successively, excessive optimism and then excessive pessimism. Investors follow the lead of other investors, committing funds to markets with good prospects like the East Asian markets. Bad news or simply a change of sentiment often provokes a violent reaction. As was discussed in Section III, there is evidence that the financial crisis in Korea was triggered by the contagion of the Southeast Asian crisis and, in particular, the speculative attack on the Hong Kong dollar. After what took place in Hong Kong, the Korean economy suddenly looked vulnerable in the eyes of many foreign investors. A stampede of frightened investors then followed. The moral hazard problem and the close presidential race, which cast doubt as to the prospects for economic reform, accelerated the panic flight of foreign investors. In the end, the change caused by the expectated contagion of the Southeast Asian crisis shifted Korea from a relatively stable into a bank-run equilibrium.

As shown in Tables 3 and 5-A, securitised capital has accounted for more than 70% of the capital inflows into Korea since the early 1990s.[10] The predominance of portfolio investment has made global institutional investors much more important in international finance. Since they are driven largely by liquidity and short-term performance considerations, portfolio capital inflows are obviously far more volatile than bank loans as portfolio capital can leave a country in only a few hours, whereas medium-term bank loans cannot. The growing importance of portfolio capital has made the contagion of a financial crisis more likely, as has been the case in East Asia. It has also deepened and complicated the management of the ongoing crisis in Korea.

As noted earlier, foreign equity investors began to withdraw their investments from the Korean stock market as early as the first week of September 1997. In retrospect, they may not have precipitated the financial crisis, but they certainly aggravated it. Taking their cue from these portfolio investors, foreign banks soon started to refuse to roll over their

10 Securitised capital inflows in Table 5-A include all of the long-term capital inflows, plus foreigners' portfolio investment and banks' commercial paper financing.

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short-term loans to Korean financial institutions. In other words, financial market opening together with the predominance of portfolio capital inflows has permitted, and actually given rise to sudden capital outflows, resulting in inordinate increases in interest rates and excessive depreciation of the foreign exchange rate.

The Korean crisis has been exacerbated further by the moral hazard problem in the Korean banking system and in the IMF programme. As is widely known, commercial banks and merchant banking corporations have long operated with implicit government guarantees in Korea. Although a deposit insurance system is in place, few believe that the government could allow these institutions to go bankrupt. This guarantee, together with inadequate regulation, provides incentive to banks to borrow larger amounts of funds abroad for domestic lending, than they would otherwise do, and to invest in riskier projects with the expectation that the government will bail them out in the event they incur serious losses.

This moral hazard appears to have affected the behaviour of foreign financial institutions lending to Korean banks and other financial institutions as well. Since they expect to receive national treatment, they also believe that, like domestic depositors, the payment of principles and interest on their loans is guaranteed by the government, although there is no formal arrangement of guarantee to that effect. They also know that as a group they could put pressure on the Korean government to guarantee repayment. Indeed, when signs of a financial crisis began to appear, this is precisely what they did, and very successfully. Due to this implicit guarantee, foreign banks did not feel the need to conduct careful credit analysis of the Korean financial institutions to which they were lending vast sums of money. When some of the symptoms of the crisis began to surface, few foreign banks were trying to reschedule their loans to troubled Korean banks, in sharp contrast to what they normally would do if dealing with delinquent borrowers at their home bases. Even though information on Korea's corporate sector and financial institutions, including the knowledge that most of the published corporate and banking data are unreliable, was available, foreign investors did not even try to gather and analyse this information.

Another type of moral hazard was also found during the Korean financial crisis. Once it became clear that Korea could not overcome its impending financial crisis, which was in part precipitated by their fund withdrawal, international banks and institutional investors began putting pressure on the Korean government to seek IMF financing. They have done this because a debt moratorium would not be an efficient or realistic mechanism of debt resolution, for the simple reason that there were too many investors and too many types of investors. Therefore, negotiations

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would not have been feasible. More importantly, the IMF programme favours creditors more than debtors (Soros, 1998). The fact that the IMF has come to Korea's aid means that the foreign banks will be able to recover their investments with relative ease and perhaps even profit, as the austere monetary and fiscal policies that the IMF is requiring of Korea mean extraordinarily high interest rates.

However, the agreement between the Korean government and the IMF on the structural reform and rescue package was not sufficient to satisfy the banks and, as a result, did little to change the markets' sentiment, at least during December. This is because foreign banks, in view of what was happening in Indonesia and Thailand, were not sure whether the IMF could enforce the implementation of financial and real sector reforms during a political transition period, marked by an inept lame duck government which would remain in power until the end of February 1998, as well as great uncertainties surrounding the upcoming presidential election (held on December 18, 1997). In addition to the Korean government's compliance to the IMF programme, foreign lenders wanted to be assured of the payments of the principles and interest on their loans; otherwise, they would not return to the Korean market.[11] They have asked for and received the provision of a government guarantee on private debt, based on the grounds that it would facilitate and simplify the negotiations with Korean financial institutions on the debt restructuring and the supply of new credit.

Now that the moral hazard and overshooting problem appears to be rather serious, we have to ask if global institutional investors and international commercial banks, whose activities cross national borders, should be monitored and subject to some types of regulations. At present, capital flows originating from global institutional investors are completely unregulated in their source country and even less so internationally. They certainly have not been regulated in Korea. Griffith-Jones (1996) advocates the creation of an international supervisory mechanism to which the task of regulating short-term capital flows could be assigned. There is controversy as to whether such a global governance mechanism would be effective in stabilising short-term capital movements. Assuming it would be, which countries or institutions should be responsible for the task? How should the different financial rules and enforcement mechanisms of different countries be coordinated and made uniform? Should the system be made uniform at a global or at a regional level?

11 To be fair, it is true that Korean officials alluded to the possibility of guaranteeing the repayment with interest of Korean banks' foreign debts on several occasions, even before the crisis broke out.

A global system would of course face opposition and it would be difficult to negotiate it in the near future. However, since the EU members have agreed to common rules and supervision, it seems reasonable to ask whether other countries in different regions should attempt to establish regional frameworks for financial regulation and supervision. This issue merits further discussion, because smaller groups of countries, where institutions are similar, would naturally face far fewer hurdles on the way to establishing viable international arrangements. Certain public goods are better provided through such arrangements, and financial supervision and regulation would certainly seem to be one of them (Lawrence, 1996).

2. Prevention and Better Management of Financial Crises

Another important question to be raised at this point in the ongoing East Asian currency turmoil is whether the crisis could have been prevented and could have been better managed once it broke out. It is somewhat discouraging that even despite the best efforts of the participants of the G-7 Halifax summit of 1995 to work out effective means of prevention and management of currency crises, financial turmoil began to rock Southeast Asia in the summer of 1997, spreading then to other countries. Korea has been claimed as the latest casualty, with speculation that there could even be others later on.

Griffith Jones (1996) makes a number of suggestions for crisis prevention, which include: (i) better management of macroeconomic policies; (ii) fuller disclosure of information to market participants; (iii) establishment of an early warning system with improved monitoring of national economic policies; and (iv) regulatory restrictions on capital flows to emerging markets, both by creditors and debtor countries. Following these suggestions, there was little Korea could do by itself to protect itself from a crisis except for making more as well as reliable information available.

Kindleberger's study on the causes, characteristics, and propagation of financial panics and crashes in a historical perspective leaves us little doubt that financial crises will continue to recur, so long as banks and investors with propensities for speculative excess cause domestic bank runs. Likewise, there will always be national economies which mismanage their financial industries and macroeconomic policies, thereby inviting banking and foreign exchange crises. Since financial crises can occur for a number of reasons, it is not clear whether the symptoms of crises could be detected and identified beforehand. When the causes of financial crises in individual countries are domestic in origin, individual governments should be held responsible for resolving the crises. However, in an increasingly globalised world economy, the effects of a financial crisis are easily and rapidly trans-

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mitted to other countries, and this contagion, which often draws even healthy economies into financial turmoil, must be prevented. That is, the efforts of the international community should focus in particular on the prevention of financial contagion, not financial crises in individual countries.

Could the Korean crisis have been prevented? In hindsight, the answer to this question is an unequivocal yes because Korea would not have been thrown into turmoil had the Southeast Asian crisis been contained where it emerged. *Could the Korean crisis have been better managed?* The management of the Korean crisis as organised and supervised by the IMF reveals a classic dilemma of an international lender of last resort. If the IMF had had the power of global lender of last resort, and let it be known that it was prepared to supply an unlimited amount of credit until all capital outflows stopped, as central banks do when they encounter domestic bank runs, it would be reasonable to argue that the Korean crisis would have been short-lived. However, the IMF does not have either the mandate of an international lender of last resort, nor the resources to serve such a role.

The Korean experience also suggests that the presence of a powerful international lender of last resort would give rise to the moral hazard problem. Knowing that the rescue is forthcoming, the markets will lose incentive to resolve the crises by themselves. Neither the initial rescue package agreed upon between the IMF and the Korean government, nor the rescue funding was able to reverse the markets' excessive pessimism. What was so surprising and unexpected about the Korean crisis was the markets' lack of confidence in the IMF rescue efforts. The IMF funding package, though it was the largest in its history, did not impress the markets as much as it could have under different circumstances. Only when the G-7 countries produced additional financing of $8 billion and pleaded with the market participants to return to the Korean market, even threatening not to disburse the additional commitments, did the withdrawal from Korea stop. It was as if the international financial community wanted to test whether the G-7 countries would honour their Halifax commitment.

If this was what the markets are after, it is also not surprising that, as was the case in the Mexican crisis, a large share of the costs and strains are likely to be borne by the Korean economy and by the official international support. As evidenced by the debt negotiations between the creditor banks and the Korean government, foreign banks are not going to share the costs of crises as much as they should. Quite to the contrary, it appears they are determined to reap a profit from the crisis, knowing that their market power will in the end force the public sector to accept their terms for the resumption of lending. The market power that international banks and global institutional investors hold is understandably difficult to confront.

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When it is combined with moral hazard, and when the IMF and G-7 will in the end serve, as they have, as lenders of last resort, the management of crises such as that in Korea becomes extremely difficult.

Should there be a lender of last resort in international finance? And how should this lender, if it is established, mobilise its resources for intervention? In view of the systemic risk posed by the contagion of the East Asian crisis, could one make a strong case for creating a lender of last resort, although disagreement would persist over its precise role? To answer this question, it would be instructive to examine the effectiveness of the IMF's intervention in the Asian crisis so far.

Although the IMF was not created to deal with systemic risk or to act as a lender of last resort, it has played such a role during the East Asian crisis, simply because no other institutional arrangement capable of containing crises has ever been established and because it offers a framework for collective support in times of individual countries' crises (Kenen, 1996). How effective has the IMF's intervention been so far? It is too early to judge since the crisis is still unfolding before us, but the Korean experience suggests that it has not worked as well as was perhaps expected. One can point to a number of reasons for the ineffectiveness of the IMF's signaling role.

One is that the IMF does not come in to rescue a country until after the collapse of the foreign exchange market, not before. By the time that the IMF and the Korean government had agreed to a rescue plan, the crisis had gathered force and was already at its peak. The IMF intervention was too late and its financing package was not large enough to turn the tide. If indeed the IMF is going to serve as lender of last resort, the Korean experience shows that it would have to intervene at an early stage of a speculative attack. The problem here, however, is that governments in distress are extremely reluctant to ask for IMF assistance. Such a request is tantamount to admitting policy failure and is therefore a major political risk and embarrassment.

In most cases, when governments do finally decide to accept an IMF programme, the succeeding negotiations usually drag on, wasting precious time while the markets are looking for decisive action. Had new IMF credit been injected earlier, when clear warning signs of crisis were visible in Korea, the IMF programme could have worked better. To play the role of lender of last resort, there should be a mechanism or institutional arrangement by which the IMF could intervene automatically to nip speculative attacks in the bud. Waiting for governments to ask for help on their own accord will almost always mean waiting too long.

In this regard, a proposal has been made to create a new short-term financing facility at the IMF, from which the member countries could borrow before a crisis happens, with the condition that they accept an IMF

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shadow programme for approval (Griffith-Jones, 1996). The idea of attaching policy conditionality before the crisis breaks out is meant to avoid moral hazard – countries mismanaging their economy with the expectation that they would be rescued in case the markets panic. However, one must ask how many, and what types of countries, would mismanage because the IMF stands ready to bail them out in case they fall into a financial crisis? The more serious problem lies with international banks and global institutional investors who would lend more money to these countries than otherwise, knowing that they could be bailed out. The IMF has little power to regulate their lending, and this lack of supervisory authority will likely weaken considerably the effectiveness of the short-term financing facility, as it leaves the IMF powerless to deal with moral hazard.

The new automatic financing facility, to be effective and avoid moral hazard, should include measures for regulating and supervising foreign investors, as much as the member countries requesting the right for an automatic withdrawal. If controlling capital inflows at their source is not realistic, then the new facility should allow the member countries willing to accept the shadow programme to institute a system of prudential regulations on capital account transactions.

Another reason why there were serious questions as to the efficacy of the IMF programme in Korea, was that it was not flexible enough to account for the unique characteristics of specific countries. The IMF is often criticised for applying the same programme to all countries, as it has in the East Asian crises. Requiring tight fiscal and monetary prescriptions, for example, to a country with neither a fiscal deficit nor an inflation problem has been controversial. The controversy may also have dampened the IMF's efforts to shift the markets' sentiments. Admittedly, many of these industrial and financial reforms are long overdue in Korea, but it is not at all clear that they could not have been carried out without the IMF's intervention.

Indeed, it is difficult to judge whether the harsh monetary and fiscal tightening, which the IMF is requiring of Korea, is necessary or even in the interests of either Korea or the foreign investors. There is obviously a trade-off between (i) a relatively low domestic market interest rate, with a larger currency depreciation and with greater exchange rate volatility, and (ii) a high interest rate with a smaller depreciation and a relatively stable exchange rate. However, in an economy where firms are highly leveraged, as they are in Korea, a high-interest rate policy could result in a high frequency of business failures. In fact, these failures could become so high that they would dislocate the industrial base itself, thereby undermining the economy's debt servicing capacity. The won/dollar exchange rate

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changes have also been too volatile even during a panic period, often moving by more than 5% daily in either direction. This naturally raises the question of whether or not a lowering of the domestic interest rate would increase the exchange rate volatility, because the monetary easing may help change the markets' sentiment, as it could improve Korea's debt servicing capacity in the medium term. This question is essentially an empirical one.

A third reason why the IMF's intervention may have been weakened is that the standard IMF programme, which puts more emphasis on the formulation of economic policy reforms than on financing, may be less effective in cases where the creditors involved comprise such a huge and faceless mass of parties, each of whom has a different interest and outlook. It is indeed high time to ask whether these international banks and global institutional investors moving vast sums of money across national borders do actually understand the policy package and take it into consideration in their investment decisions. The difficulty with the IMF approach is that foreign investors in most cases may not have the capacity to determine whether the policy package will work. Even if they do, they may not have the patience to examine the thrust, objectives, and the effects of the policy package. Since policy changes and structural reforms are subject to many uncertainties, international banks and global institutional investors cannot afford to rely on a policy package which is claimed to cure the economic ills of a country as far away from their bases as Thailand, particularly when they are preoccupied with the short-term performances of their portfolios.

The East Asian currency crisis, in particular that of Korea, leaves little doubt that the prevention of contagion of financial crises would be greatly facilitated if there existed an effective international lender of last resort, although the presence of such an institution in the future is highly unlikely. Kindleberger (1966) argues that, while the moral hazard problem could be severe, there should be an international agency which has *de jure* responsibility for providing the public good of financial stability (p. 9). To minimise the consequences of moral hazard, he argues that the presence of such an institution should be doubted, so that such an agency could "leave it uncertain whether rescue will arrive in time or at all, so as to instill caution in other speculators, banks, cities, or countries" (pp. 9-10). Despite these problems, many small, open economies like Korea may have no alternative but to return to more restrictive capital account regimes in order to safeguard themselves against the contagion of financial crises. This in the absence of mechanisms of multilateral cooperation, including a facility which serves as a lender of last resort, and regardless of whether or not such regimes would be effective and efficient.

In the case of Korea, practically all of its foreign debt consists of private foreign liabilities of financial institutions and corporations. Except for the

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consideration of systemic risk, neither the domestic authorities nor the international lender of last resort should socialise these liabilities. One possible means of solving the moral hazard problem, which has been discussed extensively in the domestic context, would be a private insurance scheme for financial institutions. For a commitment fee, domestic financial institutions in emerging markets could receive standby credit from major international money centre banks or other willing institutions, to be drawn on in the event of such emergencies as a bank run. Foreign investors and depositors might be much less inclined to withdraw their funds from specific financial institutions or from entire countries if this kind of insurance were a standard feature of international finance.

Perhaps of equal importance, this system also has the merit of shifting the cost of financial bailouts from the public sector to where it belongs, the private sector, thereby further reinforcing the incentive for financial institutions to borrow and lend more wisely. This ultimately means that there would be more accountability at financial institutions and that there would be less possibility of taxpayers having to mop up financial messes.

3. Financial Liberalisation in Emerging Market Economies

Three of the conditionalities required of Korea by the IMF is to all at once completely open the domestic financial services market, scrap the present foreign exchange control system – something that would partly entail deregulation of capital movements – and adopt a free floating exchange rate system. These are regulatory changes that ordinarily occur over an entire generation in most countries. An important question is whether these reforms would be consistent with each other if carried out simultaneously, and if they will contribute to the stability and efficiency of the domestic financial system. The Korean experience casts doubt on both the rationale and effectiveness of these changes.

How should developing countries manage their integration into the global system? In view of the recent financial crises in East Asia, it would seem that they should be very cautious in opening their money and capital markets. Market opening greatly increases their exposures to speculative capital movements, which have been found to give rise to speculative bubbles and to dramatically destabilise local economies. Should developing countries delay integration until they can institute regulatory and supervisory systems which are comparable to those of advanced countries, in terms of standardisation and effectiveness? Or should they liberalise their financial systems in a big bang style in the expectation that market forces will in the end stabilise capital movements?

In recent years, western governments have devoted increasing attention

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to securing the rights of access for their financial firms to the markets of developing economies. However, although these governments know that the accounting practices and disclosure requirements in developing countries do not conform to their standards, and that the supervisory financial authorities do not enforce rules and regulation as tightly as they should, few western governments have demanded the necessary financial reforms and changes. Yet, they have been persistent in their demands for equal access and an outright opening of domestic capital markets (Herring and Litan, 1995).

Advanced countries have also not made clear their position as to whose rules should apply to firms and financial institutions in developing countries, or which nations or regulatory bodies should enforce these rules. As a result, the financial activities of international financial institutions, especially global institutional investors who regularly move vast amounts of capital across national borders, are not subject to prudential regulations, and understandably are not scrutinised by regulatory bodies of either home or recipient countries.

In the process of financial liberalisation in many developing countries, the domestic regulatory and supervisory authorities are required to abolish those regulations which hinder the free functioning of the markets. In many cases, this is necessary as government intervention proves to be more of a hindrance than a help after an economy matures. However, all too often, the useful prudential regulations are swept away as well; a classic case of throwing out the baby with the bath water.

This has serious ramifications. Many institutions and firms in developing countries are inadequately supervised before deregulation occurs, so they are suddenly permitted to engage in all kinds of financial activities in which they have neither experience nor competitive advantage. As they will nevertheless make forays into international lending and borrowing and other such businesses, excessive deregulation more often than not sets up an economy for a major crisis.

Needless to say, the Korean supervisory institutions had no authority to monitor the activities of those foreign financial institutions which had been lending all this money to Korean firms and financial institutions, let alone regulate them.

Every country regulates and supervises its own domestic financial institutions and markets for a number of reasons, the most important being the lessening of systemic risk. In the transition from a controlled to a liberalised financial system, the regulatory and supervisory system is often weakened and not yet harmonised with the respective systems of other countries. Furthermore, except for the IMF, there is no lender of last resort which could support central banks in case foreign financial institutions call

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in or refuse to roll over their short-term loans to domestic financial institutions, thereby precipitating a crisis. This puts developing countries at a serious disadvantage and in very real danger. It does not serve the interests of the international financial community to force developing countries to open up their financial markets without providing public goods that will safeguard these countries from currency crises and other systemic risk.

In a small economy, like Korea, which is also now open financially (since December 1997), internal and external shocks to the domestic markets are instantaneously transmitted to the foreign exchange market. Especially when the foreign exchange market is thin and forward arrangements are not readily available, the spot exchange rate reacts sharply to domestic and foreign shocks, leading to substantial changes in the real exchange rate by the day, and sometimes by the hour. This kind of exchange rate instability can be disruptive to production and investment in an economy open to international trade. A fundamental question is whether such an economy fully integrated with the global financial system can maintain a flexible exchange rate system.

Korea has experimented with both a managed floating and a completely free floating system. As it was designed, the managed floating system could not function in the face of a destabilising speculative attack. The band was widened, as part of the IMF conditionality, but this did nothing to stem the tide of capital outflows and did not stop the depletion of reserves. Since then, the nominal exchange rate vis-à-vis the US dollar has depreciated by more than 50%, and its movements have been volatile, making the real exchange rate equally unstable.

So far, it appears that the depreciation and flexibility of the foreign exchange rate has done very little in the way of restoring foreign investors' confidence. The difficult question is whether the foreign exchange rate should be allowed to depreciate continually until the markets' sentiment turns around. The recent Korean experience is rather negative in this regard. As Eichengreen and Wyplosz (1996) suggest, emerging market economies, like Korea, with a large external sector are better advised to pursue a pragmatic policy that involves limited exchange rate management and the imposition of limited restrictions on capital movements. In the long run, they suggest that these countries should contemplate monetary unification with a larger neighbour. In the case of Korea, Japan is such a neighbour, but it accounts for less than 20% of Korea's total trade, making it an impractical neighbour with whom to unify.

The process of worldwide financial integration will lead to creation of a single global market. To be tenable, such a market system must be supported by a global financial governance system that includes global rules and supervision of financial activities. In a domestic economy, the central

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bank stands ready to rescue a healthy bank suffering from a public panic by extending an unlimited amount of credit, if necessary. In an open economy, the central bank could not play a similar role as lender of last resort if a bank run ensues as a result of foreign investors' panic. A free floating system may not prevent a foreign exchange crisis caused by the financial crisis. As long as these institutional deficiencies of the international financial system remain, there may be a limit as to which emerging market economies could deregulate capital account transactions.

V Concluding Remarks: Reflections on the Crisis

The financial crisis in Korea has been much more severe than expected and has inflicted serious damage on the economy. Korea will not be able to completely recover from the economic dislocation brought on by the crisis for a number of years. The Korean experience naturally raises the questions of whether the crisis, in hindsight, could have been prevented in the first place and whether it could have been better managed once it broke out. What general lessons can we derive from the experience, and what are the implications of the crisis for the reform of the international financial system?

There is no question that the Korean policymakers are largely responsible for the crisis. They have tinkered with much needed economic reforms for the real as well as the financial sector of the economy for far too long, thereby deepening foreign investors' distrust in the government. Furthermore, in 1997, the Korean policymakers did not pay enough attention to the sharp deterioration in various liquidity indicators, and to the complaints of foreign investors about either the non-transparency in the management of corporations and financial institutions or the reliability of the published statistics on banking and foreign reserve holdings. They have tried to defend the won for too long by maintaining a managed floating system, thereby causing the Bank of Korea to lose a substantial amount of reserves.

At the same time, the deficiencies of the international financial markets have become more pronounced and have exacerbated the crisis, giving rise to far more extensive damage. The herd behaviour and information problems on the part of investors were apparent during the Korean crisis. The herd behaviour was compounded by moral hazard stemming from the implicit or expected loan guarantees by the Korean government and the recourse to IMF rescue financing.

The East Asian crisis in general has shown that in an integrated financial world, financial crises can be contagious and pose systemic risk. In order to

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prevent financial crises in the future, what reforms or institutional changes should be contemplated? Creating a new lender of last resort or strengthening the role of the IMF as such a lender is controversial, because few countries would be inclined to assume the cost of operating such an institution.

Regulating and monitoring institutional investors at their source countries is claimed to be impractical and unnecessary. Regulating and monitoring foreign lenders by borrowing countries would be regarded as capital control and completely against the spirit of liberalisation. Even despite the fact that the IMF has acted as a *de facto* lender of last resort, many would object to the idea of giving the organisation regulatory authorities.

In the meantime, Korea has been under pressure, much more so now after requesting IMF assistance, to completely open up its financial markets, thereby integrating its domestic market with the world financial system, which does not provide any public goods for global financial stability, while adopting a free floating exchange rate system. This is an unsustainable situation, to say the least. When a domestic financial institution experiences a run on its deposits, the central bank stands ready to contain the bank run by making, if necessary, unlimited amounts of credit available. If the run becomes contagious and affects other domestic banks, the central bank will have to lend from its holdings of foreign reserves. If it depletes its holdings of foreign reserves, the country will then be forced to default on its debt repayments.

Exchange rate depreciation and high interest rates could stop the run on the banking system, but the Korean experience demonstrates that they offer no guarantee. The ultimate outcome of the situation depends entirely on the markets' perception. The system of floating exchange rates does not appear to be the most efficient arrangement for a small, open economy as it may cause large fluctuations in the real exchange rate. In a fully integrated financial world, should the central bank in question be solely responsible for containment of the crisis? Other than the central bank of the country where the bank run is on, should there be a multilateral organisation serving as lender of last resort?

Most of the measures proposed so far for the prevention and better management of financial crises, such as creation of an international lender of last resort and restructuring the IMF for regulating global institutional investors, as well as harmonising rules and enforcement efforts at a regional or global level, are not likely to be realised anytime soon. Given this reality, and in view of the ongoing financial crisis in East Asia, the international financial community should have second thoughts about whether it would serve the interests of the advanced countries to demand a haphazard opening of the financial markets of emerging market economies. Until the

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provision of public goods which will safeguard these countries from the recurrence of financial crises, they should be allowed to throw some sand in the wheels of international finance, at least at the national level.

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Comment on "The Financial Crisis in Korea and Its Lessons for Reform of the International Financial System," by Yung Chul Park

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Yung Chul Park's paper, like all his previous papers, is interesting, insightful, and thought-provoking. He addresses many difficult questions like "Why did the Asian financial crisis spread so widely and so fast?" and "Why was it so severe?", the questions which many of us here have been struggling to answer. He makes frequent references to the IMF-supported programme in Korea and raises some interesting and useful thoughts on a number of issues facing the international financial community, including the possibility of regulating international capital flows.

On my part, I would like to contribute to this discussion by addressing three questions: "Could the crisis have been prevented?"; "Could it have been better managed?"; and "What needs to be done to prevent another crisis?" I will offer my comments on some of the points Mr. Park makes and, in the process, touch on what the IMF has been trying to do in Korea. My main message here, not surprisingly, is a bit kinder to the IMF than Mr. Park is – the IMF programme in Korea had a rocky start and the initial stabilisation process took more time than had been expected but, after that initial phase, the programme has been doing well and the prospects for recovery in Korea are not bad, despite numerous difficulties the economy still faces.

So, let me start with the first question, "Could the crisis have been prevented?" My answer is "yes", on two conditions – namely (i) if a country had strong macroeconomic and structural fundamentals, and (ii) if it maintained flexible exchange rate and interest rate policies. I share Mr. Park's view that Korea could have avoided the crisis, if the authorities had dealt with all the structural weaknesses before they were uncovered by a cyclical slowdown of the economy. Market participants, then, could have differentiated Korea from countries like Indonesia and Thailand. Unfortunately, this was not the case in Korea in late 1997, and even if strong macro and structural fundamentals had been in place, that would not have been sufficient to prevent a crisis. In my view, strong fundamentals have to be

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accompanied by flexible policies on the exchange rate and, especially, interest rates. To keep markets functioning and to clear supply-demand imbalances, market prices – the exchange rate and interest rates – must be allowed to move freely and at times substantially. One mistake Korea – and Thailand and Indonesia – made at the initial stage of the present crisis was that they tried to deal with the imbalance through direct market intervention. Since no central bank could match the liquidity the market can mobilise, this strategy only aggravated the problem. The movements of the exchange rate and interest rates at this initial stage were too small, making the subsequent depreciation and interest rate increases much larger than otherwise required.

This was in sharp contrast to the experience of Hong Kong and the Philippines, both of which were perceived to have relatively strong fundamentals, but which nevertheless were subjected to a speculative attack at least once during last fall. At that time, market participants were so pessimistic about Asia and, as Mr. Park puts it, were behaving like a scared herd, that they were ready to move liquidity out of even those markets that were seen as having relatively strong fundamentals. Against this pressure, Hong Kong raised the overnight call money rate to 300% and the Philippines raised the rate to 200% for a few days in late October. Consequently, Hong Kong and the Philippines managed to prevent the initial exchange market turmoil from developing into a full-fledged crisis.

Let me now move to the second question: "Could the crisis have been better managed?" Here, I join Mr. Park in saying that the crisis could, and should, have been managed better, at least in the Korean context, but perhaps for different reasons. Instead of identifying these possible differences, however, I would like to present my own account of what happened in Korea. I will do so by dividing the Korean crisis into three periods – (i) the pre-IMF period between mid-November and December 4th (when the IMF Board approved the programme); (ii) the "initial" post-IMF period around Christmas; and (iii) the period since then.

Although the Korean economy had faced an increasing number of problems from the beginning of 1997, the crisis reached Korea only in mid-November. The subsequent three-week period – my pre-IMF period – was crucial in containing the crisis. In a way, the Korean authorities moved fast to address the situation. Following a change of Finance Minister, the IMF was contacted at the end of the first week, the programme was negotiated in the next two weeks and received approval on December 4th. To complete programme negotiations within such a short period required tremendous efforts, especially for the Korean authorities, who had to negotiate not only with the IMF mission, but among themselves to build consensus. However, in the meantime, policies were kept unchanged and no new

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measures were introduced to deal with the evolving situation. Most significantly, during the first week, the Bank of Korea tried to defend the rate through direct intervention, losing a large amount of reserves, then discontinuing the intervention without raising interest rates substantially, causing a sharp fall in the won exchange rate. Consequently, Korea lost the opportunity to contain the crisis at its very early stage.

The second period began with the approval of the Korean Programme on December 4th. The initial priority of this programme was to stabilise the exchange market through the restoration of market confidence. To that end, the programme entailed a number of specific measures: (i) demonstration of the authorities' strong will and commitment to structural reform and sound economic management, including defending the Korean currency through higher interest rates; (ii) demonstration of the central bank's ability to meet any contingency with its reserves. For this purpose, Korea received a large amount of resources from the Fund, as well as credit commitments for the second line defense from a number of industrial countries; and (iii) expectations of a rollover of short-term credits by foreign commercial banks.

In any event, things did not go as well as expected. Almost immediately after the programme was put in place, a public debate began as to whether the programme should be renegotiated in the heated political climate prior to the presidential election. Interest rates were raised, but only modestly compared to the prevailing market pressure. New short-term debts were "found" and market estimates of Korea's debt were revised upward almost every day, raising questions regarding the central bank's ability to meet payment obligations, even after its reserves had been enhanced with resources from the IMF. These developments did not help strengthen confidence, especially among foreign banks, who withdrew rather than rolled over credit during the first twenty days of December. Although a number of important actions such as capital account liberalisation and banking sector reform were introduced, the programme was not really in place. Consequently, Korea lost another crucial opportunity.

The third phase of Korea's adjustment began in the final weeks of December, when the situation started to improve. By that time, the then president-elect, Kim De Jung, had convinced the market that he was firmly behind the programme, and at the same time, policies were strengthened in many respects – including interest rates, which were raised to the highest level in many years in Korea. Debt data were finally revised and published, clarifying the uncertainties that had caused unnecessary confusion and fear. Discussion of a formal rollover of short-term debts began between the Korean authorities and foreign banks. The IMF had advanced its disbursement and made $2 billion available in late December, in addi-

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tion to the $9 billion it had already disbursed. The G-7 countries confirmed their commitments to provide resources for the second line of defense, if and when it was needed.

Based on these measures in late December, the won strengthened substantially from its trough on December 23rd and a measure of stability has now been established in the exchange market. The Korea authorities have since been working toward the second key objective of the programme, that is to establish a base for resuming strong growth. This is a difficult task but, as Mr. Park describes in his paper, the Korean authorities are forcefully implementing the needed measures and, like many others, I have every confidence that they will succeed.

Let me now turn to the last question: "What should be done to prevent another crisis?" In his conclusion, Mr. Park mentions the possibility of creating an international lender of last resort as well as a mechanism to regulate international investors and their activities. Mr. Park seems to favour creating such an institution and mechanism, but he recognises that this is not likely to be realised anytime soon. He argues that in the meantime, emerging market countries "should be allowed to throw some sand in the wheels of international finance," to safeguard themselves from the recurrence of financial crises.

In my view, the main problem with the argument for an international lender of last resort is that it comes too close to an argument for "an IMF with generous credit but with no conditionality". This is an argument put forward from time to time in Asia and elsewhere in the world. The presumption is that there is nothing wrong with the countries' policies and that all crises are externally induced. Hence, such a crisis should be dealt with without changing policies, or with minimal changes to the exchange rate and interest rate. However, this presumption does not usually hold. Policies, including the exchange rate, are often wrong and need to be adjusted. An international lender of last resort would create a moral hazard by prolonging wrong policies. Also, addressing a crisis by intervention only, or even mainly by intervention, is no longer technically feasible, given the recent expansion of cross-border capital flows.

This brings me to the subject of regulating certain types of capital flows. I believe that there is a growing consensus that the international financial community should monitor and collect information on large transactions and positions in exchange markets. I hope that the international community will be able to come up with and agree upon a mechanism to utilise this information in order to regulate excessive and abrupt movements of liquidity across borders. Here I share Mr. Park's wish, although, like him, I am not hopeful that we will get what we want anytime soon.

With regard to Mr. Park's suggestion of throwing some sand in the

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wheels of international finance, I would note that some emerging market countries have done this as a temporary measure, including requiring central bank deposits with no remuneration for all external short-term borrowing. At the same time, I would ask whether a country can effectively control these "speculative" capital flows while maintaining other flows intact. The question is at what cost? In my view, these considerations on balance, would not support Mr. Park's suggestion, especially in the Korean context.

Let me now conclude with my own suggestions, which I am afraid, are not exciting but which are, I believe, pragmatic. To avoid another crisis, it is important for countries to maintain strong macro and structural fundamentals, as well as efficient exchange and money markets, where both exchange rate and interest rates are allowed to move flexibly to address any supply-demand imbalances. At the regional and international level, this should be supported by a mechanism for effective mutual surveillance and a strong IMF, both in terms of policy advice and financial support.

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Globalised Financial Markets and Financial Crises

Charles Wyplosz

I Introduction

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

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

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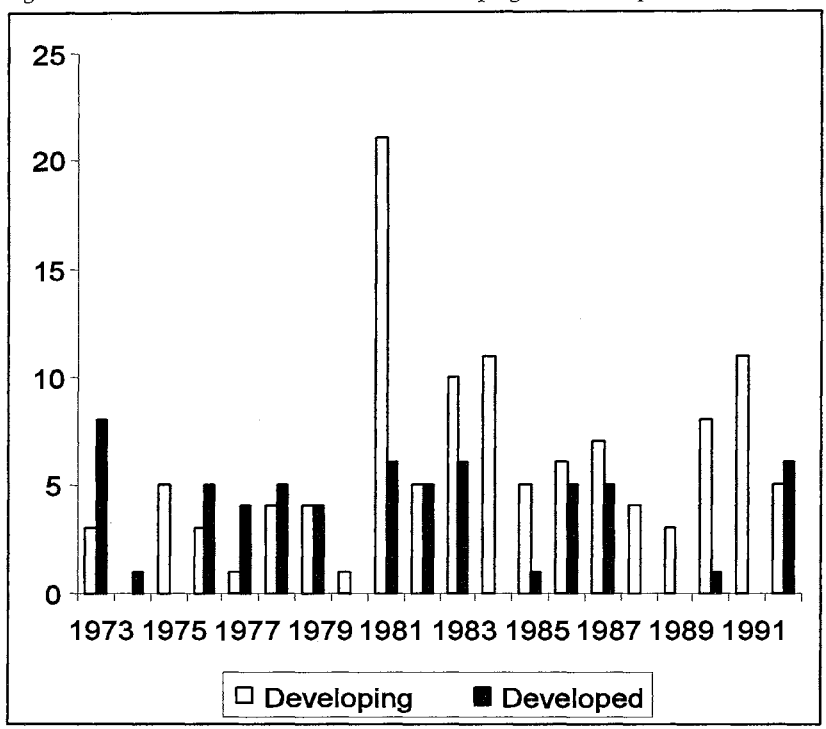
fall ahead of the crisis; they are often high before and quickly decline at the time of the crisis. Fifth, in the case of developing counties, crises tend to occur when interest rates in developed countries bottom up. Although not yet backed by hard evidence, these stylised facts lend themselves to a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

Figure 1 Number of Financial Crises in Developing and Developed Countries



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

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

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

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

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

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

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

II Old Lessons Not Learned

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

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

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

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

1. The Inconsistent Trinity

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

2. Financial Markets Are Subject to Serious Information Asymmetries

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

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

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

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

3. Good Behaviour as a Source of Severe Difficulties

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

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

5. Sequencing and the Choice of an Exchange Rate Regime

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

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

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

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6. *Moral Hazard and Adverse Selection*

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

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

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

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

II New Lessons

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

1. A Widening List of Weaknesses

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

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

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

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

2. *Policy Intervention When the Fundamentals Are Good*

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

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

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

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

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3. The Crucial Role of Moratoria

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

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

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

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

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

11 See Eichengreen and Portes (1989).

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

IV Summary Conclusions: Coping with Future Crises

1. Why There Will Be More Crises

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

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

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2. *Financial Deregulation*

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

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

3. *Exchange Rate Regimes*

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

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

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

4. Orderly Workouts

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

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

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Comment on "Globalised Financial Markets and Financial Crises," by Charles Wyplosz

Mukhtar Nabi Qureshi

Listening to the masterly presentation of Charles Wyplosz on globalisation of financial markets and financial crises has been very educative and indeed enlightening. He gives an analytical insight into the dimension of problems that have arisen as a result of a violation of what he calls an iron law of open macroeconomics, namely the inconsistency of a fixed exchange rate, full capital mobility and monetary policy independence. While any pair of the three is possible, an attempt at achieving all three would inevitably result in a currency crisis which, in his view, lesson-wise is not a new phenomenon but a rediscovery of what has already happened in Europe or Mexico. Seen in the suggested healthy order of sequencing, the lesson is that full capital liberalisation should be undertaken after consolidation of the banking system on a sound footing, the removal of other weaknesses in the external and domestics side of the macroeconomic framework, and the selection of an appropriate exchange rate mechanism.

I have a few comments to make in this regard. From the point of view of developing countries, it is sometimes argued that while capital liberalisation is a desirable objective, it would not be proper to base it on the strength of efficiency of resource allocation alone. Other factors of production including labour are equally essential for resource allocation and global welfare. However, in a situation where first-best conditions in the use of all factors of production are not available, other combination of policies may be considered. Thus, balance of payment needs of developing countries would justify capital account convertibility which, in turn, helps financing their needs of current account deficits for achieving a desirable level of investment and growth. Developing countries need private capital inflows because of low national savings, large investment requirements, increasing debt servicing, and a declining trend in net official capital inflows. Grants and long-term concessionary loans from multilateral agencies and bilateral sources are no more available to finance current account deficits. While developing countries have benefited from private capital inflows, they have also faced crises as funds were withdrawn, even when they already had strong fundamentals like high growth and saving rates,

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low budget deficits, low inflation, diversified exports and high levels of reserves. It is, therefore, appropriate for other developing countries with weaker economic fundamentals to pause for a while along with these emerging economies to take a fresh look at the costs and benefits of capital account convertibility.

In developing countries the current account deficit is mostly generated by ambitious growth targets and speedy liberalisation of the current account itself. Paradoxically trade liberalisation and market-based economic management make it necessary for them to carry forward the process of reform and opening up of their capital account transactions as well.

The difficult issue to decide is whether capital account liberalisation should be extended to short-term funds and if so whether it be optional or compulsory. One may argue that certain preconditions should be put so as to hedge against disruptive or destabilising effects of cross-border movement of short-term funds. Several countries including Pakistan have moved toward a *de facto* liberalisation of short-term capital and the question is whether to make them adopt it *de jure* forcefully or voluntarily. It seems a consensus is developing in favour of a mandatory approach and extension of the IMF jurisdiction to the capital account to promote an orderly liberalisation through proper watch, advices and assistance. It could provide rather more resources to sterilise speculation efforts and to meet systemic problems. To make the process of capital account convertibility less painful, a reform of the banking system is a *sine qua non*. Regulators should provide for acceptable international standards of capital adequacy, lending, early warning and preventive mechanisms, transparency and disclosure, as well as a proper reporting system to the cental bank. This should include information on capital flows in and out of the country. Good governance, containing favouritism and corruption is necessary. Again, a strong and autonomous central bank capable of enforcing desirable monetary policy is also necessary. Fiscal prudence and avoidance of quasi-fiscal deficits coupled with proper coordination with monetary policy objectives would add to the strength of the economy and would facilitate meeting preconditions for moving toward capital account convertibility.

It might be appropriate to say that the financial mess of Asian countries was of its own making. For years, banks were treated as tools of state industrial policy, ordering them to make loans to uncreditworthy companies and industries. Central banks were subservient to the wishes of extraneous elements and did not enjoy proper autonomy. New lessons learned through the Asian crisis, incisively articulated by Professor Wyplosz, will go a long way in generating new research besides forcing the monetary authorities to reduce their objectives and follow a cautious blend of interventionist and market-based approach.

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Floor Discussion of "The Global Implications of Financial Crises in Emerging Market Economies"

Information and the Spread of Crises

Alexandre Lamfalussy began the discussion by commenting on the availability of information. "It is at the heart of the matter. Mr. Park is entirely right in saying that there was a lot of factual information available and that it was not used. I am primarily referring to the maturity profile of bank borrowing and bank lending. It was known by the end of 1995, and widely publicised by early 1996, that the very substantial increase in bank borrowing by most of the Southeast Asian countries was at the short end. I wrote a letter to the *Financial Times* about this and the BIS report in June 1996 spelled it out in great detail and in very strong words. The same situation had occurred in the early 1980s. By 1979, it was quite clear that almost 50% of sovereign bank borrowing was at the short end. This did not come as a surprise to the bankers in 1982. So it would be unwise to think that by improving this kind of information, you would necessarily improve the whole financial scene.

There is, however, one very difficult area concerning information where a kind of asymmetrical information problem exists which has no easy remedy. This is the uncertainty about how the affected countries will, in fact, react. How will the political reaction develop? This is not a very helpful remark, and the information is not entirely asymmetrical because I doubt that the countries themselves know how they will react. There is a sort of global uncertainty about how the policy reactions will develop inside the countries, how the international community will react, and so forth. And this is the more fundamental information problem; the information problem is not just a problem of basic statistics."

Lamfalussy continued by relating the issue of information to the spread of crises throughout a region. While he thought it unlikely that regional contagion could be avoided, he suggested that efforts still needed to be made in this regard. "During the crisis in the 1980s, I was at the BIS. When it began in Mexico the BIS package and the US package were put together in 24 hours and they were not conditional. The response was extremely quick, yet three months later the crisis spread to Brazil. I think that what happens in many instances is that financial market participants have a very bizarre way of looking at these things. They do not ask wheth-

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er the same conditions are emerging in country Y as in country X which experienced a crisis. Instead, they ask whether there are not *other* conditions that would justify a fear. In other words, if you have macroeconomic mismanagement, for instance, they don't necessarily look at another country and ask, 'is it also mismanaged from a macroeconomic point of view?' They ask instead whether it is mismanaged from *another* point of view – structural problems, lack of transparency in corporate balance sheets, etc. If they are satisfied that this is not the case, then they ask whether political problems are emerging, and if there are no political problems, then they wonder whether the weather might be responsible. Corporations and lenders seek to cover their responsibility."

Jack Boorman suggested that we would never be able to answer whether the Korean crisis could have been avoided if Thailand had been dealt with successfully. "The issue of why Thailand was not quickly and successfully dealt with goes back to Mr. Lamfalussy's point. A lot of what went wrong in Thailand between July and November was political. The government did not come to grips with the situation, so whether a large financing would have made a difference is certainly a question, but it also raises a deeper question. Would even more financing for Thailand and other similar cases have been appropriate, and if so, how do you square this with calls that the private sector be called into these operations at an earlier stage? I happen to agree with Mr. Lamfalussy about the fact that once the investors' fascination with Asia had ended, they began looking around, but they were not looking at exactly the same kinds of problems that fostered the crises in Thailand, among others the current account deficit. Instead, they were looking at structural issues and so forth."

Barbara Stallings made the point that the containment of regional contamination is crucial. "It has been mentioned a couple of times that it is impossible to contain regional contagion once it starts. But there are a number of examples in Latin America, back in the middle of the decade and more recently, that show that if you act quickly and in a draconian manner if necessary, then you can stop the contagion. In the mid-1990s, it hit Mexico and Argentina and despite initial fears, the rest of the region had no serious contagion effects. Recently, Brazil and Chile raised interest rates very rapidly and at least up until now, this seems to have worked in stopping the contagion this time as well."

Rating Agencies

The issues of information and contagion led the participants to examine the role of the rating agencies. Paul Cantor elaborated on their specific activities. "With the evolution of the flows of capital in the markets today,

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I want to make two general points about how lenders grapple with the credit risk issue. The first is that disintermediated assets tend to be more dependent on the rating agencies' interpretation of creditworthiness than intermediated assets. The second point is that the shorter the term, the more likely it is that the rating agencies will be the crucible on which the investment is made. So in an environment where there is a large flow of short-term lending and that lending is disintermediated, there is a much greater likelihood of the kind of volatility that we have seen in recent years. The growth of the financial institutions, which now span the investment as well as the commercial banking format, also creates additional volatility in these circumstances. One tends to find that the short-term disintermediated assets are run by the institution's trading room, and that the credit departments, which have a greater ability to do their own assessments, have had less of a role to play. Or to put it another way, while investment bankers are good at doing deals, they do not have a high level of credit skills. In this environment, the rating agencies have played a fairly significant role, as we have seen, and are open to some doubt as a result of their failure to effectively foresee and predict the circumstances that have now arisen."

György Szapáry suggested that rating agencies are basically market-driven institutions trying to anticipate market sentiment. "They try to second-guess what the markets think and want. For instance, if markets think that a country is not doing well, rating agencies will find various indicators which will prove that the country is not doing well. On the other hand, if capital is flowing to a country, in spite of that country's weak macroeconomic fundamentals, rating agencies will find other reasons to give it a positive rating. Korea is an example. Within a few weeks, they downgraded Korea by several notches after the markets had precipitated the crisis. But what was there about Korea which the agencies did not know before? In my view, a credit rating agency which reacts like the market is not a good guide for markets to follow. We need independent objective agencies which are not paid by the market and which are not trying to second-guess the markets."

Yung Chul Park agreed with the notion that the rating agencies do not always base their ratings on a country's macroeconomic fundamentals. He elaborated on Korea's rating in 1997. "In January 1997, Moody gave us a rating of A-1. On November 28, 1997, it dropped to A-3; ten days later it was BAA-2 and after another ten days, it was BA-1. Did they discover some new fundamentals in the span of one week? On what were they basing their ratings? Standard and Poors gave us a AA- in January 1997. On October 24, 1997 it was A+. On November 25, 1997, it was A-; ten days later it was BBB-; and ten days later B+. For heaven's sake, what were they doing?"

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Charles Wyplosz responded to Park. "I have been very critical of rating agencies in the past, so I find myself in a strange position. However, when we have self-fulfilling attacks, we cannot ask credit rating agencies to come up with an accurate assessment because *nobody* has this assessment. The problem lies in awareness of this fact and the recognition that they are unable to predict a crisis."

The IMF Response to the Crisis

Jack Boorman explained how the IMF responded to the situation in Korea "The Korean authorities chose an initial policy defense mechanism which was fundamentally flawed. Not only did it delay their willingness to involve the Fund, but by the time we did get involved, the situation was dire.

In early November, the Korean authorities were still refusing to accept assistance from the Fund. A mission was invited to Korea only on Monday, November 24th. On Thursday, the 27th, I received a call that they were effectively out of reserves. We had not known that. In fact, we thought that they had 50 billion dollars in reserves at the end of September. But this was misleading because 20 billion turned out to be claims on Korean banks, which were not usable. So they had 30 billion in usable reserves. During the course of November, because of a flawed policy of the Bank of Korea, they wasted, I would say, another 20 billion. So by the time we started discussions, they had 7 billion left.

I use the term wasted because the Bank of Korea opened its window to its own banks and made foreign exchange available to them at 100 points above Libor. As soon as the banks came under pressure from their own short-term claimants, mostly overseas banks, they adopted the totally passive posture of going to the Bank of Korea and taking down loans of 100 basis points above Libor – which was more attractive – and paying off their creditors. They never engaged their creditors to keep them in, they didn't have to, they had a cheap, alternative source of funds.

So the Bank of Korea violated one of the key principles of the lender of last resort, i.e. lending to institutions at anything other than a penalty rate. This was an absolutely key issue, and it unfortunately went on for several days and weeks – even after the approval of our programme. The government finally changed this policy and increased its rate first to 400 basis points, then 600 basis points, and finally 1000 basis points. Then the Korean banks finally started dealing with their creditors and indeed some of the creditors, at that high of a spread, showed a willingness to stay in.

I remain concerned about this critical issue of willingness on the part of country authorities to ask for assistance in a timely manner. You cannot deal with a situation like this when there are effectively no reserves left and

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you are staring default in the face. It forces you to take decisions, it limits your ability to analyse and it limits negotiating capacity. There has to be an earlier approach.

I also remain concerned because of the arguments that are being made by Martin Feldstein in his article in *Foreign Affairs* (March/April 1998). He argues that we have probably worsened the situation of the willingness of countries to come to the Fund early, because of the way in which these cases in Asia have been dealt with. In other words, having finally come to the Fund for assistance, the Fund then crafted programmes which go to the heart of some of the structural, political, some would say cultural, ways of doing business in these countries. To be crude, a 'kick them while they're down' syndrome on the part of the international community. If this indeed has the effect of making middle-income countries and emerging market countries reluctant to come to the Fund, I think that we have a real problem on our hands that we have to confront quite seriously."

H. Johannes Witteveen compared the current crisis to 19th century crises experienced in Europe. "While I think it is quite right that there is nothing new in history, there are always variations. We have a long history of business cycles, the whole 19th century had many crises. These crises were often characterised by overinvestment and this is also the character of the current Asian crisis. It is not a case of government overspending and government deficits, as was often the case after the war when the IMF applied its remedies. And while the current Asian crisis is a case of overinvestment, it is much more dangerous than generally was the case in 19th century Europe, because it is financed by foreign bank credit in foreign currency. Previously in Europe, these overinvestment situations were mostly financed internally by the domestic banking system, and this left a certain amount of room for bank credit to expand, but there were also limits and it could not be withdrawn so easily. The great danger of the current Asian crisis was not only that the flow of credit could not be stopped, but that it went back the other way, it had to be repaid. This determined the character and the difficulty of this crisis. It also holds some lessons for how it could have been prevented. I think we should look at how the international community might restrain this type of international credit in certain cases or in general.

What I would like to ask is: Why didn't the IMF try to bring in an element of rescheduling from the beginning? I think that the 1982 crisis in Latin America was handled well because IMF funding went hand in hand with rescheduling. The IMF could influence the banks by saying, 'We will provide this kind of credit if you agree to this kind of rescheduling.' I understand that in the case of Asia, it was much more difficult because it was not credit to the government but to many different private business.

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Nevertheless, I wonder whether rescheduling shouldn't have had more priority from the beginning with IMF support and the support of the main central banks. This ultimately happened when the crisis had become much more serious. The difficulty, as we have seen, is that once these bank loans have to be repaid and not enough reserves are available, then exchange rates are put under tremendous pressure and the whole repayment problem becomes considerably more difficult. This is also a feature which was not present in most of these earlier 19th century crises. To some extent perhaps it was present in the 1873 crisis in the US where a substantial amount of European capital was withdrawn. Probably, for that reason, that crisis was then the beginning of a rather serious depression in the American economy.

So my question is: Couldn't more have been done to coordinate some rescheduling by the banks and the financial support? The next question, which was also raised by Dr. Park is: Couldn't the financial support by the Fund be adjusted to the remaining repayment needs? Of course the IMF has the purpose of disbursing the money over time based on performance criteria, but in this case, does that not mean that not enough money was available to prevent this disastrous foreign exchange crisis?"

Park agreed with Witteveen. "The IMF was concerned about building up reserves. A larger amount of reserves would convince international creditors. I thought at that time that the IMF or the G-7 countries should get into the rescheduling right away instead of doing it 2 months later. We finished the rescheduling only on March 15th. Of course, in hindsight, we should have done it but everyone was so preoccupied with building up reserves."

Jack Boorman responded by reviewing each of the cases and their negotiations with the IMF. "We approached each of the cases differently because they were different. Thailand was the first. In July, in Thailand we were dealing with heavy short-term bank exposure and some corporate exposure. The approach taken there was an informal "moral persuasion" and, partly because of Japanese subsidiaries of corporations operating in Thailand, there was the opportunity to use the authority of the Japanese and the others to talk to the banks, to explain the situation, and to maintain exposure as one means of working through it. So there were these informal approaches, and even though the situation emerged rather problematically, partly because of the political uncertainties with the Thai government until the new government came in November, a case can be made that that approach has pretty much worked. The roll-over rate and the maintenance of exposure in Thailand has been pretty good.

We were dealing with a completely different situation in Indonesia. It was something with which we had little experience, i.e. massive exposure,

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including short term, in the corporate sector. It was not a bank problem in the first instance. Dealing with corporate sector debt, particularly in Indonesia, is extremely difficult partly because the domestic institutions which are necessary to induce debtors to behave themselves do not exist. There is a bankruptcy law, but it is the 1904 Dutch law, and while it is not a bad law, there was no effective judicial system in Indonesia to enforce it. So there is a problem with debtor discipline. What we have done is to set up a body which is attempting to bring a voluntary case-by-case solution to this issue. It is working dreadfully slowly, so I think there is no doubt that we have to consider alternatives.

In Korea, the situation was basically short-term bank exposure. We debated this matter when we were coming to a conclusion regarding the arrangement at the end of November with Korean authorities as to what ought to be done. We shied away from what would have been a default or moratorium at that stage. This leads to my point that we must keep in mind what the situation was at that moment in the individual country and in the world. We should not forget this when we try to look back at these 'post mortems'.

Latin America and Brazil, in particular, were under tremendous pressure. Thailand had spread to Malaysia, Indonesia, the Philippines and then Korea. Then it seemed to be jumping the Pacific and pressures were developing in Latin America. I can only speak for myself in those deliberations, but I was greatly influenced in that discussion by the risk to the markets of calling a halt to payments in Korea, with the fear that everybody would pick up their phone with instructions to their traders and dealers about what to do in Latin America. Maybe it was right, maybe it was wrong, but it was part of what was in the back of my mind.

The other aspect of it, which I think has turned out to be correct, was that you have to deal in an environment where there is some receptivity on the part of the private creditors. I remain sceptical as to whether we would have had that receptivity at the end of November, given the host of second-tier institutions that were involved in lending to the banks in Korea and given the exposure levels of even the big institutions. This is not to say that this is the best that could have been done, but the fact that some of those second-tier institutions got out and that some of the big institutions had the opportunity to work down their exposure led to a situation whereby, when we finally did approach the banks on December 21st or 22nd, we were playing into a slightly more receptive environment."

Alexandre Lamfalussy expressed concern about the issue of lender behaviour and moral hazard. "There is a serious moral hazard problem on the lending side which needs to be put on the record. It is difficult to draw conclusions, but my instinctive feeling is that the way in which the 1994-

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1995 Mexican crisis was handled – which didn't seem to have caused any loss to any lender – may have had an impact on current lending behaviour. While I think that what was done in the 1980s was a rather long, drawn-out process and while banks may not have lost very much in the end, they were kept very uncertain about the losses for a very long time indeed."

Ariel Buira suggested that the process in Latin America was drawn out because the authorities in the industrial countries did not want their banks to take such losses since they had not yet made the necessary loan-loss provisions and were unable to immediately absorb such losses. "So they drew out the process and Latin America lost a decade. I think we need some other arrangement, in fact, if we had had a Chapter 11 option, the banks would have taken the losses, some banks would have gone bankrupt, somebody else would have bought the banks and the thing would have gone on as happened in any country that has had a banking crisis. This is the normal procedure and if it had been followed, Latin America would not have lost 10 years and endured all sorts of problems."

Charles Wyplosz suggested that the notion of moral hazard for lenders was an argument in favour of a moratorium which would not be as lender friendly as practice had been so far. Age Bakker wondered "whether the way we are dealing with this crisis is not giving the wrong signals to the lenders, because what we are doing is in fact bailing out those who have given dollar-denominated loans, while those who took a real interest in these countries by investing in companies in domestic currency are being substantially penalised. One could argue that the way we are dealing with this crisis is giving the wrong incentives to lenders and perhaps encouraging moral hazard."

Liberalisation, Sequencing and Exchange Rates

As the participants continued to examine the causes of the crisis, the discussion turned to the issues of liberalisation and sequencing. György Szapáry responded to the suggestion that some countries liberalised too early. "Some of the benefits we in Hungary are enjoying are directly related to liberalisation. Some Central and Eastern European countries have attracted a fairly important amount of FDI as a result of liberal rules which have allowed the multinationals to manage their financial transactions efficiently. In Hungary, for instance, we have been quite successful in attracting foreign banks to set up business, which has been facilitated by the liberalisation of the capital markets. However, we have been very conscious in the area of short-term capital flows, we have kept restrictions and we would like to liberalise them last.

I have been involved in the market reforms in Hungary from the very

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beginning and one of the things that I have learned is that the simultaneity of reforms is in fact a necessity. For instance, if one wants to privatise the banking system, one has to strengthen supervision at the same time. If it is not possible to strengthen the supervision of the banking system because of a lack of adequate expertise or because there is political quibbling about whether supervision should be done by the Central Bank or by a separate institution, then it is better to postpone liberalisation. But keep in mind that it would be ideal to do this all at the same time. As for liberalisation and crises, it is clear that you will not have a crisis if you have not liberalised, but neither will you have efficiency and potential for rapid economic growth. Postponing liberalisation makes sense only if there is a lack of human and institutional back-up to implement and live with liberalisation. In other words, sequencing is the second-best solution, which one has to accept sometimes."

Roy Culpeper took issue with the notion that without liberalisation, one suffers on the growth side. "The whole Asian miracle took place among countries that were highly non-liberal over three decades. If you look within Asia, I find it interesting that the two countries that have not been affected by contagion, China and Taiwan, are relatively closed economies. Finally, the limits on short-term flows that Chile and other countries have imposed have not only protected them from the 'tequila' effect, but have not resulted in a penalty on their growth performance either. Deferring, especially short-term, liberalisation does not seem to have a growth penalty."

Szapáry emphasised the importance of differentiating between countries and regions when one is talking about liberalisation. "The Asian countries range in population and markets from 35 million to over 100 million, let alone China which is over 1 billion. They are rich in natural resources and they can afford a cautious approach to liberalisation, since they can live on their own markets if they need to. They have more room for manoeuver and more time to implement some of the liberalisation. But in Eastern Europe, countries like the Czech Republic, Slovakia and Hungary are small countries, 10 million people or so, with no vast natural resources and substantial integration into the neighbouring European markets. We face different problems and some of the things that are being said about postponing liberalisation and sequencing do not apply to us or would be much more difficult to implement."

Louis Kasekende commented on the issue of sequencing as one of the lessons from the crisis. "We have been liberalising the current account, have moved forward towards liberalising the financial sector and, at the moment, we are enjoying some benefits. Still, I do not want to underrate the risks. For some African countries, we have to think about measures for assisting them because when we maintained the controls, it did not stop

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capital flight during the 1970s. When we came to the 1980s and the 1990s, we had all of these big problems of monitoring and identifying what was coming back in the various countries. There is a study financed by UNCTAD which revealed numerous problems of recording. We found no use in maintaining controls and we moved very fast in liberalising. We need to develop some measures for highly liberalised countries that remain in this category of developing countries with all of its attendant problems with regulation and the effectiveness of that regulation."

Stephany Griffith-Jones supported Kasekende's point with a reference to Chile. "Chile liberalised very quickly and is very committed to a market economy, but it has imposed reserve requirements for short-term inflows, which seem to work because they have helped to discourage short-term flows."

Mike Kennedy suggested that we may never get the sequencing right. "It is always easier politically to start with financial liberalisation. However, then the real issue is, how do you create some sort of forcing mechanism to undertake structural reform as well? Most models emphasise macroeconomic fundamentals of 'getting it right' and helping prevent speculative attacks. I think we are going to see a third generation of speculative attacks' literature coming from Paul Krugman on the role of structural features. The point is, we know that there are always going to be attacks, but would flexible exchange rates have been better for these countries? Would that have made creditors and debtors look more carefully? As Mr. Lamfalussy pointed out, information was available about these things. Did the existence of the peg or the crawling peg lend them some sort of complacency so that they kept on lending since they presumed that there would be some sort of bailout?

At the OECD, we pointed out in our Korean survey that there were structural problems, but it is difficult to do more than that. You are dealing with sovereign governments and you can only use peer pressure to try to create some sort of forcing mechanism."

Yung Chul Park explained the exchange rate policy of Korea. "We had a long discussion about exchange rate policy before the crisis and whether we should expand the adjustment band from 2.5% to 10% or 15%. The IMF could not give us an answer. I suggested 10%, but that might be a sign of weakness. What about 5%? And in fact, I was very surprised when after we agreed to the IMF programme sometime between December 3rd and Christmas, the IMF suddenly came to us and said we had to go to the floating exchange rate system, 100% flexible system. When we asked why they didn't suggest that before, they said that the situation had changed."

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Macroeconomic Fundamentals and Coping with Crises

The issue of macroeconomic fundamentals remained an important topic for the participants as illustrated by Charles Wyplosz. "Restrictions to capital movement are only useful in crisis time when things move so rapidly that the authorities don't have time to think through their options or they cannot negotiate with the IMF because things are moving so fast. But I don't know of anything that can prevent a crisis if the fundamentals are wrong, and I think it would be a mistake to rely on restrictions to capital movement to deal with wrong fundamentals. Even if the fundamentals are right but the market, for some reason, is going into crisis, restrictions would not work."

Szapáry also stressed the importance of good macroeconomic fundamentals. "Clearly there are some countries which suffer attacks without apparent reason since their macroeconomic fundamentals are good. Good fundamentals help to discourage attacks. If attack, nevertheless, takes place, a country with strong macroeconomic fundamentals is in a better position to withstand it."

Miroslav Hrnčíř added the institutional dimension to the macroeconomic fundamentals argument. "I can perhaps make this point by looking at Czech development. While our macroeconomic figures were considered the success story of transition economies for a long time, it is also true that there was some loss of momentum in developing an institutional framework. As you perhaps know, we were subject to quite heavy speculative attacks in 1997. We became vulnerable from two points of view. Certainly our macroeconomic figures deteriorated at that time, but it was a result of microeconomic and institutional weakness in the allocation of resources. And at the same time, we liberalised considerably more than our neighbouring countries, so Czech currency became more exposed to currency trading than any other currency in Central and Eastern Europe. So we were also vulnerable because of our success.

In any case we have been fairly successful in coping with the currency crisis we faced and one of the reasons for our success was that we didn't hesitate to act quickly. We raised the interest rates immediately, which was a clear signal. So we were able to cope with the crisis without any external help, with very modest depreciation of the currency and with a soft landing of interest rates. What is even more important for our case, the other side of the coin of the currency crisis was that there was a reconsideration of government policy. We determined that it was necessary to go ahead with the privatisation of the banking sector, with the legal framework and the institutional framework, with cultivation of the market institutions and I

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think this is the crucial point for further conditions of how to cope with the next crisis."

Moratoria, Chapter 11 and Bailouts

Yilmaz Akyüz presented the UNCTAD view on moratoria. "In the 1980s it was discussed in the context of sovereign debt and in the mid-1990s also in the case of the Mexico crisis. In Asia, as we know, the issue is largely a private debt crisis. Usually, private creditors are protected by insolvency court according to the provisions of their contracts regarding choice of law, choice of forum. But in a case like Korea, it is very difficult to expect every individual creditor to try to benefit from the two principles that Chapter 11 of the US Bankruptcy Code formulates, i.e. the automatic standstill principle and 'debtor in procession' financing.

It is difficult to deal at the private individual debtor level for another reason, as we have seen in Korea, because the individuals may be solvent, but the country doesn't have the reserves to make the payments. In that case, the individual debtors may be unwilling to file a petition for their protection. So the country must be allowed to unilaterally declare a debt standstill. As you may know from the 1980s, the US courts turned this down in the case of Costa Rica when the Costa Rican government introduced such a debt standstill. Initially the US District Court and the Court of Appeals accepted the case in favour of Costa Rica. However, after the hearing, the US Department of Justice intervened in the Court of Appeals and said that while it was consistent with US law, it was against the US policy of dealing with such situations through the IMF. There is an Article 6, Section 2b of the IMF which one can interpret as saying that debt payments cannot be stopped. What we need is either an amendment of that IMF article or some other mechanisms which allow countries to unilaterally declare a standstill along the lines of Chapter 11, much like the safeguard action countries can take in the WTO, subject to further negotiations and consultations with the parties concerned in order to stop the damage that external factors may be causing.

The problem here is that being itself a creditor and its main shareholders being creditors, the IMF has a conflict of interest not only vis-à-vis debtors on which the IMF placed policy conditionality, but also with other creditors because the IMF itself is a creditor with seniority. So a more independent panel could be established along the WTO lines in order to allow countries, once they unilaterally declare that kind of a standstill, to approve it and also allow 'debtor in procession' financing, that is financing that has seniority over the previous debt, while at the same time asking the country to present a restructuring plan with the debt.

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The advantage of such a procedure would be that there is no need for large sums of money for bailouts. What I want to put on the table is a proposal which follows Mr. Wyplosz' suggestion to think about an international mechanism that would allow automatic standstill and 'debtor in procession' financing which will eliminate any need for large-scale bailouts."

Witteveen suggested that the IMF would be in a very special position to give some guidance to a moratorium and rescheduling process, because it could then be coordinated as in the 1982 Latin American crisis with financial support that it is itself providing. "In those negotiations, the IMF was able to put strong pressure on the banks because it could say, if you go along with this kind of rescheduling, we will provide these financial resources, and then the loans can be serviced. It was a very logical connection.

At the same time, we need to consider how we can create some restraint on international credit. We have learned to control domestic business cycles in the advanced economies because we control bank credit. But in the international scene, international bank credit is not controlled. It can expand enormously to certain countries and regions beyond anything that is reasonable. What I think would be very important in preventing such crises is if there could be international consultation in the BIS, for example together with the IMF, to get the main central banks to restrain this kind of international credit by their banks – even if it goes through Euromarkets and not through their own economy. They control bank credit in their own economy, they control the money supply very well now, but this has no parallel in the international scene and that is what we are going to need in the future."

Griffith-Jones agreed that moratoria and standstills are very attractive conceptually "but they are very tricky because capital is more mobile and you cannot freeze all the flows. Therefore, the risks of restraining capital outflows during crisis are very high. It is much more difficult than in the 1980s when it was just medium-term debt. The emphasis should be placed on the kinds of issues that Mr. Witteveen was pointing out, what can be done both nationally and internationally to slow down the flows before the crisis? Precisely because everyone knows that these moratoria are very difficult to implement, it may not be a first-best solution, but a second-best *realistic* solution of trying to regulate excessive surges, both internationally and nationally."

Wyplosz suggested that it would be difficult to determine who should be the referee or the equivalent of Chapter 11 courts. "There have been views that the IMF is suffering a conflict of interest, there are other views that the IMF is good to internalise the externality. Jack Boorman said we could

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not call a moratorium because of concern about the externality with Latin America. That is a valid point and I understand that there is a conflict of interest between protecting one country and protecting the systemic access to markets. This is an argument that makes it even more difficult to think about how we should deal with these moratoria. It is an extremely complicated and at the same time extremely important issue."

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