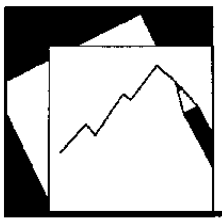
WP/01/154



IMF Working Paper

From Crisis to Recovery in Korea: Strategy, Achievements, and Lessons

Ajai Chopra, Kenneth Kang,
Meral Karasulu, Hong Liang, Henry Ma,
and Anthony Richards

INTERNATIONAL MONETARY FUND

WP/01/154

IMF Working Paper

Asia and Pacific Department

From Crisis to Recovery in Korea: Strategy, Achievements, and Lessons

Prepared by Ajai Chopra, Kenneth Kang, Meral Karasulu, Hong Liang, Henry Ma, and Anthony Richards[1]

October 2001

Abstract

This paper reviews and draws lessons from the stabilization and reform program that Korea implemented in response to the 1997–98 crisis. The economy recovered quickly from the deep recession in 1998 and its vulnerability to a balance of payments crisis has been reduced sharply. Significant progress has also been made in stabilizing the financial system and addressing corporate distress, and wide-ranging reforms have made Korea's economy more open, competitive, and market driven. Notwithstanding these achievements, more needs to be done before the soundness of the corporate and financial sectors is firmly established.

JEL Classification Numbers: E6, F3, F4

Keywords: Korea, Asian financial crisis, IMF

Author's E-Mail Address: achopra@imf.org; kkang@imf.org; and arichards@imf.org

---

[1] This paper was prepared for the *Conference on the Korean Crisis and Recovery*, Seoul, Republic of Korea, May 17–19, 2001, and it reflects information available through that date. The paper draws on work done by Peter Hayward, Nigel Chalk, Jeanne Gobat, and numerous other colleagues in the IMF. We would also like to thank David Coe, Stanley Fischer, Jim Gordon, Peter Hayward, and Wanda Tseng for valuable comments and insights. The authors, alas, are solely responsible for any remaining errors or shortcomings.

Contents Page

I. Introduction....3

II. The Origins and Outbreak of the Crisis....4
A. The Buildup in Short-term Debt and Foreign Currency Exposure....4
B. A Weak Financial System....6
C. A Highly Leveraged Corporate Sector....8
D. Macroeconomic Developments Before the Crisis....10
E. The Outbreak of the Crisis....13

III. The Crisis Resolution Strategy....15
A. Stabilizing the Exchange Rate....15
B. The Monetary Policy Debate....20
C. Supporting the Recovery—The Conduct of Fiscal Policy....26
D. Expanding the Social Safety Net....29
E. Addressing Structural Weaknesses and Increasing Market Orientation....31

IV. Financial Sector Restructuring....36
A. Strategy and Implementation....36
B. Achievements....47
C. Ongoing Restructuring: A Mixed Picture....50
D. Remaining Agenda....51

V. Corporate Restructuring....54
A. Strategy for Restructuring....54
B. Achievements....59
C. Remaining Agenda....68

VI. The Economic Recovery....70
A. Factors Contributing to Korea's Recovery....70
B. Potential Output and the Output Gap....76

VII. Lessons from the Crisis....77
A. Crisis Prediction and Prevention....77
B. Crisis Management....79
C. Structural Reforms....80
D. The Challenges Ahead....83

Boxes
1. Literature on the Origins of the Crisis in Korea....17
2. "Bailing In" the Private Sector....21
3. Structural Conditionality in the Korea Program....34
4. The Evolving Role of KAMCO....45
5. Profitability of the Banking Sector....52

Appendix I: Structural Performance Criteria in the Korea Program 84

References....88

I. INTRODUCTION

Korea's three-year stand-by arrangement with the IMF expired on December 3, 2000. Looking back, a tremendous amount was accomplished during the IMF-supported program. First, macroeconomic fundamentals have improved and vulnerability to a balance of payments crisis has been sharply reduced. The economy recovered very rapidly from the deep recession in the immediate aftermath of the 1997 crisis; unemployment has been reduced; inflation has been contained; exports have been strong (although they have softened recently with the global slowdown); foreign direct investment and portfolio inflows have increased markedly; and foreign reserves have been built to record levels. Second, a wide range of structural reforms have made Korea's economy more open, competitive, and market driven. Significant progress has been made in stabilizing the financial system; addressing corporate distress; strengthening the institutional framework for corporate governance and financial sector supervision; liberalizing capital markets and foreign investment; enhancing transparency; and creating an environment where market discipline plays an increasingly important role.

These are impressive achievements and they surpass those in other crisis-affected economies. The IMF-supported program has thus been very successful and its goals—namely, to restore confidence and stabilize financial markets, and also to lay the foundation for a sustained recovery in the real economy and lower the chances of future crises—have been met. Moreover, the reforms initiated since the crisis will continue to yield benefits for years to come, and in many cases the benefits will increase as practices and ways of doing business change.

Notwithstanding these achievements, the reforms are far from complete and there are still important structural weaknesses. Confidence has declined amid the growing perception that corporate and financial sector restructuring has been slow. Worries about the health of the corporate sector, a large portion of which is still saddled with weak cash flow and poor profitability, have intensified. Further, financial sector risk will remain high as long as the corporate sector remains weak. The uncertainty about domestic restructuring has been exacerbated by the simultaneous weakening in the external outlook, notably slower world growth and lower equity prices. Growth is forecast to slow sharply in 2001.

The slow progress on the structural front will increasingly exert a drag on the economy. Commendably, the government has increased its efforts to provide new impetus to reform and restructuring. Weak banks are being pressed to restructure and recapitalize, and more public funds have been allocated to assist this process. Creditors, in turn, are beginning to take a tougher attitude toward weak companies, forcing some important ones into court-supervised insolvency and wresting control of others. These are positive steps, but many challenges still remain.

The paper is structured as follows. Section II reviews the origins of the twin currency and financial sector crisis in Korea and provides a summary of the events leading to the outbreak of the crisis. Section III discusses the strategy followed in responding to the crisis and its rationale. Where relevant this strategy is contrasted with alternative approaches that have been proposed. Sections IV and V examine the strategy for restructuring the corporate

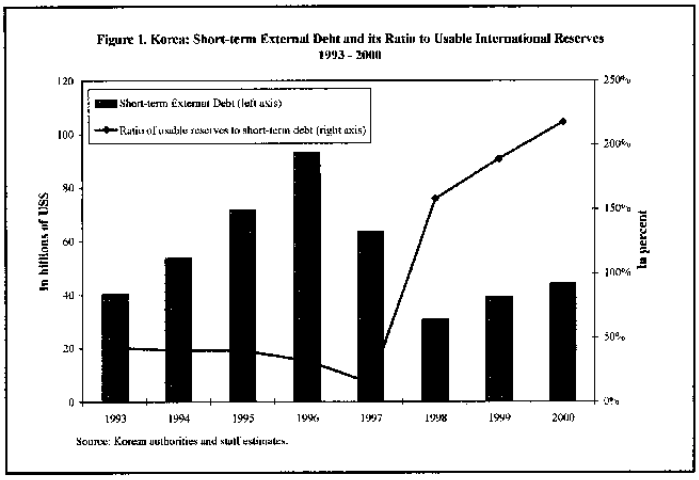
and financial sectors—the heart of the structural reforms being pursued in Korea—and the achievements in these two areas. Section VI reviews the factors that contributed to the unexpectedly rapid economic recovery following the crisis. Finally, Section VII concludes with some general lessons and summarizes the challenges ahead.

II. The Origins and Outbreak of the Crisis

Most observers in 1997 were shocked to see Korea—the world's eleventh largest economy with an impressive record of macroeconomic performance—swept into the financial crisis that was spreading through Southeast Asia. In retrospect, however, Korea's remarkable growth masked a number of structural weaknesses that left the economy vulnerable to external shocks and adverse shifts in investor sentiment.

Although a severe international liquidity squeeze was the immediate trigger for the crisis, structural weaknesses—notably a weak financial sector with little commercial orientation and limited ability to assess risk, combined with an overleveraged corporate sector that had invested heavily to gain market share with insufficient attention to profitability—were at the core of the problem. These weaknesses left the economy exposed to external shocks, including financial contagion and the sudden reversal of capital flows, and exacerbated the severity of the crisis. This section describes these vulnerabilities and the macroeconomic conditions leading up to the "twin" currency and banking crisis.

A. The Buildup in Short-Term Debt and Foreign Currency Exposure

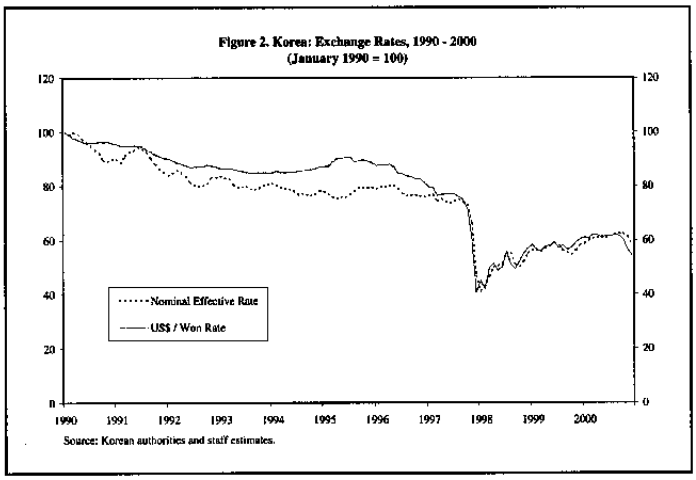


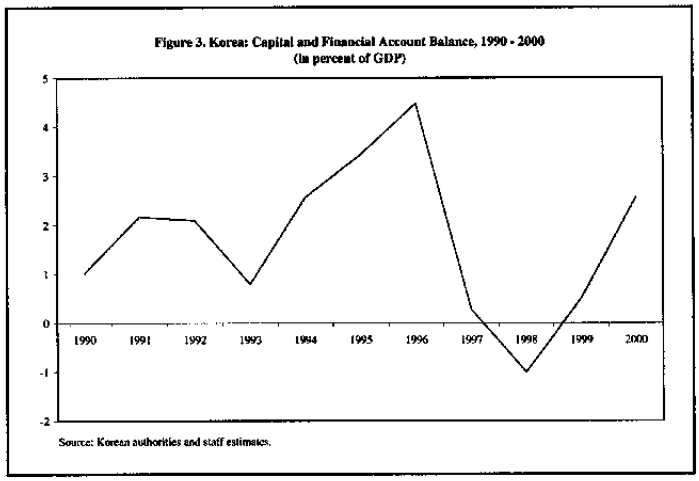
The rapid buildup in private short-term external debt created the potential for liquidity problems. In Korea, as in many other Asian countries, bank financing historically played a leading role in economic development, with relatively undeveloped equity and debt capital markets. In 1993, when the government expanded the scope for short-term overseas borrowing by removing controls on such borrowing by banks, it maintained tight restrictions on medium- and long-term capital and on direct access to capital markets by Korean corporations.[2] As a result, short-term external debt increased dramatically, creating a maturity mismatch, as Korean financial

[2] To limit possible takeovers by foreigners, foreign ownership of listed companies was restricted to 20 percent of capital with the limit on individual stakes set at 5 percent. See Johnston et al (1999) for an overview of how capital account liberalization led to a buildup of short-term borrowing and a maturity mismatch in banks' balance sheets.

institutions borrowed short-term overseas in order to help finance long-term investments.[3] Short-term external debt rose from $40 billion in 1993 to $98 billion at end-September 1997, representing 54 percent of total external liabilities. Short-term external debt also quickly outpaced growth in usable reserves, creating the potential for liquidity problems and raising doubts about Korea's external position. The ratio of usable international reserves to short-term debt (on a residual maturity basis) fell from 42 percent in 1993 to 29 percent at end-1996.[4]

Prior to the crisis, strong macroeconomic performance and the relative stability of the exchange rate may have led both borrowers and lenders to underestimate the risk of their foreign currency exposure. During the 1990s, Korea's exchange rate regime was essentially a tightly managed float with the won/dollar rate moving in a very narrow range. Together with the underdeveloped market for hedging, there was thus little incentive to hedge against exchange rate risk. The positive spread between domestic and foreign interest rates combined with the relative stability in the exchange rate also helped to draw large inflows of foreign capital.[5] Net capital inflows rose from around 2 percent of GDP during 1990–94 to around 5–6 percent in 1995–96, with much of these inflows being channeled through the





[3] At end-December 1997, short-term assets covered only 55 percent of short-term liabilities in commercial banks and only 25 percent in merchant banks.

[4] Reserves here exclude foreign exchange deposits lent to commercial banks accounts held abroad for liquidity support.

[5] It should be noted, however, that the positive interesst rate spread did not draw large inflows into the domestic bond and money markets, which were essentially closed to foreigners. A factor that contributed to the rise in overseas interbank lending to Korea was the more favorable capital requirement on lending to Korea when it became a member of the OECD in December 1996. Upon entry, the risk-weight for loans to Korean banks fell from 100 percent to 20 percent, which raised banks' return on capital and lowered the spreads for loans to Korean banks (Baliño and Ubide, 1999).

banking system. The perceived low risk in Korean lending can be seen in the narrow international spreads, which in 1996 were around 65 basis points and rose only to about 80 basis points after the Thai baht devaluation in July 1997. The large unhedged foreign debt and its short maturity left Korea vulnerable to capital flight and a sharp devaluation.

B. The Weak Financial System

Korea's weak financial system, lacking in market discipline and proper supervision, was ill-equipped to handle the large inflows. Liberalization of the financial system gained momentum in the early 1990s, leading to rapid growth in domestic credit and large capital inflows. A history of government intervention in the financial system (e.g. the directed credit policy of the 1970s and 1980s) not only left the financial system with large nonperforming loans, it also left it with little commercial orientation. In addition, weak regulatory and supervisory arrangements allowed banks to take on excessive risk without an adequate capital base to withstand shocks.[6]

Although the financial system was gradually liberalized in the early 1990s, substantial moral hazard remained, reflecting the legacy of government intervention and the perception that the government would not allow major banks or large Korean *chaebol* to fail.[7] Commercial banks were privatized starting in the mid-1980s, but the government still exerted significant control in the system through the appointment of senior management and through the large state-owned banks, such as the Korea Development Bank (KDB) and the Korea Export-Import Bank (KEXIM), which were important sources of financing for the large *chaebol*.

Government intervention in credit decisions also hampered the development of strong risk management and credit analysis skills. Because of the government's traditional role in guiding the allocation of credit and implicitly assuming the risk of directed lending, banks had little incentive to develop the necessary skills to assess risk and credit quality. Instead, lending decisions relied more upon collateral and inter-company guarantees rather than projected cash flows. Banks did not follow proper loan review processes, and management information systems were rudimentary. Financing was made available for large investment projects even when such investments added to overcapacity. Private sector credit grew during the 1990s at an average rate of close to 20 percent per year, helping to keep investment rates high. As a result, banks took on excessive risk in their lending and were under-capitalized.

---

[6] See Cho (1999) for discussion on how the sequencing of Korea's financial liberalization contributed to the buildup of these structural weaknesses in the system.

[7] Korea had a partial deposit insurance scheme but the funds were woefully insufficient to provide adequate coverage. Prior to the crisis, the government never allowed a bank to fail, which led depositors to believe that their deposits were implicitly insured. Insolvent banks were either taken over by the government, forced to restructure with public funds, or merged with a healthy bank.

The misallocation of credit was facilitated by a weak system of prudential controls. Loan classification standards and provisioning were less stringent in Korea than in many OECD countries and were based upon backward looking criteria that focused more on borrowers' prior loan servicing record and availability of collateral rather than their future capacity to repay.[8] Loose restrictions on banks' risk concentration led to large exposures to certain conglomerates that were heavily leveraged and dependent mainly upon bank financing. In addition, the bulk of corporate bonds issued carried a bank guarantee that exposed the financial system to even more corporate risk. Accounting and disclosure standards were also below international best practices, and market value accounting was not widely practiced. The lack of a liquid bond market and of transparency in the equity market also hindered the development of strong corporate governance and market discipline.

The problem of weak prudential controls was compounded by fragmented supervision and widespread forbearance. Supervision of the financial sector was split between the Office of Banking Supervision at the Bank of Korea (commercial banks) and Ministry of Finance and Economy (specialized banks and nonbank financial institutions). The lack of a unified supervisory framework created opportunities for regulatory arbitrage and permitted unsound banking practices to continue. Furthermore, regulatory forbearance made enforcement nontransparent and undermined the credibility of the system.

In addition, less stringent regulatory requirements on nonbanks triggered an expansion in their activities, cutting into the profitability of the banking sector. Merchant banks, as wholesale financial institutions engaging in underwriting, leasing, and unsecured short-term lending, competed directly with the commercial banks and attracted an increasing share of funds by offering a wide range of accounts and instruments. Many were owned by the large *chaebol* and invested their funds in short-term corporate paper. Banks also faced competition in their trust business from the growth of the investment trust sector. As a result, banks faced declining profits and were unable to generate sufficient income to strengthen their capital base.

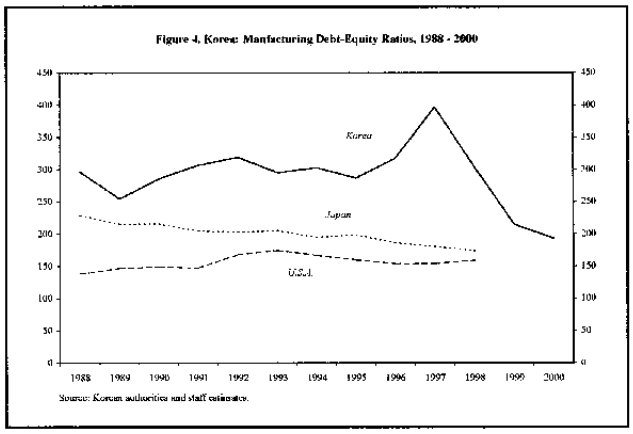
The result was an under-capitalized financial system that was highly vulnerable to external shocks and rising corporate distress. When export prices slumped and a number of *chaebol* went bankrupt in 1997, banks experienced a rapid deterioration in their asset quality

[8] Nonperforming loans were defined as loans that had been in arrears for six months or more, compared with a more typical definition of three months or more. Official data, which showed nonperforming loans falling between 1993 and 1996, may have obscured the true health of banks' balance sheets. After accounting for insufficient provisioning of loan losses and the underreporting of nonperforming loans, Hahm and Mishkin (2000) show that banks' balance sheets deteriorated steadily throughout the 1990s. This assertion is partly supported by the poor performance of the bank stock price index beginning in late 1995, suggesting that the stock market was aware of the severity of the asset quality problem well before the crisis.

and a loss of capital. By end-1997, 14 of the 27 commercial banks had measured capital adequacy ratios below 8 percent even under the lax accounting standards.[9]

C. A Highly Leveraged Corporate Sector

Structural weaknesses in the corporate and financial sector were closely intertwined because of firms' heavy reliance on bank financing. As a result, banks were taking on risks that in most countries were borne by shareholders. In view of their large exposure, both in terms of direct lending and through bond guarantees, banks faced a systemic risk from the growing problems in the corporate sector. Corporations, in turn, depended upon the health of the banks for their financing, and in some cases, their survival.



Prior to the crisis, the corporate sector was highly leveraged and suffering from poor profitability. The history of directed lending and government bailouts of distressed companies encouraged excessive risk taking and overinvestment.[10] Between 1993 and 1996, Korean industrial conglomerates *(chaebol)* launched a series of ambitious investment projects, but these investment failed to generate adequate returns to cover the cost of capital.[11] Because of restrictions that favored debt over equity financing, *chaebol* financed much of their investment with short-term borrowing from banks. As a result, the debt-to-equity ratio of the manufacturing sector jumped from 300 percent to 400 percent—double the OECD average—between 1996 and 1997. Even worse, the average debt-to-equity ratio for the top-30 *chaebol* rose from 387 percent to 518 percent over the same period.[12]

---

[9] No doubt many of these would have shown much lower capital ratios had assets been valued appropriately.

[10] See Graham (2001) for a discussion of Korea's policy of "socialization" of risk, starting in the 1960s, and its consequences (including excessive risk taking) over time.

[11] See Claessens et al (1998) for an analysis of the financial structure and performance of the corporate sectors in the Asian crisis countries prior to 1997, and evidence that many of the now apparent vulnerabilities in the corporate sector can be traced as far back as the early 1990s.

[12] In addition to the rise in debt-financed investment, the spike in the debt-equity ratio in 1997 also reflected the overshooting of the exchange rate.

The high level of corporate debt cut into profitability and left the sector vulnerable to a cyclical downturn or a cutoff in credit lines. Profitability indicators in the manufacturing sector, such as return on assets and net profit margins, already low relative to other countries, all exhibited sharp declines after 1995, and turned negative in 1997. One reason for the poor performance was the high interest expense on accumulated debt that was about three times higher than in Germany, Japan, Taiwan Province of China, and the United States. In addition, a major part of this debt was short-term (60 percent of total liabilities in 1996) in the form of commercial paper and promissory notes, creating the potential for a liquidity squeeze.

The overexpansion of the sector was associated with the perception that *chaebol* were "too big to fail." With few exceptions, the government repeatedly bailed out large failing companies instead of leaving their fate to the markets or the courts.[13] As a result of the implicit guarantee on their risky investments, companies faced an artificially low cost of capital that allowed excessive expansion. Even struggling companies faced little pressure to restructure through downsizing and divestiture of loss-making affiliates.

Poor corporate governance encouraged excessive risk taking and shielded managers from market discipline. The complex web of cross-guarantees and cross-equity investments within the Korean *chaebol* created soft-budget constraints for weaker affiliates and diluted accountability for poor business decisions. Cross-guarantees allowed weaker affiliates easy access to credit markets, and they also had the potential for bringing the whole group down by allowing financial distress in one affiliate to affect the rest of the group.[14] Further, cross-shareholdings shielded managers from market discipline and led to nontransparent corporate decision making by allowing a large investor, typically a family owner, to control the company with little of his own capital at risk. This lack of corporate transparency also deterred outsiders from investing in Korean companies.[15]

---

[13] With just two exceptions—Kukje in 1985 and Woosung Construction in 1996—the government did not allow a big business or nationwide bank to fail until 1997.

[14] The total value of these cross-guaranteed debts for the top-30 *chaebol* amounted to W 70 trillion at end-April 1997 or 91 percent of total equity of these affiliates. See Gobat (1998) for a discussion of corporate governance in Korea prior to the crisis.

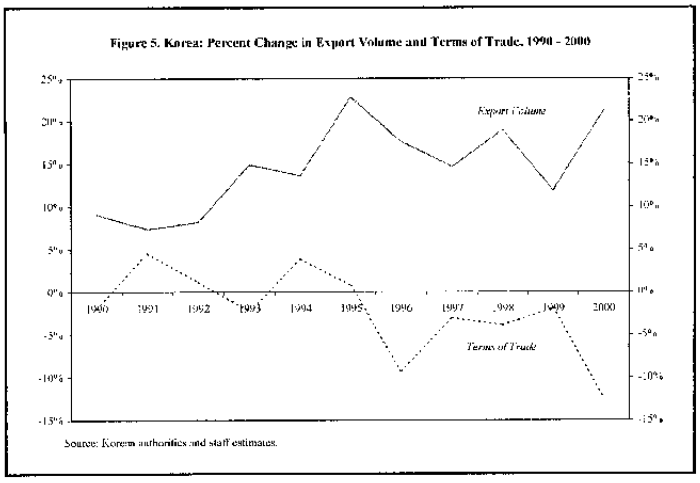
[15] Johnson et al (2000) and Johnson and Mitton (2001) find empirical evidence in crisis countries that weak corporate governance can also leave a country vulnerable to a sudden loss of investor confidence, resulting in a collapse in the exchange rate and a sharp fall in asset prices. Krueger (2000) and Krueger and Yoo (2001) note that the declining rate of return on capital in the 1990s exposed the cost of favoritism to large firms (so called "cronyism"), resulting in a slower rate of economic growth. Shin and Park (1999) compare the financing constraints of the *chaebol* and non-*chaebol* firms and find that largely as a result of the soft budget constraint within the *chaebol* structure, *chaebol* firms were able to invest more than non-*chaebol* despite the poorer growth opportunities. Finally, Joh (2000) finds firm-level evidence that prior to the crisis, poor corporate governance, such as through conflicts of interest among shareholders and business groups, lowered firm performance.

The lack of well-developed capital markets and adequate financial reporting and disclosure standards limited the role of market discipline. Korean corporate financial statements did not conform to internationally accepted accounting and auditing standards and prevented a clear assessment of a company's health.[16] Government restrictions on the capital markets and foreign direct investment limited corporations' access to nonbank funding and other longer-term instruments while protecting managers from hostile foreign takeovers. Mergers and acquisitions were rare because of regulations limiting takeovers.

Problems in the corporate sector began surfacing as early as January 1997 with a string of large bankruptcies. Hanbo Steel, Korea's second largest steel maker and fourteenth largest *chaebol* was the first to go under, followed by five more *chaebol* before the financial crisis struck in November. These large bankruptcies combined with the rising bankruptcies among small and medium-sized enterprises quickly eroded the asset position of financial institutions and raised doubt about the soundness of the entire financial system. It was ironic that these bankruptcies, which were the precursor to the crisis, were in some sense a manifestation of government policies to increase market discipline in the Korean economy, as part of the liberalization accompanying OECD membership.

D. Macroeconomic Developments Before the Crisis

Korea's impressive macroeconomic record prior to the crisis may have blinded most observers to the structural weaknesses in the financial and corporate sector that left Korea vulnerable to an economic crisis. Macroeconomic fundamentals appeared sound and offered few clues as to the timing and severity of the crisis. As a result, foreign investors, attracted by high returns and the region's impressive growth record, failed to carefully assess the risks involved and continued to pour money into Korea with low spreads. However, as external conditions began to worsen in 1997, these financial vulnerabilities became evident and helped quickly turn market sentiment against Korea.



Growth in Korea remained strong until shortly before the crisis (Table 1). Amid an investment boom, growth averaged 8 percent per year over 1994–96. It was in 1997 that growth fell to 5 percent due to a cut back in investment and slowing consumption. Although export volumes remained strong before the crisis, slumping export

[16] As combined financial statements were not required for the entire group, it was nearly impossible for investors to understand the internal finances of the *chaebol*, including the separation of strong and weak affiliates.

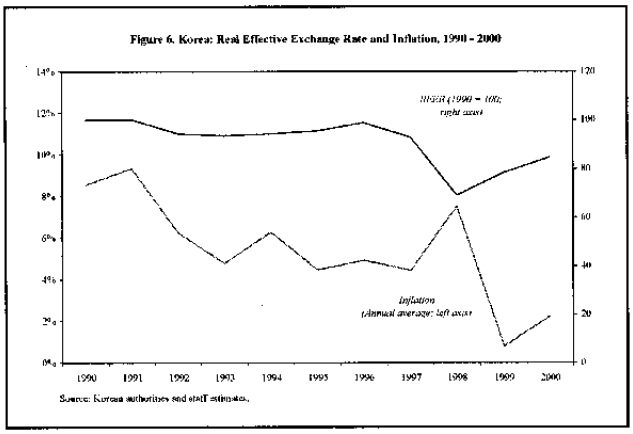
Table 1. Korea: Summary Indicators, 1990-2000

	1990	1991	1992	1993	1994	1995	1996	1997	1998	1999	2000
Real GDP (percent change)	9.0	9.2	5.4	5.5	8.3	8.9	6.8	5.0	-6.7	10.9	8.8
Final domestic demand	14.5	9.8	3.3	5.7	8.4	9.5	7.3	1.2	-13.8	7.4	7.7
Consumption	9.2	7.9	5.6	5.4	7.1	8.2	7.2	3.2	-9.8	9.1	6.2
Gross fixed investment	25.9	13.3	-0.7	6.3	10.7	11.9	7.3	-2.2	-21.2	3.7	11.0
Stock building 1/	-1.4	0.6	-0.1	-1.1	1.2	-0.1	0.6	-2.0	-5.5	5.4	-0.9
Net foreign balance 1/	-2.1	-2.0	1.2	1.1	-1.5	0.2	-1.1	5.7	12.3	-0.8	3.5
Saving and investment (in percent of GDP)											
Gross national saving	36.9	37.0	36.1	35.8	35.5	35.4	33.5	32.5	33.9	32.7	31.1
Gross domestic investment	37.7	39.9	37.3	35.5	36.5	37.2	37.9	34.2	21.2	26.7	28.7
Prices (percent change)											
Consumer prices (average)	8.6	9.3	6.2	4.8	6.3	4.5	4.9	4.4	7.5	0.8	2.3
Consumer price (end-period)	9.4	9.2	4.6	5.8	5.6	4.7	4.9	6.6	4.0	1.4	3.2
GDP deflator	10.7	10.9	7.6	7.1	7.7	7.1	3.9	3.1	5.1	-2.0	-1.6
Employment and wages											
Unemployment rate	2.5	2.3	2.4	2.8	2.4	2.0	2.0	2.6	6.8	6.3	4.1
Wages, manufacturing (annual percent change)	20.1	16.9	15.6	10.8	15.4	9.9	12.3	5.1	-3.1	14.7	8.6
Consolidated central government (in percent of GDP)											
Revenues 2/	17.9	17.3	17.8	18.6	19.1	19.3	20.4	20.6	21.8	22.4	25.8
Expenditure	18.6	19.2	18.5	18.3	19.0	19.0	20.4	22.3	26.0	25.7	24.8
Balance 2/ 3/	-0.7	-1.9	-0.7	0.3	0.1	0.3	0.0	-1.7	-4.3	-3.3	1.1
Consolidated Central Government Debt 4/							8.8	12.7	24.7	33.2	30.8
Money and credit (end of period)											
M3	28.7	23.6	21.8	19.0	24.7	19.1	16.7	13.9	12.5	8.0	8.8
Yield on corporate bonds	16.4	18.9	16.2	12.6	12.9	13.8	11.9	13.4	15.1	8.9	10.0
Trade (percent change)											
Export volume	6.2	9.9	8.5	6.9	13.8	24.9	20.0	17.2	19.5	12.6	20.6
Import volume	12.0	16.7	2.1	6.4	21.5	21.2	17.2	4.1	-23.1	29.5	18.4
Terms of trade	-2.8	0.3	0.1	4.3	1.2	-3.5	-11.7	-11.4	-3.9	-2.1	-12.8
Balance of payments (in billions of U.S. dollars)											
Exports, f.o.b.	63.7	70.5	76.2	82.1	95.0	124.6	130.0	138.6	132.1	145.2	175.8
Imports, f.o.b.	66.1	77.3	78.0	79.8	97.8	129.1	144.9	141.8	90.5	116.8	159.2
Current account balance	-2.0	-8.3	-3.9	1.0	-3.9	-8.5	-23.0	-8.2	40.4	24.5	11.0
Current account balance (in percent of GDP)	-0.8	-2.8	-1.3	0.3	-1.0	-1.7	-4.4	-1.7	12.7	6.0	2.4
Short-term debt cover	...	...	0.4	0.4	0.4	0.4	0.3	0.1	1.6	1.9	2.2
Usable gross reserves 5/											
In billions of U.S. dollars (end of period)	11.3	10.1	13.8	16.9	21.5	28.5	29.4	9.1	48.5	74.1	96.1
In months of imports of goods and services	1.8	1.4	1.8	2.1	2.2	2.2	2.0	0.6	5.1	6.2	6.0
External debt 6/											
In billions of U.S. dollars	...	...	62.9	67.0	88.7	127.1	164.4	159.2	148.7	137.1	136.3
In percent of GDP	...	...	20.0	19.4	22.0	26.0	31.6	33.4	46.9	33.8	29.8
Exchange rate (period average)											
Won per U.S. dollar	707.8	733.4	780.7	802.7	803.4	771.3	804.5	951.3	1,402.1	1,188.9	1,131.1
Nominal effective exchange rate (1995=100)	122.5	116.5	106.6	103.8	100.9	100.0	100.6	92.4	64.5	73.1	78.4

Sources: Data provided by the Korean authorities; and staff estimates and projections

1/ Contribution to GDP growth.
2/ Excluding privatization receipts.
3/ Prior to 2000, the civil service pension fund is excluded.
4/ Including government guaranteed restructuring bonds issued by KDIC and KAMCO.
5/ Excluding deposits at overseas branches and subsidiaries of domestic banks.
6/ Includes offshore borrowing of domestic financial institutions and debt contracted by overseas branches of domestic financial institutions.

prices led to a sharp decline in export revenues. Korea's terms of trade fell by 22 percent from 1995 to 1997, driven largely by a worldwide slump in semiconductor prices, one of Korea's main export items.[17]



Neither inflation nor the real exchange rate showed signs of growing imbalance. During the boom of 1994–96, broad money and credit to the private sector grew at an average annual rate of 20 percent. The authorities tightened monetary policy starting in the second half of 1996 over concerns of the inflationary impact of the sustained expansion. The policy was successful in containing average inflation at 4½ percent in 1997. Despite the inflation, the real exchange rate remained fairly stable. Although the exchange rate in real effective terms appreciated by about 5 percent between 1994 and 1996, it declined by 1 percent since 1990.[18]

Domestic investment rates were high before the crisis, but the overall efficiency of investment appeared to have declined. Gross domestic investment averaged over 37 percent of GDP during 1994–96, falling to 34 percent in 1997. However, the incremental output to capital ratio (ICOR), a crude measure of overall investment efficiency, declined from 0.24 in 1995 to 0.14 in 1997 suggesting that investment productivity was falling in the years prior to the crisis. This is consistent with the sharp decline in manufacturing profitability after the large *chaebol* launched their investment drive in 1995.

The current account deficit widened somewhat in 1996 but remained in a range that was considered sustainable given Korea's external debt position. Korea's current account deficit averaged 2½–3 percent of GDP before the crisis, and external debt as a share of GDP was about 30 percent in 1996. At first glance, Korea's historically high domestic savings rate and low debt service burden (8 percent of export earnings in 1996) suggested that its external debt position was sustainable provided banks were able to refinance their short-term

---

[17] See Corsetti et al (1999) and IMF (1999) for an overview of the macroeconomic fundamentals in the Asian countries prior to the crisis. In Korea's case, as discussed in Gordon (2001), strong export volumes and slumping export prices were not unrelated—Korean producers played a major role in the oversupply of memory chips that emerged in the world market in 1996.

[18] Empirical studies of the degree of exchange rate misalignment prior to the crisis do not suggest that the won was overvalued. For example, Chinn (1999) finds that the won was substantially undervalued prior to the crisis, while Marquez (1999) finds that the real exchange rate was not misaligned through 1996.

obligations. The current account deficit widened to 4.4 percent of GDP in 1996, largely because of the slowdown in exports. The deficit continued to widen in the first quarter 1997, but then fell sharply thereafter as import demand weakened and exports picked up.

The measured fiscal position appeared sound with the budget either in surplus or in balance in the four years prior to the crisis. Korea had a record of fiscal prudence such that the share of public sector debt in GDP was below 10 percent at end–1996—one of the lowest among OECD countries. The true fiscal position, however, may have been understated to some extent by the presence of large nonperforming loans and their implicit government guarantee that would have raised the public sector debt burden significantly if these implicit costs were included.[19]

E. The Outbreak of the Crisis

The changing external environment—including increased oil prices, falling semiconductor prices, and the depreciation of the yen—and slowing domestic economy gradually brought to the forefront the weaknesses in Korea's corporate and financial sectors that had been hidden behind its impressive growth record. The decline in equity prices was the clearest signs of growing problems in the corporate and financial sectors. The overall market index (KOSPI) fell by over 40 percent from its peak in November 1994 to end-1996. The decline in bank share prices was somewhat larger (46 percent over the same period), suggesting that the market was aware of the growing risks to the financial system from the difficulties in the corporate sector. Problems in the corporate sector began surfacing as early as January 1997 with a string of large bankruptcies.

The collapse of several large *chaebol,* combined with the rising failures among small and medium-sized enterprises, quickly spilled over to the banks, eroding their capital positions and raising doubt about the soundness of the entire financial system. Uncertainty about the true extent of nonperforming loans and declining corporate earnings contributed to the continued decline in equity prices. In July 1997, several Korean banks were placed on a negative credit outlook by credit rating agencies.

The devaluation of the Thai baht in July 1997 turned market sentiment against the region. International banks began to modestly reduce their exposure to Korean financial institutions and to cut back on their short-term credit lines because of concerns about the health of Korea's financial system. Accordingly, in August 1997, the government announced a blanket guarantee on overseas borrowing by Korean financial institutions.[20] Nonetheless,

---

[19]Burnside et al (1999) argue that the large implicit guarantee to the failing financial sectors in Korea and Thailand was the primary cause of the crisis by raising the *prospective* fiscal deficits that would be needed to bailout the financial sector and casting doubt on the government's ability to finance these costs without resorting to higher seignorage.

[20] The government issued a public statement on August 25, 1997 that the "Korean Government will ensure the payment of debt liabilities by Korean financial institutions." The

(continued...)

until mid-October, most observers thought that Korea would be spared from any major impact, and the rollover ratio for interbank credit lines averaged over 85 percent. However, in the second half of October a number of events combined to worsen sentiment against Korea. On October 17, the authorities in Taiwan Province of China abandoned their defense of the New Taiwan dollar leading to a substantial depreciation. Further, intense pressures on the Hong Kong stock market in the second half of October spread to other regional markets and even the to U.S. and European markets. Then, on October 24, Standard and Poor's downgraded Korea from AA- to A+, citing corporate and financial problems and the government's response, including the rescue of Korea First Bank and the bailout of the Kia group. These developments struck a tremendous blow to market confidence in Korea, leading to capital flight and a rapid withdrawal of credit lines. Once market participants began to scrutinize Korea, the structural weaknesses of the economy began to look more stark. Capital flight took place as foreign investors started to pull out of Korea, and domestic residents shifted funds to foreign currency deposits.

The lack of transparency in key financial data contributed to the uncertainty in the markets and inflated the fears of international lenders. Official data provided incomplete disclosure on key variables, such as BOK's international reserves, forward exposure, and the amount of nonperforming loans. In addition, official data on external debt omitted debt contracted by offshore entities, which was estimated to have understated the true level of external indebtedness by a half. The lack of transparency served to undermine the government's attempt to stabilize the situation and exacerbated the severity of the crisis.

By November, Korea was confronted with a "twin crisis"—a banking and a currency crisis—that complicated the government's handling of the situation. The wave of corporate bankruptcies and rising nonperforming loans created doubts about the overall health of the financial system and drove foreign banks to withdraw their credit lines to Korea. The drying up of foreign credit lines in turn made it more difficult for Korean banks to roll over their large stock of short-term external debt, creating the potential for a currency crisis and contributing to capital flight and further falls in the value of the won. It should be noted, though, that the currency crisis in Korea was not a classic speculative attack. Capital controls in 1997 were such that the won was difficult to short, and the crisis reflected a foreign currency creditor panic, rather than an attack on the won by speculators. That is, the reason that the won came under pressure was not that spectators were selling it short, but rather that Korean banks were scrambling to find foreign currency to meet loans that were no longer being rolled over. Government support of distressed banks through foreign exchange deposits in overseas branches and intervention in the foreign exchange market were ineffective and served only to deplete the BOK's supply of usable reserves. Despite the sharp turn for the worse in the external financing situation in late October, the authorities waited until November 21 to approach the Fund.

---

legal status of such a guarantee was, however, indeterminate as the procedure required for government guarantees (approval by the National Assembly) was not taken.

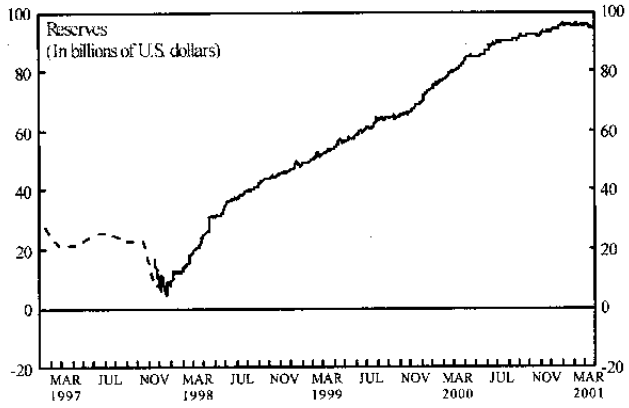
III. The Crisis Resolution Strategy

The objectives of Korea's crisis resolution strategy were, first and foremost, to restore confidence and stabilize financial markets; and second, to lay the foundation for a sustained recovery in the real economy and lower the chances of future crises. The policy strategy was three-pronged, combining macroeconomic policy adjustment, structural reforms, and the largest financing package in IMF history. To ease the dislocations that inevitably accompany reforms, the program also contained a substantial expansion of the social safety net.

A. Stabilizing the Exchange Rate

At the onset of the crisis in November and December of 1997, the immediate priority was to stabilize the situation in financial markets and to bolster investor confidence, especially in the foreign exchange market. After trading at about W 910 per U.S. dollar in September and early October, the won began to depreciate amid pressures on stock markets in Hong Kong and beyond. The depreciation was initially quite gradual, but by mid-November the won had weakened through the W1,000 level and by the time of the announcement of agreement on the stand-by arrangement with the IMF on December 3 it had fallen to about W1,150. At the same time, the authorities had absorbed much of the exchange market pressures through intervention; combined with Bank of Korea deposits being moved to offshore branches of Korean banks that were facing problems in rolling over international interbank credit lines, reserves fell from a reported $30 billion at end-September to only $6 billion of "usable" reserves by early December.[21]

Figure 7

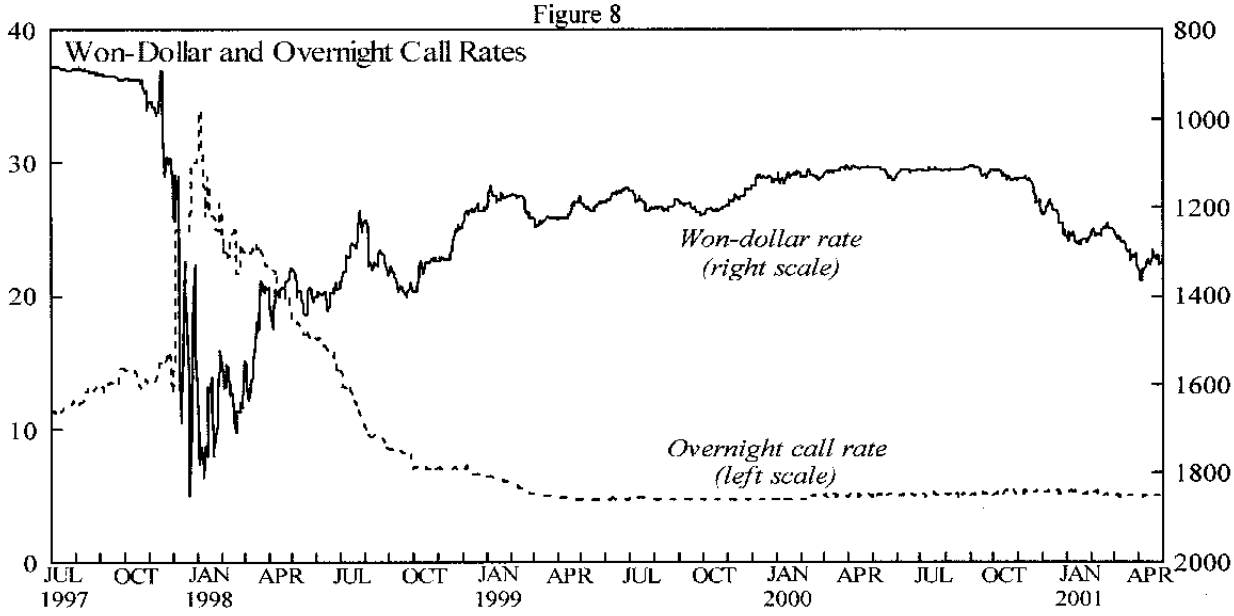


The December 3 program was based on the expectation that a large financing package, comprehensive structural policy measures, and firm monetary and fiscal policies would be sufficient to restore market confidence. The monetary policy component was directed both at containing inflation to avoid an inflation-depreciation spiral and at limiting downward pressure on the won by raising nominal returns on won assets and thereby slowing capital outflows and limiting speculation. In operational terms this translated into an increase in interest rates and a reduction in monetary growth rates. The overnight call rate was immediately increased from 15 percent to 25 percent (and the legal ceiling on interest rates was increased and then removed). The intention was that the increase in interest rates would be only temporary and would be reversed once markets stabilized. In addition to the funds being

[21] During October–November 1997, the BoK deposited about $20 billion of official reserves in overseas subsidiaries and branches of Korean financial institutions, rendering these reserves as "unusable" as the money was used immediately to meet obligations falling due.

made available under the program, the foreign exchange constraint was to be further eased by an acceleration of the program to liberalize capital flows into the equity, bond and money markets. There was also to be close monitoring of the provision of foreign exchange to overseas branches of Korean commercial banks, with any further such financing to be at penal interest rates and to be discontinued by the end of December 1997.

Figure 8



The magnitude of the financing made available to support the program—the largest in the history of the IMF—was notable. The IMF committed SDR 15.5 billion (or about $21 billion)—an unprecedented 19 times Korea's IMF quota. The funds were to be available over a three-year period, albeit with an expectation that if the situation was successfully stabilized some of the subsequent drawings would not be needed and repayments could occur early. The initial drawing was SDR 4.1 billion ($5.6 billion), with a further SDR 2.6 billion ($3.6 billion) to become available after two weeks upon the first program review. The program was approved under accelerated procedures established under the emergency financing mechanism and subsequent drawings were to be financed in part from the IMF's new Supplemental Reserves Facility (SRF).[22] The World Bank and Asian Development Bank pledged a further $14 billion, and a group of other countries pledged an additional $23 billion in a "second line of defense." The overall package of $58 billion was expected to contribute to stabilizing financial markets.

[22]The SRF is designed to assist countries facing exceptional balance of payments problems created by large short-term financing needs, and provided funds at higher interest rates and shorter maturities than conventional IMF lending. Drawings under the SRF began on December 18, 1997, two weeks after the stand-by arrangement was approved. See table in appendix for the full schedule of drawings.

Box 1. Literature on the Origins of the Crisis in Korea

Explanations on the origins of the crisis vary, from the lack of liquidity to problems of moral hazard and investor panic. Although almost all would agree that the rapid buildup of unhedged short-term external debt played a major role, many disagree to what extent underlying structural weaknesses in the Korean economy caused the crisis and contributed to its severity, and consequently, how policies to address the crisis should have been formulated.

A case of temporary illiquidity

Some view the crisis as mainly a case of "temporary illiquidity" brought upon by the rapid buildup in short-term external debt (Feldstein (1998, 1999)). Korea was solvent and its macroeconomic fundamentals were sound, but faced questions on whether it was liquid enough to meet its short-term obligations. The appropriate policy response would be to relieve the liquidity constraint either through massive up-front assistance or by coordinated action by creditor banks to restructure short-term debt. The argument goes one step further to claim that the IMF's early emphasis on structural reforms may have exacerbated the crisis by raising doubts as to whether Korea would be able to service its external debt without first resolving its deeply-rooted structural problems.

A self-fulfilling panic

Other explanations focus on the inherent instability in financial markets that led to a self-fulfilling panic by investors (Sachs and Radelet (1998, 1999)). As evidence, proponents point out that the underlying structural weaknesses in the economy have existed for some time, including during periods of rapid growth, and do not offer enough of an explanation for the severity of the crisis, i.e. "the scale of the punishment seems wholly disproportionate to the crime" (Krugman (1999)).

Under this scenario, rational investors have an incentive to pull their money out of a country if they feel that other investors are likely to do the same, pushing the economy into a "bad equilibrium" and causing a financial panic. The key precondition was Korea's high level of short-term external liabilities relative to its short-term assets that created the incentive to move before others in order to avoid being unpaid. In some sense, short-term borrowing imposed a negative externality on the economy by raising the probability of a liquidity crisis and speculative attack (Furman and Stiglitz (1998)).

Moral hazard

Some have used an asymmetric information framework to understand the causes of the crisis (Frankel (1999), Hahm and Mishkin (2000)). According to this line of thinking, the rising uncertainty and deterioration in the balance sheets of Korean banks and corporations prior to the crisis may have created asymmetric information problems that left Korea vulnerable to a financial crisis. In this environment, banks found it more difficult to distinguish between good and bad borrowers, and corporations with falling net worth had a greater incentive to make risky investments.

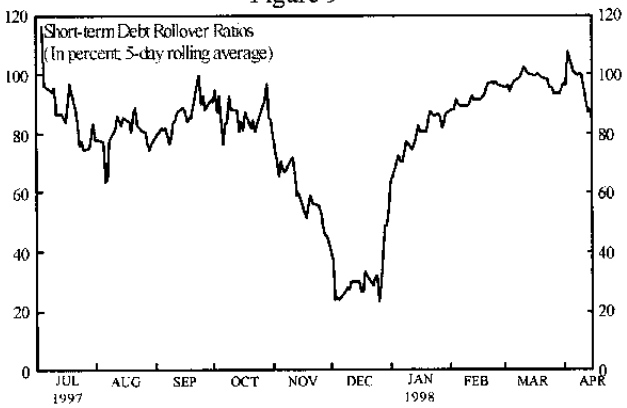
In addition, the impression that *chaebol* were "too big to fail" led banks to overlend to these large conglomerates and underestimate the riskiness of their loans. The combination of these factors worsened adverse selection and moral hazard problems and made the Korean economy highly susceptible to a financial panic. The relatively favorable macroeconomic fundamentals in the years before the crisis may have masked the underlying weaknesses and vulnerabilities in the economy, leading to overinvestment and an underestimation of the risk of a potential crisis.

Underlying Structural Weaknesses and Policy Distortions

Here, structural weaknesses in the corporate and financial sectors, in combination with a sharp build up in short-term external debt, were at the root of the crisis and made Korea vulnerable to a reversal of capital flows and financial contagion (Corsetti et al 2000; Fischer 1998; Goldstein 1998; IMF 1999a, 1999b). These fundamental imbalances, brought about by a long history of policy distortions, triggered a "twin crisis" —a financial and currency crisis—and explain how market overreaction and investor panic could have had such a severe impact on economic activity, asset prices, and the exchange rates given the modest weakening of macro fundamental prior to the crisis. This explanation is also more in line with the IMF's views on the origins of the crisis and formed the basis for the IMF program's approach which combined financing, macroeconomic policy adjustment, and structural reforms to resolve the crisis.

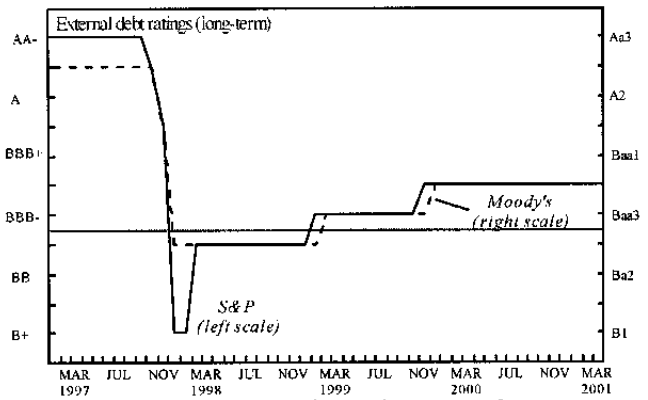
It soon became apparent that the December 3 program had not been successful in turning sentiment around. On several days during the second week of December, the won fell by the 10 percent daily limit (which was eliminated on December 16) and trading then essentially stopped for the day. By the end of this week, the currency traded at about W 1,700 per dollar, a further depreciation of about 30 percent since the announcement of the program.by the time of the first review of the program on December 18, usable reserves had fallen to $4 billion.

Figure 9



The major reason for the failure to turn sentiment about was the overhang of Korea's massive short-term external debt.[23] Short-term interbank credit had been Korea's main source of external credit, and markets feared the worst about the magnitude of total short-term debt, with estimates of about $100 billion. Given the fragile situation, there were strong incentives for individual foreign banks to refuse to roll over credit lines. In these circumstances, increased official financing to bolster central bank reserves would simply allow further cutbacks in credit lines. On some days in mid-December, the rollover rate fell to 5–15 percent.

Figure 10



The pressures on the won in mid–December were also aggravated by sharp downgrades in Korea's external credit rating. The two major international agencies had both cut Korea's long-term foreign currency debt rating in late November, to A-/A3. However, the agencies made far sharper cuts between December 10 and December 22 to subinvestment grade levels, with one agency moving the sovereign rating to four "notches" below the investment grade cutoff, a massive and unprecedented ten notch movement in less than two months. In both cases, the agencies cited the large short-term external debt of banks and the low level of usable external reserves. More so than with any of

[23] The leak of IMF Executive Board documents also had a very damaging effect on market confidence. As markets digested the contents of the report, including the fact that official financing under the program was barely enough to cover short-term debts falling due, doubts about Korea's ability to repay heightened.

the other crisis countries, the Korean case raised widespread concerns about the role of the agencies, failing to foresee and then exacerbating the crisis.

The ongoing pressures on the won prompted a strengthening of the program in late December. With the won falling close to W 2,000 per dollar on December 23, the Korean authorities on December 24 requested a rephasing of the financing under the program to bring forward a disbursement of SDR 1.5 billion ($2 billion) from January 8, 1998 to December 30. In doing so, they committed to strengthen and bring forward some of the measures in the program. Overnight interest rates were raised to 30 percent on December 24, and the authorities took new measures to ensure that liquidity was distributed through the financial system to prevent a liquidity crunch that could cause bankruptcies of viable firms. They also accelerated the liberalization of capital markets, and further increased the penal rate on Bank of Korea foreign currency loans to commercial banks. In addition, the program was strengthened in other areas including financial sector restructuring, trade policy, labor market policies, fiscal policy, and data publication.

However, given the problem of maturing short-term interbank debt, the most important factor in containing the crisis in late December was the rollover agreement with international banks. With support and provision of information from the Fund, officials in the major economies convened meetings with the largest creditor banks and also made several phone calls to try to convince them to roll over their maturing interbank lines. It was pointed out that a failure to roll over enough of the credit lines would likely lead to systemic financial risk. On December 24, a temporary agreement was reached with U.S. banks to maintain interbank lines at existing levels for at least a week, while a longer-term solution was hammered out (see Box 2).

Exchange market pressures eased following the success in obtaining the informal standstill on short-term debt, allowing monetary policy to be eased from early 1998. By the end of January, the exchange rate had strengthened back to about W 1,550 per dollar and usable reserves had grown to $12 billion. The overnight call rate peaked at about 35 percent in early January but was only briefly above 30 percent. Further, the current account swung sharply into surplus in the first quarter of 1998 due to the compression of imports, extraordinary gold exports (associated with donations made by individuals), and transfers from overseas Koreans. By the end of the first quarter, the call rate had fallen to 22 percent, as the won continued to strengthen. Usable reserves had recovered to $24 billion by end-March. The elimination of restrictions on foreign investment in domestic bonds and other capital account liberalization measures began to have an impact and contributed to a pickup in portfolio inflows from the first quarter of 1998.

By mid-1998, interest rates had been brought down to pre-crisis levels. As the recovery in foreign reserves continued, the overnight call rate was lowered below 10 percent in early August 1998, even in the face of Russia-driven turmoil in other emerging markets.

After a period of continued reductions in the overnight call rate, which contributed to bringing down other interest rates, the Bank of Korea kept the call rate near 4¾ percent between May 1999 and February 2000, when the easing cycle ended with the first increase in official rates in more than two years.

Indeed, the major problem for monetary policy soon became the issue of how to management of capital inflows and pressures for appreciation. With the current account moving sharply into surplus in 1998, repayment of foreign debt, and healthy capital inflows (via direct and portfolio investment), there was substantial upward pressure on the exchange rate. The Bank of Korea absorbed much of this pressure through intervention, initially from a desire to rebuild its reserves, and then out of concern that the exchange rate not appreciate excessively. The intervention was partially sterilized through issuance of central bank securities, and inflationary pressures have indeed been modest. At its peak in September 2000, the CPI-based real effective exchange rate was estimated at about only 10 percent below its pre-crisis level.

B. The Monetary Policy Debate

Notwithstanding the success in stabilizing the situation within only a few months after the onset of the crisis, the monetary policy response to the crisis has come under some criticism. Monetary policy in the middle of the crisis faced the difficult task of deciding which of two courses of action would be less costly in terms of output losses. On one hand, the high rates of leverage and exposure to bank debt made the corporate sector vulnerable to increases in interest rates. On the other hand, the high rates of exposure of financial corporations and business enterprises to short-term foreign currency borrowing meant that unchecked depreciation would have imposed substantial burdens on banks and corporations. In addition, an unchecked depreciation would have led to further overshooting of the exchange rate and, in turn, a depreciation-inflation spiral.[24] Hence, stabilizing the currency assumed a high priority in program design and a temporary hike in interest rates was viewed

[24] Krueger (2000) also discusses the dilemma at the height of the crisis. She notes that the crisis was a dual balance-of-payments and financial crisis, and that the traditional remedy for the former problem (tighter monetary and fiscal policy) was exactly the opposite of the traditional policy required for the latter problem. She concludes, however, that it is inevitable that the balance-of-payments crisis is addressed immediately, and that addressing the financial problems requires time, involving measures to improve the balance sheet of the corporate sector as well as the financial sector.

Box 2. "Bailing In" the Private Sector

Following the concerted efforts in late 1997 to persuade foreign creditors to roll over short-term debt, negotiations were also initiated on a more comprehensive rescheduling of the debt maturing in 1998 of 33 commercial and specialized banks and certain merchant banks. After difficult negotiations, agreement in principle was reached on January 16, 1998, and covered debt amounting to about US$24 billion. (For a detailed account of the debt negotiation process between the Korean government and foreign creditors, see Kim and Byeon (2001).) A key component in enforcing the agreement was a debt monitoring system set up by the IMF and the Bank of Korea, which helped solve the collective action problem inherent in any rollover operation. Rollover ratios quickly recovered, rising to over 80 percent by late January. Efforts were also undertaken to find mechanisms to maintain trade credits and derivatives exposure.

In early February 1998, negotiations commenced on a longer-term solution for the rolled-over foreign debt. On March 31, a debt restructuring agreement was signed, covering loans and deposits to 134 banks in 32 countries, and amounting to nearly US$22 billion (96 percent of eligible debt). The debt covered interbank deposit obligations, as well as short-term loans owed to foreign banks and financial institutions that matured in 1998. As a result of the restructuring, Korea's short-term debt declined from US$61 billion at end-March to US$42 billion at end-April.

Under the agreement, new claims carried an explicit guarantee by the Government of Korea. Creditor banks could choose from three options: (a) a one-year rescheduling at an interest rate of 225 basis points above six-month LIBOR (into which US$3.8 billion was transformed), (b) a two-year rescheduling at an interest rate of 250 basis points above six-month LIBOR (US$9.8 billion), and (c) a three-year rescheduling at an interest rate 275 of basis points above six-month LIBOR (US$8.3 billion). Individual creditors were not permitted to choose more than 20 percent of their exposure for the one-year rescheduling option. Korean debtor banks reserved the option to prepay the new two to three year loans, on any interest payment date, without premium or penalty, but no earlier than the first six months after the completion of the operation. Subsequently, several Korean banks availed themselves of this option.

In Korea's case, private sector involvement played a critical role in the successful resolution of a major foreign currency liquidity problem. The agreement was key to easing the foreign exchange constraint, and also facilitated an upgrade of Korea's sovereign credit ratings and its return to international capital markets. By early April 1998, the government was able to place two sovereign global bond issues totaling US$ 4 billion, demonstrating the turnaround in investor confidence.

By any reasonable ex post standard, the "bailing in" was creditor-friendly. Banks that agreed to coordinated rollovers incurred no losses, and in exchange for their claims on Korean banks received government-guaranteed claims carrying generous interest rates. Indeed, some critics have argued that the generosity of the rollover package—in contrast with the losses borne by holders of longer term claims—was a bad precedent that provides an incentive to lenders to keep the maturity of lending to emerging markets as short as possible.

as necessary.[25] At the same time, the authorities were keenly aware of the disruption that this could bring to particular institutions. In response, a range of measures were adopted to mitigate these effects, including emergency liquidity support from the Bank of Korea, various structural measures such as increased provision of official export guarantees, financing for small- and medium-sized enterprises, and purchase of subordinated debt from banks facing capital shortfalls.

In broad terms, the criticisms that have been raised against monetary policy can be summarized as follows: High interest rates were the cause of the slow turnaround in currency markets, because they raised debt servicing costs for firms, and hence the risk of default.[26] Thus, higher interest rates actually exacerbated capital outflows and contributed to a weakening of the currency. The program should instead have comprised a larger financial package to boost confidence, and less monetary tightening. Furthermore, even if tight monetary policy had been necessary to stabilize the exchange rate, interest rates were kept high for "too long" and resulted in a credit crunch, which exacerbated the output decline following the financial crisis.[27]

There have been numerous studies that have tried to assess empirically whether higher interest rates are useful in supporting the exchange rate during financial and currency crises.[28] The results are inconclusive, which may not be surprising since the degree of monetary tightening actually implemented may well be a function of the magnitude of the depreciation that would have occurred in the absence of the tightening. Although some studies find some support for the view that higher interest rates are associated with a strengthening of the currency, the evidence is not overwhelming or robust to changes in sample periods or countries. However, none of the studies finds any evidence to support the contention that monetary tightening has a perverse effect on exchange rates. In light of this lack of evidence, it seems hard to argue that the decision taken to defend the exchange rate

---

[25] Analysis by Claessens, Djankov and Ferri (1999) on the balance sheets of a large sample of Korean firms lends support to the focus on the exchange rate. They find that the exchange rate shock was sufficient to drive 20 percent of firms in their sample into insolvency and 38 percent into (their definition) of illiquidity. By contrast, the interest rate shock had an impact (in terms of insolvency or illiquidity) on a much smaller proportion of firms. As noted in Lane et al (1999), the authors did not estimate an explicit trade-off between higher interest rates and a smaller depreciation.

[26] See, e.g., Furman and Stiglitz (1998), Feldstein (1998), and Radelet and Sachs (1998).

[27] See Boorman et al. (2000) and Lane et al. (1999) for general discussions of the monetary policy response to the Asian crisis.

[28] See, e.g., Chung and Kim (2001); Dekle, Hsiao, and Wang (1999); Furman and Stiglitz (1998); Goldfajn and Baig (1998); Goldfajn and Gupta (1998); Kraay (2000); Basurto and Ghosh (2000); and Flood and Rose (2001).

was inherently flawed. The argument that higher interest rates were necessary to help stabilize the exchange rate does not, of course, imply that they were a sufficient condition or that they did not have a negative impact on corporate balance sheets. Indeed, given the high leverage of the corporate sector, IMF staff were well aware of the negative impact of high interest rates. Accordingly, very soon after the approval of the initial program, the IMF began to argue for action to deal with the rollover problem, to reduce the reliance on monetary policy.

The argument that Korea should have received a larger external financing package, and should have implemented less restrictive policies is not persuasive. Korea's was the largest financing package provided by the IMF and the official international community in the IMF's history, and the existence of the program enabled the agreement on the critical debt restructuring agreement with commercial banks. A larger financing package was simply not available, and there are indeed many critics who argue it was too large and—in conjunction with the generous terms on the rollover—involved too much of a "bailout," with implications for future moral hazard.

Consider next the argument that interest rates were kept too high for too long in Korea, plunging the economy into a vicious circle of declining output, increasing bankruptcies, and further weakening of the financial sector. Several points can be made in response to this line of argument. First, the magnitude of the peak in interest rates was not large for an economy that had seen its currency lose half its value in a two month period. In particular, the 35 percent peak in the call rate corresponds to a monthly rate of less than 3 percent, which is not the type of level that *per se* should have resulted in major dislocations in the economy. Second, the degree of tightening—measured by the number of months during which interest rates were maintained above the average level prevailing during the two years prior to the crisis—was not unusual compared to recent experience in other countries facing exchange rate crises (see table below). By June 1998—about seven months after the onset of the crisis—interest rates had been brought down to below the level prevailing before the crisis. Third, domestic demand collapsed independently of the spike in interest rates as there was a massive shock to confidence. This shock to confidence was related to the end of the prospect of life-time job security, combined with the damage sustained to the sense that Korea's model of development—which had delivered spectacular growth of per capita income in previous decades—also had its flaws and left it prone to a crisis. And fourth, the continued emergence of new cases of corporate distress after the period of high growth and low interest rates that prevailed in 1999 and 2000 suggests that the problem of nonperforming loans was related more to underlying weaknesses than to the spike in interest rates.

There are numerous studies that attempt to address the issue of whether the modest decline in bank credit in 1998 represented a "credit crunch" and was caused by tight monetary policy. Several papers have examined developments at an aggregate level and

Table 2. A Comparison of Real Interest Rates During Crisis Periods 1/ 2/
(In percent unless otherwise indicated)

Country	Nominal rate		Real rate		Threshold rate 3/	No. of months Real > Threshold
	Minimum	Maximum	Minimum	Maximum		
Korea	7.0	27.4	-0.2	19.1	7.7	7
Brazil	19.5	43.3	13.8	40.3	17.5	10
Thailand	15.6	24.9	7.5	17.7	5.4	12
Sweden	8.4	82.4	3.7	80.0	5.0	5
Mexico	29.9	70.3	-8.9	40.9	8.7	5

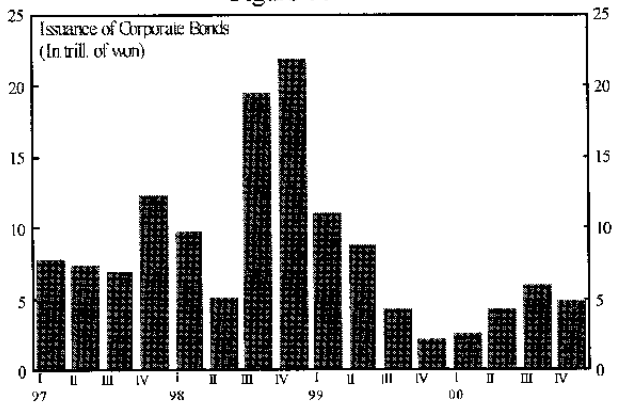
1/ Based on average monthly date of overnight interbank/call rate.
2/ The 12-month period for Korea is defined as Dec 97 to Nov 98; for Brazil Sep 98 to Aug 99; for Thailand Jul 97-Jun 98; for Sweden Sep 92 to Aug 93; for Mexico Jan 95 to Dec 95.
3/ The threshold real interest rate is defined as the average real interest rate during the 24 months proceding the crisis period.

obtain results with different conclusions or that are open to alternative interpretations.[29] For example, it remains an open question as to whether the contraction in credit was due more to reduced supply or to reduced demand. Further, even if data suggested the former, it would still be unclear if this was due to appropriately tighter bank lending policies or to monetary policy being too tight and not attempting to offset the reduction in bank lending that occurred.

Some of the more robust conclusions on the credit crunch issue have come from studies that use disaggregated data for individual banks or enterprises. Ferri and Kang (1999) use individual bank data and find that capital-constrained banks experienced a more marked slowdown in loan expansion and disproportionately raised their lending rates. Ferri, Kang and Kim (1999) show that small and medium-sized enterprises (SMEs) with strong pre-crisis relationships with (surviving) banks were better able to maintain bank credit than other SMEs. Finally, Borensztein and Lee (2000) use firm-level data and find that there was a reallocation of credit away from nonprofitable firms to profitable ones. Furthermore they find that the disadvantage in fund raising that non-*chaebol* firms faced prior to the crisis disappeared in the aftermath of the crisis. Overall, these results suggest that the credit constraints suffered by certain sectors or firms might well be explained more by the adjustment by banks and enterprises to changes in creditworthiness and capital positions, rather than to tight monetary policy *per se*.

[29]E.g., Kim (1999), Ghosh and Ghosh (1999), Ding, Domac and Ferri (1998), Domac and Ferri (1999), Hahm and Mishkin (2000).

Figure 11



More generally, there are some important broader trends in corporate financing that are missed in analyses that focus purely on bank credit. In particular, while bank financing may have fallen in 1998, firms obtained increased financing from the equity markets and the corporate bond market. Increased equity financing was clearly a positive development given that high leverage was one of the factors that contributed to the crisis. The increased financing from the bond market was less clearly a positive development. It partly reflected the lax supervision of the investment trust company (ITC) sector, and the growth in this sector in 1998 magnified the problems that were seen in 1999. More broadly, the corporate bond rollover problems seen in late 2000 and in 2001 would suggest that some of the firms that raised funds in the bond market in the wake of the crisis were nonviable, or at least that the easy access to funds in this market delayed necessary restructuring.

Overall, it is difficult to argue that the decline in output that was observed was due primarily to monetary policy. Given the massive loss of confidence and the fundamental nature of restructuring that was required in both the corporate and financial sectors, it seems inevitable that the crisis that hit Korea in late 1997 would have had substantial real effects. It seems highly unlikely that different monetary policy choices would have been effective in avoiding all the dislocation that was observed.[30] Further, given the potential moral hazard if insolvent or undercapitalized institutions had been allowed to continue lending to companies with low or negative equity, it seems hard to argue that there should have been looser financial supervision—indeed, if this had occurred and exit of insolvent companies had been delayed, corporate and financial restructuring would now be even further from completion.

On the whole, the policies to stabilize the exchange rate—especially the debt rollover—were successful. This stability, together with the replenishment of foreign exchange reserves with the support of the international community, was essential in restoring confidence in the Korean economy. Combined with the easing of macroeconomic policies to support demand and growth, this improved sentiment was a major contributor to the economy's quick recovery from recession.

[30] Analysis by Lane et al. (1999, Appendix 6.1) suggest that less than one quarter of the swing in GDP growth from 1997 to 1998 can be attributed to the observed deceleration in monetary growth.

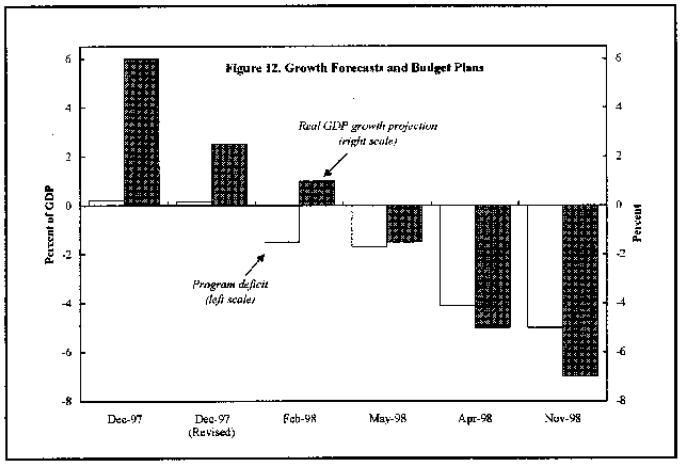
C. Supporting the Recovery—The Conduct of Fiscal Policy

The financial crisis resulted in Korea's worst economic performance in its post-war history. Real GDP fell by 6.7 percent in 1998, with private consumption and fixed investment declining by 11½ percent and 21 percent, respectively. The depth of the recession was unanticipated by virtually all analysts, and led to major changes in the focus and operation of fiscal policy. Before the financial crisis, fiscal policy in Korea had been dominated by a culture of fiscal conservatism with the consolidated central government remaining in balance since 1993.[31] Indeed, it has long been a common practice in Korea not to undertake spending commitments until the revenues that finance them have been received. As a result, it required a major shift in the stance of fiscal policy to respond to the unprecedented economic downturn of 1998. Instead of a fiscal policy directed towards budget balance in a time of high growth, the government had to shift to a more supportive stance to provide temporary demand stimulus to a worsening economic downturn.

When the financial crisis hit, the program called for the policy of fiscal conservatism to be continued. The reasons were four-fold: First, the depth of the recession that occurred was not anticipated. Second, the authorities believed that a worsening fiscal position would have placed a greater burden on monetary policy in the overall macroeconomic adjustment. Third, the expected contingent liabilities from the costly financial sector restructuring would require an offsetting policy response in other components of the fiscal balance. Fourth, a tight fiscal policy would provide a positive signal to financial markets and foster a return of confidence. However, as the extent of the crisis unfolded, increasing fiscal support for the economy was programmed to take account of the weaker growth outlook and the need to strengthen the social safety net.

Fiscal policy in 1998

The original 1998 budget, passed in November 1997 before the crisis became full blown, targeted a budget surplus of ¼ percent of GDP based on an assumption of 6 percent real growth (see Figure). By early December 1997, however, growth estimates had been downgraded to 3 percent, and consequently the overall balance was expected to worsen to a deficit of around ½ percent of GDP. In addition, the interest costs of financial sector



[31] The consolidated central government includes the general account, 18 special accounts, and 25 extra budgetary funds. In this paper, the consolidated central government deficit and other fiscal aggregates are presented excluding privatization receipts, which are treated as a financing item instead of revenue.

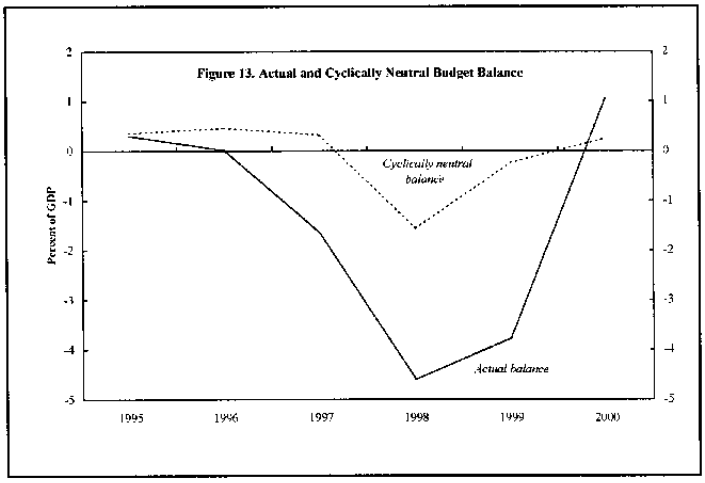
restructuring were projected to add a further ¾ percent of GDP to the deficit. Faced with the prospects of a significant turnaround in the overall deficit, it was decided that offsetting policies would need to be implemented with the aim of restoring fiscal balance. Measures were introduced in late 1997 to increase excise and oil taxation, expand tax bases, freeze civil service salaries, and reduce current expenditures.

By the end of December 1997 the extent of the crisis was becoming more clear, leading the government and the IMF to reconsider the appropriateness of the initial fiscal policy response. Rather than trying to maintain a fiscal balance, the revised December program focused on allowing the automatic stabilizers to operate and tolerating a deficit in the short-term. It was unlikely that even this policy stance would have provided sufficient stimulus to the economy as the effect of the automatic stabilizers was likely to have been weak given the high proportion of indirect taxes in revenue and the inadequate social safety net.

By early 1998, at the urging of the Fund the government changed the direction of its fiscal policy and started to put greater emphasis on providing fiscal stimulus and lessening the consequences of the crisis on the poor and the unemployed. In February, as a part of the Tripartite Accord (see below), the government concluded an agreement that increased unemployment-related spending by about ½ percent of GDP. This effort, as well as other increases in safety net spending included in the March 1998 supplementary budget, led to an increase in the projected deficit to 1½ percent of GDP. This change in fiscal stance provided needed temporary fiscal stimulus to the ailing economy, and also, helped maintain social consensus and support for the government's reform program in the face of economic hardships that were becoming increasingly apparent.

Despite the deeper-than-expected economic downturn and the shift in the official position on fiscal policy, the actual budgetary outturn in the first quarter was one of fiscal balance. Both current and capital outlays were well below projections, partly reflecting difficulties in executing several of the newly implemented social safety net programs and bottlenecks in local government implemented capital projects. However, the balanced fiscal outturn also reflected the traditional emphasis on securing revenues prior to making expenditures; it soon became clear that such old practices would need to be quickly abandoned.

By July 1998, following a sharp fall in output and amid increasing social pressures, the authorities dramatically shifted gears with the introduction of a second supplementary budget. This budget, passed in September, aimed to support the economic recovery by further increasing spending on the social safety net, and by providing assistance to SMEs through guarantees and net lending. Although the thrust of the budget was appropriate, as it increased stimulus at a time of collapsing domestic demand, some elements of the package were questionable. Specifically, the introduction of higher tax rates on interest income and oil products was unnecessary at a time when economic prospects were highly uncertain. In addition, the initiatives on spending could have been better directed towards consumption-generating programs and the further development of the social safety net rather than towards net lending.



By the third quarter of 1998, the economic downturn had moderated and, following the approval of the supplementary budget, government expenditures began to pick-up. Safety net programs in particular were rapidly disbursed, and public works programs were redesigned. By the end of the year central government expenditure had risen from 22 percent to almost 26 percent of GDP and the fiscal deficit reached 4.2 percent of GDP which, although still less than the budgeted level, provided considerable fiscal stimulus to the economy. As the accompanying figure shows, although the economic downturn would, in the absence of offsetting policy action, have resulted in the budget moving into a deficit of about 1½ percent of GDP, the actual deficit was much larger in 1998.

Fiscal policy in 1999 and 2000

In 1999, the government continued the expansionary fiscal stance. Initially a fiscal deficit, including privatization receipts, of about 5 percent of GDP was targeted. This involved increased spending on the social safety net, greater support for SMEs, and additional interest payments associated with bonds issued for financial sector restructuring. Facing a rapidly rising level of unemployment at the start of 1999, the authorities introduced a supplementary budget in March aimed at reinforcing measures for job creation and protection for the unemployed.

By mid-1999, it was clear that the automatic stabilizers associated with the rapid economic recovery were going to result in a deficit well below the level targeted at the start of the year. In June, the government announced a second supplementary budget that added ¾ percent of GDP to the deficit, including measures such as increased deductions and allowances for the personal income tax, corporate tax incentives and preferences, spending to encourage business start-ups, increased funding for subsidized lending and the credit guarantee fund, and expanded programs of free food provision to the needy. However, the continued rapid economic recovery, better-than-expected revenue collections, and lower-than-budgeted capital spending resulted in the deficit falling to 3¼ percent of GDP in 1999, which fell short of the original deficit target but was still expansionary after adjusting for the effect of the cycle.

In 2000, with the strong economic recovery under way, the Korean authorities intended to redirect fiscal policy towards the process of medium-term fiscal consolidation. In the event, fiscal consolidation proceeded much more rapidly than expected. The budget moved into surplus to the tune of about 1 percent of GDP versus a planned deficit of

2½ percent of GDP implied in the supplementary budget, thus achieving fiscal balance four year ahead of the target specified in 1999.[32] The strong performance was partly cyclical (especially the boost to revenue and lower spending for unemployment benefits), and there were also temporary windfall gains (e.g. revenues delayed from 1999 due to Y2K problems). However, overall discretionary expenditure was well below budgeted levels—without any specific directive being given to curtail spending—indicating that the fiscal contraction went well beyond the estimated effects of automatic stabilizers.

Building on the strong performance in 2000, the authorities intend to keep fiscal policy broadly neutral on a cyclically adjusted basis in 2001. With the slowdown of the economy and a rise in unemployment since the end of 2000, they have announced plans to frontload investment spending, as well as new measures to deal with the expected increase in unemployment.

D. Expanding the Social Safety Net

In Korea, business enterprises have traditionally been the major provider of social benefits. With the high rate of bankruptcy among enterprises following the crisis, one of the most dramatic changes in Korea's policies was the concerted effort directed at putting in place a working social safety net. It became clear early on that the needed financial and corporate sector restructuring was likely to lead to a large increase in unemployment and a deterioration in income distribution. Indeed, unemployment rose from a steady 2–3 percent before the crisis to 8½ percent by early 1999, labor force participation fell, and real incomes declined. The government's efforts at instituting a safety net focused on two aspects: (i) providing support for those that had been made redundant and facilitating their rapid return to the workforce; and (ii) providing a minimum level of income for the most needy in the society including the aged, children of the unemployed, and those unable to work.[33] As a result, social safety net outlays increased substantially from 0.6 percent of GDP in 1997 to 1.6 percent of GDP in 1999. The authorities were careful, however, to ensure that in the process of expanding the social safety net they did not create permanent welfare entitlements or distort incentives for job search and work.

To deal with the increase in unemployment, the coverage of the employment insurance system (EIS) was expanded in 1998, first to include all enterprises with five or more employees, and then further to cover enterprises with less than five workers, part-time workers, and temporary workers. As a result, the proportion of wage workers covered by the unemployment insurance system rose from 33 percent to 70 percent. In addition to expanding benefit coverage, the government also doubled the minimum duration of benefits to 60 days and extended the maximum duration of benefits from seven to nine months.

---

[32] The 2000 Budget originally targeted a deficit for the consolidated central government of 3¾ percent of GDP.

[33] See Martin and Torres (2000) for additional details on social safety net reforms in Korea.

The government also attempted to reduce unemployment by providing support to firms that retained employees. This support typically involved subsidies for up to six months (later expanded to eight months) for employers that used temporary closures, paid leave, and reductions in working hours to avoid lay-offs. In addition, subsidies were provided for firms that hired workers that had recently been laid-off. Moreover, in July 1998, the Wage Claims Guarantee System was introduced to ensure that workers in bankrupt firms would receive pay for their last three months of work. To facilitate the return of the unemployed back into the workforce, the government also expanded its program of vocational training and introduced a program of loans, up to W 30 million, to support small business start-ups.

The government also took steps to provide more direct aid for those most needy and vulnerable in society. This was seen as particularly important as much of the burden of the adjustment fell on this group. Income of the very poorest fell by 17 percent in 1998 and, as the table below shows, the crisis led to a significant widening in the income distribution. Despite such increased inequality, however, income distribution in Korea is broadly comparable to advanced industrial countries.

The public works program was an important component of the safety net strategy. Given the limited coverage of unemployment benefits at the beginning of the crisis, the government created a large number of public works jobs, drawing from the pool of

Table 3. Korea: Changes in the Income Distribution[1]

	Korea				Canada	Mexico	Sweden	U.S.
	1997	1998	1999 H1	1999 H2	1994	1995	1992	1994
	(percent share of total income)							
Upper 20 percent	37.2	39.8	40.4	40.0	39.3	58.2	34.5	45.2
Lower 20 percent	8.3	7.4	7.3	7.4	7.5	3.6	9.6	4.8
Upper 20 percent/Lower 20 percent	4.49	5.38	5.54	5.41	5.24	16.17	3.59	9.42
Gini coefficient	0.28	0.32	0.32	0.31	0.32	0.54	0.25	0.40

Source: Korean authorities and World Bank World Development Report (2000).

[1] Based on urban worker households.

unemployed—particularly those whose benefits had expired—to perform tasks such as caring for public lands and maintaining public infrastructure, as well as more skilled jobs aimed towards unemployed university graduates. In 1998 public works programs cost the budget over W 1 trillion and employed 440,000 persons, with the allocation rising to W 2.5 trillion (½ percent of GDP) in 1999.

More direct social assistance was made available through the livelihood protection program for those who are unable to work and have low income and few assets. This is a means-tested program that provides a below-subsistence level of income support (in 1998 this amounted to up to W 152,000 per month plus assistance in paying for medical and education costs) for those unable to work, such as the disabled, the elderly and children. In addition, a variety of programs have been implemented to assist low income, unemployed households. The two most important were the Temporary Livelihood Protection scheme and the Support for Living Costs program (although the one-time benefit in these programs were relatively small).

Finally, the government adopted a number of other programs of social assistance such as providing tuition support for children of unemployed persons, housing subsidies, assistance in paying for medical insurance premiums, and free food programs for children, the elderly, and disabled persons.

In sum, the welfare system in Korea has evolved substantially since the crisis. The government acted promptly to improve the social safety net and limit the rise in poverty. With the economic recovery and decline in unemployment, the focus has gradually shifted from public job creation and layoff avoidance to providing social assistance and encouraging employment with self-support. More importantly, with the passage of the national Basic Livelihood Security Act in October 2000, a comprehensive institutional framework for welfare provision is now being put in place.

E. Addressing Structural Weaknesses and Increasing Market Orientation

It was evident from the start that the twin crisis that faced Korea in late 1997 was more due to structural weaknesses than to any fundamental macroeconomic disequilibria. Hence, it was clear that the response to the crisis would have to contain a substantial structural component. At the heart of the structural reform agenda were measures to deal with the immediate problems in the financial and corporate sectors and address their underlying weaknesses. In addition, steps were taken early in the program to accelerate capital account liberalization and improve labor market flexibility. Finally, there were measures to foster more timely, transparent, and accurate reporting of key economic data.

The magnitude and timing of the structural program has come under fire, with some critics arguing that it was not necessary because the crisis was largely an external liquidity crisis.[34] According to this view, the program should have just focused on resolving the liquidity crisis rather than including wide-ranging structural policies. This criticism can be rebutted on three levels. First, there was (and remains) a consensus that structural factors were at the heart of the crisis. Hence, the program would not have been credible if it had ignored these weaknesses as the chances would remain high that Korea would suffer from another crisis down the road. In particular, the fact that this was a twin balance-of-payments

[34] See, e.g., Feldstein (1998) and Radelet and Sachs (1998).

and financial crisis required urgent attention to the financial sector. Further, as the financial sector would remain weak if corporate creditworthiness and competitiveness were not tackled, corporate restructuring was also a priority. Second, at a more political level, there simply would not have been the massive level of official support or the consensus for rollover by commercial banks in the absence of a substantial structural component that addressed the problems that had been highlighted by the crisis. Third, in many cases the structural reforms were measures that had been discussed or even planned in the years leading up to crisis, in some cases in connection with OECD membership. In light of the strong national desire—especially on the part of the new administration of President Kim Dae Jung, which took office in early 1998—to ensure a durable recovery, it was feasible and desirable to press ahead with many of these measures quickly.

Others have argued that structural reform was necessary, but that reform—especially of the financial sector—should have been delayed.[35] Several of the points in the previous paragraph are again relevant. In addition, if financial institutions with low or negative net worth had been allowed to continue lending at will to companies in similar financial positions there would have been serious moral hazard. The recognition of the losses experienced by the financial sector might have been delayed, but those losses might well have been far larger.

In addition to the measures to stabilize the immediate problems, the structural component part of the program largely consisted of measures that increased the market orientation of the Korean economy. In each case, the focus was on giving greater emphasis to more efficient private sector decision making with reduced role for government in microeconomic outcomes. Market discipline had not traditionally played a major role in the Korean economy, so one of the objectives of the program was to assist the authorities in establishing a framework that would allow market forces to work better.

The extensive structural reform agenda in the programs with the Asian crisis countries has also contributed to the intensification of the debate on the scope and detail of IMF structural policy conditionality.[36] In the case of the Korea program, the vast bulk of structural reforms focused on the core areas of financial and corporate sector restructuring. Measures outside these core areas accounted for a relatively small share of measures listed in extensive policy matrices. Formal structural conditionality—specifically, structural performance criteria—were almost exclusively in the realm of financial sector issues. Nonetheless, in retrospect, the sheer volume and detail of measures listed in letters of intent and policy matrices became widely identified as part of the program's structural conditionality, and streamlining of these matrices would have been possible without a major loss in substance. These issues are discussed in greater detail in Box 3.

---

[35] See, for example, Yoshitomi and Ohno (1999).

[36] See, for example, Goldstein (2001).

Box 3. Structural Conditionality in the Korea Program

The debate about the breadth and depth of structural conditionality in Fund-supported programs has intensified in the wake of the Asian crisis. For example, Goldstein (2001) concludes that "...on structural policies the Fund has bitten off more—in both scope and detail—than either it or its member countries can chew" (page 78). A study by Fund staff (IMF, 2001) notes that although experiences regarding the extent of structural conditionality have varied widely across countries, "...there are indications that in a significant number of cases, structural conditionality has moved beyond what seems consistent with the principle of parsimony, underscoring the need for streamlining" (page 85). This study also notes that, "with the exception of extended arrangement with Indonesia, the programs in the Asian crisis countries [Korea, Thailand, and Indonesia], which have come to be seen as virtually synonymous with extensive structural conditionality, did not stand out in terms of the number of structural performance criteria, prior actions and benchmarks they included" (page 83). Against this background, this box reviews the nature of structural conditionality in the Fund's stand-by arrangement with Korea.

The Korea program covered a wide range of structural issues in detailed policy matrices.[37] The vast bulk of measures listed in these matrices involved financial sector restructuring, which was seen as essential to restore market confidence, overcome the crisis, and lessen vulnerability to future crises. Corporate sector restructuring, a critical counterpart to the reforms in the financial sector, was also a vital part of the program. As the Fund was not well equipped to deal with corporate sector issues, which were clearly beyond its areas of expertise, close collaboration with the World Bank was necessary for the design of measures in this area. Due to the complexity of the needed restructuring of the financial and corporate sectors, the policy content of the program expanded substantially as the program evolved.

The policy matrices for Korea went beyond the two core areas of financial and corporate sector restructuring. Some of the additional areas covered—such as capital account liberalization, strengthening the social safety net, labor market reforms, and systemic reforms (e.g., institution building, the legal and regulatory framework, and transparency)—were essential to support reforms in the core areas and were therefore important for the achievement of the program's objectives. However, reforms in other areas—such as trade and financial services liberalization, privatization of public enterprises, and tax reform—were probably peripheral.

The measures outside the two core areas, however, were not subject to structural performance criteria (see below) and accounted for a relatively small share of the structural measures listed in the extensive policy matrices. Indeed, these reforms were typically part of the government's broader policy agenda and in many instances were inserted into the policy matrices at the request of the Korean authorities to demonstrate their resolve to enhance flexibility and growth potential of the economy. Nevertheless, as noted in IMF (2001), in view of the ambiguity of the status of the policy matrices that represented programs' letters of intent in the Asian crisis countries, it is perhaps not surprising that all measures listed in them came to be widely identified as part of the program's structural conditionality even though this was not the case.

Monitoring the implementation of structural policies in the Korea program, and hence formal conditionality, relied primarily on program reviews and structural performance criteria, and to a lesser extent on prior actions.[38] This combination of monitoring provided considerable flexibility in adjusting to circumstances, including unanticipated events. Overall, Korea established a good record of policy implementation under the program.

---

[37] The various letters of intent and policy matrices contained in memoranda on economic policies have been published by the Korean authorities and are also available at www.imf.org.

[38] These various monitoring techniques are defined and explained in IMF (2001).

Box 3. Structural Conditionality in the Korea Program (concluded)

In the initial stages of the program, **program reviews** predominated. Following the approval of the program on December 4, 1997, there were two bi-weekly reviews in mid-December 1997 and early January 1998. Thereafter, there were five quarterly program reviews during 1998 and early 1999, after which the frequency of reviews was reduced to six month intervals (see table in the Appendix). The reviews covered structural issues that were difficult to define ex ante (e.g., ensuring that sufficient public funds were allocated for financial sector restructuring) and also reforms characterized by a series of smaller steps, which were of only moderate significance individually but made an important contribution to meeting the program's objectives when a critical mass was implemented (e.g., tightening regulations on connected lending, large exposure, and financial transactions between affiliates). In addition, the frequent program reviews provided an opportunity to adapt the structural reform agenda and make mid-course corrections to policies in light of developments (e.g., the tightening of regulations on provisioning for exposure to companies undergoing workouts, and defining a strategy for bank privatization). Although this sometimes meant expanding the agenda in response to emerging problems, it also allowed refocusing, with some reforms that were no longer seen as important being dropped from the agenda.

Structural performance criteria focused on measures that were (a) seen as important to the success of the program; (b) could be defined in precise, objectively verifiable terms; and (c) whose implementation in a specific timeframe was important to maintain the momentum of reforms. The three-year program with Korea had a total of 21 structural performance criteria—i.e., an average of seven per year.[39] A full listing of the performance criteria and the status of implementation is contained in an Appendix. The performance criteria were almost exclusively in the realm of financial sector issues—the single exception being a criterion on the publication of monthly fiscal data that was aimed at improving transparency—and were generally observed in the timeframe specified. In cases when there were delays—the more notable include delays in obtaining bids for the sale of Korea First Bank and Seoul Bank and in issuing new loan classification guidelines—the Executive Board granted waivers (in the context of program reviews) as it was expected that the performance criteria would be observed in due course.

Prior actions typically related to the completion of reviews and were applied to measures seen as important to keep the structural reform agenda on track. Prominent examples include agreement on steps to enhance the operational independence and autonomy of the supervisory authorities and steps to stabilize the situation in the investment trust sector and also to reform it with the aim of putting the sector on a sound footing in the longer run.

In sum, the structural conditionality in the Korea program was concentrated on the core areas of financial and corporate sector restructuring. The sheer scope of issues to be addressed in these core areas was, however, unprecedented and was a reflection of the complexity of the situation and the interrelationship between various measures. Reliance on program reviews provided considerable flexibility in the monitoring of policies in these areas. In retrospect, although structural performance criteria focused on financial sector reforms, the number of criteria was on the high side, and greater selectivity would have been preferable. Further, streamlining of policy matrices, especially in noncore areas, and greater prioritization based on the importance of structural reforms for the program's objectives would have been more consistent with the principle of parsimony.

---

[39] The Korea program made greater use of structural performance criteria than other stand-by arrangements, which relied more on structural benchmarks that were monitored in the context of reviews rather than being directly linked with purchases. See Tables 6 and 7 in IMF (2001).

Financial sector reforms focused on strengthening regulations and the framework for supervisory oversight, restructuring the financial system starting with the weakest segments (namely the commercial banks and merchant banks), and progressively moving on to the rest of the nonbank financial sector. Reforms in the corporate sector initially focused on improvements in governance and competition policies. Subsequently, the authorities' attention shifted to financial and operational restructuring aimed at reducing debt levels and strengthening the capital structure of Korean corporations. Measures in the areas of financial and corporate restructuring were formulated by the authorities in close consultation with both the Fund and the World Bank.

Reform of the financial and corporate sector also required both greater labor market flexibility and a stronger social safety net. Accordingly, the Tripartite Commission was formed in January 1998. This Commission, with representation from labor, businesses, and government facilitated agreements on layoffs, pay cuts, and reduced overtime and bonuses that were necessary to allow firms to adjust to weaker demand in the wake of the crisis.[40] Labor laws were changed in February 1998 to allow firms to lay off redundant workers in cases of "urgent managerial need."[41] Although the unemployment rate rose sharply, labor leaders co-operated with the new administration and labor unrest was limited. In addition, the increase in unemployment (which was subsequently reversed) was limited by a substantial fall in real wages, mainly from reduced overtime payments and bonuses. As discussed above (Section III.D), the strengthening of the social safety net also contributed to improved labor market flexibility.

Capital account liberalization was directed at strengthening market discipline through increased foreign participation in the Korean economy. The initial focus was on easing or eliminating restrictions on foreign investment in Korea. These measures were designed to have an immediate effect in easing the foreign exchange constraint, as well as longer term benefits on the governance and capital structure of companies. By allowing for mergers and acquisitions and imposing the threat of hostile takeovers, the opening of the market to foreigners was intended to strengthen market discipline on managers and owners of domestic companies and help with corporate restructuring. In addition, the foreign exchange regime was substantially liberalized in April 1999 and in January 2001. There was also trade

---

[40] An attempt had been made in late 1996 to introduce such changes, which resulted in a national strike and the abandonment of these plans. The crisis provided the authorities an opportunity to try again and reintroduce labor issues in their reform agenda.

[41] Firms contemplating shedding workers were required to follow strict guidelines aimed at minimizing actual layoffs. Specifically, prior to making a final decision on layoffs, firms are encouraged to maximize efforts to avoid dismissals, including through wage cuts, reductions in working hours, freezing of new recruitment, reduction in the number of temporary workers, early retirement, and temporary shutdown. In addition, the government provided various temporary wage subsidies to firms that retained redundant workers.

liberalization to enhance domestic competition, including the elimination of trade-related subsidies and of restrictive import licensing and certification.

Overall, the structural program has contributed to an environment where market discipline can now potentially play a strong role in Korea. However, given the broad focus of the structural program, it is not surprising that there are some areas where progress has been slower than hoped, and where there may still remain a tendency for agents to expect government intervention. It will be important that the government's actions demonstrate that market discipline is now well entrenched in Korea. Although the government will always need to monitor and enforce regulations and competition policies, the framework is now in place for market discipline and the market mechanism to drive the process of corporate and financial reform. These issues are discussed in greater detail in the next two sections.

IV. Financial Sector Restructuring

The restructuring of the financial sector was central to the structural reform program. This section outlines the main elements of the strategy adopted, assesses the main achievements, and reviews some of the key items that remain on the agenda.[42]

A. Strategy and Implementation

The authorities' strategy comprised four key elements:

- Emergency measures to quickly restore stability to the financial system through liquidity support, a blanket (but time-bound) deposit guarantee, and intervention in systemically important nonviable institutions.

- Restructuring measures to restore the solvency of the financial system by intervention in nonviable institutions, purchase of nonperforming loans (NPLs), and recapitalization.

- Regulatory measures to strengthen the existing framework by bringing prudential regulations and supervision in line with international best practices.

- Corporate restructuring measures to reduce corporate distress and the vulnerability of financial institutions exposed to the highly indebted corporate sector (see Section V).

[42] For a review of the structure of Korea's financial system before the crisis see Baliño and Ubide (1999).

Emergency measures

At the height of the crisis, the most immediate need was to restore basic stability of the financial system. The first task was to maintain public confidence in the banking system. Prior to the onset of the crisis, in January 1997, the authorities had introduced a deposit insurance scheme funded by low premium contributions from banks. The scheme provided for full coverage of all deposits not exceeding W 20 million per individual depositor. In addition, in August 1997, the government had announced that they would ensure that Korean financial institutions would be in a position to meet their foreign liabilities, effectively guaranteeing these liabilities.

The withdrawal of foreign credit lines in the second half of 1997 suggested that the authorities' external guarantees were not viewed as entirely credible. The guarantee on foreign liabilities of Korean banks was not backed up by any institutional arrangements—a formal guarantee would have required approval by the legislature—nor was it clear as the crisis developed that the Korean authorities had the resources to back up their commitment. Further, the complete implementation of domestic deposit insurance needed legislation, and there was skepticism about the authorities' willingness to deliver on their commitment. Thus further action became necessary and, in mid-November, 1997, the government announced that it would guarantee all deposits of financial institutions until end-2000, and would provide liquidity support to banks as necessary. As discussed earlier, in early 1998 the government successfully negotiated extensions of foreign currency debt maturities with foreign banks. Although the assurances to external creditors was initially unsuccessful, the efforts to reassure domestic creditors via the blanket deposit insurance was largely successful and major bank runs were avoided.

The extended coverage of the guarantee was crucial to restore confidence in the system. The guarantees not only included deposit liabilities of banks and their foreign currency obligations, but also some of their trust department liabilities, those of merchant banks, and premiums paid to insurance companies. Appropriately, however, funds invested with Investment Trust Companies (ITCs) were not covered. The guarantees were backed up by the provision of temporary liquidity support by the Bank of Korea (BoK). In September 1997, the BoK provided special liquidity support to merchant banks and to Korea First Bank (KFB), and in December, another facility was established for commercial banks and other financial institutions that had been affected by the suspension of merchant bank operations. With respect to foreign exchange guarantees, the BoK ensured that commitments were met by placing foreign currency with the foreign branches of commercial banks.

Rapid intervention in nonviable institutions was also instrumental in restoring stability of the financial sector. In December 1997 the authorities announced that two commercial banks, KFB and Seoul Bank would be acquired by the government, thereby ensuring that they could continue to meet their liabilities. To deal with the problem of insolvent merchant banks the government announced the suspension of 14 of them in December, and ten of these were closed in January 1998. A bridge merchant bank was formed to take over and liquidate their assets.

Restructuring measures

The next step was to restore the solvency of the financial system. The first element of this process was to distinguish unviable institutions from weak but viable institutions. This involved a systemic evaluation of credit institutions, merchant banks, commercial banks, and specialized and development banks. For nonviable institutions, exit strategies—mergers, sales, or liquidation—were developed and applied. For viable institutions, rehabilitation plans specifying detailed measures to achieve minimum capital adequacy (including fresh capital contributions from new or existing shareholders) and to restructure operations were required. Failure to comply with the performance targets triggered prompt corrective action procedures, including suspension and eventual closure.

The focus of this exercise was the institutions with the greatest systemic importance. This implied giving priority to the insolvent merchant banks and commercial banks. Once these institutions were dealt with, attention shifted to the specialized and development banks and nonbank financial institutions.

Banks

The first wave of public support was targeted at resolving problems with potential systemic consequences. Of the 27 commercial banks at end-1997, 14 had reported capital ratios below the 8 percent requirement, and two were technically insolvent.

- Given their systemic importance, in January 1998 the government nationalized the two large commercial banks that were insolvent (KFB and Seoul Bank).

- In July 1998, five small banks with negative capital ratios were closed. Their operations were transferred to five stronger banks under purchase and assumption agreements.

- The remaining seven undercapitalized banks were required to take remedial action under approved rehabilitation plans to meet the required minimum capital requirement of 8 percent. The banks were given a two-year period in which to attain this level in order not to unduly disrupt the credit process. However, this forbearance was not entirely successful as the bank themselves found they were under increasing pressure from the market to attain the 8 percent ratio as soon as possible.

- During the course of 1999, there was a series of mergers, facilitated by the injection of public funds, involving five of the undercapitalized banks. These mergers resulted in two large government-owned banks (Hanvit and Cho Hung). The other two undercapitalized banks were recapitalized with a combination of private and public funds.

- Banks that were not undercapitalized at end-1997 have undergone diagnostic reviews. Three have been placed under prompt corrective action while the rest have undergone various forms of restructuring, including mergers, downsizing and raising additional private capital.

- The government has also recapitalized the specialized and development banks, which had seen a significant deterioration in their portfolios, and made them subject to regulations in line with those applied to commercial banks.

Nonbank financial institutions

Once the strategy for bank restructuring was in place, the authorities targeted the restructuring of nonbank financial institutions (NBFIs). Priority was initially given to resolving problems in the merchant bank sector as their condition had deteriorated sharply in late 1997. The large concentration of credit risk to the troubled *chaebol* and their affiliates, together with losses in currency, bond, and equity markets, led to widespread distress in this sector. Out of 30 merchant banks before the crisis, only a half dozen remain, the rest being closed, merged with commercial banks, or taken over the government and consolidated. At this stage the sector has ceased to be a systemic concern; rather the issue now is the role that merchant banks will play in the more liberalized financial sector.[43]

The next step was to close the smaller institutions that had no prospect of viability. These included a very large number of smaller depositary institutions, mutual saving and finance institutions, credit co-operatives, and a large number of more specialized institutions. With the setting up of the unified supervisory system (see below), it became possible to apply similar supervisory standards to these institutions. As a result nearly a thousand smaller institutions have been closed, and it is anticipated that more will follow.

A review of the life insurance sector revealed widespread financial stress. Korea had a large life insurance sector that consisted of 33 companies, estimated to be the sixth largest in the world in terms of premia collected. The industry was also conducting a quasi-banking business, with the average maturity of policies much shorter than is conventional in other countries, and with a large proportion of assets invested in commercial lending. A 1998 review identified 18 weak companies that were requested to submit rehabilitation plans. Seven of these companies had negative net worth; four small companies were closed and the remainder merged or sold. One large company, Korea Life, remains to be dealt with after

[43] The share of merchant banks in total financial system assets declined from 5 percent at the end of 1999 to 1 percent in June 2000.

initial attempts at finding a buyer have failed. The authorities are now seeking to rehabilitate it before making a further attempt to sell.[44]

Following these initial steps, the government implemented a number of measures to strengthen the industry. The EU solvency margin standards for life insurance companies were adopted in April 1999, to be phased in over a period of 5 years. New loan classification and provisioning rules similar to those of commercial banks were designed and imposed effective September 2000, and investment guidelines have been tightened to curtail bank-like lending activities. The terms and pricing of policies was liberalized in early 2000. Finally, the insurance business law has been amended to enact the reforms of corporate governance that apply to listed companies.

The leasing sector, said to be the fourth largest in the world, has also been substantially reduced in size following the restructuring measures. Most of the leasing companies were associated with commercial banks, albeit via minority stakes. The bulk have now been closed, with shareholders and creditors absorbing significant losses.

Among other nonbank financial intermediaries, the investment trust industry was perhaps the weakest and posed the most significant systemic risk. This industry—consisting of investment trust companies (ITCs) that were allowed to sell their products and investment trust management companies (ITMCs) that were not—faced twin problems of liquidity and capital deficiency. These institutions were the main purchasers of corporate bonds in Korea. The bottoming out of interest rates and gradual increase in bond yields since early 1999 resulted in mounting unrecognized losses. Initially, the lack of transparency in the sector partly disguised the losses.[45]

The ITC sector suffered from a number of problems. First, the three largest ITCs were insolvent and, although it was illegal, they had been borrowing indirectly from their trust funds to finance operations. They had very large losses in their proprietary trading accounts that were incurred in the late 1980s when the government instructed the ITCs to intervene in the stock market to support falling stock prices. Second, most of the bond funds were not marked to market and inter fund transfers were common given the lax supervisory oversight. With declining interest rates, managers transferred higher yielding paper to new funds in order to offer above-market rates of return and thus attract new investments. The marketing

---

[44] In addition, two surety and guarantee insurance companies experienced major difficulties following the default of a large proportion of the corporate bonds that they had guaranteed. The two companies were taken over by the government, merged, and recapitalized as Seoul Guarantee.

[45] See Oh and Rhee (2001) for a discussion of the shift in funds from the banks to the ITCs following the crisis. Cho (2001) argues that the more relaxed regulatory rules on the ITCs led to the rapid shift in funds, leaving aggregate risk in the system unchanged.

agents of investment trusts essentially offered a guarantee on the funds' rate of return even though this practice was illegal. Third, there was an increasing maturity mismatch in the asset and liabilities. In mid-1999, the average maturity of liabilities was four and a half months compared to the average maturity of assets of 16 months. Fourth, ITCs and ITMCs held a significant proportion of the outstanding debt of the top five *chaebol*, including more than 80 percent of Daewoo's domestic bonds and commercial paper. Finally, the problems had systemic implications because a large proportion of the sector's funding came from financial institutions, including banks, which treated such investments as liquid.

Following the Daewoo crisis in July 1999, redemption pressures mounted as investors became increasingly aware of the losses in ITCs. It became clear then that the authorities' initial approach of delaying the resolution of the industry's problems until the rest of the financial sector had been restored to health, would no longer be tenable, nor would it be possible to avoid the use of public funds.[46] In response the government implemented a number of steps to deal with the liquidity crisis of the sector. These included temporary restrictions on redemptions to slow the withdrawal of funds from the sector, and the creation by the government of a "Bond Market Stabilization Fund" (BMSF) to be funded with contributions from banks and insurance companies. The BMSF's aim was to maintain single-digit bond rates by purchasing corporate bonds and government securities.

These measures temporarily slowed redemptions from bond funds, but the deep rooted weaknesses of the sector required fundamental restructuring efforts. The government responded with a series of measures to accelerate the transformation of the sector starting in November 1999. The two largest ITCs, which did not have large parent company shareholders, were recapitalized. The authorities regarded the third largest ITC, controlled by the Hyundai group, as being in a position to carry out its own recapitalization without the use of public funds. Steps were also taken to move gradually to mark-to-market principles for all bond funds. The ITCs were also instructed to clean up bad assets in their trust funds through write-offs, transfers to sales units (i.e., securities companies), and securitization. The FSS also tightened regulations on disclosure requirements and corporate governance for ITCs. These included disclosure requirements for the performance of fund management, and appointment of non-executive directors, audit committees, and compliance officers to ensure that managements act in accordance with their responsibilities to investors. These efforts

---

[46] Indeed, many of the problems of the ITC sector were well recognized by the Korean authorities and the Fund staff before they reached crisis proportions. Thus, the letter of intent for the fourth quarterly review under the stand-by arrangement in November 1998 included measures such as (a) requiring ITCs to mark new funds to market beginning on November 15, 1998, and to mark all funds to market beginning on July 1, 2000; and (b) reducing borrowings from their trust funds according to a specified schedule. The authorities, however, were reluctant to push hard on restructuring the sector and these steps did little to prevent the market turmoil that ensued.

stabilized the sector in mid-2000 and the improved disclosure and governance measures started attracting fresh capital from abroad.

NPL purchases

The authorities had announced, in November 1997, a program of nonperforming asset acquisition as a mechanism for delivering official support for bank restructuring. In March 1998, the government estimated the total amount of troubled loans of all financial institutions to be about W 118 trillion (about 28 percent of GDP) and targeted W 100 trillion worth of loans for immediate disposal through two channels: first, the internal restructuring efforts of financial institutions, and second, purchases by KAMCO at a discount of the face value. Although the efforts of financial institutions took time to bear fruit, KAMCO quickly became influential in the early stabilization of the financial sector by removing a large proportion of the banks' nonperforming assets in exchange for negotiable government guaranteed bonds carrying market related interest rates. These asset purchases helped to stabilize the balance sheet deterioration of the banks and also substituted a more liquid asset for the illiquid assets purchased. In the early stages of the acquisition program the prices paid by KAMCO turned out to be in excess of realizable value of the assets. Thus KAMCO provided solvency support as well as liquidity. Starting in September 1998 KAMCO developed uniform pricing criteria and increased the average discount on its purchases to more realistic levels.[47]

The heavy use of nonperforming asset purchases was controversial at the time because its implications for the use of public funds could not be easily assessed. Compared with using public funds to recapitalize banks directly, asset purchases did not provide managerial rights to KAMCO, which could have been used to require banks to undergo operational restructuring. In addition, if banks' conditions improved following asset purchases, KAMCO did not benefit from the upside potential. Borrowers were also likely to assign a lower priority to repaying KAMCO as the institution could not provide them with new financing. On the positive side, a centralized approach for asset purchases provided economies of scale in disposition and collection, and freed bank management to focus on the analysis of new loans and other operational issues. Recently KAMCO has also assumed a role in corporate restructuring through its ownership of debt of large corporations that are undergoing debt-equity swaps. Further, KAMCO has used innovative methods to dispose of more than half of its portfolio through various methods with considerable profits (Box on KAMCO). In the process the institution has been influential in nurturing a new market for NPLs both in Korea and also in the region. Following in the agency's footsteps, several

---

[47]After September 1998 the purchase price of secured loans was reduced from 70–75 percent of collateral value to 45 percent. For unsecured loans, a uniform price structure was introduced after September, paying 3 percent of the principal balance, whereas previously doubtful loans and estimated loss credits were purchased at 10–20 percent and at 1–3 percent of face value, respectively.

financial institutions have become active in the NPL market through strategic partnerships with foreign financial institutions for securitization and disposal of their NPLs.

The stock of impaired loans (i.e., substandard and below) remains high but has been on a declining trend since 1999. As the crisis unraveled, and with the strengthening of loan classification standards, financial institutions' impaired loans reached about 15 percent (W 88 trillion) at end-1999 despite KAMCO purchases amounting to W 56 trillion (face value). Since then, financial institutions have made significant progress in reducing their impaired loans, with such loans declining to 10½ percent (W 65 trillion) of total loans as of end-2000 (see table below). Commercial banks account for about two-thirds of these impaired assets. The decline was mainly due to continuing efforts of institutions to dispose bad loans through sales to KAMCO, via asset-backed-securities (ABS), extensive write-offs, and collections. Questions remains, however, about the magnitude of loans currently classified as "precautionary" (i.e., one category better than impaired) that will likely turn bad.

Table 4. Korea: Asset Quality of All Financial Institutions

Percent of All Loans	Dec-99	Dec-00
Substandard or below	14.9	10.4
Of which: commercial banks	13.6	8.9
Net substandard or below 1/	9.0	4.8
Of which: commercial banks	8.1	3.7
Nonperforming 2/	11.3	8.1
Of which: commercial banks	8.3	6.6
Total loans (in trillion won)	590.9	621.4
Of which: commercial banks	328.3	361.4

1/ (Total substandard or below loans-loan loss provisions)/(total loans-loan loss provisions).
2/ Including all loans overdue for more than 3 months and non-accrual loans.

Use of public funds

A necessary ingredient in the financial sector restructuring process has been the large injection of public funds. This was essential for a number of reasons. First, the history of significant government intervention in financial markets led to expectations of public support, which became self-fulfilling when problems came to light. The government was also unwilling that numbers of Korean citizens to lose their deposits. Second, the share owning structure of the commercial banks consisted of institutional portfolio investors and small shareholders, none of which were in a position to be the source of the recapitalization of the sector. Although major corporate groups were substantial owners of non-bank financial institutions (e.g. securities companies, merchant banks, life assurance companies, and investment trust companies), they were barred from owning banks.[48] Third, the size of the problem was obscured by ineffective and misleading accounting arrangements, discouraging private investors from stepping in. Moreover, the scale of the problem was clearly so large as to deter any investor that did not have the backing of the government.

[48] No shareholder could own more than 4 percent of equity capital of a bank.

As of end-October 2000, the gross injection of public funds amounted to W 118 trillion (22 percent of 2000 GDP). The government's intervention has been channeled through two agencies: KDIC is charged with recapitalization of financial institutions, loss coverage, and depositor protection, whereas KAMCO is responsible for the purchase of impaired assets (see table). The National Assembly has made two separate authorizations for the issuance of government-guaranteed bonds totaling W 104 trillion (about 21 percent of average GDP in 1998–2000) for financial sector restructuring.[49] The allocations from the National Assembly have been supplemented by injections of W 30 trillion financed from other public sources, including the budget, resources borrowed from international organizations, and asset swaps; of this, about one-third represents an actual or contingent liability for the government. Further, about W 24 trillion of recovered funds have been recycled.

Table 5. Korea: Public Funds Used for Financial Restructuring
(as of end-October 2000, in trillions of Won)

Form of Support	KDIC	KAMCO	Total
Banks	27.9	17.3	45.2
Nonbanks	15.6	3.2	18.8
Total bond financed funds	43.5	20.5	64
Financed from recoveries	10.5	13.4	23.9
Subtotal	54.0	33.9	87.9
Other public funds	28.9	1.1	30.0
Gross total	82.9	35.0	117.9
Memorandum Item:			
Total recovery	8.9	19.2	19.2

The use of public funds has been linked to strict criteria to minimize moral hazard. Although initial asset purchases by KAMCO in late 1997 and early 1998 were not linked to specific conditions, once the system stabilized the use of public funds was made conditional on approved rehabilitation plans. In addition, any contribution of public funds was linked to adequate contributions by shareholders. In the case of recapitalization of financial institutions taken over by the government, the shareholder equity has been diluted to avoid moral hazard. A striking example of this was the recapitalization of four smaller banks in late 2000 where all shareholder equity was written down.

In addition, to improve transparency the government published a white paper in late 2000 documenting the use of public funds. The government has also committed to a tight-deadline for the recovery of used public funds through the redemption of preferred shares and privatization of commercial banks no later than 2003, and also through the various asset disposition methods adopted by KAMCO.

[49] The second allocation, which was for W 40 trillion, was made in late 2000 and has not yet been fully utilized. Hence, it is not part of the W 118 trillion figure of the total injection mentioned earlier.

Box 4. The Evolving Role of KAMCO

Following the financial crisis in late 1997, KAMCO was charged with two main tasks: purchase of impaired assets to support normalization of financial institutions and corporate restructuring, and disposal of these assets to minimize public burden of financial restructuring. In carrying out these tasks, KAMCO has contributed to the creation of a market for impaired assets where one did not exist before, thus fostering the development of Korea's capital market.

As of end-2000, KAMCO had purchased loans with a face value of W 89 trillion (17 percent of GDP) at an average discount of 60 percent. Of this, W 46 trillion has been resolved (see table) and W 21 trillion has been recovered, resulting in a profit of W 2½ trillion (0.5 percent of GDP) over the purchase price.

The trade-off between speedy recovery and maximization of asset value shaped the evolution of the resolution methods chosen by KAMCO. In the vortex of the crisis, the quick sale of assets was favored over securitization or management of impaired assets for future sale. Nevertheless, KAMCO managed to dispose of only a small fraction of its assets in 1998, mostly through monthly foreclosure auctions and collections. Since 1999, however, the emphasis has shifted to maximization of asset value through resolution methods that would enable KAMCO to profit from the upside potential of the economic recovery. These methods include: (i) securitization of assets in joint-venture (JV)-Special Purpose Companies (SPCs); (ii)portfolio sales of bad loan pools to JV-Asset Management Companies (AMCs); and (iii) most recently, large individual loan sales to JV-Corporate Restructuring Companies (CRCs). With these transactions, KAMCO retained ownership of assets with its joint-venture partners while farming out the impaired assets to workout specialists.

Korea: Resolution Method of Impaired Assets

Resolution Method	Face value (in trillion won)	Percent of face value	Yearly distribution (%) 1997-98	1999	2000
International bidding	6.0	13.2	-	44.7	55.3
ABS issuance	7.3	16.0	-	24.9	75.1
Foreclosure and public auction	7.9	17.3	2.1	30.8	67.1
Individual loan sale	0.3	0.7	-	-	100.0
Collection	5.0	10.9	25.5	21.5	53.0
Court authorized process	1.6	3.5	0.0	45.8	54.2
Sale to AMC and CRC	2.6	5.6	-	-	100.0
Subtotal	30.7	67.2	-	-	-
Reverse and cancellation	15.0	32.8	24.2	50.4	25.4
Total	**45.7**	**100.0**	**13.0**	**42.0**	**44.9**

In KAMCO's first international auction in 1999, the sale of NPLs was accompanied by a simple profit sharing agreement. The subsequent bids became increasingly more diversified, both in terms of assets pooled and the target investor base. In 1999, KAMCO broke new ground by international securitization of its NPL portfolio through issuance of asset-backed securities (ABS). With this transaction, KAMCO entered into its first joint venture with the Lone Star Fund to manage the disposition of assets. Its subsequent portfolio sales also attracted well-known names in the distressed-debt business, including Deutsche Bank, Morgan Stanley Dean Witter, Goldman Sachs, Cerberus Capital, and GE Capital. With the success of its first international ABS issue, KAMCO increasingly shifted its resolution method to issuance of ABS in the domestic market and added attractive features, such as put back options to original lenders, guarantees for principal and interest payments, and call options that allow for repurchase of the ABS when the underlying loans are repaid earlier than the initial schedule. As a result ABS issues now enjoy the highest share in KAMCO's total portfolio of disposed assets (see table). In 2000, the agency extended its resolution methods to direct sale of NPL pools and workout loans to JVs. These partnerships are charged with raising recovery values through efficient management of impaired assets and normalization of workout companies. By farming out the longer term management and normalization of impaired assets to specialized JVs, the agency has extended its role as a corporate restructuring vehicle. In the long run, KAMCO plans to privatize itself and make inroads into Asian NPL markets.

In the process of adopting resolution methods to maximize recovery values, KAMCO has helped nurture a solid investor base in a new market for impaired assets by diversifying its products for various risk appetites. As a result, a market for impaired assets is beginning to flourish. Several banks followed the path opened by KAMCO and are selling their NPLs directly to foreign investors, including to KAMCO's partners. This new competition for NPLs is likely to increase asset value and speed up corporate and financial restructuring. The successful securitization of NPLs through ABS issues has led to the development of an ABS market backed not only by impaired assets but also by healthy ones, further developing capital markets. The issuance of ABS, which amounted to W 1.7 trillion in the first nine months of 1999, increased to W29 trillion in 2000, taking up 70 percent of total corporate bond issues.

The government, by providing the public funds for its past commitments only, is trying to strike a balance between allocating the needed public funds and the moral hazard implications of committing contingency funds for future use. However, further delays in corporate restructuring and additional contingent liabilities of the government may require additional public funds in the future. In addition, the committed amounts so far do not include the contingent liabilities of the government due to the corporate bond guarantee scheme announced in late 2000 (see below). These contingent liabilities may require future use of public funds if the guarantees are called. The remaining challenge for Korea is to speed up the market-based restructuring of the corporate sector without use of public funds and to manage the recovery of public funds efficiently.

Prudential regulations and supervision

Supervisory oversight has been significantly strengthened and prudential regulations have been brought closer in line with international best practice. Steps have also been taken to improve the quality of supervision. Supervision has been consolidated into a single independent agency, the FSC and its executive branch, the FSS. The FSC/FSS now has supervisory as well as regulatory authority for all bank and nonbank financial institutions and also the specialized and development banks. In addition, new legislation makes the FSC (rather than the Ministry of Finance and Economy) responsible for issuing and revoking licenses of all financial institutions. By consolidating many supervisory functions in one agency, the potential for regulatory arbitrage, a problem in the past, has been reduced.

Prudential measures introduced so far have addressed a wide range of concerns, including loan classification and provisioning standards, capital adequacy, accounting and disclosure standards, connected lending, cross guarantees, and foreign exchange liquidity and exposure. Most of the regulatory changes were introduced during 1998–99 with the aim of bringing Korea's prudential regulations closer to international best practice:

- More stringent rules on the classification and provisioning of nonperforming loans have been introduced. The introduction at the end of 1999 of loan classification and provisioning based on "forward-looking criteria," which takes into account the capacity of borrowers to service all obligations rather than focusing on delinquency criteria, was especially noteworthy.

- Large exposure limits for commercial, merchant, and specialized and development banks were reduced, and more comprehensive definitions enacted, which will play a part in limiting the ability of major corporates to gear up excessively.

- Limits on connected lending to large shareholders and their affiliates have been significantly tightened and disclosure requirements strengthened. In addition, since 1999 all connected lending and the terms on which it is provided must be audited and disclosed in annual financial statements.

- Prudential requirements for commercial banks have been extended to specialized and development banks.

- Mark to market accounting has been introduced, including on new funds invested in ITCs, and on all traded securities and derivative positions other than for hedging assets valued at historical cost.

- Controls were introduced for prudent management of banks' foreign currency liquidity. Both commercial banks and merchant banks are now required to report the maturity of their liabilities and assets. In addition, internal liquidity controls based on a maturity ladder approach have been introduced for these institutions. To further improve Korea's external debt profile, the monitoring of external debt and reserves has been strengthened through more frequent reporting and improved coverage.

- Improved arrangements for supervising groups of institutions on a consolidated basis have been established. New arrangements for the supervision of market risk were introduced in 2000.

- Accounting and disclosure standards for banks, securities companies, and insurance companies now fully comply with the requirements of the International Accounting Standards (IAS 30). Where IAS are silent, the US GAAP will be used as the alternative benchmark.

B. Achievements

As a result of the crisis and the implementation of the reforms described above, the state of the financial sector has changed radically and its viability has been enhanced. The number of financial institutions has been significantly reduced, some sections of the financial system are much reduced in importance, and the remaining institutions have improved their financial and operational structure. There has been a significant change in ownership and foreign participation as well.

Banks' capital is now in excess of the minimum requirement for almost all institutions. The average capital of commercial banks increased from a reported (but likely overstated) 7 percent of risk-weighted-assets at end-1997 to 10.8 percent at mid-2000 after mergers, closures, and recapitalization. Impaired assets, although still high, are declining and provisions for such loans have been boosted. The restructuring process has also led to a significant consolidation in the Korean banking sector. Mergers have been especially influential in this process. The government's recent restructuring measures include the consolidation of unsound government-owned banks under a financial holding company which will create a large bank with significant market share. This measure has provided an incentive for private banks to follow suit with other mergers.

The government also launched the process of divesting the new stakes it has acquired in the financial sector by selling 51 percent of KFB to a foreign capital group. In addition, Seoul Bank was put under new management with the assistance of Deutsche Bank to prepare it for privatization. The authorities have also committed to the privatization of remaining state-owned banks beginning no later than 2003.

A significant degree of operational restructuring has taken place in commercial bank operations. About one third of the workforce has been cut, along with branch closures, and many remaining employees have had to accept salary reductions. Banks that received government support are also required to set performance benchmarks (e.g., minimum required returns on assets and equity). The restructuring process has also shaken up management culture and is changing the business structure of banks, with positive implications for future profitability. Following the large losses in the immediate aftermath of the crisis, the banking sector reported positive profits before provisions in 1999, and most banks reported positive profits after provisions in 2000. Bank managements are placing an increasing emphasis on profitability rather than asset growth (see box on the profitability of the banking sector). Most banks now have formal risk management systems in place, although the entrenchment of these techniques into banking operations will take time.

Partial deposit insurance was reintroduced on January 1, 2001 as originally scheduled. This switch from blanket insurance is essential to spur restructuring of the financial sector and reduce moral hazard. The level of insurance has been set at W 50 million ($42,000) per depositor, which covers about 40 percent of all deposits and 95 percent of all depositors as of end-August 2000. Noninterest bearing corporate deposits, however, will remain fully covered until end-2003; these deposits are typically used by businesses in their daily operations and the extension of full coverage was granted to minimize the impact of a failure on corporate depositors and their employees and customers.

Among nonbank institutions, the significance of the merchant banking sector has diminished. Out of 30 institutions before the crisis only 4 remain. Although there may remain a niche for small specialist institutions, it is likely to be limited. In addition, many nonviable smaller depository institutions have been liquidated and the remainder do not pose any systemic vulnerability. The ITC sector has undergone a significant change in its business culture. The disclosure requirements and various corporate governance measures, along with mark-to-market pricing of bond funds, have helped to increase investor awareness about risk and the responsibilities of fund managers—necessary first steps for healthy market discipline in the industry.

Figure 14. Korea: Financial Sector at end-1996 (Share of Asse

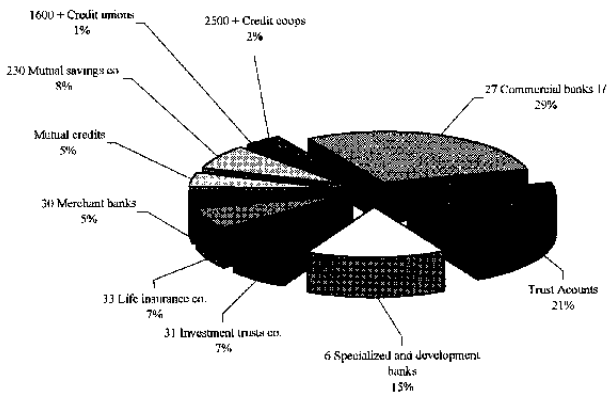
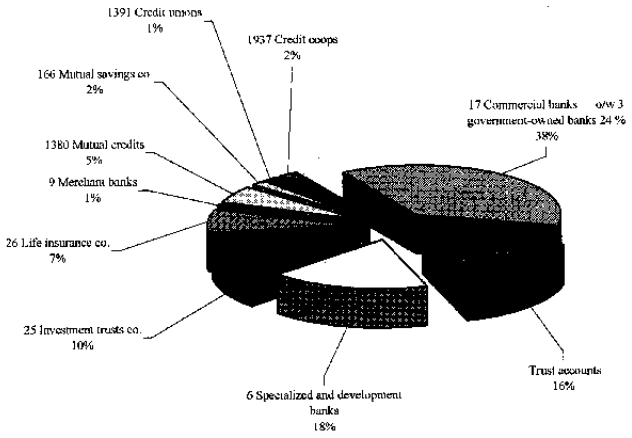


Figure15. Korea: Financial Sector at end-June 2000 (Share of Asse



Finally, significant amount of foreign capital has entered the financial sector, both at banks, securities companies, IT(M)Cs and insurance companies (see table). Although most foreign-owned bank shares remain in the hands of portfolio investors, key strategic partners in large banks are now contributing to significant business decisions. In addition, since early 2000, several foreign financial institutions have formed strategic partnerships or acquired equity holdings in Korean institutions including in ITC(M)s, and securities and insurance companies.

Table 6. Korea: Total Assets of Commercial Banks
(as of end-2000)

Bank	Amount (In trillion won)	Foreign ownership (Percent)	Government ownership (Percent)
National			
Kookmin	81.5	58.1	6.5
Hanvit	69.8	...	100.0
Korea Housing & Commercial	60.4	66.4	14.5
Cho Hung	48.9	0.2	80.1
Shinhan	47.5	49.4	
Korea Exchange	44.5	33.5	32.2
Hana	41.8	32.2	
Korea First	25.5	51.0	49.0
KorAm	28.2	61.5	
Seoul	19.1	...	100.0
Peace	6.0	...	100.0
Regional			
Daegu	13.0	0.8	...
Pusan	11.9	7.0	...
Kyongnam	7.4	0.0	100.0
Kwangju	6.1	...	100.0
Jeonbuk	3.4	0.1	5.9
Cheju	1.4	...	100.0
Total:	**516.6**	**33.0**	**36.8**

Source: FSC.

C. Ongoing Restructuring: A Mixed Picture

Following the initial success in stabilizing the financial sector, the Daewoo crisis revealed further weakness in the financial and corporate sectors and the need for renewed effort in the restructuring process. After an extensive review in the latter part of 2000, an independent evaluation committee identified eight weak banks in need of recapitalization.[50] The extension of FLC loan classification and provisioning standards to restructured and workout loans revealed significant capital deficiencies at these banks. Accordingly, in December 2000, the government declared six of these banks technically insolvent and wrote off their entire shareholder capital ahead of public recapitalization. The authorities have also established a financial holding company and brought four of these six banks under the umbrella of the FHC. In addition, four more merchant banks failed in 2000. The government

[50] The group includes four large banks (Cho Hung, Korea Exchange Bank, Hanvit, Seoul) all of which have received significant government support in the past, and four smaller banks (Peace, Kwangju, Cheju and Kyongnam).

decided against liquidation, and instead provided public funds to normalize operations and merge them for subsequent inclusion in the FHC. The remaining two banks will also receive additional capital injections tied to strict performance criteria that include a freeze on operational costs, targets for NPL disposal and profitability.

The nationalization rather than closure of smaller institutions of no systemic importance was a policy change. This change appears to be partly dictated by political realities—outright closure would have brought forth strong opposition from labor—and partly by cost-benefit analysis of alternative resolution methods. The outright closure of the smaller banks faced strong opposition from labor. However, the decision to include the smaller banks in FHC together with Hanvit could hinder the rehabilitation of all four institutions. In addition, creating financial conglomerates ahead of an adequate governance and regulatory infrastructure may present new vulnerabilities.

The liquidity crunch in the corporate bond market has prompted further government measures. In late 2000, large companies that encounter difficulty in rolling over their bonds became eligible for a scheme, provided they retired 20 percent of the maturing bonds, whereby the state-owned KDB rolls over the remaining 80 percent of maturing amounts for subsequent sale in government guaranteed collateralized bond obligations (CBOs). There was also a sharp increase in the amount of government guarantees provided for bonds of low-rated and small and medium-sized companies when these bonds are included in CBOs. These measures were in response to the exceptional bunching of maturing corporate bonds, the decline of the investment trust sector, the risk aversion of banks, and the strong likelihood that there could be spillovers affecting many viable companies.[51]

D. The Remaining Agenda

Although much has been done to stabilize the financial system, more needs to be done before its soundness is firmly established. Deeper corporate restructuring will likely reveal additional impaired loans that banks will have to resolve, and a subset of banks remain weak. Indeed, the problems that remain in the financial sector are now largely the result of continuing weaknesses in the corporate sector. Despite the emphasis on creating "clean banks," asset quality problems remain. It is now up to the banks, under the supervision of the authorities, to take an even more aggressive attitude in accounting for asset quality. Only by doing so will banks convince markets that known credit losses have been met and that they are now making operating profits sufficient to meet new credit losses in the future. For balance sheet improvements to be sustained, banks will need to strengthen business practices, especially with regard to risk analysis and lending practices.

---

[51] See Oh and Rhee (2001), for discussion of changes in the corporate bond market since the crisis and government steps to address the bunching of maturities, including through securitization.

Box 5. Profitability of the Banking Sector

The banking sector in Korea has been significantly transformed since the financial crisis. Bank restructuring has entailed increased market concentration, significant capital injections, one of the highest disposal rates of nonperforming loans (NPL) in the region, and reductions in operating costs. As a result there have been notable changes in relative market shares, ownership structure, financing sources, management, and attitudes toward risk. Despite these changes Korean banks, remain unprofitable (Table 1).

Table 1. Korea: Bank Profitability

	1997	2000 June
Number of banks	27	17
Average CAR (%)	7	10.8
Share of all banks in domestic financial assets (percent)	65 1/	72
Of which: commercial banks (percent)	29 1/	38
Ownership (percent of banking system)		
Government	10	28
Foreign	0	41
Concentration		
Number of bank branches per 1000 capita	7.7	9.8
Share of assets of 3 large banks (percent)	26.7	40.3
NPLs/total loans 2/	5.3	11.6
Number of bank branches	6177	4784
Number of staff	113994	73401
Operating expenses (tr. Won)	6.1	0.3
ROA	-93.7 3/	4.2
ROE	-3.2 3/	0.2
NIM	7 3/	1.8

1/ 1996 figure.
2/ Old criteria.
3/ 1998 figures.

Poor profit performance is mainly due to the low interest margins and the high provisions necessitated by low asset quality. Although banks are making a significant effort to reduce their NPLs through asset sales and by the issuance of asset-backed securities (ABS), the immediate impact on profits is negative. The sale of NPLs requires the recognition of credit losses to the extent that provisions are inadequate. Similarly, the extension of FLC to restructured loans is also contributing to increased loan losses and to higher provisions.

The low net interest margin is a reflection of deficiencies in pricing credit risk. In the past, directed policy lending on the basis of implicit government guarantees biased banks to favor growth of assets over profitability. Lacking incentives to develop risk management systems to price credit risk appropriately, banks competed for large corporate loans with excessively low lending rates. In the aftermath of the crisis, corporate failures led to high non-accrual rates and reduced the effective ex post yield on the loan portfolio of banks.

The net interest margin is also depressed by high funding costs. This is driven by two factors; (i) stickiness in deposit rates due to high competition in deposit markets to retain market share, and (ii) the change in the composition of deposits and the associated pricing structure. Due to financial innovation, the share of demand deposits in bank deposits has been on a declining trend since 1980s. In a period of declining interest rates, the lagged price setting structure on time deposits has contributed to the low net interest margins since time deposits bear higher rates than demand deposits.

A pooled regression analysis based on balance sheet and income statements of 17 commercial banks between 1998 and mid-2000 has been conducted to estimate the determinants of bank profitability in Korea[52] (Table 2). The analysis considered the following variables as possible determinants of profitability: the equity ratio (EQR), government ownership dummy (OWN), loans-to-assets and deposits-to-assets ratios (TLTA, TDTA), ratio of nonperforming loans (NPLR), operational expenses per branch (OPEXBR), taxes- to-before tax profits ratio (TBTP), call rate (CALL), three bank concentration ratio (CON) and market share (MS).

[52] During this period there were significant changes in the regulatory environment and the financial structure of banks. Due to these changes, the regression analysis is subject to the usual caveats about structural change and should be considered as only indicative. See Karasulu (2001) for additional details regarding the empirical analysis.

Box 5. Profitability of the Banking Sector (concluded)

Profitability was measured by the ROA. In the analysis, two hypotheses are of particular interest given the consolidation trend in the banking sector. Concentration has been linked to increased profitability in the literature. This link presumes increased pricing power and economies of scale. The competing efficient structure hypothesis, on the other hand, purports that the observed high profitability in concentrated markets may be a reflection of a selection process of the more efficient banks that increase their market share through better business decisions. Accordingly, a higher market share would be associated with higher profitability because of better efficiency and independent of the concentration and the validity of associated presumptions in the sector. The two hypothesis can be tested by including both variables in the regression; a significant market share variable along with an insignificant concentration measure would support the efficient structure hypothesis, given the other conditioning variables.

Table 2. Korea : Regression Results

Dependent Variable ROA -	Estimation by Least Squares	
Usable Observations 50	Degrees of Freedom 39	
Centered R**2 : 0.72	R Bar **2 : 0.65	
Std Error of Dependent Variable	0.03	
Standard Error of Estimate	0.02	
Durbin-Watson Statistic	2.26	
Variable	Coefficient	Std. Error
1. Constant	0.41	0.50
2. NPLR	-0.07	0.03*
3. EQR	0.29	0.15*
4. OPEXBR	0.00	0.003*
5. TBTP	-0.08	0.04*
6. CON	-0.85	1.08
7. MS	0.38	0.13*
8. CALL	-0.01	0.01
9. TLTA	-0.02	0.04
10. TDTA	0.00	0.04
11. OWN	-0.04	0.01*

Regression results reveal the following tendencies: (i) The share of NPLs, along with government ownership, operational and tax management efficiency, and capital asset ratio are statistically significant determinants of profitability. (ii) The overnight call interest rate does not exert a significant effect on the ROA. (iii) The increasing concentration in the sector does not appear to have affected profitability. After controlling for concentration, a higher market share has a positive effect on profitability, validating the efficient structure hypothesis. This is consistent with the circumstances in the Korean banking sector. First, the increase in concentration has been mainly due to mergers among unsound banks. These are the least profitable banks, ill-suited to exert market power. Second, despite the increase in concentration, competition in the sector remained high as banks attempted to retain their market share before further consolidation in the sector. In this environment the banks that have managed to increase their market share are likely to be those that have better management with positive implications on their profitability. Hence, the increase in concentration did not contribute to profitability of the sector, and the positive relationship between market share and profits is a reflection of the more efficient structure of those banks that were able to increase their market share.

Despite continuing weaknesses, there are some positive changes that will take time to be reflected in bank profitability. In aggregate, Korean banks returned to positive operational profits in 1999 mainly due to significant savings in operational expenses that have been achieved through rationalization of personnel and branches. Mergers contributed significantly to operational savings as well. Banks are now placing an increasing emphasis on rationalizing their income structure to improve profitability. They are reducing non-earning assets and shifting their loan portfolio away from corporate lending toward household loans. Most banks now have a formal risk management system in place, although the impact of these techniques on profitability will take time to materialize.

Large-scale balance sheet cleansing by several large and mid-sized private banks during 2000 will also help lay the foundation for healthy growth in bank profits. For the unsound banks now under government control the prospects are less clear. The restructuring measures of the government involve significant capital injections to these banks at end-2000 and 2001. This would help reduce the NPL hangover in these banks. However, unless the consolidation of these banks in a FHC can generate significant operational changes, and a turnaround in management and business practices, a quick return to profitability appears unlikely.

A market driven corporate restructuring process will only be truly feasible if it is led by sound and privately owned banks. The privatization of Korea First Bank was a landmark step, and priority will need to be given to privatizing the other nationalized banks and divesting government minority stakes in other banks. The privatization process cannot be done rapidly but it is important that a start be made as soon as the market allows; the costs involved in the government continuing to own these banks for several years outweigh the benefits that might accrue by waiting in the hope that the share price might rise.

Turning to specific issues, first, an immediate priority is the rehabilitation of the banks that, in late 2000, were revealed to have capital deficiencies. The restructuring plans these banks have submitted will need to be vigorously implemented, with special attention to those grouped under the new financial holding company. Second, financial sector consolidation is likely to occur naturally over time through market-driven mergers. The creation of financial conglomerates, however, should be pursued only after an adequate governance and regulatory infrastructure is in place; this will take time to create. And third, the authorities need to be vigilant about the credibility of the supervisory framework; it will be critical to resist pressures for forbearance and ensure operational autonomy of the financial supervisory authorities. Most of the needed improvements in the regulatory framework, or what might be called the "hardware," have now largely been completed. However, important steps remain to be completed to the "software" of the supervisory system. In particular, it will be important to move from a process that emphasizes formal compliance with regulations, which was the tradition of the predecessor organizations of the Financial Supervisory Service, to one that concerns itself mainly with assessing risk and promoting better risk management.

Finally, the recent intervention by the government in the corporate bond market raises a number of concerns that the authorities will need to address through their actions. First, it will be critical to avoid actions that may create a perception that some corporate groups are "too big to fail," thereby introducing moral hazard and undoing some of the progress of the last three years. Second, it will be important to ensure that the intervention in the bond market contains sufficient safeguards to ensure that corporate restructuring will continue, including the exit of nonviable companies. Third, the use of government guarantees should not become so widespread that the role of the market in assessing and pricing risk is effectively eliminated and replaced with credit decisions by committees of state-owned financial institutions and possible subsidies for borrowers. And fourth, the authorities will need to be watchful of the growing contingent liability that arises from the extensive provision of government guarantees.

V. Corporate Sector Restructuring

A. Strategy for Restructuring

In response to the crisis, the government made corporate restructuring one of its key priorities. The main objectives were to restore the health and competitiveness of the corporate sector and address the structural weaknesses that left Korea vulnerable to a financial crisis. Unlike previous interventions, the government tried to limit its role to

strengthening the institutions in order to allow investors and creditors to monitor firms and create an environment where market discipline could play a stronger role in driving the restructuring process. However, given the scale of the corporate sector's problems and the use of public funds to restructure the financial system, a substantial government role was unavoidable. The strategy for corporate restructuring had three main elements:

- **Promoting greater competition.** Reforms focused on opening markets to greater competition, both domestic and foreign, by liberalizing the foreign investment regime and strengthening the role of the Fair Trade Commission (FTC).

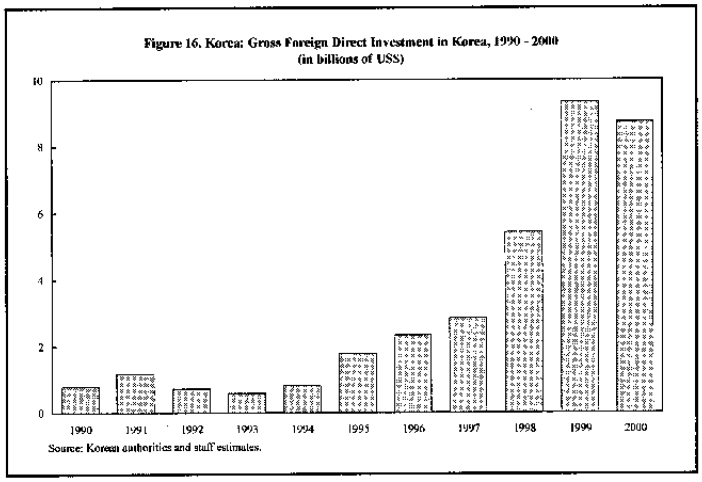
- **Improving corporate governance.** Measures to improve the corporate governance system included: strengthening investor rights, enhancing the transparency of financial accounting and disclosure, raising the accountability of managers and major shareholders, and improving the efficiency of bankruptcy procedures.

- **Improving capital structure and profitability.** Through a combination of direct enforcement and market incentives, the government pushed corporations to reduce their excessive debt levels, improve their capital structure, and eliminate cross-subsidization of weaker affiliates. The government adopted a flexible approach to restructuring, depending upon the size, nature of the problem, and available financing options.

Promoting greater competition

Steps to liberalize the capital markets and the foreign investment regime were implemented in the very early stages of the government's reform program. The objective was to give Korean companies direct access to foreign capital markets and to allow for greater competition in the economy. Granting companies direct access to the international capital markets would not only provide them with a wider menu of financing options and lower borrowing costs, but also help shift corporate financing away from an excessive reliance on bank financing.

The steps to liberalize capital markets and foreign direct investment included: (i) the elimination of ceilings on foreign investment in equity, bond, and money markets; (ii) the lifting of restrictions on corporate borrowing abroad; (iii) the liberalization of foreign ownership in most industries and financial services; (iv) the establishment of a "one-stop service" to simplify the approval process for foreign



investment; (v) the easing of hostile takeover rules and other anti-takeover devices to protect existing management; and (vi) the elimination of restrictions on foreign investors to purchase land for investment projects.[53]

These liberalization measures contributed to the strong inflows of portfolio and foreign direct investment, beginning in the first quarter of 1998. Furthermore, in response to the lifting of the restrictions on overseas borrowing, long-term external liabilities of domestic corporations rose from $25 billion at end-1997 to $30 billion by end-June 1999, while short-term borrowings by domestic financial institutions were reduced from $63 billion to $31 billion over the same period.

Improving corporate governance

To strengthen corporate governance, the government addressed a wide range of issues from legal, regulatory, and tax impediments to mergers and acquisitions, asset sales, and spin-offs to improvements in corporate transparency and accounting standards. Several laws and regulations were amended to increase the accountability of management and controlling shareholders. In February 1998, the Korean Stock Exchange (KSE) required that all publicly traded companies have at least one outside board director, and by the end of 1999 fill a quarter of their boards with outside directors. The government also reformed the Commercial Code to clarify the fiduciary responsibility of directors. Steps were also taken to strengthen the rights of minority shareholders to counterbalance the leverage of large inside shareholders. For example, the Commercial Code and Securities and Exchange Act were reformed in February 1998 to lower the threshold for exercising rights to file suit, make proposals at a general shareholders meeting, inspect company's financial accounts, and request the dismissal of directors or internal auditors. In September 1998, restrictions on voting rights for institutional investors were removed, and in December 1998 a limited form of cumulative voting for the selection of directors was introduced. The government also announced plans to introduce class action suits against directors starting in 2002.

Considerable emphasis was put on improving the quality and timeliness of financial disclosure and strengthening accounting standards. In February 1998, the government amended the Act on External Audit of Joint-Stock Corporations to bring forward the deadline to 1999 (from 2000) for requiring that all listed companies prepare financial statements that are audited in accordance with international standards (IASC), and to bring financial disclosure standards in line with international best practice. In April 2000, the top 30 *chaebol* were required for the first time to produce combined financial statements that net out intra-group transactions, thereby producing a more complete picture of corporate health.[54] Also in

[53] For a more detailed review of the government's program to liberalize the capital markets and the foreign investment regime, see IMF (2000).

[54] "Combined" statements apply the principle of consolidated accounting to companies that do not necessarily have any shareholding links but are under common control. This is a

(continued...)

2000, listed companies were required to release reports quarterly and establish audit committees composed of outside directors, shareholders, and creditors representatives' within the board of directors. The government also empowered the Korea Institute of CPAs as an independent professional body for auditing and setting standards by granting it responsibility for regulating and monitoring auditing standards in the profession.

The FTC has played a more active role in enforcing regulations against illegal intra-unit *chaebol* transactions. In April 1998, it prohibited the use of new debt guarantees across affiliates and required that existing guarantees be wound down by March 2000. The FTC has also conducted its own investigations and levied fines on *chaebol* found engaging in illegal intra-unit transactions. In some instances, these investigations have led to lawsuits filed by civic groups and minority shareholders against companies whose actions went against the best interest of shareholders.

Finally, insolvency laws were strengthened to expedite the exit of nonviable firms and facilitate restructuring under court supervision. In February 1998 and again in December 1999, the government amended the insolvency laws to provide a better balance between debtors' and creditors' rights and to improve the speed and efficiency of the court system. To strengthen creditor rights, the government required that creditors' committees be formed and that court-appointed administrators consult with creditors' committees on major issues affecting the administration of the debtor company. Time limits were also introduced to expedite the reorganization process.[55] A specialized bankruptcy court was also created in Seoul District with judges assigned predominantly to do insolvency work.

Improving capital structure and profitability: the restructuring framework

The authorities recognized that the changes to the legal and regulatory framework would have little immediate impact on improving companies' capital structure and profitability. In particular, more direct action would be needed to address immediate problems such as the large corporate debt overhang. The Financial Supervisory Commission (FSC) was hence given responsibility for overseeing the restructuring of the corporate sector.

For restructuring, the government separated corporations into three tiers that mirrored the industrial structure of the economy. The first tier was the top-5 *chaebol*—Hyundai, Daewoo, Samsung, SK, and LG—which accounted for a large share of the country's

---

typical form of organization of Korean *chaebol* where control is exerted through family shareholdings in individual companies rather than through a parent holding company (Park 2000).

[55] Proceeding must commence within one month of filing and be completed within one and half year after filing. Bankruptcy (i.e. liquidation) is automatically triggered if the process is repealed or the reorganization plan is rejected.

resources and exports.[56] The next tiers were the heavily indebted medium-sized *chaebol* ranked 6 to 64 by asset size, and the cash-strapped small and medium-sized enterprise sector (SMEs). Each group faced similar problems, but differed in the magnitude of their indebtedness, access to capital, and the nature of the restructuring issues.

The restructuring task of the top-5 affiliates was viewed as too large and complex for either the courts or the banks to handle. Because of their large resources, ready access to the capital markets, and the weak conditions of the banks, the government instead pushed the top-5 to restructure on their own, through "voluntary capital structure improvement plans" (CSIPs) that were agreed by the banks, the government, and the companies.[57] The main banks worked with affiliates to draw up plans to monitor progress in restructuring, and the FTC was given greater power to enforce rules against illegal intra-*chaebol* transactions.[58] To help eliminate overcapacity in key manufacturing industries, the government called for a number of mergers and swaps, the so-called "Big Deals." In September 1998, the top-5 agreed on the general terms for merging and/or swapping 17 companies in seven core industries, covering aircraft, autos, petrochemicals, power generation, rolling stock, semiconductors, and ship engines.

For the more troubled and highly leveraged second tier *chaebol*, the government established an out-of-court workout process modeled after the Bank of England's "London Approach." Unlike the top-5, most of these mid-size companies lacked access to bank credit or the capital markets and needed debt workouts or new loans to have any chance of meaningful restructuring. Many were highly leveraged, with debt in some cases exceeding 1,000 percent of equity, spread across a number of creditors and a variety of debt instruments. They also had complex capital structures with non-transparent collateral pledges and cross-debt guarantees. To address the debt overhang problem of the most troubled *chaebol*, over 200 financial institutions signed in June 1998 a Corporate Restructuring

---

[56] In 1998, the top-5 *chaebol* accounted for roughly 27 percent of manufacturing output, 12 percent of manufacturing employment, and 30 percent of corporate sales.

[57] The CSIPs for the top-5 included steps to: (i) reduce debt-equity ratios to below 200 percent by end-1999; (ii) streamline operations to focus on four or five core businesses, and (iii) cut in half the number of subsidiaries and affiliates.

[58] In 1998, the FTC launched two rounds of investigations on intra-group transactions among the top-five *chaebol*. It found that over 113 firms had provided a total of W 6 trillion of support to 56 affiliates. Support came mainly in the form of purchases of subordinated debt or convertible bonds of troubled affiliates at inflated prices. In response, the FTC levied fines of W 93 billion.

Agreement (CRA) that committed all creditors to abide by specific workout procedures.[59] These procedures typically involved management changes, debt-equity swaps, asset sales, debt rescheduling, performance targets, and new loans. In addition, the government established an arbitration committee, the Corporate Restructuring Coordination Committee (CRCC), to help resolve disputes among creditors or between creditors and debtors.

The government also initiated a number of schemes to help SMEs obtain working capital and trade credit. The financial crisis hit the SME sector particularly hard, with the number of SME failures reaching 8,200 in 1997 and 10,500 in 1998. Support for the SMEs was seen as important not only for political reasons but also as a counterweight in an economy dominated by large conglomerates. Measures included expanding the capacity of the credit guarantee funds and establishing several short-term lending facilities, including through the BoK and KEXIM. Banks were instructed to evaluate the financial status of roughly 22,000 SMEs with outstanding loans of more than W 1 billion. Banks classified roughly 40 percent of these as viable, identified candidates for workouts, and set up individual workout departments to review restructuring plans.

B. Achievements

Progress over the past three years has been mixed; there has been some restructuring, but not enough given the scale of the problem, and there are still significant weaknesses in the corporate sector. On the one hand, aggregate debt-equity ratios have fallen from their excessively high levels; financial disclosure and corporate governance have improved; and the strong economic recovery has helped to improve cash flows. Market discipline is also beginning to play a larger role than before the crisis in punishing imprudent corporate behavior and in separating good and bad companies. On the other hand, Korea's corporate sector still remains highly leveraged and continues to suffer from low profitability, indicating that much more operational restructuring needs to be done. The continued existence of nonviable firms continues to be a drag on the economy, crowding out capital and labor to viable companies. In addition, the recent difficulties with some of the largest *chaebol* affiliates show that they still have the potential to destabilize financial markets.

Progress in restructuring the large chaebol and dealing with the collapse of Daewoo

Under the CSIP, the top-4 *chaebol* (excluding Daewoo) have made progress in reducing the number of subsidiaries and eliminating cross-debt guarantees. The top-4 rationalized 94 affiliates (out of around 190) in 1999 through sales, mergers, or liquidations and largely eliminated cross-debt guarantees by March 2000. The top-4 also met the

[59] Several candidates for workouts among the second tier *chaebol* affiliates decided to not apply for a workout and instead restructure on their own through CSIPs.

government's target of a 200 percent debt-equity ratio by end-1999 by lowering their ratios from 470 percent in 1997 to 174 percent in 1999, through asset sales and capital expansion. However, these debt ratios do not account for the effect of cross-equity holdings across affiliates which artificially lower debt ratios without any real debt reduction or capital expansion.[60]

In August 2000, the Financial Supervisory Services (FSS) released for the first time a report on the combined financial statements (CFS) for sixteen large Korean *chaebol* for fiscal year 1999. The release of the CFS represents an important step in improving financial disclosure and transparency and bringing Korean accounting standards closer to international best practices. Not surprisingly, the CFS revealed higher debt-to-equity ratios than what had been reported under the consolidated framework. The average debt-to-equity ratio for the conglomerates, excluding financial institutions, was 225 percent at the end of fiscal year 1999 (see table).The higher debt ratios for the top-4 *chaebol* reflected both higher reported debt (by $14 billion) and lower equity (by $10 billion). For the remaining *chaebol*, the debt ratios varied from a low of 82 percent for Lotte to a high of 1,789 percent for Ssangyong.

Table 7. Korea: Key Financial Indicators under CFS, 1999

	Debt-to-Equity Ratio			Interest Coverage Ratio	Current Assets / Current Liabilities 1/
	end-1998	*end-1999*			
	Original	Original	New CFS	New CFS, end-1999	New CFS, end-1999
	(in percent)				
Hyundai	449.3	181.0	229.7	0.91	0.81
Samsung	275.9	166.3	194.0	3.15	0.96
LG	341.0	184.2	273.2	1.42	0.75
SG	354.9	161.0	227.6	1.47	0.76
Top-4	**352.0**	**173.9**	**225.4**	**1.71**	**0.83**
Total (16)	...	...	**225.5**	**1.42**	**0.81**

Source: FSS.
Note: 1/ "Current" refers to assets which can be converted within one year or liabilities with a maturity of one year.

The CFS also showed that the large *chaebol* were still suffering from poor operating performance. Nine of the sixteen *chaebol* reported an interest-coverage ratio (operating income divided by interest expense) of less than one, indicating that operating income was insufficient to cover their interest payments, let alone their principal obligations. Of the top-4, Hyundai was the worst performer (with a ratio of 0.9) while Samsung (with a ratio of 3) was the best. In addition, the average ratio of current assets to current liabilities was 0.81, implying that in the event of a cutoff in credit lines, many *chaebol* would not be able to

[60] The large *chaebol* have used cross-equity shareholdings as a way to support weaker affiliates and reduce on paper their reported debt-equity ratios. The government originally placed limits on affiliate's cross-shareholdings, but removed them in 1998 to accelerate consolidation and in response to complaints that they left affiliates vulnerable to hostile takeovers by foreigners. However, the *chaebol* used cross-investments as a way of recapitalizing weaker affiliates without actually investing funds and for lowering debt-equity ratios for the entire group. To limit this, the FTC set a deadline of April 2001 for the top-30 *chaebol* affiliates to reduce their cross-shareholdings to below 25 percent of their net assets.

cover their short-term debts with current assets that can be liquidated within one year. These figures imply that a majority of these large companies still remain highly leveraged and vulnerable to a rise in interest rates, a cutoff in bank lending, or a slowdown in the economy.

The collapse of Daewoo in 1999 was a result of its failure to address its core problems and delays in restructuring. Daewoo was the country's second largest conglomerate, accounting for roughly 10 percent of total exports. Daewoo's collapse was the largest corporate failure in Korea, and one of the largest and most complex restructuring cases in the world given its huge liabilities ($74 billion or 18 percent of GDP) and large scope of its domestic and overseas operations. Daewoo, like other *chaebol*, suffered from poor cash flow, excessive leverage, and overextension, but instead of selling assets and shedding loss-making businesses, it expanded and borrowed aggressively. As a result, its debt-equity ratio increased from 474 percent at end-1997 to 527 percent at end-1998. By July 1999, Daewoo's financial position became unsustainable.

Fearing the systemic risk from a Daewoo bankruptcy, the government urged creditor banks to roll-over Daewoo's short-term debt and take over its restructuring. Creditor banks eventually placed the 12 Daewoo affiliates under workout programs involving debt for equity swaps, debt restructuring, and new financing, and took over the restructuring of affiliates, by replacing top management and appointing outside auditors.[61] A buyback of just under $5 billion of debt owed to foreign creditors was also negotiated at a price of about 40 cents on the dollar. The takeover of Daewoo by its creditors was an important break from the past and sent a strong signal that no *chaebol* was "too big to fail." The government managed to successfully stabilize the financial system from the fallout, but the implications for the ITC sector, which had been main purchasers of Daewoo bonds, were substantial, resulting in a large fiscal costs.

However, progress has been slow in actually restructuring or selling off the various Daewoo affiliates leading to additional losses and lower values. To date, only small pieces of the group have been sold while creditor banks continue to extend loans ($4 billion in 2000) to keep affiliates operating. Following the collapse in September 2000 of the deal to sell Daewoo Motors to Ford—an event that was a serious blow to market sentiment—and difficulties in securing agreements with labor unions over job cuts, creditor banks decided to put the company into court receivership.

---

[61] Daewoo was later found to have over inflated its assets and hidden debts totaling as much as $34 billion in July 1999.

Progress under the workout programs

Workout programs have continued, but have focused more on debt restructuring than asset sales or divestitures. At end-September 2000, 44 companies (including the 12 Daewoo affiliates) were still under workout programs, down from 79 as of end-July 1999.[62] However, many of the workout companies remain deeply distressed and will face uncertain prospects when grace periods on debt service expire. In some cases, additional workouts were needed after the original programs failed to normalize operations. The strong economic recovery, the stock market boom in 1998–99, and improved liquidity appear to have taken off some of the pressure to restructure.[63]

Banks were slow in pushing for real restructuring and asset sales partly as result of lax provisioning requirements on restructured loans to workout companies and weakness of their own balance sheets. Banks were allowed to classify restructured loans as "precautionary" or "substandard" and subject to provisioning of only 2–20 percent. In addition, banks were allowed to apply less stringent standards on loans to companies under court receivership and to losses resulting from holding secured commercial paper issued by the insolvent Daewoo Group.[64] Preferential treatment was given in order to encourage banks to participate in the corporate restructuring process and to extend new loans to workout companies. However, it subsequently became clear that the lax provisioning requirement was a disincentive for banks to recognize true losses in debt workout cases and led to superficial corporate restructuring with debt rescheduling and long grace periods. In addition, with no real market for distressed assets, pricing was difficult, leading to overvaluation or simply the use of book values. Banks were also constrained by their lack of expertise in corporate management and rehabilitation.

---

[62] The change over this period reflects: (i) firms that have "graduated" from the program either through mergers, outright sales, or a turnaround in performance; (ii) firms that have left the program with support of their creditors to seek mergers on their own; and (iii) firms that have been "demoted" and will likely be liquidated or apply for court receivership.

[63] See Mako (2001) for a comparison of progress in corporate restructuring in East Asia. In addition, Mako (2001a) contains a discussion of the impediments to restructuring under the workout framework.

[64] Loans classified as "doubtful" or "estimated loss" require a minimum provisioning ratio of 50 percent and 100 percent respectively. Loans extended to companies under court receivership or mediation procedures were reclassified as "normal" if they fulfilled the requirements as set in their Capital Structure Improvement Plans (CSIPs).

To facilitate the transfer of these distressed assets to investors, the government tightened loan classifications for credits to workout companies, bringing them under the new "forward looking criteria" (FLC). The elimination of special treatment of loans to workout companies and the subsequent higher provisioning requirement under FLC (starting at end-2000), combined with enhanced accounting standards, have helped banks to take a more realistic view on asset quality. As a result, creditors have already begun selling their interests in some distressed workout companies to specialists with the capacity to realize potential recovery. In October 2000, the government introduced the corporate restructuring vehicle (CRV) system as a way of facilitating this transfer. CRVs take over distressed assets from creditor banks and restructure them using an asset management company with turnaround experience.

Progress has also been slow in resolving firms under court-supervised insolvencies. Thirteen *chaebol* began restructuring under court-supervised reorganizations in 1997. Most remain under court receivership and are being managed by a court-appointed administrator. With the exception of the early large cases, such as Kia Motors, relatively few large corporations have emerged from court-supervised reorganizations or been sold or liquidated.[65] Reasons include the lack of expertise in bankruptcy procedures within the court system, gaps within the insolvency procedures that favored the interests of debtors over those of the creditor, and the small pool of qualified court-appointed trustees.[66] The delays and associated uncertainty also severely hampered the ability of firms under court-supervised workouts to raise capital and compete for new orders.

Corporate governance

Companies have made progress in eliminating cross-payment guarantees and in erecting firewalls between affiliates. As of end-September 2000, only about W 1 trillion in debt guarantees for all companies remained outstanding, down from W 70 trillion before the crisis.[67] In a break from the past, large *chaebol* affiliates have begun separating themselves

---

[65] In addition to Kia Motors, the exceptions include the sale of Anam Semiconductors to a foreign consortium, the sale of Samsung Motors to Renault, and the emergence of Jinro Coors from the Jinro Group.

[66] For example, changes in the Company Reorganization Act in 1998 which mandated wiping out half of the existing shares if a firm was found to be insolvent merely pushed debtors to apply for the less stringent "composition" procedures which did not mandate a wipeout of equity and allowed debtor management to maintain control of the company (Nam et al. 1999).

[67] As many of the remaining guarantees are associated with companies under workout programs or court-supervised reorganizations, the FTC has extended the deadline for eliminating them to March 2002 subject to fines for delays. However, cross-payment guarantees on borrowings from foreign financial institutions still remain.

from the group. For example, in addition to the forced breakup of the Daewoo Group, the healthier affiliates of the Hyundai group, such as Hyundai Motors and Hyundai Heavy Industries, have taken steps to divorce themselves from their loss-making affiliates.[68]

Although financial disclosure and corporate transparency have improved, gaps in principle and in practice still remain. Korean accounting standards have been brought much closer to US GAAP and international best practices, and creditors, credit rating agencies, and investors have started to scrutinize auditors' reports more carefully. Banks are also using the combined financial statements to help classify loans to affiliates of the top *chaebol*. About 8,000 companies, including all listed firms, are now required to produce financial statements audited by independent accountants.[69] To meet the growing demand for corporate information, domestic credit rating agencies have expanded the depth and coverage of their services, and in an effort to deregulate the local credit information industry, the government is preparing legislation to allow international credit agencies to form joint ventures or set up their own operations in Korea.

Shareholder activism is on the rise, although it remains low compared with other advanced countries. Civic groups and minority and foreign shareholders are participating more in shareholder meetings to influence company policy, including through outside directors. Lawsuits have also been filed against corporations for actions that went against the best interest of shareholders. For example, in 1998 the People's Solidarity for Participatory Democracy (PSPD)—a citizens action group—and three large foreign funds won a proxy contest against SK Telecom's board and management, and resulted in the placement of three outside directors on the board, including two appointed by foreign funds. In December 1999, the government amended the Commercial Code and Securities Law to require that 50 percent of directors on boards of large companies be outside directors and that audit committees be established on the board.[70]

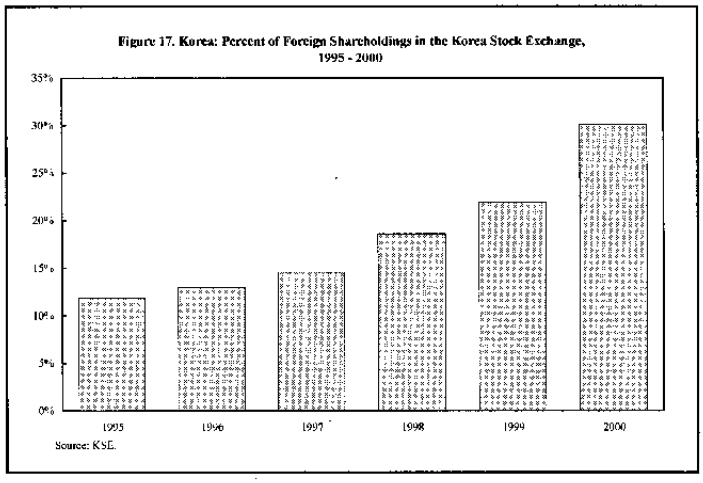
---

[68] Using stock market data, Joh (2000) examines market evaluation of corporate governance reforms at the firm level and finds some evidence of improvement. Medium-size *chaebol* affiliates are perceived to be more independent than before the crisis, though group unity for the largest *chaebol* still remains high. In examining the relative performance of common and preferred shares, she finds weak evidence that excess private returns from controlling shares has diminished since the crisis, though the premium remains high compared to other countries.

[69] Auditors who fail to report now face more severe sanctions, including criminal sentencing and large fines.

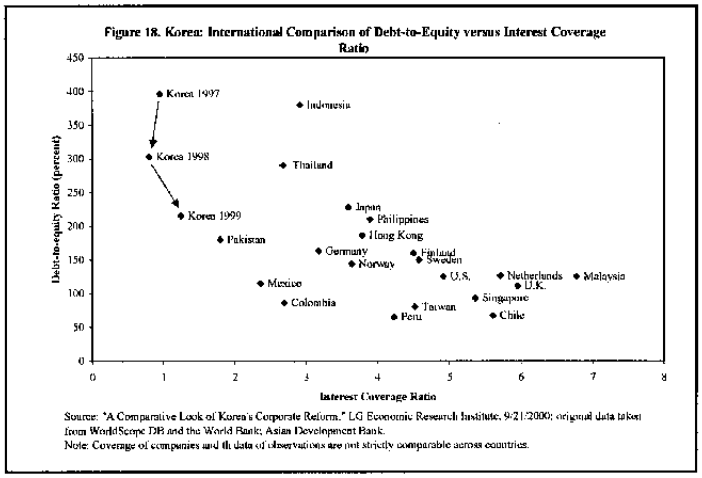
[70] According to the KSE, as of February 2001 about 49 percent of the directors of the top-4 *chaebol* companies are outside directors.

Foreign participation in the Korean economy has risen substantially. For example, foreign ownership in Korean listed companies jumped from 13 percent in 1996 to over 30 percent at end-2000. Many of Korea's leading companies are now majority foreign owned (though not controlled) including Samsung Electronics (57 percent), POSCO (56 percent) and Hyundai Motors (50 percent), though the foreign shareholders are mainly portfolio and institutional investors. In addition, as mentioned earlier, Renault has taken over Samsung Motors, and Daimler Chrysler now owns a 15 percent stake in Hyundai Motors.



Health of the corporate sector

Despite the progress made so far in reducing debt-equity ratios, the corporate sector still remains highly leveraged and continues to suffer from low profitability. The average debt-equity ratio has come down significantly since the crisis but remains high by international standards (see chart). In addition, much of the improvement has been due to issuance of new equity rather than debt reduction. Although cash flows have improved in part due to the economic recovery, profitability continues to suffer, mainly due to high interest payments. This suggests that despite the strong recovery, little operational restructuring has taken place.



The average debt-to-equity ratio for the nonfinancial corporate sector declined from a high of 425 percent in 1997 to 235 percent in 1999. For the manufacturing sector, which accounts for over half the nonfinancial corporate sector, the average debt-to-equity ratio fell from 396 percent in 1997 to 215 percent at end-1999; as of end-June 2000, it stood at 193 percent (see table). Total debt liabilities for the nonfinancial corporate sector fell by only W 6.5 trillion in 1999 to W 725 trillion (137 percent of GDP). Taking advantage of the rising stock market, equity financing increased sharply in 1999, replacing bond issuances as the primary source of financing.

Table 8. Korea: Indicators of Financial Stability and Profitability in Manufacturing

	Korea			U.S.	Japan	Taiwan,	Germany	Hong Kong,	U.K.
	1997	1998	1999	1998	1998	P.O.C., 1995	1996	S.A.R., 1996	1996
Debt-equity ratio	396.3	303.0	214.7	158.9	173.6	85.7	163.0	186.0	111.0
Operating income to sales 1/	8.3	6.1	6.6	7.5	2.5	7.3	...	...	...
Ordinary income to sales 2/	-0.3	-1.8	1.7	8.1	2.3	5.1	...	...	...

Sources: BOK, Financial Statement Analysis, 1999; national sources.
1/ Operating income is the difference between the revenue of a business and its related costs and expenses, excluding income derived from sources outside its regular activities.
2/ Ordinary income is operating income after losses or gains from interest expenses/income, foreign currency transactions, and disposals of investments and tangible assets.

Manufacturing profitability has improved over the last three years, owing in part to the economic recovery, but it remains weak and is constrained by the large debt service burden. Korea's operating performance compares favorably with Japan, the U.S., and Taiwan Province of China, but after accounting for nonoperating income and expenses, Korean corporate performance suffers markedly. This difference is due mainly to the interest burden on accumulated debt, which accounts for almost all of nonoperating expenses in Korea and is much higher relative to sales than elsewhere.[71] This trend is likely to have continued in 2000, when according to preliminary data from the Korea Stock Exchange (KSE), ordinary profits of listed companies fell by 27 percent.

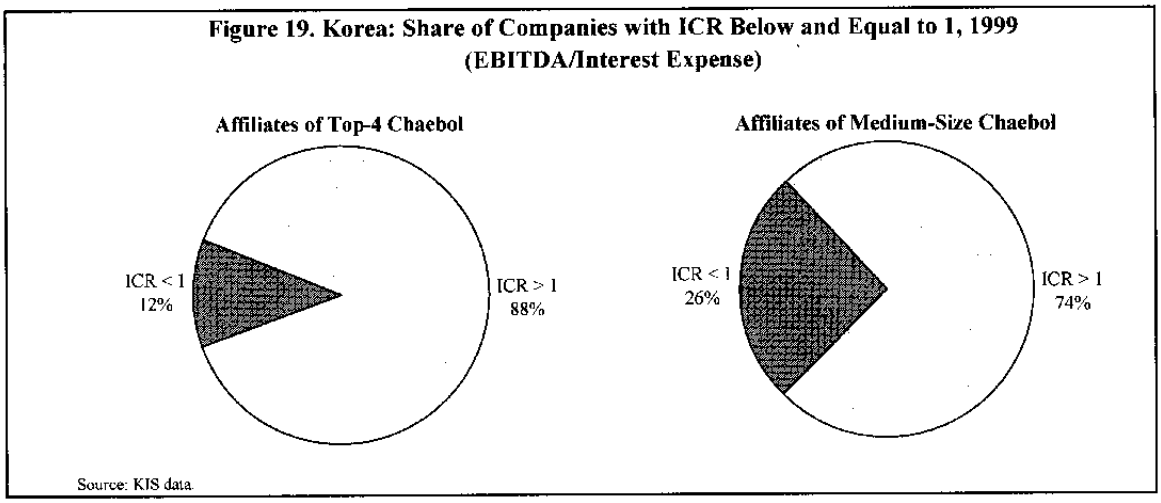
Another important measure of corporate health is the interest coverage ratio (ICR), defined as earnings before interest, tax, depreciation, and amortization (EBITDA) over interest expense. It measures a firm's capacity to cover its interest payments on its outstanding loans and presents a more complete picture of debt sustainability than just debt-equity ratios.[72] If a firm has an ICR of below 1, it is unable to meet its interest payments, let alone its principal obligations, using its current earnings. In the U.S., the average ICR in 1996 was around 8, and in order to earn an A-rating (based upon Standard & Poor's rating requirements), a U.S. company typically must have a ratio of operating cash flow to interest of more than 8.

[71] In general, sectors that managed to reduce significantly their debt-equity ratios (information technology, transport, storage and communications) showed better operating performance than those that remain saddled with large debts (construction, wholesale and retail trade).

[72] For example, although the Hyundai group (along with LG, Samsung and SK) managed to reduce its debt-to-equity ratio to below 200 percent by end-1999 (on a consolidated statement basis), several of its affiliates continued to experience financial difficulties.

Despite the improvement in operating performance in 1999–2000, about one in four Korean companies were unable to generate enough cash flow to meet their interest payments.[73] For example, the average ICR in 1999 for the affiliates of the top-64 *chaebol* was 2.3, up from 1.4 in 1998. However, 23 percent of the companies had an ICR below one, including 13 percent which recorded negative EBITDA. Many of the worst performers represented companies in workout programs or in court receivership.[74] The financial position of the medium-size *chaebol* affiliates is much weaker than for the top-4 affiliates. The medium-size *chaebol* had a larger share of companies with an ICR of below one (26 percent), suggesting that they in particular remain vulnerable to adverse shocks (see Figure 19).

Figure 19. Korea: Share of Companies with ICR Below and Equal to 1, 1999 (EBITDA/Interest Expense)

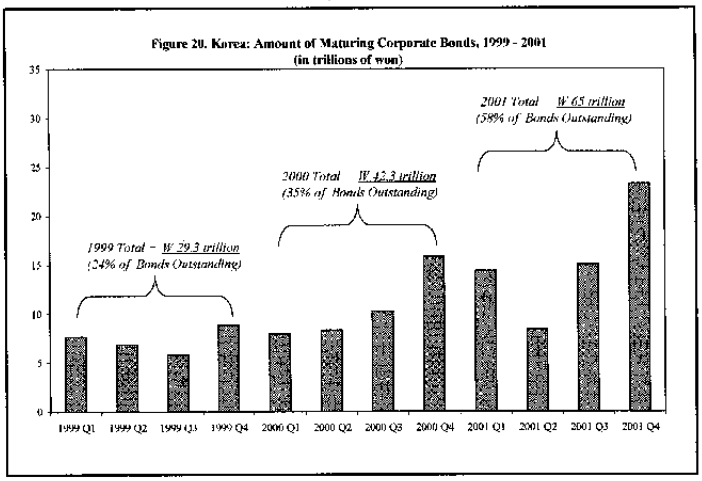


Source: KIS data

[73] The analysis here uses firm level financial data for 496 companies of the top-64 chaebol groups in 1999 (excluding Daewoo) compiled by IFC using data from the Korea Investor Services.

[74] This result is consistent with BOK's analysis of 3,703 companies in the manufacturing industry, which showed that in 1999 roughly one in four manufacturers were unable to pay their financial costs with their cash income (BOK 2000). A more recent BOK study of 1,807 manufacturing companies in the first half of 2000 found that about 27 percent still had an ICR of less than one.

A broader analysis, which includes principal payments falling due (i.e. a debt service coverage ratio), would likely show that many more firms would be unable to meet their principal obligations with current income. Nearly 60 percent of outstanding corporate bonds mature in 2001; much of this debt was issued shortly after the crisis in early 1998 with a standard three-year maturity. Although some of this is likely to be refinanced or rescheduled, firms with a poor cash flow position will likely face difficulties in rolling over this debt and remain vulnerable to a cutoff in credit lines.



C. Remaining Agenda

To restore profitability and investor confidence, the corporate sector needs to accelerate deleveraging and undertake deeper operational restructuring. This will require further cost cutting, sales of noncore assets, and strategic alliances. Without these improvements, the corporate sector will remain weak and a source of distress, not of value, in the economy.

In some respects, the difficult part of corporate restructuring still lies ahead—nonviable firms need to be closed, and viable but distressed companies should be subject to rigorous workouts involving debt write downs as opposed to rescheduling. Indeed, the closure of nonviable companies may be a prerequisite for the growth of other companies, as these "zombie" companies are eroding the profit margins and crowding out credit to viable companies. In addition, it will be important for the government to avoid actions that could undo the lesson that no company is "too big to fail." With the improved social safety net, the economy should be strong enough to absorb the temporary dislocation that accompanies restructuring in the short run.

Although bank-led workouts were an important initial response to the systemic crisis in view of the simultaneous distress among dozens of *chaebol* and insufficient institutional capacity of the courts, their potential as a vehicle for promoting restructuring has diminished. Because of concerns about realizing losses, banks have been unwilling or unable to force necessary divestitures, asset sales, or operational improvements on workout companies. Minority creditors and shareholders have also delayed workout resolutions by holding back support for an agreement until their narrow demands are met (as seen in several Daewoo

cases).[75] As a result, relatively few large corporations have emerged from the workouts or from court-supervised reorganization.

To accelerate the restructuring process, attention needs to shift towards greater reliance on court-supervised insolvency. This could help overcome issues such as unrealistic valuations and difficulties with minority participants that have stymied bank-led workouts. Under court supervision, majority creditors would have more leeway to reorganize or liquidate a company. Toward this end, the recent legislation introducing "pre-packaged" bankruptcies should provide greater opportunities for cooperation between debtors and creditors and help simplify and shorten the time needed for liquidation procedures.[76] Additional steps to reform the insolvency system are needed to improve courts' capacity to handle cases effectively and expeditiously. For example, introducing an automatic stay and an "absolute priority rule" for the treatment of different creditor classes could help to encourage and expedite reorganizations, though incorporating such elements may require a broader examination of Korea's bankruptcy system. Insolvency reform is a long-term process, but the governments should press ahead now in anticipation of the next round of reorganizations and liquidations.

Further labor market flexibility would facilitate corporate restructuring. Labor difficulties have not only raised operating costs and created uncertainty, but also discouraged foreign investment and delayed asset sales and mergers. It will therefore be important to develop a national consensus that shifts attention away from preserving old jobs in dying industries to creating new jobs in vibrant growing ones. Some layoffs are inevitable, especially during the current economic downturn, and the government should ensure that provisions under the safety net are adequate to help mitigate their negative impact.

Continued development of capital markets would improve credit allocation, provide a wider range of financing options for companies, and allow investors to play a stronger role in corporate decision-making. In particular, greater access to the capital markets by small- and medium-sized enterprises will lower the barriers to entry into industries long dominated by the large *chaebol*. Developing an active mergers and acquisition market will also facilitate restructuring by avoiding the use of the courts and bank-led workouts, and allowing companies themselves to do the necessary restructuring. This would also help promote further consolidation within industries suffering from excess capacity.

---

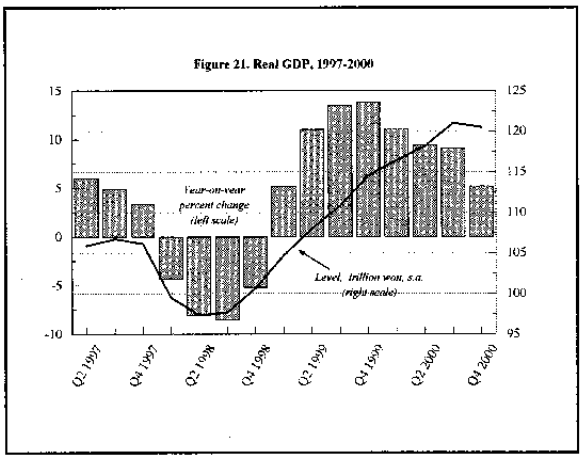
[75] Under Korean law, the votes of 80 percent of secured creditors and 66 percent of unsecured creditors are needed to approve a debt restructuring plan.

[76] "Pre-packaged reorganization" refers to the technique whereby an agreement reached between a debtor and a majority of its creditors out of court is then submitted to the court for approval under the applicable reorganization law. Because of the "cram down" provisions of the law, the approval by the court of this agreement makes it binding on dissenting creditors.

Finally, the campaign to discourage Korea's largest *chaebol* from ill-advised and excessive investments financed by debt will require longer-term efforts. Success will require progress on a number of fronts—strict oversight by investors and creditors, enhanced risk management practices, elimination of anti-competitive practices, stronger and more efficient insolvency procedures, and improved corporate governance. In this connection, recent measures announced by the government—covering issues such as improving the cumulative voting system, a further strengthening of minority shareholder rights, qualifications of outside directors, and transactions with related parties—will be useful. Efforts to further improve financial disclosure and transparency also need to be stepped up. Despite the progress made so far, Korean accounting practices still remain below the level of international best practices, both in principle and in practice. Greater corporate transparency will help to lower the cost of capital, reduce the uncertainty in investing in Korean companies, and allow markets to discipline poor corporate behavior.

VI. The Economic Recovery

Korea's twin crisis resulted in a recession of unprecedented magnitude in 1998 when the economy contracted by almost 7 percent. The recovery in 1999 and 2000, with average growth of 10 percent per year, was also much faster and steeper than expected, and the large output gap was closed by late 1999. In addition, external vulnerability was sharply reduced with the rapid accumulation of external reserves and the reduction in short-term debt. The rebound, however, stalled in the latter part of 2000 with the economy contracting in the fourth quarter. A slowdown from the rapid growth rates of 1999 and much of 2000 was anticipated, and indeed seen as desirable in view of earlier concerns about overheating, but the downturn has been exacerbated by the deterioration in the global environment. Domestic confidence and demand have also been weakened by concerns about the pace of restructuring. The outlook for 2001 is thus for a sharp fall in growth to well below Korea's potential.



A. Factors Contributing to Korea's Recovery

Korea's economy bottomed in the second quarter of 1998, half a year after the onset of the crisis. The origin and the nature of the crisis, initial conditions, developments in the external environment, and macroeconomic and structural policies all had significant impact on the recovery path. This section analyzes Korea's recovery by comparing it with other OECD economies that experienced similar crises during the 1990s, with severe external shocks, depreciations of the exchange rate, and banking crises. The comparator countries are

Sweden, Finland, and Mexico, and the stylized facts for these countries reveals certain differences that may explain why Korea was able to adjust as quickly as it did.[77]

Initial conditions

Sweden and Finland entered deep and prolonged recessions well before the financial crises of 1992 when their currency pegs were abandoned. Their recessions—which lasted three full years—were triggered by a combination of adverse factors, including the bursting of an asset price bubble and an overvalued exchange rate. Sweden's real GDP contracted by a cumulative 5 percent, Finland's by almost 9½ percent reflecting the collapse of trade with the former Soviet Union and a terms of trade shock. The initial recoveries were narrow and externally driven; domestic demand began to strengthen only in late 1994.

Mexico's crisis unfolded in late 1994 and the country experienced a severe recession in 1995 when real GDP contracted by 7 percent. Similar to Korea, Mexico's economy rebounded swiftly. The recovery started about two quarters after the height of the crisis and was driven chiefly by booming exports, benefiting from market-opening trade reforms, strong partner country growth, and an improvement in terms of trade.

Relative to the other countries, Korea's pre-crisis economy enjoyed several advantages—a fiscal surplus; high household savings; a relatively large electronics manufacturing sector that allowed it to benefit from the global electronics boom; and a relatively balanced pre-recession real estate market. In addition, the real exchange rate was reasonably well-aligned with economic fundamentals prior to the crisis. Although there was overinvestment in Korea, this occurred primarily in the tradable goods sectors—namely, shipbuilding, automobiles, electronics, and semiconductors. Fortunately, these sectors received a boost from the significant depreciation of the currency. By contrast, excessive investment in some other crisis economies was concentrated in the real estate sector.

---

[77] The choice of comparator countries is always debatable—Sweden and Finland have been chosen because they also have large manufacturing based export sectors. Lee and Rhee (2000) also analyze cross country patterns of recovery following a crisis. They attribute Korea's quick recovery to both the export-oriented structure and swift adjustment of macroeconomic policies. In a study of currency crisis, Barro (2001) found no evidence of a persistent adverse influence on economic growth and investment, lending support to the notion that the financial crisis in Asia may not have had a permanent effect on growth prospects. Park and Lee (2001) also find no evidence of a direct impact of a currency crisis on long-run growth and observe that the factors behind Asia's rapid adjustment—a significant real depreciation, expansionary macroeconomic policies and favorable global environment—resembled those in previous currency crisis episodes. They, however, note that the degree of initial contraction and subsequent recovery in Asia were much greater than other cases suggesting that a liquidity crisis triggered by investor panic and amplified by weak balance sheets played a more significant role in the sharp downturn.

Korea also benefited from its low government debt (9½ percent of GDP at end-1996) and a fiscal surplus, which allowed greater latitude in countercyclical policies and in absorbing bank restructuring costs. By contrast, public finances in Sweden and Finland deteriorated rapidly, and were at the core of the crises, leaving less room for fiscal accommodation. In the case of Mexico, because of the higher initial debt level the government sought a fiscal surplus to offset foreign capital outflows and the effects of higher external debt service and bank restructuring costs, dampening its recovery.

With these advantages, Korea's economic turnaround was quicker, stronger and broader based than in Finland, Mexico, and Sweden. Although initially externally driven, the recovery broadened to private consumption and investment in large part due to improved sentiment and a significant recovery in the stock market (mainly in the information technology and communications sector).

External demand

In all countries, the external sector led the recovery and contributed to a sharp turnaround in the current account. But the nature of the external adjustment differed. In Finland, Mexico and Sweden, strong exports led the recovery and current account swing. By contrast, in Korea, although exports were strong, the turnaround in the current account was initially mainly the result of import compression. The net impact was that Korea's current account moved from a deficit of about 1½ percent of GDP in 1997 to a surplus of 12½ percent of GDP in 1998—a swing of almost $50 billion. This turnaround was an important factor in the quick replenishment of Korea's international reserves, which in turn helped restore investor confidence and the restoration of more orderly financial market conditions.

Since the middle of 1998, however, strong exports have played a greater role in boosting Korea's GDP growth. With its open and highly export-oriented economy, Korea benefited from gains in external competitiveness following the substantial depreciation of its currency. The surge in global demand for information technology and electronic equipment was an additional important element. Owing to heavy investment in information and communication technologies since the beginning of the 1990s, Korean producers were well positioned to take advantage of information technology boom in the United States and elsewhere.

Domestic demand

Although strong exports played a pivotal role in Korea's recovery, the contribution of domestic demand to the recovery and subsequent expansion was also important. In fact, Korea's turnaround was broader based than the other crisis-hit countries in the 1990s. For example, despite high unemployment and a decline in real wages, private consumption

rebounded very fast in Korea due to an exceptionally high household saving ratio (23 percent average between 1995-1997) and low debt burden. By contrast, a revival of private consumption in Finland and Sweden, but also Mexico, was slow to come. Households in those countries were heavily indebted going into the recession, forcing a sharp retrenchment when interest rates rose and credit contracted. This sparked a major increase in household savings, effectively precluding a swift revival of private consumption and prolonging the recession.

The recovery in investment was also swifter in Korea. Initially, however, there was a strong technical element to the rebound. Companies faced a severe liquidity squeeze in 1998 as sales collapsed and banks were reluctant to finance working capital. This forced companies to de-stock rapidly to free up cash and reduce costs. With the rebound in demand and easing of liquidity pressures, restocking to desired levels provided a major boost contributing 5½ percentage points to the 11 percent growth in real GDP in 1999.

Fixed investment also responded surprisingly fast in Korea after a collapse in 1998. Concerns about a drag on investment due to the capacity overhang in several heavy industries and excessive corporate indebtedness were offset by substantial investment to upgrade technology by a number of businesses and equipment investment in new emerging growth industries—such as information technology, telecommunications, and high-tech start-ups. In addition, the recovery in fixed investment may have been faster in Korea than in other countries because the construction sector, where excess supply takes longer to absorb, was not overheated: the construction sector boom of the late 1980s had already unwound when the 1997 crisis hit. By contrast, fixed investment in Sweden and Finland only began to recover three full years after the recession began, reflecting largely the overhang that resulted from the construction sector boom of the late 1980s.

Government policies

Although Korea's spectacular rebound was linked in part to a favorable external environment, the policies pursued by the authorities also played an important role in allowing Korea to take advantage of these favorable external factors.

- First, as discussed in Section III, both monetary and fiscal policy switched to an expansionary stance relatively soon after the onset of the crisis.

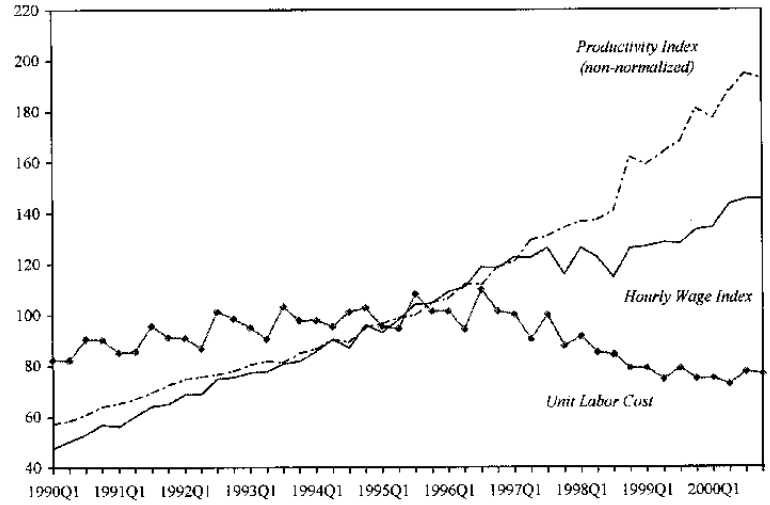
- Second, the strong efforts to address the structural weaknesses from the outset boosted investor confidence and enhanced the credibility of the stabilization program. Early aggressive efforts to clean up banks' books helped them resume the business of banking relatively quickly. Notwithstanding the major challenges that remain, Korea was widely acknowledged as the front-runner in implementing structural reforms among the crisis-hit Asian countries.

- Third, the opening of the capital account in the midst of the crisis also helped attract foreign capital and reduced reliance by firms on short-term debt and bank financing.

Foreign direct investment inflows shot up from less than $3 billion in 1997 to an average of $8½ billion per year in 1999–2000.

- Fourth, the increased flexibility of the labor market also contributed to the adjustment process. There were significant adjustments in both employment and real wages. Given productivity improvements, unit labor costs have fallen sharply thus improving competitiveness.[78]

Figure 22. Manufacturing Labor Productivity, Hourly Wages, and Unit Labor Costs, 1990 - 2000
(1990 = 100)



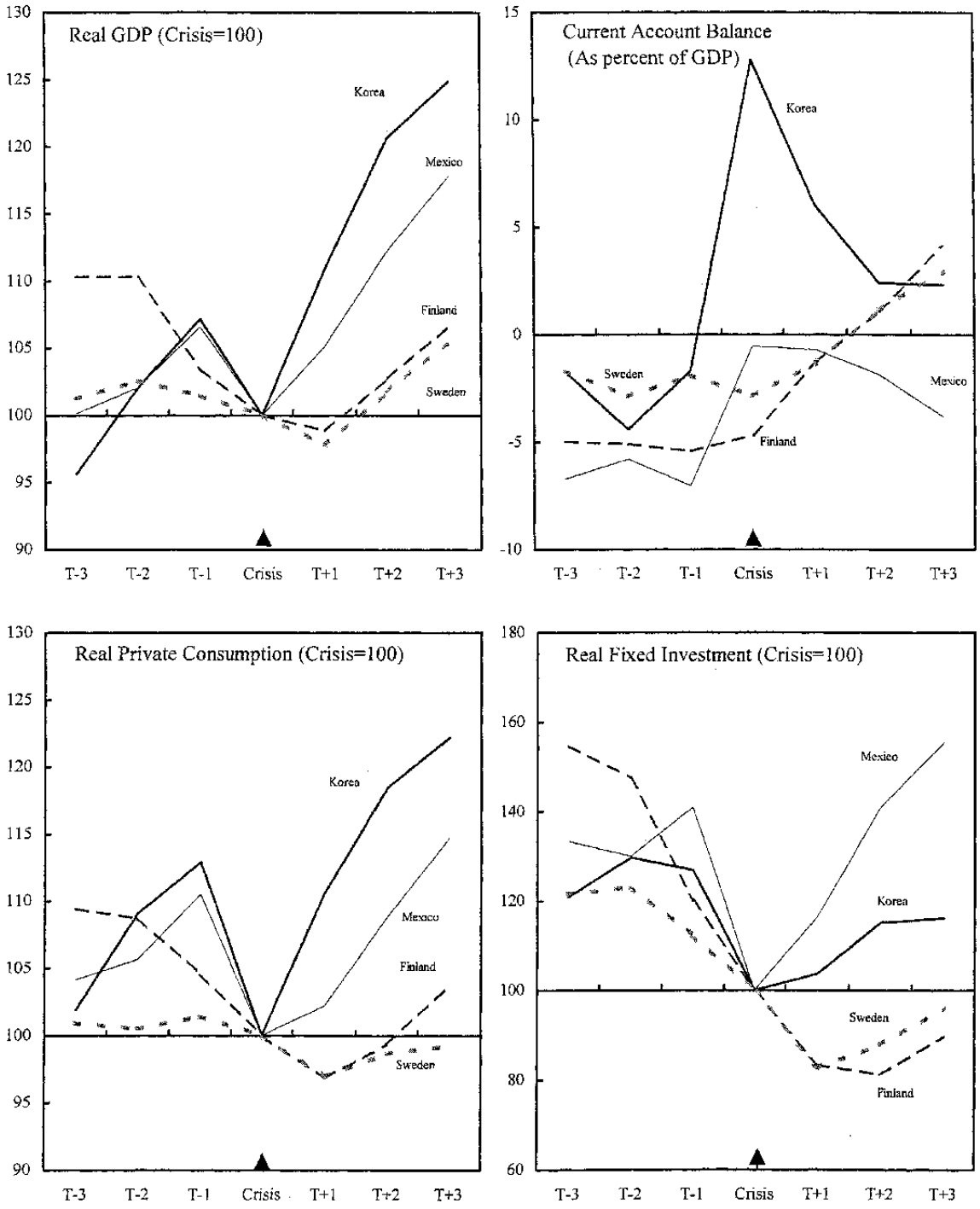
Source: Korea Productivity Center (KPC); and staff estimates.

- Fifth, more generally, both prices and quantities were allowed to adjust, facilitating a quick recovery. Indeed, there was no pass through of the exchange rate depreciation into wages and there was only a first round inflationary impact. After February 1998, month on month inflation was negligible (even though the 12-month rate remained high until February 1999 because of the base effect). If anything, Korean workers seemed prepared to accept lower wages as a result of the crisis. These adjustments facilitated the rapid turnaround, not least because interest rates could start coming down relatively quickly.

- Finally, the high level political commitment to reforms was critical. The new political leadership that took power in Korea in early 1998 made great efforts to solidify the consensus for reforms. By contrast, in economies where confidence in the authorities' commitment to structural reform is less robust, recoveries have been delayed. It also gave rise to much less uncertainty about the direction of policies than in some of the

[78] See Kim (2001) for an analysis of changes in Korea's labor market since the crisis.

Figure 23. Comparative Recoveries



Sources: World Economic Outlook database and staff calculations.

Crisis: Korea = 1998; Finland, Sweden = 1992; and Mexico = 1995.

other crisis countries. These factors undoubtedly contributed to the early return of consumer and investor confidence.

The various elements discussed above all contributed to the recovery and were mutually reinforcing. Although the positive external environment was a major factor, the policies pursued by the authorities were instrumental in bringing a quicker, stronger and broader based recovery than has been seen in other crisis-hit countries.

B. Potential Output and the Output Gap

Another perspective on Korea's recovery can be gained from a comparison of actual and potential GDP. To estimate the output gap in Korea since the onset of the financial crisis in 1997 several approaches were employed.[79] Two time series techniques (namely, the Hodrick-Prescott (HP) filter and the cubic spline (CS) smoothing method) were used to derive alternative decompositions of real GDP into its two components: permanent (corresponding to potential output) and cyclical. In addition, a Cobb-Douglas production function (PF) was set up, with physical capital and raw labor as inputs. Using historical data on output and these two inputs, total factor productivity (TFP) was derived and trend productivity growth was estimated. Trend levels of labor were also estimated. Potential output was then estimated by substituting the trend levels of physical capital, labor, and TFP into the production function. Results from the PF approach and projections of trend growth in the labor force and in investment indicate that potential output growth could be approximately 6 percent per year over the period 2000–05.

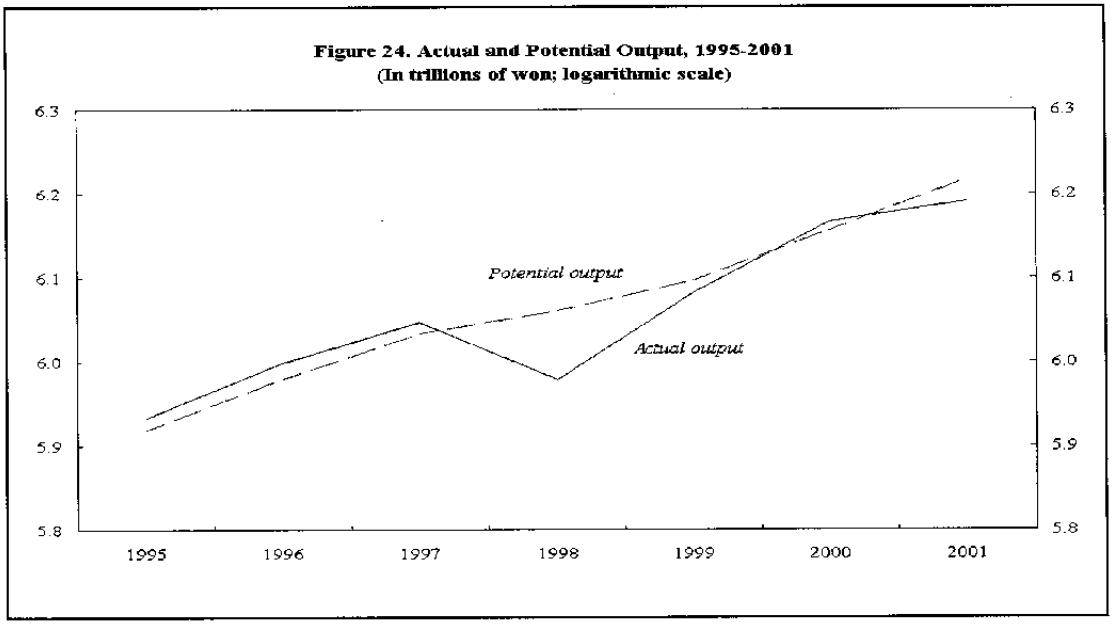
Table 9. Alternative Measures of the Output Gap and Potential Growth

	1998			1999			2000		
	CS	HP	PF	CS	HP	PF	CS	HP	PF
Output gap 1/	-7.0	-6.3	-8.0	-2.1	-1.2	-1.7	1.2	1.7	1.4
Potential growth 2/	4.5	3.5	2.8	5.1	5.0	3.6	5.8	6.3	6.2

1/ In percent of potential output.
2/ In percent.

The three estimated series of the output gap using the various approaches point to broadly the same results. All three series suggest that there was a large positive gap (i.e., excess demand) in 1997, amounting to 2–4 percent of potential output. Real GDP then fell quickly and substantially in 1998, resulting in an output gap of about 6–8 percent of potential GDP. The three series suggest that actual output moved above potential in the second half of 1999. In view of the strong growth in the first three quarters of 2000, it is estimated that

[79] Further details can be found in Ma (2001).



actual output exceeded potential output in 2000 by around 1½ percent. In the earlier part of 2000 there was concern about possible overheating, but these concerns were relatively short-lived with the weakening in economic activity in late 2000 and early 2001.

VII. Lessons from the Crisis

The past four years have been among the most turbulent in Korea's recent economic history. During this period, Korea has not only witnessed severe turmoil in domestic financial and foreign exchange markets, but also a remarkably rapid stabilization and recovery from crisis conditions. By and large, the three-year IMF-supported program has been successful and the objectives of the program have been met. The reforms initiated since the crisis will continue to yield benefits for years to come and should help restore Korea to the position of one of the most dynamic and vibrant economies in the world. The credit for Korea's successful turnaround belongs to the Korean people, who sacrificed and worked hard, and to Korea's political leadership, who, after the Presidential election in December 1997, took firm ownership of the stabilization and reform program and implemented it with determination. This section focuses on key lessons from Korea first in the area of crisis prevention and management, and then in the area of structural reforms. It closes with a discussion of the remaining challenges for Korea.

A. Crisis Prediction and Prevention

The discussion in Chapter II on the origins of the crisis raises the important question of why market participants—including the Fund and other international organizations, credit rating agencies, and investors—were unable to predict the crisis in Korea. Although most observers were aware that there were weaknesses in the system, the savage interaction of these weaknesses was not foreseen.

One explanation for the failure to predict the crisis is that previous crises elsewhere had largely been balance of payments crises, and analysts looking for similar weaknesses in Korea found few of the signs of a classic external crisis. Growth was relatively high; inflation remained low; the real exchange rate was not thought to be overvalued; the current account deficit was within a sustainable range; and the measured fiscal position (which excluded implicit financial sector liabilities) was strong. Moreover, the record of prudent and flexibly applied macroeconomic policies suggested that Korean economic policies would respond appropriately to a large shock. In the event, however, the Korean crisis was the result of mismanagement of companies and banks, not an undisciplined government or poor macroeconomic fundamentals.

From a broader perspective, Korea may also have been a victim of its own success. Although many observers were aware of the growing problems of the highly leveraged corporate sector and a weakened financial system, the fact that these weaknesses had existed for so long while Korea continued to grow rapidly may have created a sense of complacency and confidence that Korea would be immune to a crisis. Korea's model of development worked remarkably well over a sustained period of time, producing an enviable record of development and poverty alleviation. However, as Korea advanced and become more integrated with the global economy, the government- and *chaebol*-led system that had functioned so well during periods of rapid growth proved ill-equipped to deal with new types of shocks to what had become a more developed economy.

Regardless of failures to predict it, the Korea's experience provides some useful lessons for crisis prevention:

- The sequencing of capital account and financial liberalization must be done carefully to avoid the buildup of systemic vulnerabilities. A more balanced approach to capital account liberalization, which would have allowed foreigners to invest long-term in Korean companies, might have limited the potential for liquidity problems and resulted in corporate balance sheets that were less dangerously leveraged. Closer integration with international capital markets also requires that financial supervision and prudential controls be strengthened to ensure that the large capital flows are used appropriately and that incentives for strong corporate governance and market discipline exist. In economies with a history of substantial government involvement the risks of liberalization are commensurately larger in part because of the perceptions of continued implicit government support for companies and financial institutions.

- Greater attention to Korea's external liquidity position probably would have helped to forestall or mitigate the crisis. Although stronger international reserves certainly would have strengthened Korea's external position, more appropriate capital account policies that reduced reliance upon short-term external debt would have been a more direct way to minimize the potential for liquidity problems.

- Greater disclosure of macroprudential indicators and transparency of key macro and financial policies would have alerted markets to these vulnerabilities earlier and perhaps prompted pre-emptive corrective policy measures. Incomplete information on the amount of nonperforming loans, the health of the corporate sector, the maturity profile of external debt, and the level of international reserves allowed problems to go unaddressed, and subsequently intensified the reaction of investors when they suddenly learned the true situation. More complete disclosure to the markets also would have helped investors differentiate between good and bad companies, and created pressures for better corporate governance practices.

- More broadly, the Korean experience suggests that crisis prediction frameworks should pay greater attention to structural vulnerabilities and microeconomic performance. Of course, these factors are harder to quantify, especially consistently across countries. They will hence be difficult to include formally in early warning signals (EWS) models. Crisis prediction (and prevention!) will inevitably retain a substantial judgmental component.

B. Crisis Management

The rapid emergence from crisis to robust recovery suggests that the response to the crisis was very effective overall. Economic growth resumed just three quarters after the onset of crisis, and output recovered back to potential in less than two years. The following are some key lessons from the Korean experience.

- The early rescheduling of external short-term debt was extremely important. By eliminating the specter of an ongoing drain on foreign reserves and the prospect of imminent default, the rescheduling agreement reduced the reliance on interest rates to stabilize the exchange rate and gave room for expansionary monetary and fiscal policy to address the economic downturn. Korea was caught in a twin crisis for which no simple solutions existed. Raising interest rates to stabilize the exchange rate created distress in the corporate sector, which in turn adversely affected the health of the banks. Eliminating the short-term financing constraint at an early stage allowed macroeconomic policies to shift to supporting the recovery. Indeed, concerted efforts to obtain a rollover agreement with international banks at an even earlier stage would have been preferable.

- The relatively low initial stock of government debt facilitated an appropriate fiscal response, allowing the government to run deficits and provide support for the financial sector. As a result of the healthy starting position, fiscal policy did not need to be tightened and was able to support the recovery. Indeed, Korea's earlier conservative fiscal record allowed an extra degree of freedom in a crisis as markets believed that the fiscal deficits would be temporary. Further, it allowed a substantial expansion of the social safety net, which facilitated structural reform by mitigating the impact on those most affected by the crisis. The switch from the authorities'

original relatively restrictive budget for 1998 to a more expansionary stance was rapid. Its actual execution, however, was slower because of the inherent conservatism of Korean budget practices.

- A simple but largely overlooked factor for the strong recovery was that both prices and quantities were allowed to adjust in response to the external shock. Unemployment was allowed to rise and the exchange rate and equity prices fell. Relative prices adjusted, and capital and labor markets were sufficiently flexible so that the large shock could be dissipated quickly across the economy. There was no pass through of the currency depreciation into wages, and inflation was negligible (month-on-month) after February 1998. If anything, Korean workers seemed prepared to accept lower wages as a result of the crisis. With low inflation, interest rates could be lowered substantially. After the markets stabilized, investors returned quickly when they saw cheap buying opportunities, and labor was able move to higher productivity industries.

- Despite the initial criticism, the early focus on structural reform was crucial not only for laying the long-term foundations for the continued growth of the economy, but also for boosting the credibility of the government's stabilization program. The primary factors causing the Korean crisis were fundamental weaknesses in companies and banks, not public sector excesses. Without addressing the root causes of the crisis, attempts to regain market confidence through a stabilization program would have been futile, as fears of another crisis would have remained. Without early measures to strengthen corporate governance, foreign investors would have been reluctant to put money back in Korea. It is no surprise that among the Asian crisis countries, foreign money returned to Korea earliest and in the largest amounts.

- In cases where the very stability of the entire financial system is at risk, there may be little choice but to provide a blanket guarantee of bank deposits. In these circumstances, there will be little additional moral hazard from a blanket guarantee—deposits have already been placed in bad banks and bad lending decisions have already been made. But it is important that the authorities rapidly intervene in those banks that have lost their capital, and bring in specialist new management to prevent further erosion.

C. Structural Reforms

Unlike the rapid recovery of the macroeconomy, progress in structural reform has been slower. This is hardly surprising. Neither a fundamental reorientation of the Korean economy nor the resolution of widespread financial distress were going to be tasks that could be achieved overnight. Nonetheless, there has been very important progress. Some key lessons from the Korean experience include:

- The structural reform program in Korea benefited greatly from its broad support and effective political leadership. The Tripartite Commission of labor, management, and government formed in early 1998 was a useful vehicle for generating social consensus and support for the government's reform program in the face of economic hardships. The commission helped to improve labor market flexibility by facilitating agreement on layoffs and wage cuts and by establishing a social safety net that limited the rise in poverty and helped retrain workers. In contrast with other countries, Korea was fortunate that the presidential election at end-1997 allowed the new government to start with a fresh mandate to implement its economic reform program.

- The government's decision to pursue a centralized approach to restructuring the financial system was justified given the systemic nature of the crisis and perceived inability of the private sector to handle this role. However, having made such a decision, it is important to have an effective exit strategy from involvement in the banking system. Although retaining state ownership may appear to produce a higher recovery rate on the state's investment, delaying privatization may result in large long-run costs if it prevent banks from operating on a commercial basis and from returning to profitability. A market-driven corporate restructuring process will only be truly feasible if it is led by sound, privately owned banks.

- Foreign capital played an important role not only in stabilizing the economy but also in recapitalizing the financial system and transforming corporate decision making. Given the strong need for capital and the limited availability from domestic sources, foreign capital was an important source of funding. The alternative of allowing Korean *chaebol* to increase their control of the banking system could have been disastrous. Without foreign money, financial restructuring would have had to rely upon even more on public funds which—for political reasons, and probably appropriately so—became increasingly difficult to secure.

- In cases where nonbank financial institutions play a major role, reform of these may be as important as reform of the banking sector. In the case of Korea, nonbanks (notably life insurance companies and merchant banks) performed many bank-like functions prior to the crisis but were not supervised accordingly. And in the wake of the crisis, supervision of the investment trust companies was not tightened sufficiently quickly. As result, improper management practices and substantial balance sheet growth continued until mid-1999, providing substantial financing to weak companies (most notably the Daewoo group), thereby easing financing constraints and delaying restructuring.

- Realistic valuation of distressed assets is crucial to advance restructuring. Workout programs were an effective initial mechanism for handling the large number of distressed companies but their usefulness waned as their use shifted from a means of dealing with bad assets to a means of attempting to preserve the value of the loans.

Although determining a fair price for an unquoted equity is difficult, delaying resolution creates ongoing risks for the system and hence can be more costly than selling at prices that appear to be too cheap. Strict enforcement of loan classification regulations and the threat of bankruptcy are necessary for ensuring that banks and companies have the incentives to pursue realistic valuations and meaningful workout programs. If the government owns a significant portion of the banking system, it can also play an important role in setting an example by selling nonperforming assets, writing off bad loans, or pushing for the exit of nonviable firms—the early sale of Daewoo Motors (for which KDB was one of the lead negotiators) would have been a good precedent.

- Regulatory forbearance must be used carefully to avoid backsliding in restructuring. In Korea, the lax requirements on provisioning for restructured companies under workout programs delayed restructuring and probably resulted in additional losses. At the start, the authorities preference for forbearance on workout loans was envisaged as a way of encouraging banks to participate in the voluntary workout programs. However over time, forbearance allowed banks to prop up failing companies and avoid recognizing losses. If used, it is important that forbearance be granted on the provisioning *per se* and not on the loan classification standards, and that a clear timetable is announced for its removal.

- Market-based corporate restructuring can only proceed as quickly and as far as supporting market infrastructure allows. Weak accounting standards and financial disclosure can allow firms to hide problems that result in eventual massive losses, as happened in the Daewoo Group, which perpetrated the largest accounting fraud in history. An undeveloped capital market, particularly for corporate control, forces banks to assume responsibility for restructuring instead of shifting it to the companies themselves. An inadequate insolvency system limits the threat of foreclosure and liquidation and delays the exit of nonviable firms. Further, the restructuring process is bound to take longer if the insolvency system favors shareholders over large creditors—it is difficult for banks to steer the process without support from the courts and insolvency system. Finally, it is important to recognize that improvements to market infrastructure and corporate governance take a long time to come to fruition implying that they should be started at an early stage.

- The close link between financial and corporate restructuring requires that the two be undertaken simultaneously, and with an understanding of their implications for each other. The remaining problems in the financial sector are now largely a result of weaknesses in the corporate sector, and the slow progress in corporate sector restructuring is partially due to the unwillingness of creditor banks to write-off bad assets. Progress must be made on both fronts for the process to go forward. In addition, combining the responsibilities for corporate and financial restructuring into one supervisory agency can create a potential conflict of interest, where the regulator may be caught between wanting banks to lend to corporates in distress while at the same time trying to fulfill its supervisory responsibility over the banking system.

D. The Challenges Ahead

Bold policies and a commitment to reform have led to the overhaul of many domestic institutions and increased the market orientation of the economy. As a result, many of the weaknesses that contributed to the crisis in 1997 have been addressed. But much remains to be done to ensure that the gains endure and that the Korean economy is sufficiently sound and flexible to adapt and prosper as conditions change. Further progress in corporate and financial sector restructuring is imperative to ensure that the remaining problems do not jeopardize what has already been achieved and adversely affect Korea's long-term capacity to grow. Although the economic situation has weakened recently and created new problems for policy makers, there is also considerable upside potential—tangible progress with restructuring, especially in some of the high profile cases, could set in motion a virtuous circle of improved confidence, higher economic growth, and support for further restructuring.

The basic framework for restructuring the corporate and financial sectors is in place, and, looking ahead, the key issue will be implementation and ensuring a stronger role for markets—especially creditors and investors—to drive the process. Indeed, most of the needed "hardware" improvements in the regulatory and institutional framework have now largely been completed, but important steps remain to be completed to develop the necessary "software" of the system in order to change practices and ways of doing business. The government will continue to have a critical role to play in monitoring and enforcement of regulations, but it will now be important for it to step back from intervening in the operation of markets and economic decision making, and instead to rely more—as in other advanced economies—on markets to impose discipline.

Although there is still a long way to go to complete the restructuring and reform process, this is largely a reflection of the magnitude of the necessary changes and should not detract from the major achievements of the last few years. Macroeconomic policy making has achieved much, and must continue to provide a stable environment for ongoing restructuring. Restructuring will be an ongoing, multiyear process, but continued tangible progress is of paramount importance. In sum, the policies adopted by the government are working and have been instrumental in the recovery from the crisis; their continuation is essential to ensure high medium-term growth and reduce vulnerability to shifts in market sentiment and other shocks.

STRUCTURAL PERFORMANCE CRITERIA IN THE KOREA PROGRAM

March 31, 1998

1. ***Performance criterion:*** Complete second-round evaluation of the remaining 20 merchant banks and suspend operations of those banks that fail to pass the evaluation. ***Status:*** Completed February 26, 1998.

2. ***Performance criterion:*** Allow foreign banks and brokerage houses to establish subsidiaries. ***Status:*** Came into effect on March 31, 1998.

June 30, 1998

3. ***Performance criterion:*** Complete assessment of the recapitalization plans of commercial banks. ***Status:*** Completed June 29, 1998.

4. ***Performance criterion:*** Establish a unit for bank restructuring under the FSC with adequate powers and resources to coordinate and monitor bank restructuring and the provision of public funds. ***Status:*** Unit established on April 1, 1998.

September 30, 1998

5. ***Performance criterion:*** Submit legislation to allow for the creation of mutual funds (by August 31, 1998). ***Status:*** Legislation submitted to the National Assembly on August 8, 1998.

6. ***Performance criterion:*** Require listed companies to publish half yearly financial statements prepared and reviewed by external auditors in accordance with international standards (by August 31, 1998). ***Status:*** Done.

December 31, 1998

7. ***Performance criterion:*** Obtain bids for Korea First Bank and Seoul Bank (by November 15, 1998). ***Status:*** Memoranda of understanding for the sale of Korea First Bank and Seoul Bank were signed with potential buyers on December 31, 1998 and February 22, 1999, respectively.

8. ***Performance criterion:*** Introduce consolidated foreign exchange exposure limits for banks, including their offshore branches (by November 15, 1998). ***Status:*** Done.

March 31, 1999

9. ***Performance criterion:*** Complete audit of KAMCO to international standards by a firm with international experience in auditing this type of agency and reflect any losses identified in KAMCO's audited financial statements. ***Status:*** Losses identified in the external audit report of March 12, 1999 were reflected in KAMCO's financial statement as of April 30, 1999.

10. ***Performance criterion:*** The FSC to complete supervisory examination of the KDB and make recommendations to the MOFE, as needed, as to any remedial actions required. ***Status:*** Examination completed on March 20, 1999; recommendations arising from the examination submitted to MOFE on April 26, 1999. In view of the change in law related to jurisdiction of MOFE and FSS, which gave FSS full supervisory powers over KDB effective May 21, 1999, MOFE transferred the report back to the FSS for action.

Period of April 1–August 31, 1999

11. ***Performance criterion:*** Issue regulation by April 1, 1999, requiring insurance companies that fail to meet the mandatory solvency margin thresholds (specified in the Memorandum on Economic Policies for the fifth quarterly review of the stand-by arrangement) to submit recapitalization plans by July 31, 1999. ***Status:*** Regulation issued on March 26, 1999.

12. ***Performance criterion:*** By June 1, 1999, begin publishing data on revenue, expenditure, and financing of the consolidated central government on a monthly basis with no more than a four week lag. ***Status:*** Data have been published on the Ministry of Finance and Economics website since July 1999. The delay was caused by technical difficulties related to the installation of a new computer system to facilitate reporting.

13. ***Performance criterion:*** By June 1, 1999, issue new loan classification guidelines that fully reflect capacity to repay. These guidelines would also cover the treatment of restructured loans and the valuation of equity and convertible debt acquired as part of corporate restructuring. ***Status:*** The authorities provided the staff with a draft in mid-June 1999. The authorities issued the guidelines on September 17, 1999, taking into account comments provided by Fund and Bank staff.

14. ***Performance criterion:*** For merchant banks, implement prudential rules for foreign exchange liquidity and exposures based on a maturity ladder approach by July 1, 1999. ***Status:*** Done before July 1, 1999.

15. ***Performance criterion:*** Issue instructions, effective July 1, 1999, that at least 20 percent of the new guarantees issued by the Korea Credit Guarantee Fund and Korea Technology Guarantee Fund will cover only 80–90 percent of the value of guaranteed obligations depending on the credit rating of the firm. ***Status:*** Done before July 1, 1999.

December 31, 1999

16. ***Performance criterion:*** By December 31, 1999, FSC to have completed a study of reserving by life insurance companies. ***Status:*** The study was completed on December 10, 1999.

17. ***Performance criterion:*** By December 31, 1999, FSC to have brought into force new classification and provisioning requirements for commercial banks, and for specialized and development banks that are based on forward looking criteria that reflect capacity to service all obligations. ***Status:*** Became effective on December 31, 1999.

January 31, 2000

18. ***Performance criterion:*** By January 31, 2000, consistent with the underlying legal framework, issue regulations to update the prudential rules for specialized and development banks and systems for reporting to the FSC on the same basis as commercial banks. ***Status:*** The relevant decree was revised on March 4, and the supervisory code was revised on July 14, 2000.

March 31, 2000

19. ***Performance criterion:*** By March 31, 2000, the FSC will issue minimum guidelines regarding corporate governance for insurance companies, which will include appointing nonexecutive directors to the board of directors, establishing an audit committee of which at least two thirds would be nonexecutive directors, and establishing risk management committees. ***Status:*** The FSC recommended guidelines to MOFE regarding corporate governance for insurance companies on March 16, 2000; the implementing Presidential decree became effective on June 23, 2000.

20. ***Performance criterion:*** By March 31, 2000, the FSC will issue regulations requiring ITCs and ITMCs to appoint nonexecutive directors, disclose investment guidelines and strategies to investors, to have investment funds subject to external audit, and introduce penalties on trustees that fail to observe their obligations to investors. ***Status:*** The regulation concerning the IT(M)Cs are in the Security Investment Trust Act, which was passed on January 21, 2000; the implementing Presidential decree became effective on June 23, 2000.

September 30, 2000

21. ***Performance criterion:*** By September 30, 2000, the FSC will issue instructions that financial institutions must classify restructured loans, including loans restructured through workouts, on the basis of "forward looking criteria." ***Status:*** The necessary instructions were issued prior to September 30, 2000.

Korea: Schedule of Purchases Under the Stand-By Arrangement, 1997–2000

Date	Amount of Purchase (SDR billion)	Conditions
December 4, 1997	4.1	Approval of arrangement. Disbursed.
December 18, 1997 1/	2.6	Completion of the first bi-weekly review. Disbursed.
December 30, 1997 1/	1.5	Agreement on revised program and financing package. Disbursed.
January 8, 1998 1/	1.5	Observance of end-December 1997 performance criteria and completion of second bi-weekly review. Disbursed.
February 15, 1998 1/	1.5	Observance of end-December 1997 performance criteria and completion of first full review. Disbursed.
May 15, 1998 1/	1.4	Observance of end-March 1998 performance criteria and completion of second full review. Disbursed.
August 15, 1998 1/	0.725	Observance of end-June 1998 performance criteria and completion of third full review. Disbursed.
November 15, 1998 1/	0.725	Observance of end-September 1998 performance criteria and completion of fourth full review. Disbursed.
February 15, 1999	0.18125	Observance of end-December 1998 performance criteria and completion of fifth full review. Disbursed.
May 15, 1999	0.18125	Observance of end-March 1999 performance criteria. Disbursed.
August 15, 1999	0.18125	Observance of end-June 1999 performance criteria and completion of sixth full review. Eligible to draw, but authorities chose not to make the purchase.
November 15, 1999	0.18125	Observance of end-September 1999 performance criteria. Eligible to draw, but authorities chose not to make the purchase.
February 15, 2000	0.18125	Observance of end-December 1999 performance criteria and completion of seventh full review. Eligible to draw, but authorities chose not to make the purchase.
May 15, 2000	0.18125	Observance of end-March 2000 performance criteria. Eligible to draw, but authorities chose not to make the purchase.
August 15, 2000	0.18125	Observance of end-June 2000 performance criteria and completion of eight full review. Eligible to draw, but authorities chose not to make the purchase.
November 15, 2000	0.18125	Observance of end-September 2000 performance criteria. Eligible to draw, but authorities chose not to make the purchase.
Total 1/	15.5	

1/ Drawings from the Supplemental Reserve Facility.

References

Baliño, Tomás, J. T., and Angel Ubide, 1999, "The Korean Financial Crisis of 1997—A Strategy of Financial Sector Reform," IMF Working Paper 99/28.

Bank of Korea, 2000, "Manufacturing Industries: Analysis of Cash Flow During 1999," August.

Barro, Robert J., 2001, "Economic Growth in East Asia Before and After the Financial Crisis," Paper prepared for the "Conference on the Korean Crisis and Recovery," Seoul, Korea, May 17–19, 2001. Forthcoming in *Korea: Crisis and Recovery,* edited by David T. Coe and Se-Jik Kim.

Basurto, Gabriela, Atish R. Ghosh, 2000, "The Interest Rate-Exchange Rate Nexus in the Asian Crisis Countries, " IMF Working Paper 00/19.

Boorman, Jack, Timothy Lane, Marianne Schulze-Ghattas, Aleš Bulíř, Atish R. Ghosh, Javier Hamann, Alexandros Mourmouras, and Steven Phillips, 2000, "Managing Financial Crises: The Experience in East Asia," IMF Working Paper 00/107.

Borensztein, Eduardo, and Jong-Wha Lee, 2000, "Financial Crisis and Credit Crunch in Korea: Evidence from Firm Level Data," IMF Working Paper 00/25.

Burnside, Craig et al., 2000, "Understanding the Korean and Thai Currency Crisis," *Federal Reserve Bank of Chicago Economic Perspectives* v24, n3, 45-60.

Chinn, Menzie, 1999, "Measuring Misalignment: Purchasing Power Parity and East Asian Currencies in the 1990s," International Monetary Fund Working Paper: WP/99/120.

Cho, Yoon Je, 1999, "Financial Crisis of Korea: A Consequence of Unbalanced Liberalization?" Paper prepared for World Bank Conference, "Financial Liberalization: How Far, How Fast?" Washington, D.C.

Cho, Yoon, Je, 2001, "Economic Adjustment Program of Korea After the Crisis: What Have We Learned?" Paper prepared for the "Conference on the Korean Crisis and Recovery," Seoul, Korea, May 17–19, 2001. Forthcoming in *Korea: Crisis and Recovery,* edited by David T. Coe and Se-Jik Kim.

Chung, Chae-Shick and Kim, Se-Jik, 2001, "New Evidence on High Interest Rate Policy During the Korean Crisis," Paper prepared for the "Conference on the Korean Crisis and Recovery," Seoul, Korea, May 17–19, 2001. Forthcoming in *Korea: Crisis and Recovery,* edited by David T. Coe and Se-Jik Kim.

Claessens, Stijn, Simeon Djankov, and Giovanni Ferri, 1999, "Corporate Distress in East Asia: The Effect of Currency and Interest Rate Shocks," Note No. 172, Finance, Private Sector, and Infrastructure Network, The World Bank.

Corsetti, Giancarlo, Paolo Pesenti, and Nouriel Roubini, 1999, "What Caused the Asian Currency and Financial Crisis?" *Japan and the World Economy*, Vol. 11, 1999, 305–373.

Dekle, Robert, Cheng Hsiao, and Siyan Wang, 1999, "Do High Interest Rates Appreciate Exchange Rates During Crisis?", forthcoming in *Oxford Bulletin of Economics and Statistics*.

Ding, Wei, Ilker Domaç, and Giovanni Ferri, 1998, "Is There a Credit Crunch in East Asia?," Asia Pacific Journal of Economics and Business 2 (2). 4–32.

Domaç, Ilker, and Giovanni Ferri, 1999, "Did the East Asian Crisis Disproportionately Hit Small Businesses in Korea?," Economic Notes 28 (3), 403–429.

Feldstein, Martin, 1998, "Refocusing the IMF," *Foreign Affairs* 77, 20–33.

Feldstein, Martin, 1999, "A Self-Help Guide for Emerging Markets," *Foreign Affairs* 78, 93–109.

Ferri, Giovanni, and Tae Soo Kang, 1999, "The Credit Channel at Work: Lessons from the Republic of Korea's Financial Crisis", World Bank Policy Research Working Paper 2190.

Ferri, Giovanni, TaeSoo Kang, and In-June Kim, 1999, "The Value of Relationship Banking During Financial Crises: Evidence from the Republic of Korea," World Bank Policy Research Working Paper 2553.

Fischer, Stanley, 1998, "Response: In Defense of the IMF, Specialized Tools for a Specialized Task," *Foreign Affairs* 77, 103–106.

Flood, Robert and Andrew K. Rose, 2001, "Uncovered Interests Parity in Crisis: The Interest Rate Defense in the 1990s," mimeo.

Frankel, Jeffrey, 2000, "Ten Lessons Learned from the Korean Crisis," Paper prepared for NBER Conference on the Korean Currency Crisis, February 2000.

Furman, Jason, Joseph E. Stiglitz, 1998, "Economic Crises: Evidence and Insights from East Asia," *Brookings Papers on Economic Activity* (2), 1–135.

Ghosh, Swati R., and Atish R. Ghosh, 1999, "East Asia in the Aftermath: Was There a Crunch?." IMF Working Paper 99/38.

Gobat, Jeanne, 1998, "Corporate Restructuring and Corporate Governance," Republic of Korea—Selected Issues, IMF Staff Country Reports No. 98/74.

Goldfajn, Ilan, and Taimur Baig, 1998, "Monetary Policy in the Aftermath of Currency Crises: The Case of Asia," IMF Working Paper 98/170.

Goldfajn, Ilan, and Poonam Gupta, 1999, "Does Monetary Policy Stabilize the Exchange Rate Following a Currency Crisis?," IMF Working Paper 99/42.

Goldstein, Morris, 1998, "The Asian Financial Crisis: Causes, Cures, and Systemic Implications," Institute for International Economics.

Goldstein, Morris, 2001, "IMF Structural Conditionality: How Much is Too Much?", Institute for International Economics, WP 01–04, April.

Gordon, James, 2001, "The Crisis in Asia: Are There Lessons for Zimbabwe?" in C. Mumbengegwi *Macroeconomic and Structural Adjustment Policies in Zimbabwe,* Palgrawe.

Graham, Edward M., 2001, "The Chaebol and the Continuing Crisis in Korea," draft manuscript, Institute for International Economics.

Hahm, Joon-Ho, and Frederic S. Mishkin, 2000, "The Korean Financial Crisis: An Asymmetric Information Perspective, *Emerging Markets Review* 1, 21–52.

International Monetary Fund, 1999, "Financial Sector Crisis and Restructuring, Lessons from Asia," Occasional Paper 188.

International Monetary Fund, 2000, "Republic of Korea: Economic and Policy Developments," IMF Staff Country Report No. 00/11.

International Monetary Fund, 2001, "Structural Conditionality in Fund-Supported Programs," available at www.imf.org/external/np/pdr/cond/2001/eng/struct/ index.htm.

Joh, Sung Wook, 2000, "Control, Ownership, and Firm Performance: The Case of Korea," Korea Development Institute.

Joh, Sung Wook and Ryoo, Sang Dai, 2000, "Evaluation of Changes in the Corporate Governance System of Korean *Chaebol,*" Draft Paper, Korea Development Institute.

Johnson, Simon et al., 2000, "Corporate Governance in the Asian Financial Crisis," *Journal of Financial Economics*, 58, October-November 2000, 141–186.

Johnson, Simon and Mitton, Todd, 2001, "Corporate Governance and Corporate Debt in Asian Crisis Countries," Paper prepared for the "Conference on the Korean Crisis and

Recovery," Seoul, Korea, May 17–19, 2001. Forthcoming in *Korea: Crisis and Recovery,* edited by David T. Coe and Se-Jik Kim.

Johnston, R. Barry et al., 1999, "Capital Account Liberalization in Selected Asian Countries," *Exchange Rate Arrangements and Currency Convertibility, Development and Issues*, IMF.

Karasulu, Meral, 2001, "The Profitability of the Banking Sector in Korea," *Republic of Korea—Selected Issues*, Country Report No. 01/101, International Monetary Fund.

Kim, Dae Il, 2001, "Labor Market Changes in Korea after the Crisis," Paper prepared for the "Conference on the Korean Crisis and Recovery," Seoul, Korea, May 17–19, 2001. Forthcoming in *Korea: Crisis and Recovery,* edited by David T. Coe and Se-Jik Kim.

Kim, Hyun E., 1999, "Was the Credit Channel a Key Monetary Transmission Following the Recent Financial Crisis in the Republic of Korea?," World Bank Policy Research Working Paper 2103.

Kim, Woochan and Byeon, Yangho, 2001, "Restructuring Korean Banks' Short-Term Debts in 1998: Detailed Accounts and Their Implications," Paper prepared for the "Conference on the Korean Crisis and Recovery," Seoul, Korea, May 17–19, 2001. Forthcoming in *Korea: Crisis and Recovery,* edited by David T. Coe and Se-Jik Kim.

Kraay, Aart, 2000, "Do High Interest Rates Defend Currencies During Speculative Attacks?," World Bank Policy Research Working Paper 2267.

Krueger, Anne O. and Yoo, Jungho, 2001, "Falling Profitability, Higher Borrowing Costs, and Chaebol Finances During the Korean Crisis," Paper prepared for the "Conference on the Korean Crisis and Recovery," Seoul, Korea, May 17–19, 2001. Forthcoming in *Korea: Crisis and Recovery,* edited by David T. Coe and Se-Jik Kim.

Krueger, Anne O., 2000, "Conflicting Demands on the International Monetary Fund," *American Economic Review* (Papers and Proceedings), 38-42.

Krueger, Anne O., 1999, "Why Crony Capitalism is Bad for Economic Growth," mimeo.

Krugman, Paul, 1999, "The Return of Depression Economics," *Foreign Affairs* 78, 56–74.

Lane, Timothy, Atish Ghosh, Javier Hamann, Steven Phillips, Marianne Schulze-Ghattas, and Tsidi Tsikata, 1999, *IMF-Supported Programs in Indonesia, Korea, Thailand: A Preliminary Assessment*, IMF Occasional Paper 178.

Lee, Jong-Wha and Rhee, Changyong, 2000, "Macroeconomic Impacts of the Korean Financial Crisis: Comparison with Cross-country Patterns," Background paper for NBER Conference on the Korean Currency Crisis, February 2000.

Ma, Henry, 2001, "Potential Output, the Output Gap, and Inflation in Korea," *Republic of Korea—Selected Issues*, Country Report No. 01/101, International Monetary Fund.

Mako, William P., 2001, "Corporate Restructuring in East Asia: Promoting Best Practices," *Finance and Development*, Volume 38, No. 1.

Mako, William P., 2001a, "Corporate Restructuring and Reform: Lessons from Korea," Paper prepared for the "Conference on the Korean Crisis and Recovery," Seoul, Korea, May 17–19, 2001. Forthcoming in *Korea: Crisis and Recovery,* edited by David T. Coe and Se-Jik Kim.

Martin, John P. and Raymond Torres, 2000, "Korean Labor Market and Social Safety Net Reforms: Challenges and Policy Requirements," *Journal of the Korean Economy,* Vol. 1, No. 2, 267–300.

Marquez, Jaime, 1999, "Income and Price Effects of Asian Trade," Federal Reserve Board, mimeo.

Nam, Il Chong, Kim, Joon-Kyung Kim, Yeongjae Kang, Sung Wook Joh, Jun-il Kim, 1999, "Corporate Governance in Korea," KDI Working Paper No. 9915.

Oh, Gyutaeg and Rhee, Changyong, 2001, "The Role of Corporate Bond Markets in the Korean Financial Restructuring Process," Paper prepared for the "Conference on the Korean Crisis and Recovery," Seoul, Korea, May 17–19, 2001. Forthcoming in *Korea: Crisis and Recovery,* edited by David T. Coe and Se-Jik Kim.

Park, Yooh-Shik, 2000, "Korea's *Chaebols* Issue Combined Financial Statements for First Time," *Korea Insight*, Korea Economic Institute, Vol. 2, No. 8.

Park, Yung Chul and Lee, Jong Wha, 2001, "Recovery and Sustainability in East Asia," Paper prepared for the "Conference on the Korean Crisis and Recovery," Seoul, Korea, May 17–19, 2001. Forthcoming in *Korea: Crisis and Recovery,* edited by David T. Coe and Se-Jik Kim.

Radelet, Steven, and Jeffrey D. Sachs, 1998, The East Asian Financial Crisis: Diagnosis, Remedies, Prospects," *Brookings Papers on Economic Activity* (1), 1–74.

Radelet, Steven, and Jeffrey D. Sachs, 1999, "What Have We Learned, So Far, From the Asian Financial Crisis?" Paper prepared for NBER Conference on the Korean Currency Crisis.

Shin, Hyun-Han and Park, Young S., 1999, "Financing Constraints and Internal Capital Markets: Evidence from Korean Chaebols," *Journal of Corporate Finance: Contracting, Governance and Organization*, June 1999, 169–191.

Yoshitomi, Masaru, and Kenichi Ohno, 1999, "Capital-Account Crisis and Credit Contraction," Asian Development Bank Institute Working Paper 99/2.