

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.

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 Economy¹
(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.

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.

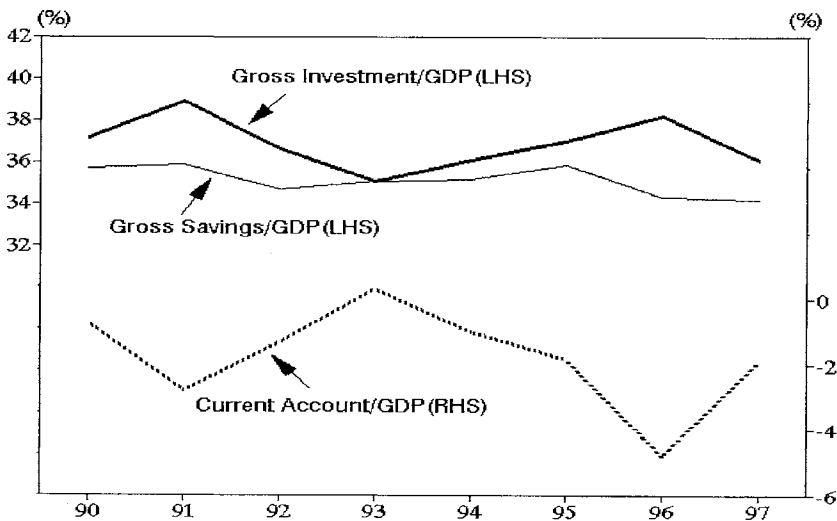
Source: The Bank of Korea, *Balance of Payments*, various issues.

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

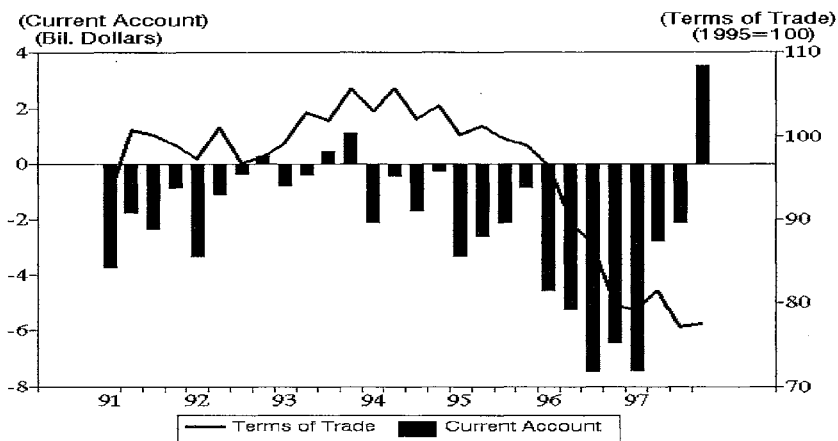
The appreciation of the yen brought about a sharp increase in the export earnings of East Asian countries, as they were becoming more competitive vis-à-vis Japan in exports of manufactures. This, in turn, encouraged a great deal of investment throughout East Asia. Korea benefited most out of all the 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.

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,

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.

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.

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

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.

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 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

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.

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).

Table 5-A External Liabilities of Domestic Deposit Money Banks in Korea¹
(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.

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

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-

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.

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

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.

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-

div. 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 Pools.

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.

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

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.

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?

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 expected 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.

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

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-

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.

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

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

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

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

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

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

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

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

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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