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CURRENCY EQUIVALENTS

Currency unit	=	won
JS\$1	=	W 788
W 100	=	US\$0.13
W 1,000,000	=	US\$1269

GLOSSARY OF ABBREVIATIONS

ASEAN	-	Association of Southeast Asian Nations
BOK	-	Bank of Korea
CD	-	Certificate of Deposit
CPI	-	Consumer Price Index
DFI	-	Direct Foreign Investment
EC	-	European Community
EPB	-	Economic Planning Board
FESB	-	Foreign Exchange Stabilization Fund Bond
GATT	-	General Agreement on Tariffs and Trade
GDP	-	Gross Domestic Product
GNP	-	Gross National Product
IMF	-	International Monetary Fund
KDB	-	Korea Development Bank
KDI	-	Korea Development Institute
KEXIM	-	Korea Export-Import Bank
KLTCB	-	Korea Long-term Credit Bank
LDC	-	Less Developed Country
MOE	-	Ministry of Environment
MSB	-	Monetary Stabilization Bond
NIC	-	Newly Industrializing Country
NUB	-	National Unification Board
OBS	-	Office of Bank Supervision and Examination
R&D	-	Research and Development
ULC	-	Unit Labor Cost
UNDP	-	United Nations Development Programme
WPI	-	Wholesale Price Index

KOREA
COUNTRY ECONOMIC MEMORANDUM

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This Country Economic Memorandum (CEM) provides a brief assessment of recent economic developments in Korea, and of their implications for the medium term. The CEM was prepared by Su-Yong Song, based on a mission in March, 1992. It was peer reviewed by Farrukh Iqbal and David Dollar.

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KOREA
COUNTRY DATA SHEET

Area: 98,500 sq km Population (1991): 43.27 Mln Density (per sq km): 439
Rate of growth: 0.9 %

Population Characteristics <u>a/</u>		Health <u>a/</u>	
Crude birth rate (per 1,000):	16	Infant mortality (per 1,000):	21
Crude death rate (per 1,000):	6	Population per physician:	1155
		Population per hospital bed:	596

Income Distribution (1988)		Access to Safe Water <u>a/</u>	
% of national income		% of population - urban:	100
Highest 10 % :	28	- rural:	76
Lowest 20 % :	7	- total:	93

Nutrition <u>a/</u>		Education <u>a/</u>	
Per capita calorie intake (cal/day):	2,852	Primary enrollment ratio:	108
Per capita protein intake (g/day):	78	(% of relevant age group)	

GNP Per Capita (US\$, 1991): 6,340 b/

GROSS NATIONAL PRODUCT (1991)	US\$ Mln	%	Annual Rate of Growth (% Constant Prices)		
			1980-85	1985-90	1991
GNP at Market Prices	280940	100.0	8.4	10.8	8.4
Gross Domestic Investment	110569	39.4	8.3	16.5	16.0
Gross National Saving	101587	36.2	15.0	16.5	9.9
Current Account Balance	-8827	-3.1	---	---	---
Export of Goods & NFS	82909	29.5	10.1	11.6	9.8
Import of Goods & NFS	90226	32.1	8.3	16.1	17.4

OUTPUT, EMPLOYMENT AND PRODUCTIVITY (1991)

	Value Added		Labor Force		V.A. per Worker	
	US\$ Mln	%	Mln	%	US\$	%
Agriculture	22793	8.1	3.1	16.7	7345	48.2
Industry	128561	45.4	6.5	35.2	19637	128.9
Service	131618	46.5	8.9	48.1	14745	96.8
Total/Average	282971	100.0	18.6	100.0	15233	100.0

GOVERNMENT FINANCE

	General Government			Central Government		
	W Bln	% of GDP		W Bln	% of GDP	
	1991	1986	1991	1991	1986	1991
Current Receipts	45902	20.8	22.1	33065	16.8	15.9
Current Expenditure	31064	14.5	15.0	28315	13.7	13.6
Current Surplus	14837	6.3	7.2	4751	3.1	2.3
Capital Expenditure	14500	5.4	7.0	4531	2.3	2.2

a/ Most recent estimates in Social Indicators of Development, 1991-92.
b/ Bank Atlas method.

MONEY, CREDIT & PRICES

	1986	1987	1988	1989	1990	1991
	(Y bln)					
Money Supply (M2) (average of year)	30396	36120	42893	50793	61576	73024
Bank Credit to Public Sector	5915	7854	6761	8825	10233	11898
Bank Credit to Private Sector _a/	43581	49187	57338	70264	86655	106288
	(Percentage or Index Numbers)					
Money as % of GDP	32.5	33.3	33.5	35.5	35.6	35.2
General Price Index (CPI) (1985=100)	102.8	105.9	113.4	119.9	130.2	142.8
Annual Percentage Changes in:						
General Price Index (CPI)	2.8	3.0	7.1	5.7	8.6	9.7
Bank Credit to Public Sector	--	32.8	-13.9	30.5	16.0	16.3
Bank Credit to Private Sector	--	12.9	16.6	22.5	23.3	22.7

BALANCE OF PAYMENTS

	1987	1988	1989	1990	1991
	(US\$ mln)				
Exports of Goods	46244	59648	61409	63124	69522
Imports of Goods	38585	48203	56812	65127	76587
Trade Balance	7659	11445	4597	-2004	-7065
Service Balance	977	1267	211	-451	-1615
Net Transfers	1218	1448	247	275	-147
Balance on Current Account	9854	14161	5055	-2179	-8827
Direct Private Foreign Investment	418	720	453	-105	--
Net MLT Borrowing	-9365	-3072	-2049	-902	--
Disbursement	4461	3928	3906	4727	--
Amortization	13826	7000	5955	5628	--
Other Capital (net)	1197	-2493	-339	1978	--
Increase in Reserves	-2104	-9316	-3120	1208	--
Gross Reserves (End-Year)	3739	12478	15342	14916	13815

EXCHANGE RATE

	1989	Annual Average 1990	1991	End Period July 1992
US\$1 = Won	671.46	707.76	733.35	788.10
1,000 Won = US\$	1.49	1.41	1.36	1.27

MERCHANDISE EXPORTS (AVERAGE 1989-1991)

	US\$ mln	%
Textile & Clothing	8131	12.2
Footwear	3910	5.9
Electrical & Electronics	18326	27.6
Passenger Cars	2007	3.0
Ships	2906	4.4
Iron & Steel	3527	5.3
Total Manufactured Goods	62923	94.7
Total Exports	66421	100.0

EXTERNAL DEBT, DEC 1990

	US\$ bln
MLT	23.2
ST	10.8
Total DOD	34.0

DEBT SERVICE RATIO (1990)

10.7 %

IBRD/IDA LENDING (6/30/92)
(millions of US\$)

	IBRD	IDA
Outstanding & Disbursed	6950.0	119.6
Undisbursed	673.9	0.0
Outstanding including Undisbursed	7624.0	119.6

_a/ Including the claims on official entities and non-bank financial institutions until 1985.

KOREA

COUNTRY ECONOMIC MEMORANDUM

A. Introduction and Overview

1.1 Despite the recent symptoms of "growing pains" in the process of transition to maturity, the Korean economy continues to prosper. Less cannot be said about an economy that has grown at an average rate of 10 percent during the last five years, seen per capita income rise by four thousand dollars to a level of \$6,500 in current dollars, and become the world's 12th largest trading nation in the process. However, this is not to say that such prosperity has come smoothly and without cost. Korea has experienced wrenching labor strife in recent years and presently suffers from a case of "overheating". It also faces challenges in the areas of labor, trade, finance, technology and social welfare. The fundamentals, however, remain robust and on this basis Korea should continue to prosper over the medium term.

1.2 One prominent characteristic of recent macroeconomic developments is overheated domestic demand. Evidence for this may be found in the following facts: First, the economy is experiencing labor shortage. Second, inflation has been accelerating in the last two years. The causes of overheating lie mostly in high private consumption and construction investment. During 1989-91, private consumption has risen faster than GNP, at an average rate of 10 percent (compared with 8 percent GNP growth), thanks in part to hefty wage increases and substantial capital gains in real estate. Construction investment has exploded, at an average rate of 20 percent, due mostly to the ambitious project of building two million housing units.

1.3 Korea is concerned that the recent "excessive" private consumption may have been undermining growth potential by depleting capital for equipment investment. Although it may well be a legitimate concern, it should also be understood that the surge in private consumption is a common transitional phenomenon when per capita income reaches a certain threshold level, as the public tries to catch up the previously repressed consumption. The explosion in construction investment similarly reflected a catch-up process in the provision of housing, which has lagged behind the developments in other social welfare areas. All in all, considering the robust equipment investment level, it would be fair to say that the recent high private consumption and construction investment have not crowded out equipment investment much.

1.4 Another prominent characteristic is difficulties in the labor market. Although the frequency of labor disputes declined sharply since 1990, nominal wages in manufacturing continued to increase rapidly, at an average rate of 20 percent during 1989-91. The rapid wage increases reflected the tight labor market, as evidenced by the unemployment rate of 2.3 percent. In turn, labor productivity in manufacturing increased by an average of 11 percent. Alarmed by the recent trend of wage increases, the government has intervened in the wage settlement process since 1990, mainly through wage guidelines, but with little success, in part due to the complex wage payment system involving various allowances and bonuses in addition to basic pay.

1.5 Emerging labor shortage is another concern in the labor market. This affects the small and medium manufacturing sector especially and is due in part to the overheated domestic demand and in part to ongoing structural changes in the supply side of the labor market. There are three major reasons for the changes in the supply side. First, successful family planning and changing family size preferences have reduced the population growth rate. Second, the pool of young rural workers from which industry had drawn liberally in the 1960s and 1970s has virtually dried up. Third, the expansion of secondary education has reduced the supply of workers even from within the urban population. The government intends to mobilize more female, older and handicapped labor as part-time workers by revising labor laws and increasing nurseries, among others. The government is reluctant to rapidly increase guest workers, fearing a possible adverse social impact.

1.6 Exports grew at an average rate of only 3 percent during 1989-91, in sharp contrast to the average of 20 percent during 1986-88. (Thus, the primary source of economic growth since 1989 has been domestic demand rather than the external sector.) The recent lackluster performance in exports has been due in part to external factors such as the sluggish world economy, but mostly to an erosion of export competitiveness. Among the factors responsible for an erosion of competitiveness, difficulties in the labor market and in technology upgrading are most serious. On the other hand, imports continued to surge due to a rapid increase in domestic demand. As a result, the current account balance has steadily worsened since 1989, after a period of expanding surpluses during 1986-88, and eventually turned to deficits of \$2 billion in 1990 and \$9 billion in 1991. Accordingly, the amount of external debt, which had rapidly declined from the peak of \$47 billion in 1985 to \$33 billion in 1989, increased to \$39 billion by the end of 1991.

1.7 Although Korea has made significant progress in trade liberalization, which was accelerated during 1987-88 in the wake of large trade surpluses and ensuing pressures from trading partners, elimination of restrictions on agricultural imports has been slower than some trading partners would have liked. The Korean government aims to speed up the liberalization of agricultural imports, which will demand considerable efforts to mitigate the substantial adjustments required in the agricultural sector. Another main area of negotiations for liberalization has been the services market. Efforts have been made to place foreign and domestic banks closer to an equal footing. Liberalization measures were also undertaken in the areas of securities, life insurance, advertising, wholesale and retailing, and travel services.

1.8 During the 1980s, the authorities have made several attempts to liberalize the domestic financial sector, but with limited success. Most recently, in December 1988, the authorities attempted to implement gradual interest rate deregulation, but postponed implementation due to unfavorable macroeconomic developments. In August 1991, the government announced a new four-phase interest deregulation schedule. According to the plan, lending rates are to be deregulated faster than deposit rates. The first phase took effect in November 1991 and was completed in June 1992. So far, about 10 percent of the lending rates have been deregulated. Further financial market

liberalization, if effectively and prudently implemented, will help strengthen the industrial sector and foster industrial transformation.

1.9 The Korean government has also successfully pursued a gradual capital market internationalization program since the early 1980s. Among others, indirect investment in Korean stocks has been allowed through foreign investment funds, such as the Korea Fund and Korea-Europe Fund. Starting January 1992, foreigners were allowed to invest directly in Korean stocks with certain limits. Portfolio investment by foreigners has been smooth and steady so far. While the government is committed to financial market deregulation in principle, the actual speed of implementation will depend on macroeconomic conditions over the next several years.

1.10 The Korean economy has been undergoing significant industrial restructuring, one distinctive trend being the declining light industry. The share of light industry in total manufacturing production decreased to an average of 38 percent during 1988-91, 5 percentage points lower than the average during 1985-87. The recent high wage increases not accompanied by the corresponding productivity increases, in combination with frequent labor disputes, accelerated the industrial transformation away from the labor-intensive light industry. Although the recent trend is not totally negative since it could facilitate the industrial restructuring, away from the less efficient industries and towards the higher value-added industries, efforts should be made to help the transformation be smoother, such as strengthening the social safety net for the workers in the declining labor-intensive industries.

1.11 Enhancing productivity will be the key for the successful industrial restructuring. In this regard, one crucial element is technology development. Korea made significant progress in promoting technology development during the 1980s, as indicated by the fact that Korea's R&D expenditure as a proportion of GNP tripled from 0.6 percent to 1.9 percent, which is higher than, for example, the R&D ratio in Taiwan, China. Nonetheless, Korean firms are concerned about slow domestic technology development. They also complain that industrialized countries have become more reluctant to transfer technology. Accordingly, the Korean government has identified technology development as one of the top priorities in the Seventh Five-Year Plan and aims to boost the R&D expenditure to GNP ratio up to an ambitious 3-4 percent (which is higher than the current level of the U.S. or Japan) by 1996.

1.12 Significant progress has been made in improving social welfare during the 1980s, especially in the areas of health insurance and housing. However, although poverty has decreased substantially in the process of rapid economic growth, it is argued that a sense of "relative deprivation" among lower and middle income classes has grown. It is widely perceived that the distribution of wealth, if not income, is considerably skewed, due mainly to the highly concentrated land ownership.

1.13 An interesting recent development is the improvement of relations between North and South Korea, which raises the prospect of economic

cooperation and perhaps even economic integration in the foreseeable future. This would have significant implications for the economic development of the Korean peninsula. The two economies are complementary in many respects and the combination of the capital and managerial and technological expertise of the South with the labor and natural resources of the North could possibly produce one of the strongest economies within decades. Of course, there are likely to be adjustment costs as well, especially arising from the need to dismantle the North's inefficient heavy industry sector. In any case, the path to greater cooperation and integration is strewn with political obstacles and recent movements have been erratic, with progress and optimism followed by occasional reversals and pessimism.

1.14 Concerned with the overheating of the economy, the government decided to implement contractionary policies in 1992. It aims at sacrificing the GNP growth in return for lower inflation and a smaller trade deficit. Fiscal and monetary austerity will be the key for the success of this policy option. An alternative policy option to ease overheating would be accelerating the pace of capital account liberalization, hence allowing foreign capital inflows and appreciation of the won. With this approach, Korea could narrow the investment-savings gap and lessen the inflationary pressure. In fact, experiences of Japan and Taiwan, China since the mid-1980s showed that the appreciation has effectively contributed to the successful industrial restructuring. This approach would have negative aspects, however. For one, if combined with high wage increases, it would seriously damage the competitiveness of labor-intensive small and medium industries. For another, it would depress exports and result in an increase in external debt. Domestic demand development in the first half of 1992 has shown signs of cooling off, especially in construction investment.

1.15 Korea's medium-term development targets are outlined in the Seventh Five-Year Plan. According to the Plan, GNP growth is targeted at an annual rate of 7.5 percent, and by 1996 per capita GNP is projected to reach above \$10,000. It is generally believed that the Korean economy will not have serious difficulties in achieving the macroeconomic targets per se, barring major external shocks. Rather, the real challenge is whether Korea will be able to join the ranks of industrialized countries by the end of this century, as the Korean government envisages. This will depend on how successfully Korea can resolve a number of problems of which the most significant are: (i) how to establish harmonious labor-management relation and resolve the labor shortage problem, (ii) how to further liberalize the economy, especially in the agricultural sector and the financial sector (iii) how to accommodate the industrial restructuring smoothly, (iv) how to enhance equity without undermining growth potential; and (v) how to balance continued growth with avoidance of environmental degradation.

B. Output and Demand Developments

1.16 After a major economic boom during the 1986-88 period, with over 12 percent GNP growth in each of these years, GNP growth rates decelerated to 6.8 percent in 1989 and then rebounded to 9.3 percent in 1990 and 8.4 percent in

1991. (See Table 1.1.) The drop in GNP growth rates since 1989 was chiefly a result of sluggish export growth. While strong export performance, which benefitted from low oil prices, low interest rates, and a depreciating won, mainly contributed to the 1986-88 boom, the major source of economic growth since 1989 has been domestic demand rather than the external sector.

1.17 Net Exports. Korean exports over the past three years have increased very modestly, compared with an average of 20 percent export growth during 1986-88. Exports decreased by 3.8 percent in 1989, and slightly increased by 4.2 percent in 1990, and picked up to 9.8 percent in 1991. Imports continued to surge at an average rate of 16.0 percent during 1989-91, which is similar to the average import growth rate during 1986-88. As a result, the trade balance continued to deteriorate from surpluses of \$11.5 billion in 1988 and \$4.6 billion in 1989 to deficits of \$2.0 billion in 1990 and \$7.1 billion in 1991. The trade balance during the first half of 1992 showed a slight improvement, registering a deficit of \$2.9 billion.

1.18 The lackluster export performance has been mainly due to the following factors: (i) substantial wage increases in addition to labor shortages and the decline in work discipline in the midst of frequent labor disputes, (ii) difficulties in technology upgrading; and (iii) lagged effect of a sharp appreciation of the won. (The issues of export competitiveness are discussed in detail in paras 1.54-1.58.) In sum, while Korea has been losing competitiveness in the traditional labor-intensive export items to countries like China, it has not yet climbed up to the next rung of the technology ladder to compete in more advanced items with countries like Japan. In turn, the continued surge in imports has been due to the rapid growth of domestic demand.

1.19 Domestic Demand. The macroeconomic situation since 1989 has been characterized by overheated domestic demand. In contrast to the previous years, private consumption grew faster than GNP, at an average rate of more than 10 percent during 1989-91 (i.e., 1.5 percentage points higher than in the period of rapid GNP growth during 1986-88), reflecting large wage increases and capital gains from real estate. Construction investment increased rapidly at an average rate of almost 20 percent during 1989-91, 8 percentage points higher than in the period of 1986-88, as a result of the ambitious construction project of two million housing units scheduled for 1988-92, although it cooled down substantially since the second half of 1991 due to the government's strict regulation on commercial building construction. Equipment investment growth remained high at an average rate of more than 15 percent over the last three years, compared with 19 percent during 1986-88, as investment in new product development, R&D, and automation increased rapidly. Consequently, the gross savings ratio fell below the gross investment ratio by 1.1 percent of GNP in 1990 and even further by 3.2 percent in 1991, a sharp turnaround from 1987-89 when the gross savings ratio exceeded the gross investment ratio.

1.20 There is a concern that the recent private consumption expenditure has been "excessive". However, it should be understood that the rapid increase in private consumption is a common transitional phenomenon observed in other NICs when per capita income reaches a certain threshold level as the

Table 1.1: GNP by Expenditure and by Industry

	1987	1988	1989	1990	1991 <u>a/</u>
(Rate of change, 1985 constant prices)					
Consumption	8.1	9.7	10.7	10.1	9.2
Private consumption	8.3	9.8	10.9	10.3	9.2
Public consumption	6.9	9.4	9.7	8.9	9.2
Gross domestic investment	17.7	15.2	20.9	18.3	16.0
Fixed investment	16.5	13.4	16.9	24.0	11.9
Of which:					
Equipment investment	19.4	13.0	15.2	18.4	12.8
Construction investment	14.0	18.5	18.5	29.1	11.2
Exports of goods and services	21.6	12.5	-3.8	4.2	9.8
Imports of goods and services	19.4	12.8	16.3	14.4	17.4
GDP	12.0	11.5	6.2	9.2	8.4
GNP	13.0	12.4	6.8	9.3	8.4
Agriculture, forestry, and fishing	-6.8	8.0	-1.1	-5.1	-0.8
Manufacturing	18.8	13.4	3.7	9.1	8.5
Construction	12.7	9.5	16.1	23.7	11.3
Services	14.0	12.8	8.3	10.1	10.6
(Z of GNP, current prices)					
Gross savings	36.8	38.6	35.4	36.1	36.2
Gross investment	30.1	31.1	33.6	37.2	39.4

a/ Preliminary.

Source: Bank of Korea, Economic Statistics Yearbook, 1992.

public tries to catch up the previously repressed consumption. Similarly, the explosion in construction investment reflected a catch-up process in the provision of housing, which has lagged much behind the developments in other social welfare areas and has become one of the most serious concerns among low- and middle-income households.¹ The recent high private consumption and construction investment did not seem to crowd out equipment investment much, considering the robust equipment investment level during 1989-91. Still, although the levels of the various components of aggregate demand seem socially desirable, in total they are straining the economy's productive capacity.

1.21 Evidence of overheating is provided in a recent study by the Bank of Korea (BOK) which shows that actual GNP growth rates in 1990 and 1991 were higher than "potential" GNP growth rates.² In response to the overheating of the economy, the Economic Planning Board (EPB) decided to implement contractionary policies in 1992. Domestic demand development during the first half of 1992 has shown signs of cooling off, most notably in construction investment

1.22 As far as the composition of GNP by industry is concerned, agriculture, forestry, and fishing continuously shrank during 1989-91, while construction showed rapid growth. More importantly, services grew faster than manufacturing. This reflects in part the shift away from export-oriented manufacturing in the wake of declining profitability in this sector.

C. Employment, Wages, and Prices

1.23 Employment Trends. During 1989-91, employment increased at an average rate of 3.3 percent, compared with the average rate of 4.1 percent during 1986-88. (See Table 1.2.) The decline of employment growth has been due mostly to the lower job creation as a result of the slower GNP growth, and also to the introduction of labor-saving technology. Also contributed was the lower job entrants due to the lower labor force growth. (Labor issues will be discussed in detail in paras 1.78-1.81.) An important sectoral employment trend is that there has been a shift of the labor force from manufacturing to services and construction. During 1989-91, employment in manufacturing increased at an average rate of only 1.9 percent (compared with the average rate of 10.0 percent during 1986-88), in sharp contrast to an average rate of 14.7 percent in construction and 5.7 percent in services. While the rapid

¹ The ratio of the available housing units to the total households in 1989 was 71 percent, which is a deterioration from, for example, 78 percent in 1970.

² Potential GNP was defined as attainable GNP under a natural rate of unemployment without causing inflation. The BOK employed three different approaches of estimation including production function approach and obtained similar results. Potential GNP growth during 1989-91 was estimated at 6.8-7.2 percent based on the production function approach.

increase in employment in construction was due to an unique factor (i.e., a two million housing unit construction project), the transfer of workers from manufacturing to services reflected workers' preferences, namely, avoiding so-called 3D (dirty, dangerous, and difficult) jobs. Employment in agriculture, forestry, and fishing continued to decline. The increase in female employment was slightly higher than the increase in male employment. Reflecting the tight labor market situation, the unemployment rate dropped to 2.3 percent in 1991; the economy has thus been virtually at full employment in recent years.

Table 1.2: Employment Indicators

	1987	1988	1989	1990	1991
(Rate of change, %)					
Economically active population	4.7	2.6	3.8	2.9	2.8
Male	3.2	2.7	2.9	2.8	3.1
Female	7.0	2.3	5.3	3.0	2.4
Employment	5.5	3.2	3.8	3.0	3.0
Male	4.3	3.7	2.9	2.9	3.5
Female	7.3	2.4	5.2	3.1	2.3
Agriculture, forestry & fishing	-2.2	-2.7	-1.9	-3.7	-5.7
Mining and manufacturing	14.7	4.5	2.6	-0.1	1.6
Of which: Manufacturing	15.4	5.7	3.7	0.1	1.8
Social overhead capital and other services	4.4	5.0	6.8	7.1	6.6
Of which: Construction	3.5	11.3	11.3	17.5	15.2
Services	4.5	4.2	6.2	5.7	5.3
Unemployment rate (%)	3.1	2.5	2.6	2.4	2.3

Source: National Statistical Office, Monthly Statistics of Korea.

1.24 Wage Developments. With the advent of a more democratic political system since August 1987, it became more difficult to resist labor's pressure for substantial wage increases: nominal wages in the manufacturing sector increased by an average of more than 20 percent during 1988-91, as shown in Table 1.3. It should be emphasized that although frequent labor strikes have

been partly responsible for rapid wage increases, the principal cause has been the tight labor market situation, especially since 1990. It should also be noted that workers' demand for high wage increases was linked to, among others, the rapidly increasing housing costs, as well as wage repression in earlier years. Labor productivity in the manufacturing sector increased by an average of 11 percent during the period, compared with the average of 14 percent during 1986-88. As a result, unit labor costs increased by an average of 8 percent during the period, causing a concern for industrial competitiveness. (See Graph 1.1.) However, it should also be noted that high wages could have a positive medium-term impact by facilitating the industrial restructuring, away from the declining labor-intensive industries and towards the higher value-added capital- and technology-intensive industries.

Table 1.3: Wages, Productivity, and Unit Labor Cost

	1987	1988	1989	1990	1991
(Rate of change, %)					
Wages					
All industries	10.1	15.5	21.1	18.8	17.5
Manufacturing	11.6	19.6	25.1	20.2	16.9
Labor productivity <u>a/</u>					
All industries	11.7	11.9	6.9	13.8	11.6
Manufacturing	12.4	12.3	6.9	14.3	11.9
Unit labor cost <u>b/</u>					
All industries	-1.4	3.2	13.3	4.4	5.3
Manufacturing	-0.7	6.5	17.1	5.1	4.5

a/ Calculated based on physical output for all regular employees.

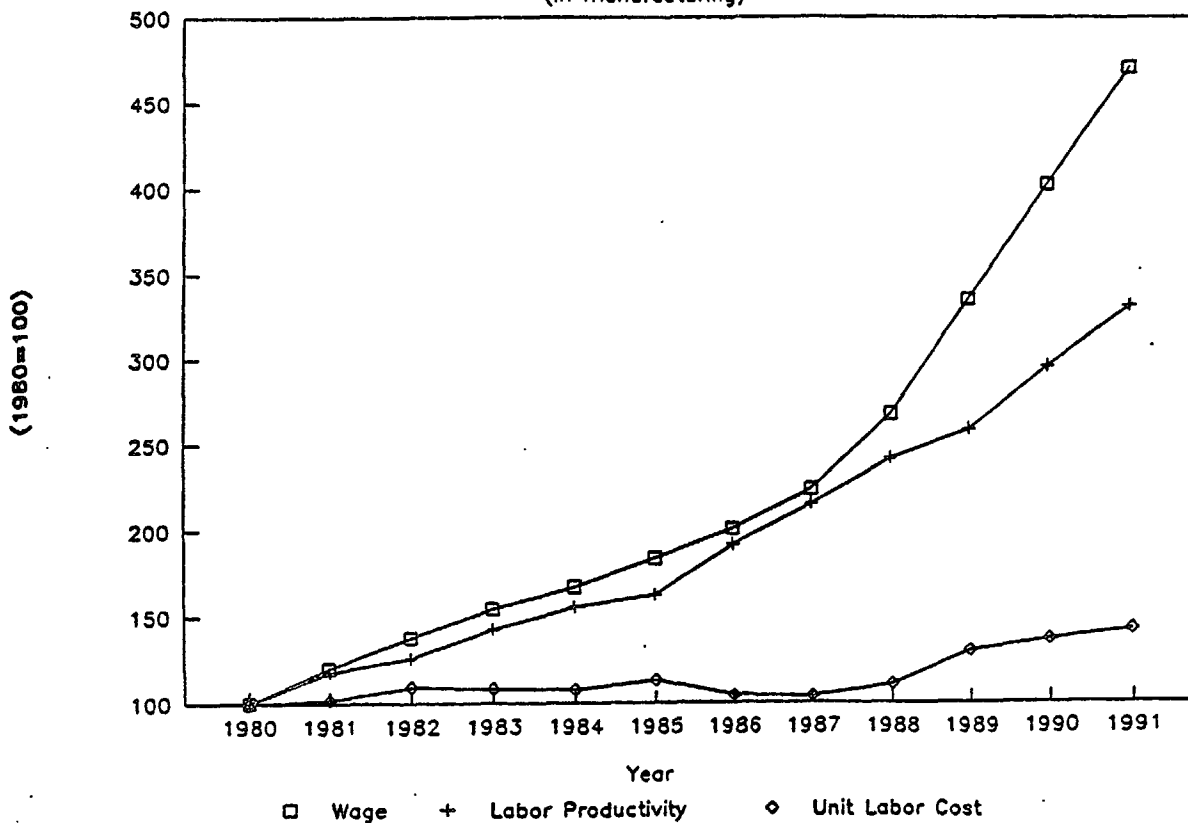
b/ Unit labor cost index = wages index / labor productivity index.

Sources: Ministry of Labor; Korea Productivity Center;
staff calculations.

1.25 Alarmed by the recent trend of wage increases, the government started intervening in the wage settlement process in 1990. An attempt was made to establish a national wages board similar to that of Singapore, but it was rejected by the labor unions. The government has asked public corporations and other public sector agencies to hold down wage increases to a single-digit, and also recommended the same to large private enterprises. However, wage guidelines have typically not succeeded, due in part to the complex wage payment system; labor and management have circumvented the government's pressure by holding down basic pay but raising other components

of compensation, such as allowances and bonuses, beyond the guideline. Consequently, actual wage increases of 18.8 percent in 1990 and 17.2 percent in 1991 were much higher than "settled" wage increase rates of 9.0 percent in 1990 and 10.5 percent in 1991. This development has prompted the government to adopt the "total compensation system", whereby a wage guideline is applied to the total compensation package which comprises basic pay, allowances, and bonuses. In 1992, the government is imposing a strict guideline of 5 percent applied to the total compensation package for 780 large, high-wage companies, government agencies and government-invested enterprises.

Graph 1.1: Wages, Productivity, and ULC
(in manufacturing)



Sources: Ministry of Labor; Korea Productivity Center.

1.26 **Labor Disputes.** The number of labor disputes skyrocketed during 1987-89, totaling more than 7,000 compared with an annual average of 100 before 1987. (See Table 1.4.) Since 1990, however, the number of labor disputes declined sharply to pre-1987 levels. However, lost man-days due to disputes have not decreased proportionally since the recent disputes were centered in large-size companies and have been of longer duration. For example, the share of companies with more than 300 employees in total labor disputes increased to 47 percent in 1991 from 23 percent in 1987 and the average duration of dispute also increased to 18 days in 1991 compared with 5 days in 1987. Several factors contributed to the decline in labor disputes: (i) both management and labor union have acquired negotiating skills from the previous disputes, (ii) the radical labor movement has weakened; and (iii) a common concern about industrial competitiveness has emerged.

Table 1.4: Trends in Labor Disputes

	1987	1988	1989	1990	1991
Number of labor disputes	3749	1873	1616	322	234
Of which:					
Illegal (%)	(94.1)	(79.6)	(68.5)	(56.8)	(39.7)
Companies with more than 300 employees (%)	(23.7)	(24.0)	(24.8)	(35.1)	(47.4)
Man-days lost (million)	6.9	5.4	6.3	4.5	3.3
Average duration (days)	5.3	10.0	19.2	19.1	17.8

Source: Ministry of Labor.

1.27 **Price Behavior.** After rather stable prices during 1987-89, inflation flared up in 1990 and 1991, recording the highest increases since 1981. Consumer price inflation accelerated to 8.6 percent in 1990 and 9.7 percent in 1991 compared with the annual average of 5.3 percent during 1987-89. (See Table 1.5.) Wholesale price inflation likewise jumped to 4.2 percent in 1990 and 5.4 percent in 1991, in contrast to the annual average of 1.6 percent during 1987-89. In terms of the GNP deflator, inflation similarly rose to 10.6 percent in 1990 and 10.9 percent in 1991 from the annual average rate of 4.7 percent during 1987-89.

1.28 This acceleration in inflation during 1990-91 was due essentially to sharply rising domestic demand, in part made possible by the substantial wage increases. Since the acceleration of inflation caused even higher wage demands, we are beginning to see the emergence of wage-price spirals.

Expansionary monetary policy in 1990, triggered by an effort to boost the depressed stock market, also contributed.

**Table 1.5: Changes in Price Indices
(1985=100)**

	1987	1988	1989	1990	1991
(Rate of change, %)					
Wholesale prices	0.5	2.7	1.5	4.2	5.4
Consumer prices	3.0	7.1	5.7	8.6	9.7
GNP deflator	3.5	5.9	4.7	10.6	10.9
Import prices (\$)	10.9	14.2	3.3	-3.1	-3.2
(won)	4.0	2.8	-4.5	2.4	0.4
Export prices (\$)	8.3	13.5	6.9	0.9	1.4
(won)	1.5	2.2	-1.2	6.7	5.2
Land prices	14.7	27.5	32.0	20.6	12.8
Housing prices	0.5	15.3	14.1	17.1	10.3

Sources: Bank of Korea, Economic Statistics Yearbook, 1992;
Ministry of Construction; staff calculations.

1.29 Among the components of the CPI, prices of agricultural, livestock, and marine products increased most rapidly, reflecting a sharp increase in distribution costs, due to bottlenecks in transportation infrastructure. Also conspicuous was inflation in service prices as a result of a substantial increase in labor costs. In fact, high inflation in service prices has been one of the main reasons for the gap between the CPI inflation rate and the WPI inflation rate. Among the components of the WPI, agricultural product prices increased most notably whereas the prices of manufactured products increased moderately. Prices of imports did not contribute much to the inflation, moderate depreciation of the won in 1990 and 1991 notwithstanding, since the dollar prices of imported goods decreased during the period.

1.30 The area in which inflation has been most serious is real estate. Land and housing prices increased rapidly at an average annual rate of 23 percent and 15 percent, respectively, during 1988-91, although the increase rates decelerated in the second half of 1991. The substantial increase in real estate prices played an important role in accelerating wage-price spirals since workers' wage demand has been linked to the development of land and housing prices.³ Furthermore, capital gains in real estate further skewed the distribution of wealth, and exacerbated the sense of relative deprivation felt by lower and middle income classes.^{4 5} Although "speculation" on real estate was mainly responsible for the skyrocketing inflation in land and housing, government policies such as greenbelt legislation and rigid zoning practices have also been responsible. It should be noted that rapid increases in housing prices is one of the main reasons why the consumer price inflation perceived by the public is higher than the official one; the CPI in Korea does not include the imputed rental cost of owner-occupied housing and consequently tends to understate the true rate of inflation.

1.31 Government has singled out inflation reduction as a top priority in its Economic Management Plan (EMP) for 1992, and aims to contain the CPI inflation below 8 percent and the WPI rate below 4.5 percent. For this purpose, in addition to contractionary fiscal and monetary policy, it will exercise incomes policy such as a strict wage guideline. So far this year, the CPI and the WPI inflation rates have decelerated and so too have land and housing prices.

³ Real wages measured in terms of housing services or land have not changed much over the period 1974-89, in sharp contrast to an impressive gain in purchasing power deflated by the CPI. (See Distribution of Income and Wealth in Korea, Economic Development Institute, forthcoming.)

⁴ It was estimated that capital gains (including unrealized) from land was as much as the size of the GNP in 1988. (Source: same as the footnote 3)

⁵ The distribution of land ownership is extremely concentrated around the top, as indicated by the fact that the top 5 percent own 65 percent of total land area. The Gini coefficient of land ownership was 0.849 in 1988, compared with 0.653 for Japan in 1987. (See "Housing Prices, Affordability, and Government Policy in Korea", by K.H. Kim, World Bank, Asia Regional Series no.99, July 1991.)

D. Fiscal and Monetary Developments

1.32 Fiscal Developments. After overall budget surpluses during 1987-89, thanks to robust tax revenues and restrained expenditure, the overall budget balance of the consolidated public sector turned to a deficit.⁶ The consolidated deficit totaled 0.3 percent of GNP in 1990 and widened further to 2.8 percent in 1991. (See Table 1.6.) This turnaround is a result of rapid expansion in expenditure due to (i) investment needs for infrastructure, (ii) increased local government finance following the introduction of local autonomy in 1990; and (iii) higher social expenditures.

1.33 On the revenue side, the tax burden ratio (the ratio of total tax revenue to GNP) increased moderately to an average of 19.2 percent during 1989-91 from the average of 17.6 percent during 1986-88. The current tax burden ratio is still low compared with most developed countries and government aims to increase the ratio up to 22 percent by 1996. Recent revenue intake has been high, consistently surpassing rather conservative targets in the budget, thanks largely to the booming economy. Almost half of the total tax revenue is collected from indirect taxes, although recently the share of direct taxes increased significantly. Among the components of expenditure, social welfare expenditure expanded rapidly; for example, expenditure on housing increased by an average of 54.2 percent during 1987-90.

1.34 Recent fiscal practice has seen the routine use of large supplementary budgets. Such supplementary budgets accounted for 21.1 percent of the original budget in 1990 and 16.3 percent in 1991. This is a sharp increase over the 1987 and 1988 supplementaries. Such budgets have provided strong fiscal stimulus to the economy and contributed to overheating in recent years. The practice of supplementary budgets is one of the main risks to fiscal discipline these days when the economy is overheated.

1.35 Another risk is the discretionary power of local government bodies. Since the introduction of the local autonomy in 1990, provincial and municipal budgets have exploded; they increased by 83 percent in 1990, making the ratio of local government expenditure to central government expenditure jump to 45 percent in 1990 from 29 percent in 1989. Local congresses are allowed to issue bonds up to a certain limit (one billion won) without permission of the Ministry of Finance. This has resulted in a tendency to be rather liberal in spending, and not fully coordinated with national development objectives.

1.36 The 1992 budget is 12.8 percent higher than the revised 1991 budget, but 23.1 percent higher than the original 1991 budget. Such a substantial increase does not seem to be consistent with contractionary policies envisaged in the EMP, although the government justifies this by asserting that there will be no supplementary budget this year; this is rather questionable considering that there is a presidential election scheduled toward the end of

⁶ The consolidated public sector comprises the central government, local government, and non-financial public enterprises.

this year. The present fiscal stance seems to be at variance with the anti-inflation objective espoused by the government.

Table 1.6: Fiscal Developments

	1987	1988	1989	1990	1991 <u>a/</u>
(Z of GNP)					
Central government					
Revenue	18.1	19.0	20.3	20.1	19.1
Expenditure	16.5	16.8	20.0	19.7	20.2
Balance	1.6	2.1	0.3	0.4	-1.1
Local government					
Revenue	9.4	9.4	11.0	11.7	10.6
Expenditure	8.8	8.8	10.1	10.9	12.1
Balance	0.6	0.6	0.9	0.8	-1.5
Public enterprises <u>b/</u>					
Revenue	4.2	3.8	3.8	4.2	4.2
Expenditure	4.6	4.2	4.1	5.2	5.9
Balance	-0.4	-0.4	-0.3	-0.9	-1.6
Consolidated public sector <u>c/</u>					
Revenue	22.2	22.8	23.8	25.7	23.4
Expenditure	21.5	21.1	22.7	26.0	26.2
Balance	0.7	1.8	1.0	-0.3	-2.8

a/ Preliminary.

b/ Non-financial.

c/ Central government, local government, and public enterprises.

Source: Bank of Korea, Economic Statistics Yearbook, 1992.

Table 1.7: Functional Classification of General Government Expenditure

	1987	1988	1989	1990	1991 <u>a/</u>
(% of total expenditure)					
General public services	15.1	15.0	15.3	14.9	15.8
Defense	21.2	20.5	18.6	16.1	16.2
Education	16.6	16.1	16.0	26.2	10.3
Health	3.3	3.3	3.0	2.7	2.9
Social security and welfare	5.7	6.3	7.0	7.1	8.0
Housing the community amenities	7.6	7.2	11.9	13.4	12.4
Of which: housing	2.9	3.0	6.3	8.4	6.5
Other community & social services	2.2	0.8	0.7	0.4	0.4
Economic services	22.1	25.2	24.1	26.6	23.8

a/ Budget.

Source: Bank of Korea, Economic Statistics Yearbook, 1992.

1.37 **Monetary Developments.** Monetary growth during the last five years has tended to be at the upper end of government's target range. Monetary growth during 1987-89 was rapid, accelerated in 1990, and then returned to 1987-89 level in 1991. As seen in Table 1.8, the pace of monetary growth 1987-89 was set largely by rapid increase in reserve money from the external sector which the government was unable to fully sterilize. Rapid monetary increase in 1990 was essentially a consequence of the government's effort to boost the depressed stock market. In December 1989, the government instructed commercial banks to lend 2.8 trillion won (which corresponds to 4.7 percent of M2 as of end of 1989) to investment trust companies for purchasing stocks, an action eventually financed by an increase in reserve money. The growth rate of domestic credit similarly accelerated during 1989-91. The government's target of M2 growth in 1992 is 18.5 percent, the same as the actual M2 growth in 1991.

1.38 Differential developments in three monetary aggregates, namely, reserve money, M2 (money in circulation, demand deposits, and time and savings deposits) and M3 (M2 plus non-bank financial institution deposits and debenture issues plus commercial bills and certificates of deposits) reflect changes in the financial system and carry implications for monetary

Table 1.8: Monetary Developments

	1987	1988	1989	1990	1991
	(average during the year)				
(Rate of change, %)					
Reserve money	19.2	41.0	36.9	24.7	17.4
M1 <u>a/</u>	19.5	15.5	14.1	18.1	16.1
M2 <u>b/</u> (government target)	18.8 (15-18)	18.8 (15-18)	18.4 (15-18)	21.2 (15-19)	18.6 (17-19)
M3 <u>c/</u>	30.8	28.5	27.8	28.6	23.3
Domestic credit A <u>d/</u>	15.2	12.4	23.4	22.5	22.0
Of which:					
Private sector credit	12.9	16.6	22.5	23.3	22.7
Domestic credit B <u>e/</u>	16.4	18.7	29.5	29.3	25.3
Of which:					
Private sector credit	16.5	23.0	30.1	29.5	25.0
M2 / Reserve money (= Money multiplier)	7.4	6.3	5.4	5.3	5.3
M2 / M3 (%)	44.0	40.5	37.9	35.4	33.4

a/ M1 = currency plus demand deposits.

b/ M2 = M1 plus time and savings deposits.

c/ M3 = M2 plus other financial institution deposits and debenture issues plus commercial bills and CDs.

d/ Domestic credit extended by banking system.

e/ Domestic credit A plus domestic credit extended by nonbank financial institutions.

Source: Bank of Korea, Economic Statistics Yearbook, 1992.

management. The money multiplier (M2 / reserve money) declined sharply from 7.4 in 1987 to 5.4 in 1989, due to a rapid increase in reserve money from the external sector, and since then it has remained stable at around 5.3. M3 has been growing faster than M2, reflecting a rapid expansion in non-bank financial institutions. Accordingly, the ratio of M2 to M3 declined steadily from 44 percent in 1987 to 33.4 percent in 1991. In this regard, the effectiveness of monetary targeting using M2 as the sole indicator has become weaker and, as a result, recently new monetary aggregates such as M2B, which excludes long-term savings deposits but includes short-term deposits at non-bank institutions, are also being considered.

1.39 Monetary authorities continue to rely heavily on direct control of the scale and direction of bank lending, in the absence of effective tools for indirect monetary control, such as reserve requirements, the discount rate, and open market operations. Upward adjustments of the required reserve ratio have been sparingly used because the commercial banking system has tended to suffer from reserve deficiency. Currently, the required reserve ratio is 11 percent for demand deposits and 8 percent for savings deposits. The scope for the discount rate policy has been limited since the bulk of the BOK loans are automatic rediscounts of policy loans extended by the banking sector. Open market operations have been retarded by an underdeveloped money market, lack of adequate securities for trading, and the absence of the secondary markets.

1.40 As a preliminary step toward open market operations, issues and redemption of Monetary Stabilization Bonds (MSBs) have been used as the major tool for absorbing liquidity. MSBs are issued by the BOK at substantially below market interest rates, currently around 13 percent compared with around 18 percent for one-year corporate bonds. Interest rates on MSBs are determined by the BOK and they have not changed frequently. No regular auction market for MSBs exists and commercial banks and non-bank financial institutions are persuaded to purchase the amounts set by the Ministry of Finance. Currently, about 40 percent of the newly issued MSBs are purchased by commercial banks and the rest by non-bank financial institutions, such as securities and insurance companies. There does exist a secondary market for MSBs and the current rate is around 16.5 percent with the rather high margin of 3.5 points, suggesting that primary purchasers are being insufficiently compensated. The government aims to liberalize the interest rates of MSBs in the third phase of the interest rate deregulation program scheduled for 1994-96. (See para 1.43.)

1.41 Although MSBs played an important role in partially sterilizing liquidity during the period of current account surpluses, they put pressure not only on the balance sheets of the BOK, but also on the liquidity position of the financial institutions, resulting in crowding out the shallow market and often seriously depressing the corporate bond market. In addition, the interest bill on the outstanding stock of MSBs in itself has become a source of reserve money expansion. Consequently, Foreign Exchange Stabilization Fund Bonds (FESBs) and Treasury Bills have recently been used increasingly, in effect transferring part of the financial burden from the BOK to the government. Accordingly, the issuance of MSBs has declined from 19.8 trillion won in 1989 and 20.3 trillion won in 1990 to 18.9 trillion won in 1991, while

the issuance of FESBs and T-bills averaged 2.4 trillion won and 2.0 trillion won a year, respectively, during 1989-91.

1.42 The government continues to guide the financial system through credit control. Most notably, banking institutions are subject to mandatory targets for lending to selected subsectors which are considered either less-privileged or strategic. For example, each commercial bank is required to maintain its credit outstanding to small- and medium-sized firms above 35 percent of its total loans outstanding. The share of policy loans extended by the banking sector continues to be about 46 percent of total domestic credit. (This issue of policy loans will be discussed further in para 1.84.)

1.43 Domestic Financial Liberalization. Since the 1980s, several attempts have been made to enhance the efficiency of the financial sector through liberalization. Most recently, in December 1988, the authorities attempted to implement gradual interest rate deregulation plan. However, the outcome was less favorable than anticipated, mainly due to the turnaround in macroeconomic situation in 1989. The authorities, without effective tools for indirect monetary control, were forced to increase the money supply to avoid a rapid rise in interest rates, which could put pressure on inflation. Stabilizing interest rates became a higher priority as the rising interest costs exacerbated the already depressed export and investment. Consequently, the authorities effectively postponed the implementation.

1.44 In August 1991, the government announced a new four-phase interest deregulation schedule, in coordination with the opening up of the capital market. (See paras 1.65-1.66.) According to the schedule, interest rates are to be deregulated gradually since it was feared that rapid deregulation might cause instability in financial markets.⁷ Lending rates are to be liberalized faster than deposit rates, and among deposit rates, rates on long-term, large-size deposits are to be liberalized first.

1.45 The first phase of reform took effect November 1991 and was completed in June 1992. During the first phase, lending rates such as bank overdraft loan rates and short-term finance companies' commercial paper rates, were deregulated. Also deregulated were deposit rates for, among others, large-denomination bank certificates of deposits and securities companies' repurchase agreements and rates on long-term deposits with maturities over 3 years. During the second phase, which will extend through the end of 1993, the government will deregulate all lending rates at both bank and non-bank financial institutions, excluding policy loans, as well as long-term deposit rates with maturities over 2 years. In the third stage, scheduled for 1994-96, lending rates on policy loans, rates on MSBs, and deposit rates with maturities over 2 years would be deregulated. Finally in the fourth stage, after 1996, all remaining restrictions on deposit rates, as well as coupon rates on government and public bonds are to be lifted. While the government is committed to the liberalization in principle, the actual speed of

⁷ In fact, rapid full-scale financial market deregulations turned out to be costly, for example, in the Philippines and Indonesia.

implementation will depend on macroeconomic conditions at various points over the next several years.

1.46 As far as preconditions for successful interest rate liberalization are concerned, one positive development is that the financial health of commercial banks has improved significantly during the past few years. Other positive developments are enhanced productivity in banking and lowered entry barriers to banking. On the other hand, the issue of policy loans will need to be carefully addressed in the design of effective financial liberalization. Another concern is the current supervision framework to ensure the financial discipline of commercial banks. These issues are discussed at great length in paras 1.82-1.86.

1.47 Since the implementation of the first phase in November 1991, about 10 percent of the lending rates have been deregulated. Interest rates initially jumped by 2-3 percentage points and then leveled off, decreasing by 1-1.5 percentage points, dispelling government's worry that reform would lead to abrupt interest rate increase. (In fact, it is argued that the increase in actual borrowing cost may not be significant because the "compensating balance" practice, i.e., a substantial portion of a requested loan to be deposited in return for the loan, has been discouraged since the introduction of interest rate deregulation.)

E. Trade Account Performance

1.48 **The Current Account.** Korea's current account balance has steadily worsened since 1989, after a period of expanding surpluses during 1986-88. (See Table 1.9.) The main source of this deterioration was sluggish merchandise exports; merchandise exports in US dollars increased by an average of only 5.2 percent during 1989-1991, in sharp contrast to the average increase of 31.2 percent during the export boom of 1986-88. Also responsible was a rapid increase in merchandise imports; merchandise imports in US dollars increased rapidly, at an average rate of 16.3 percent during 1989-91, higher than the average increase of 13.4 percent during 1986-88. The invisible trade balance also showed a similar pattern, turning to deficit in 1990 and 1991 due to a rapid increase in payments for travel and transportation. Recent current account deficits have been financed by increases in external borrowing and, to a lesser extent, drawdowns in gross official reserves. The current account balance recorded during the first half of 1992 was \$4.1 billion.

1.49 **Trade Composition.** Recent trends in export composition clearly shows that Korea is moving into more sophisticated exports. There has been a definite shift away from primary goods towards manufactured goods. Also, within manufactured goods there has been a shift away from light industry items to heavy and chemical industry items. (See Table 1.10.) The share of garment dropped most notably, reflecting difficulties of labor-intensive industries. The share of technology- and skill-intensive items such as color televisions, personal computers, and passenger cars, which had increased sharply between 1980 and 1988, increased only slightly during 1989-91, due in

part to the sluggish technology upgrading and also to the turnaround in the won-yen rate.

Table 1.9: Summary of Balance of Payments, 1987-91
(US\$ million)

	1987	1988	1989	1990	1991
Current account balance	9854	14161	5055	-2179	-8827
(% of GNP)	(7.6)	(8.2)	(2.4)	(-0.9)	(-3.1)
Trade balance	7659	11445	4597	-2004	-7065
Exports	46244	59648	61409	63124	69522
Imports	38585	48203	56812	65127	76587
Invisible trade balance	977	1267	211	-451	-1615
Credit	10010	11252	12642	14269	15469
Debit	9033	9985	12431	14719	17085
Transfers (net)	1218	1448	247	275	-147
Long-term capital (net)	-5836	-2733	-3363	548	4349
Of which:					
Loans and foreign investment	-1945	-1892	-1105	33	3019
Basic balance	4018	11428	1692	-1632	-4478
Short-term capital (net)	-7	1336	60	3334	362
Errors and omissions	1191	-589	701	-1976	375
Overall balance	5202	12175	2453	-274	-3740

Source: Bank of Korea, Economic Statistics Yearbook, 1992.

Table 1.10: Composition of Exports by Major Item

	1980	1985	1988	1989	1990	1991
Primary	9.1	8.0	6.1	5.8	5.4	4.7
Manufacturing	90.9	92.0	93.9	94.2	94.6	95.3
Light	49.4	38.6	41.8	42.0	41.1	n.a.
Of which:						
Textiles	12.9	9.3	9.3	10.2	10.9	n.a.
Garments	15.9	14.1	13.9	14.0	11.7	n.a.
Footwear	5.2	5.2	6.3	5.8	6.6	5.3
Heavy and Chemical	41.5	53.4	52.1	52.2	53.6	n.a.
Of which:						
Iron and steel	9.0	8.1	6.5	6.9	6.5	6.3
Nonferrous metals	2.3	1.7	1.7	1.4	1.3	n.a.
Chemicals	4.4	3.0	2.7	2.9	3.6	n.a.
Electrical & electronics	12.1	16.1	26.8	27.4	27.4	27.9
Transport equipment	5.6	20.0	9.9	7.9	8.8	n.a.
Of which:						
Ships	3.5	16.6	2.9	2.9	4.3	5.7
Passenger cars	0.3	1.7	5.5	3.3	2.9	3.5

Sources: Korea Foreign Trade Association; Office of Customs Administration.

1.50 The composition of imports also shows a trend away from primary goods towards manufactures. (See Table 1.11.) For example, the share of oil bill declined from 25 percent in 1980 to 10 percent in 1991, mainly reflecting import price changes. Among capital equipment, the share of general machinery continued to increase due to brisk equipment investment in manufacturing sector.

1.51 **Market Diversification.** Korea has been attempting to break out of its pattern of importing capital goods and intermediate inputs from Japan and exporting finished goods to the U.S. There has been some progress in trade diversification between 1988 and 1991, both in exports and in imports. The share of Korean exports shipped to the U.S. declined steadily from 35.3 percent in 1988 to 25.8 percent in 1991, in contrast to little change between 1985 and 1988. (See Table 1.12.) This was mainly due to a loss of price competitiveness as a result of wage hikes, and consequent market share losses

in labor-intensive items such as garment and footwear to other developing countries like China and the ASEAN countries. Trade diplomacy with the U.S. also contributed to this trend. The share of the exports going to Japan also declined to some extent from 19.8 percent to 17.2 percent between 1988 and 1991, in contrast to 4.8 percentage points increase between 1985 and 1988. Exports to the EC countries has not changed much, at around 13 percent. It is noteworthy that the share of exports to the rest of the world increased significantly by 12 percentage points between 1988 and 1991; for instance, the share of the ASEAN countries increased by 4.9 percentage points while the share of the socialist countries (notably China) increased by 2.4 percentage points.

Table 1.11: Composition of Imports by Major Item

	1980	1985	1988	1989	1990	1991
Primary	49.8	37.0	26.5	27.2	26.6	26.9
Of which:						
Crude oil	25.3	17.9	7.1	8.0	9.1	10.0
Manufacturing	50.2	63.0	73.5	72.8	73.4	73.1
Of which:						
Chemicals	13.9	15.3	19.2	18.7	20.3	n.a.
Capital equipment	23.0	35.6	36.8	36.4	36.5	37.0
Of which:						
General machinery	8.1	8.1	11.5	13.0	13.7	14.2
Electrical and electronics	7.4	11.6	17.9	16.3	15.7	n.a.
Transport equipment	5.8	14.9	7.1	6.3	6.4	n.a.
Consumer goods	3.0	3.1	4.4	4.5	4.7	n.a.

Sources: Korea Foreign Trade Association; Office of Customs Administration.

1.52 The share of imports coming from Japan dropped steadily from 30.7 percent to 25.9 percent between 1988 and 1991, in striking contrast to 6.4 percentage points increase between 1985 and 1988, as seen in Table 1.12. It has been mainly due to the government's efforts to divert imports away from Japan and toward the U.S. to rectify both chronic bilateral trade deficits with Japan and surpluses with the U.S. The share of imports from the U.S., however, declined slightly between 1988 and 1991. The EC's share of Korean

imports has not changed much, at approximately 12 percent. Similar to the trend in exports, the share of the rest of the countries increased by 5.8 percentage points (2.1 percentage points increase from the socialist countries, mainly China).

Table 1.12: Exports and Imports by Region

	1980	1985	1988	1989	1990	1991
(Share in total, %)						
<u>Exports</u>						
United States	26.3	35.5	35.3	33.1	29.8	25.8
Japan	17.4	15.0	19.8	21.6	19.4	17.2
EC	15.5	10.8	13.4	11.9	13.7	13.5
Other	40.8	38.7	31.4	33.5	37.1	43.4
Of which:						
ASEAN	6.5	5.0	5.0	6.4	7.8	9.9
Socialist countries	0.2	0.5	0.9	1.5	2.7	3.3
<u>Imports</u>						
United States	21.9	20.8	24.6	25.9	24.3	23.2
Japan	26.3	24.3	30.7	28.4	26.6	25.9
EC	7.2	9.8	11.7	10.6	12.1	12.1
Other	44.5	45.0	33.0	35.2	37.1	38.8
Of which:						
ASEAN	6.6	8.7	6.6	6.7	7.3	7.5
Socialist countries	0.2	1.9	3.2	3.7	4.1	5.3
(in US\$ million)						
<u>Trade balance</u>						
United States	-284	4265	8647	4728	2418	-335
Japan	-2818	-3017	-3885	-3992	-5936	-8764
EC	1096	196	2111	915	455	-151
Other	-2781	-2296	2012	-740	-1764	-405

Sources: Korea Foreign Trade Association; Office of Customs Administration.

1.53 The bilateral trade balance with the U.S. steadily deteriorated since 1989, recording a deficit in 1991 for the first time since 1982, after registering huge surpluses during 1986-88. In turn, the trade deficit with Japan widened even further during 1989-91, reflecting Korea's structural dependence on Japanese machinery and equipment. The trade balance with the EC countries also worsened since 1989, recording a deficit in 1991. Accordingly, in 1991 Korea registered bilateral trade deficits vis-a-vis each of its major trading partners.

1.54 Export Competitiveness. Lackluster export performance in recent years has been due in part to external factors such as sluggishness in major export markets, especially in the U.S., but primarily to an erosion of export competitiveness. Among the factors contributing to an erosion of competitiveness, difficulties related to labor and technology are most serious. As discussed in para 1.24, during 1988-91 manufacturing wages increased by cumulative 82 percent whereas labor productivity in manufacturing increased by cumulative 45 percent, resulting in a cumulative increase of 33 percent in unit labor cost. In comparison with competing countries during 1988-90, Korean manufacturing unit labor cost (in US dollars) increased by 52 percent in contrast to 34 percent increase in Taiwan, China or 6 percent decrease in Japan. However, it should be also noted that if compared for a longer period, for example, between 1980 and 1990, the increase rate of manufacturing unit labor cost in Korea is substantially lower than in Taiwan, China or Japan, as shown in Graph 1.2.

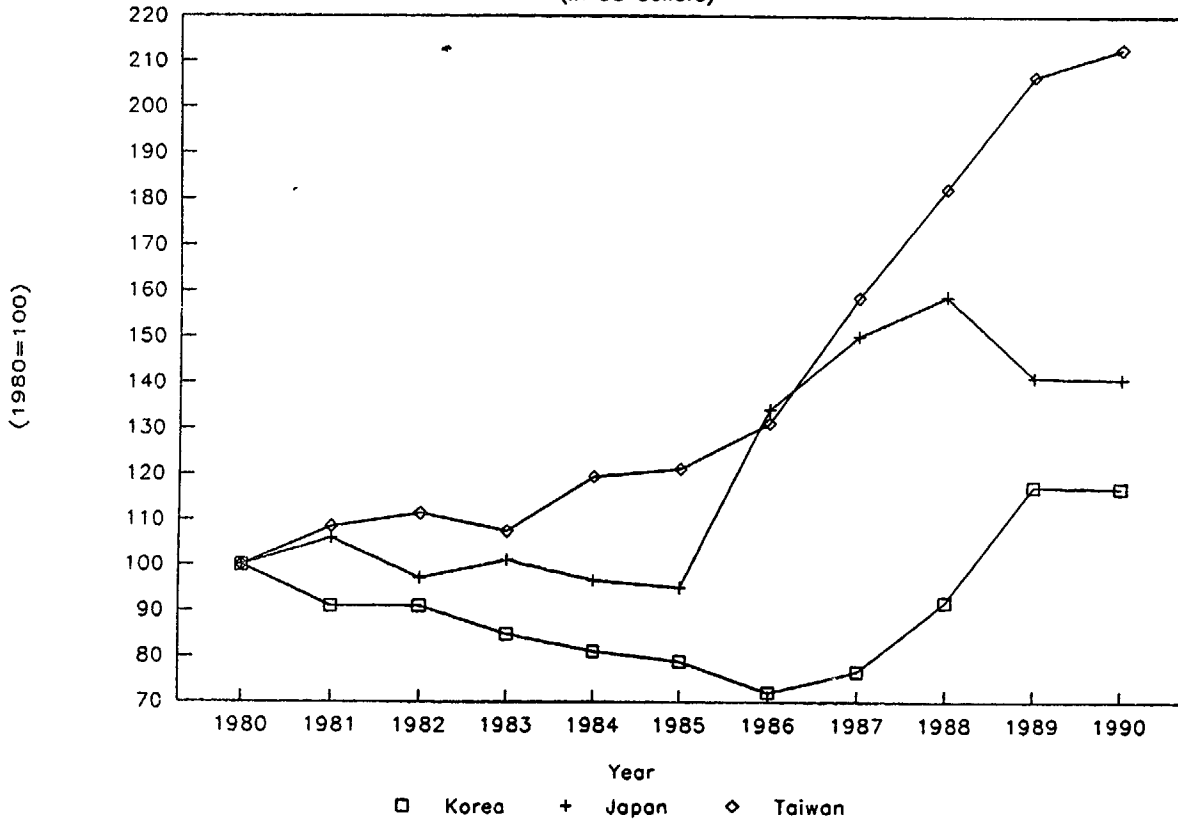
1.55 In addition, frequent work stoppages and decline in work discipline led to a deterioration in quality. The rejection rate for export items inspected by the Office of Manufacturing Promotion jumped from 3.0 percent in 1988 to 5.3 percent in 1991, much higher than, for example, the rejection rate of 2.5 percent for Taiwan, China or 1.5 percent for Japan in 1989. It should be noted that a substantial part of cost-push pressure on export prices has been absorbed by squeezing profit margins, for fear of losing markets. As a result, the profitability of export-oriented firms has deteriorated, and in fact since 1988 it has become lower than that of domestic-oriented firms, reversing the previous trend. For example, the ratio of net profit to total sales for export-oriented firms declined from 2.0 percent in 1987 to 0.6 percent in 1990, while for domestic-oriented firms it averaged a consistent 1.7-2.4 percent over the period.

1.56 Government has identified difficulties in technology upgrading as a major culprit. In fact, it seems that Korean firms have not been fast enough in upgrading quality and moving towards more sophisticated items. For example, Hyundai automobiles was very successful with a model which requires lower-end technical sophistication, but subsequently it has been struggling with a model which commands medium-level sophistication. The situation is similar for consumer electronics such as VCRs. As shown in Table 1.10, this difficulty could be exemplified by the fact that while the export share of electrical and electronic products and passenger cars (which have the highest ratios of R&D expenditure to total sales among manufacturing), increased sharply up to 1988, with products of lower-end technology sophistication, since then the share has been stagnant due partly to slow transition to the

more sophisticated technology ladder.⁸ Technology issues are further discussed in paras 1.89-1.90.

Graph 1.2: Manufacturing Unit Labor Costs

(in US dollars)



Source: Korea Labor Institute, Wage-Related Statistics, 1991.

⁸ It was argued that the largest gainers among Korean exports in the U.S. market between 1975 and 1988 were electric and electronic products and transport equipment mainly due to the highest R&D investment / sales ratios; For example, the ratio of R&D expenditure to total sales for electric and electronic products and transport equipment was 3.66 percent and 3.73 percent compared with 1.88 percent for total manufacturing. See "A Review of Korea's Trade Pattern" by D.M.Leipzig and S.Y.Song, World Bank, Asia Regional Series no.96, March 1991.

1.57 There are two other factors which contributed further to the erosion of competitiveness. One is a rapid increase in transportation cost due to insufficient expansion of roads, railroads, and ports. The share of transportation cost in total sales of manufacturing increased from 1.5 percent to 2.3 percent between 1987 and 1990. Investment in infrastructure has been stagnant during the 1980s, at 3-4 percent of GNP, due to a shift towards social welfare expenditures. In order to ease infrastructure problems, the government plans to increase infrastructure investment up to 5 percent of GNP during 1992-96. Competitiveness has also been affected by exchange rate developments; the real effective exchange rate of the won, defined as trade-weighted exchange rate adjusted for differentials in inflation vis-s-vis trading partners, appreciated by 27 percent between 1987 and 1989, in contrast to, for instance, 3 percent depreciation for the real effective exchange rate of the Japanese yen. (The exchange rate issue is further discussed in paras 1.67-1.69.)

1.58 In general, the government has avoided intensification of direct export promotion measures such as providing more preferential export credit. Rather, it has concentrated on enhancing the competitiveness of manufacturing through efforts to limit wage increases, improve labor productivity, and promote technology development. It is worth noting that in 1991 the government instructed each of the top conglomerates to choose three core businesses, for which bank credit ceilings for the group as a whole was to be exempted, with a view to encouraging specialization and hence enhancing competitiveness. All in all, the government policy of improving the environment for industrial competitiveness rather than extending direct support for export is expected to continue within the industrial policy framework of the Seventh Five-Year Plan.

1.59 Trade Diplomacy. The process of trade liberalization, underway since the early 1980s, was accelerated during 1987-88 in the wake of large trade surpluses and pressures from trading partners, particularly the U.S. During 1984-88, the average unweighted tariff rate was reduced from 24 percent to 18 percent. The reduction of quantitative restrictions was more conspicuous; the ratio of restricted items to total items was reduced from 19.6 percent to 4.6 percent. However, the number of agricultural imports subject to quantitative restrictions has not declined much, from 26 percent to 20 percent, while for nonagricultural items it declined from 17 percent to less than 2 percent. Subsequently, under the 1989-91 trade liberalization program, the average tariff rate was further reduced to 11.5 percent. The government lifted virtually all remaining restrictions on manufactured imports and launched the liberalization program of agricultural imports, consistent with Korea's GATT commitment to phase out all remaining restrictions on imports, predominantly agricultural, forestry, and fishery product, by July 1, 1997, and its bilateral negotiations with trading partners.⁹ However, elimination of restrictions on agricultural imports has been slower than some trading partners would have liked. According to the government's plan during

⁹ Korea disinvoked Article XVIII:B of the GATT (on trade restrictions for balance of payments purposes) on January 1, 1990 due to the improvement of its balance of payments situation and reserve position.

1992-94, the average tariff rate will be reduced to 8 percent, comparable to that in industrial countries, and the ratio of restricted items for agricultural imports will be reduced to 8 percent.¹⁰ Government will also abide by the results of the Uruguay Round negotiations. The envisaged liberalization of agricultural imports will demand considerable efforts to mitigate the substantial adjustments required in the agricultural sector.

1.60 Another area of negotiations for liberalization has been the services market. Although Korea progressively liberalized restrictions on trade in services during the latter half of 1980s, foreign access to the services markets remains more restricted than to goods markets. Improved access to the Korean services market has been being taken up by trading partners in the context of bilateral discussions such as financial policy talks with the U.S., as well as negotiations in the Uruguay Round. In the financial services area, since 1984 the government has been moving toward a direction of national treatment of foreign bank branches in terms of regulation and supervision, but they were still treated differently in certain respects. Recently in 1990 and 1991, however, a number of important steps have been taken to place foreign and domestic financial institutions closer to an equal footing, including the elimination of the ceiling on foreign banks' paid-in capital, the easing of restrictions on multiple branching of foreign banks, an increase in local currency funding opportunities for foreign banks, and permission for foreign banks to participate in the full range of trust business. The government also began authorizing the operation of foreign securities companies in late 1990, with certain conditions such as reciprocal opportunities in the home countries of the foreign firms, in preparation for stock market opening up in January 1992. The life insurance market has been opened to foreign branch offices since 1987, and to joint ventures since January 1988. Similarly, liberalization measures were also recently undertaken in other services sectors, especially vis-a-vis the U.S., such as advertising, wholesaling and retailing, maritime transportation, travel services, movies, and data base and data processing. Bilateral negotiations are still going on in areas such as telecommunications with the U.S. and intellectual property protection with the EC.¹¹

1.61 In turn, restrictions on Korean exports to industrial countries have continued. Various non-tariff barriers, such as voluntary exports restraints, have been imposed by trading partners in addition to regulations by Multi-Fiber Agreements on textiles and clothing. These restrictions cover a broad range of manufactured goods, and are imposed by some 20 countries. The share of Korean exports subject to quantitative restrictions has not changed much during 1988-90, at around 17 percent of total exports. The number of

¹⁰ Korea submitted a list of 15 items, including rice, that could not be liberalized because of Korea's "Non-Trade Concerns" to the GATT Negotiating Group on Agriculture late 1990.

¹¹ Korea was designated a "priority foreign country" with regard to telecommunication trade practices in February 1989 in the context of the U.S. Omnibus Trade and Competitiveness Act, and was put on a "priority watch list" for possible violations of intellectual property rights in May 1990.

anti-dumping and countervailing duties imposed declined since 1987, but administrative and technical barriers are still cited by Korean exporters as active impediments to advanced country markets.

F. Capital Account Performance

1.62 External Debt Developments. During 1986-89, Korea's external debt declined rapidly from the peak of \$47.1 billion in 1985 (when Korea was the fourth most heavily indebted LDC in the world) to \$32.8 billion in 1989. Long-term liabilities were prepaid using part of the current account surpluses registered then. Since then, however, external debt increased to \$34 billion in 1990 and further to \$39.3 billion in 1991, the highest since 1987, as the external accounts went into deficit. (See Table 1.13.) Nevertheless, the amount of external debt does not cause a serious concern unlike in the mid-1980s, as the debt to GNP ratio continued to decline to 14 percent in 1991 compared with 45 percent in 1986. The debt service ratio also declined to 10.7 percent in 1990 from 26.7 percent in 1986. Moreover, net external debt, i.e., gross external debt minus foreign assets, declined substantially from \$34.7 billion to \$7.2 billion between 1986 and 1990, as foreign assets accumulated rapidly. The increase in external debt is expected to continue for some years to come due to anticipated current account deficits.

1.63 Direct Foreign Investment. The government has been progressively liberalizing direct foreign investment (DFI) since 1984, when the previous positive system for approving direct investment was replaced by a negative system. The amount of DFI investment (approvals) substantially increased from \$0.4 billion to \$1.3 billion between 1986 and 1988, and then it declined to \$1.1 billion in 1989 and further to \$0.8 billion in 1990, before increasing again to \$1.4 billion in 1991. (See Table 1.14.) Around a half of the direct investment has come from Japan; Japan's portion has declined steadily from 60 percent to 40 percent between 1987 and 1990. The share of investment from the U.S. increased from 16 percent in 1987 to 30 percent in 1990. In manufacturing, while DFI was concentrated on machinery and electric and electronics during 1987-88, DFI in chemicals and transport equipment accelerated during 1989-90. Among services, investment in hotels boomed during 1986-89 in the wake of the Seoul Olympics, whereas investment in the financial sector accelerated since 1990 due to opening up of capital market. Recently, foreign investment has been further liberalized in a number of areas, including pharmaceutical manufacturing, cosmetic wholesaling, data processing, travel agencies, advertising agencies, general foreign trade, alcoholic beverage wholesaling, and computer communications. The government also revised the Foreign Capital Inducement Act in March 1991 in order to speed up the foreign investment approval process.

1.64 On the other hand, there also has been a substantial movement in the opposite direction, i.e., direct foreign investment by Koreans. Korea's DFI has significant implications on the changing pattern of comparative advantage and ensuing industrial restructuring. The amount of overseas investment increased slowly between 1986 and 1989, and then doubled to \$1020 million in 1990 and increased further to \$1125 million in 1991. (See Table 1.14.) Rapid

increases have occurred especially in Southeast Asia and China. Korea's DFI in Asia occurred predominantly in Indonesia (\$403 million during 1989-91), mainly in oil and gas. It also occurred, to a lesser extent, in Malaysia (\$89 million during 1989-91), China (\$65 million), the Philippines (\$54 million) and Thailand (\$54 million), primarily in labor-intensive garment and assembly-type manufacturing, in the wake of labor disputes and high wage increases at home. Korean companies have also initiated joint venture investments in Eastern Europe, mostly in general trading and assembly type manufacturing, efforts aimed at penetrating new markets.

Table 1.13: External Debt Developments a/

	1986	1987	1988	1989	1990	1991
Gross external debt (\$ bil)	46.7	39.8	35.7	32.8	34.0	39.3
Medium- & long-term debt (%)	80.2	76.7	72.6	70.1	68.2	n.a.
Short-term debt (%)	19.8	23.3	27.4	29.9	31.8	n.a.
Foreign assets (\$ bil)	12.0	13.2	23.9	26.5	26.8	n.a.
Net external debt (\$ bil)	34.7	26.6	11.8	6.3	7.2	n.a.
Debt service payments (\$ billion)	11.2	18.2	10.5	8.8	8.3	n.a.
Principal repayments (%)	65.6	82.4	71.7	67.9	67.7	n.a.
Interest payments (%)	34.4	17.6	28.3	32.1	32.3	n.a.
Debt service ratio (%)	26.7	32.3	14.8	11.8	10.7	n.a.
Debt / GNP ratio (%)	45.5	31.0	21.1	15.6	14.4	14.0
Growth rate of ext. debt (%)	-0.9	-14.8	-10.3	-8.2	3.7	15.5

a/ Discrepancies exist between the figures in the World Debt Tables and the Korean government figures. For example, total external debt in 1990 was \$31.7 billion according to the Korean authorities.

Sources: World Bank, World Debt Tables, for 1986-90; Ministry of Finance, for 1991.

Table 1.14: Direct Foreign Investment

	1986	1987	1988	1989	1990	1991
<u>Direct Investment by Foreigners</u>						
Total (\$ million)	355	1060	1283	1090	803	n.a.
(share in total, %)						
By country						
Japan	56.0	59.8	49.5	49.2	40.5	n.a.
United States	35.8	16.3	26.2	30.0	30.0	n.a.
By industry						
Manufacturing	50.7	59.9	62.4	62.1	66.6	n.a.
Chemicals	3.1	7.3	9.9	14.9	16.2	n.a.
Machinery	3.6	34.0	24.0	8.2	9.4	n.a.
Electric and electronics	8.3	25.2	24.7	13.6	9.8	n.a.
Transport equipment	23.5	5.9	4.9	12.9	15.3	n.a.
Services	48.2	39.8	36.3	37.6	32.8	n.a.
Hotel	45.6	34.0	24.0	25.4	7.2	n.a.
Finance	1.2	2.7	9.6	6.0	17.6	n.a.
<u>Overseas Investment by Koreans</u>						
Total (\$ million)	172	397	213	492	1020	1125
(share in total, %)						
By region						
Southeast Asia	4.2	33.0	19.5	25.2	30.3	38.3
North America	46.0	44.6	45.2	46.5	47.3	41.2
Europe	3.2	1.7	8.8	3.7	9.1	8.2
By industry						
Mining	42.8	50.9	30.5	15.5	14.9	n.a.
Manufacturing	40.8	39.7	35.0	45.3	53.5	n.a.
Trading	8.3	5.1	19.0	12.2	21.6	n.a.

Source: Ministry of Finance.

1.65 Liberalizing Portfolio Foreign Investment. The internationalization of Korea's capital market has been carried out cautiously since the announcement of the long-term plan in 1981. Since 1984, limited indirect investment in Korean stocks has been allowed through foreign investment funds, the Korea Fund and Korea-Europe Fund. Foreign securities companies were allowed to open representative offices, but they were not allowed to conduct domestic business. The authorities also allowed certain Korean companies to issue equity-linked bonds and depository receipts in international capital markets within specified limits. Further steps were taken following the announcement of a capital market internationalization program for the period 1988-92. The authorities established a third closed-end equity fund, the Korea Asia Fund, in 1991, permitted direct transactions among foreigners of Korean stocks acquired through equity-linked bonds, and created three matching equity funds.

1.66 Starting in January 1992, foreigners were allowed to invest directly in Korean stocks, subject to a 10 percent limit of total outstanding shares of each listed company and a 3 percent limit for each foreign investor. Free repatriation of capital is allowed in principle. Portfolio investment by foreigners was smooth and steady so far, dispelling government's worry about abrupt capital movements. During January 3-March 13, \$662 million has been invested, of which about 50 percent came from the UK and 15 percent from the US and none from Japan. Investments have been concentrated on low price-earnings ratio (PER) stocks. Foreign capital inflows could not revive the depressed stock market; the composite stock price index temporarily shot up to 700 from 630 and then dropped to 600 level afterwards. In fact, the Korean stock market has been continuously depressed since April 1989 when the stock price index reached the peak at 1000 level, government's various efforts notwithstanding. Considering the current low stock price index, considerable foreign investment is anticipated. In March 1992, the government announced the schedule for further capital market liberalization in the context of the Korea-US Financial Policy Talks, including a short-term plan (1992-93), which comprises national treatment of foreign financial institutions investing in Korean stocks and extension of the daily fluctuating range of the foreign exchange rate.

1.67 Exchange Rate Management. The Korean won was "undervalued" during 1985-88 due to the sudden realignment of the hard currencies in the Plaza Agreement of September 1985. The Korean government was reluctant to allow the won to appreciate as Korea was enjoying the current account surpluses thanks to the enhanced price competitiveness, especially vis-a-vis Japan. The government allowed a moderate appreciation in 1987 and a sharp appreciation in 1988, due to the pressure by trading partners, especially the U.S., and also to difficulties in monetary control and ensuing inflationary pressure. (See Table 1.15 and Graph 1.3.) However, trading partners, notably the U.S., continued to complain that the exchange rate was being manipulated by the Korean government and that transparency in exchange rate management was required. It prompted the government to change the exchange rate management

system from the previous "basket system", a managed float, to more market-oriented "market-average exchange rate (MAR) system" in March 1990.¹²

Table 1.15: Exchange Rate Developments
(1980 = 100)

		Nominal Effective Exchange Rate <u>a/</u>	Real Effective Exchange Rate <u>b/</u>
1987	I	70.5	78.2
	II	70.6	79.0
	III	73.1	82.5
	IV	70.7	80.7
1988	I	71.5	83.1
	II	74.5	87.0
	III	78.9	92.3
	IV	79.2	93.2
1989	I	82.5	97.4
	II	86.7	101.9
	III	87.2	103.2
	IV	86.0	103.0
1990	I	84.0	100.9
	II	82.5	101.5
	III	79.1	98.3
	IV	75.8	94.4
1991	I	76.1	96.9
	II	78.7	101.1
	III	77.6	101.0
	IV	73.1	96.1
1992	I	71.7	95.0
	II	70.3	93.9

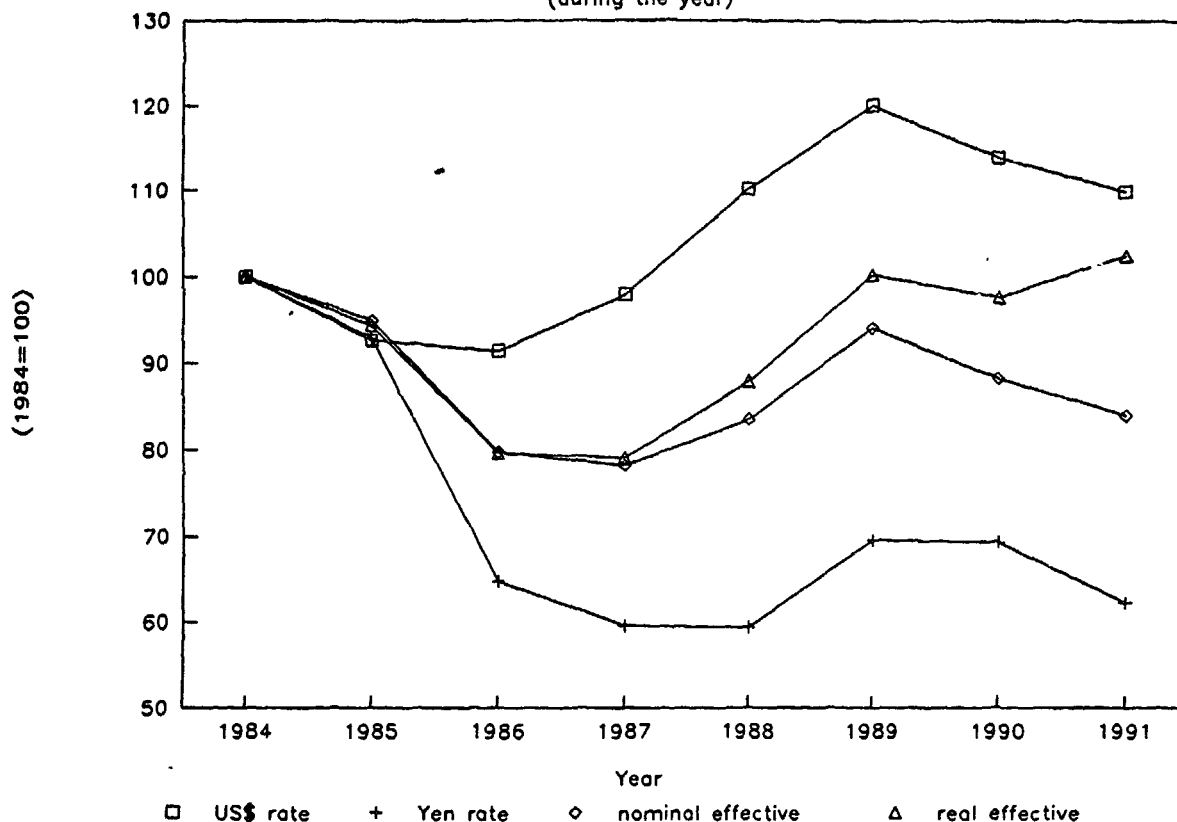
a/ Trade-weighted average of nominal exchange rates; an increase in the index indicates appreciation.

b/ Trade-weighted average of real exchange rates (nominal rates adjusted for differential inflation); an increase in the index indicates appreciation.

Sources: IMF, International Financial Statistics; staff calculations.

¹² With the previous basket system, government's policy consideration was also a factor in the exchange rate determination, in addition to the movements of trading partners' currencies.

Graph 1.3: Exchange Rate Developments
(during the year)



a/ An increase indicates appreciation.

Source: IMF, International Financial Statistics; staff calculations.

1.68 Under the MAR system, the exchange rate of the won vis-a-vis the U.S. dollar in the interbank market was allowed to float within a daily trading range of +/- 0.4 percent of the weighted average of the previous day's interbank rates for spot transactions (i.e., market average rate). The authorities widened the daily range for fluctuation to +/- 0.6 percent since September 1991 and widened it further to +/- 0.8 percent from July 1, 1992. Since the introduction of the MAR system, the volume of transactions in the foreign exchange market has increased rapidly, from less than \$100 million per day in 1989 to about \$300 million per day. The interbank exchange rates of the won against currencies other than the U.S. dollar are determined in relation to the exchange rate of the U.S. dollar against these currencies in international markets.

1.69 It is argued that the undervalued won circa 1986 effectively delayed the necessary structural adjustment in export and manufacturing sectors. For example, Korean firms neglected medium- and long- term investment in structural adjustment as exports of traditional labor-intensive industries increased very fast mainly due to the undervalued won. It should be also pointed out that the rapid appreciation of the won by 27 percent in terms of real effective exchange rate during 1988-89 diverted resources towards the non-tradable sector by squeezing the profitability of the export sector, and hence contributed to the overheating of the domestic demand during 1990-91. It is argued that the appreciation of the won should have been allowed earlier in a gradual and steady fashion and that the current account surplus should have been used for technology and manpower development.

G. Short- and Medium- Term Prospects

Short Term Outlook

1.70 One obvious approach to ease overheating of the economy is implementing contractionary policies, which the Korean government chose to adopt in its Economic Management Plan (EMP) for 1992. Fiscal discipline of the government is crucial for the success of this option. In this regard, the rigidity of public expenditure due to, among others, social welfare demands can be a binding constraint, and therefore, the effectiveness of taxation would have to be enhanced. For example, the tax burden ratio, which is currently less than 20 percent, may need to be raised, especially by strengthening taxes on land.¹³

1.71 An alternative solution to overheating would be accelerating the pace of capital account liberalization, hence allowing foreign capital inflows and allowing the won to appreciate. With this approach, Korea could narrow the savings-investment gap and lessen the inflationary pressure. In fact, experiences of Japan and Taiwan, China since the mid-1980s showed that the appreciation has effectively contributed to the successful industrial restructuring. This approach would have negative aspects, however. For one, if combined with high wage increases, it would seriously damage the competitiveness of labor-intensive small and medium industries. Then, the question is whether the social safety net would be readily available for the workers in the depressed industries and also whether the labor market would be sufficiently fluid for the transfer of workers. For another, it would depress exports and result in an increase in external debt. Depressed exports, if combined with rising interest rates in the process of interest rate deregulation, would worsen the indebtedness of firms and hence bring about difficulties in the financial sector. An accumulation of external debt would be less problematic, unlike the mid-1980s, considering the substantial amount of foreign assets.

¹³ Although the tax rates on land ownership and on capital gains from land are substantially high, the effective tax rates are low since the tax assessed values of land amount to only a fraction of market values.

1.72 In the EMP, GNP growth is targeted at 7 percent, 1.4 percentage points lower than in 1991. (See Table 1.16.) Private consumption growth is targeted at 8 percent, 1.2 percentage points lower than in 1991. The EMP envisages a substantial deceleration in investment, especially in construction investment. While equipment investment growth is targeted at 11 percent, construction investment growth is targeted at a mere 2.5 percent in sharp contrast to 11.2 percent last year. The EMP expects a modest pickup in exports in combination with a substantial slowdown in import growth. Merchandise export growth is targeted at 12 percent whereas merchandise import growth is targeted at 9.8 percent, 8 percentage points lower than in 1991. Accordingly, the current account balance target of \$8 billion is a slight improvement over last year's. Consumer price inflation is targeted at 7-8 percent, still high by recent Korean standards.

1.73 Developments in the first half have shown signs of cooling off, as envisaged in the EMP. The growth rate of GNP was 6.7 percent compared with the first half in 1991. While private consumption growth remained still high at 7.8 percent, the growth rate of equipment investment declined sharply to 6.4 percent, and furthermore, construction investment recorded no growth at all. Merchandise exports increased by a robust 12.3 percent whereas merchandise import growth was contained at 6.4 percent. Accordingly, the current account balance showed a slight improvement, registering a deficit of \$4.1 billion. The CPI inflation rate decelerated somewhat to 7.8 percent on an annualized basis.

1.74 Although developments in the first half turned out to be mostly in line with the EMP targets, there exist two main risks which could hamper achieving the targets for the whole year. For one, the public expenditure growth of 12.8 percent targeted for 1992 would seem to be on the high side, especially considering the likelihood of a supplementary budget later in this year as election time rolls around. For another, the M2 growth target of 18.5 percent would seem to be also high; in fact the BOK recommends 15-18 percent M2 growth.¹⁴ However, the government rationalizes it arguing that this M2 growth rate is necessary to prevent a rapid rise in interest rates in the process of interest rate deregulation and to offset the difficulties of corporate financing in light of the depressed stock market.

¹⁴ A simple quantity equation shows that if the velocity of money remains unchanged, the growth rate of money supply is equal to the sum of GNP growth rate and inflation rate. M2 growth target is 18.5 percent, substantially higher than the sum of GNP growth target (7 percent) and GNP deflator target (7 percent).

Table 1.16: Macroeconomic Projections for 1992

	1990	1991	Target 1992	1st Half 1992 <u>a/</u>
(Growth rates, %)				
Real GNP	9.3	8.4	7.0	6.7
Consumption	10.1	9.2	7.9	7.9
Private	10.3	9.2	8.0	7.8
Government	8.9	9.2	7.2	9.1
Fixed capital formation	24.0	11.9	5.8	2.9
Equipment	18.4	12.8	11.0	6.4
Construction	29.1	11.2	2.5	0.0
Merchandise exports	4.6	9.5	12.0	12.3
Merchandise imports	13.2	17.8	9.8	6.4
(in \$ billion)				
Current account balance	-2.2	-8.8	-8.0	-4.1
Trade balance	-2.0	-7.1	-7.0	-2.8
Exports	63.1	69.5	78.8	36.4
Imports	65.1	76.6	85.8	39.3
Invisible trade balance and net transfer	-0.2	-1.8	-1.0	-1.3
Rate of inflation (%)				
GNP deflator	10.6	10.9	7.0	n.a.
Wholesale prices <u>b/</u>	7.4	3.1	4.5	3.3 <u>c/</u>
Consumer prices <u>b/</u>	9.4	9.5	7.0-8.0	7.8 <u>c/</u>

a/ Compared with the first half of 1991.

b/ End-year to end-year.

c/ Annualized.

Sources: Economic Planning Board; Bank of Korea.

Medium Term Prospects

1.75 Korea's medium term development targets are outlined in the Seventh Five-Year Economic and Social Development Plan. The Seventh Plan is considered an "indicative" plan, namely, its role is to provide information and guidance to the private sector. The Plan aims at laying a foundation for Korea to become an industrialized country. In order to achieve this goal, the Plan envisages four basic strategies: (i) strengthening industrial competitiveness, (ii) improving social welfare and equity, (iii) promoting liberalization and internationalization; and (iv) encouraging private sector initiatives. First, the government plans to stimulate the growth potential of the private sector by encouraging technological and managerial innovation. It will also increase expenditures for social infrastructure, expand industrial sites as well as implement measures to upgrade the quality of labor and to ease labor shortages. Second, the government hopes to enhance the living standards and achieve greater socio-economic equity, among others, by making housing more accessible, expanding social welfare services, and improving labor-management relations. Third, the government is committed to further liberalize the economy, especially in the agricultural and financial sectors, with a view to improving competitiveness. Fourth, to promote greater competition and innovation among businesses, the government will simplify and deregulate administrative procedures and devise plans to ease economic concentration.

1.76 According to the Plan, GNP growth is targeted at an annual average rate of 7.5 percent during 1992-96, and by 1996 per capita GNP is projected to reach above \$10,000. (See Table 1.17.) Private consumption growth is targeted at 7 percent, slightly lower than GNP growth rate, whereas the investment growth is projected at 8.3 percent. The current account balance is projected to improve gradually toward a surplus of around 1 percent of GNP by 1996 as exports growth is projected at 12-14 percent while 10-12 percent growth is projected for imports. Consumer price inflation is projected at around 6 percent. Reflecting the government's concern on an erosion of manufacturing industries, the share of manufacturing in GNP is targeted to increase to 30.7 percent by 1996 compared with 28.7 percent in 1991. Also, employment in manufacturing is targeted to grow at 3.4 percent compared with 2.2 percent growth for total employment. In turn, government expenditure on infrastructure, education, social development, science and technology, and environment is targeted to increase to 10.4 percent of GNP by 1996 from 6.4 percent of in 1990. Tax revenue is projected to increase to around 22 percent of GNP by 1996 from current 19.5 percent.

Table 1.17: The Seventh Five-Year Plan Targets

	1986	1991	1996	Average rate of increase (%)	
				1987-91	1992-96
Current GNP (\$billion)	103	273	493	21.5	12.5
Per capita GNP (\$)	2505	6316	10908	20.3	11.5
GNP growth (%)	12.9	8.4	7.2	10.0	7.5
Private consumption growth (%)	8.1	9.2	6.8	9.6	7.0
Fixed investment growth (%)	12.0	11.9	7.5	16.9	8.3
Merchandise exports growth (%)	26.1	9.8	8.9	9.1	9.0
Exports (\$billion) <u>a/</u>	34.7	71.9	130-140	15.6	12-14
Imports (\$billion) <u>a/</u>	31.6	81.5	130-140	20.7	10-12
Current account balance (\$billion)	4.6	-8.8	5-7	--	--
(% of GNP)	(4.5)	(-3.1)	(around 1)		
Consumer price inflation (%) <u>b/</u>	1.4	9.5	around 5	7.4	around 6
Wholesale price inflation (%)	-2.6	3.1	2-3	3.3	2-3
Manufacturing in GNP (%) <u>c/</u>	31.7	28.7	30.7	10.5	9.8
Total employment (thousands)	15505	18505	20637	3.6	2.2
Manufacturing employment ('000)	3826	5048	5975	5.8	3.4
(% of total)	(24.7)	(27.3)	(29.0)		
Unemployment rate (%)	3.8	2.4	2.4	--	--

a/ Customs clearance base.

b/ End-year to end-year.

c/ In constant prices.

Source: Economic Planning Board.

H. Emerging Issues

1.77 It is widely believed that the Korean economy will not face serious difficulties in achieving the macroeconomic targets per se, barring major external shocks. Rather, the real challenge is whether Korea will be able to make a successful transition to join the ranks of industrialized countries by the end of this century, as the Korean government envisages. This will depend on how successfully Korea can resolve a number of problems of which the most important are: (i) labor shortages, (ii) financial sector liberalization, (iii) industrial restructuring, (iv) North-South Korea economic cooperation; and (v) environmental concerns.

Labor Shortages

1.78 Korean firms, especially in small and medium manufacturing, have been suffering from labor shortages, high wage increases notwithstanding. According to a Ministry of Labor survey, the labor shortage ratio jumped from 1.8 percent in 1985 to 3.5 percent in 1988 and continued to increase rapidly to 5.5 percent in 1991. (See Table 1.18.) The labor shortage situation is most serious for production workers; the labor shortage ratio, defined as the ratio of unfilled vacancies to current employees, accelerated to 9.1 percent from 2.4 percent during 1985-91. Of production workers, the labor shortage problem is most conspicuous for unskilled workers; the shortage ratio was reportedly 20.1 percent in 1991. In terms of type of industry, apparel and leather industries, which provide the least desirable workplace environment, are suffering severely from labor shortages. This labor shortage situation has been placing another burden on the eroding industrial competitiveness.¹⁵

1.79 The current situation of labor shortages is due partly to overheated demand, but more fundamentally to long-term structural changes on the supply side. The economically active population increased at an average rate of 2.5 percent between 1980 and 1991, compared with the average rate of 3.7 percent between 1971 and 1980. There are two major reasons for this development, in addition to the successful family planning which has steadily reduced the birth rate since the early 1960s from around 3 percent to less than 1 percent currently. First, the rural sector is now left with an aged population as migration to the urban sector has progressed. Second, expansion of education, especially at the secondary level, has reduced the supply of young workers, as seen in Graph 1.4. In fact, the labor participation rate for male of ages between 15-19 years old significantly dropped from 41.2 percent in 1970 to 22.9 percent in 1980 and further to 10.7 percent in 1990. Similarly, the labor participation rate for female of ages between 15-19 years old rapidly declined from 38.7 percent in 1970 to 29.0 percent in 1980 and further to 18.6 percent in 1990. In addition to these overall factors, several mismatch problems aggravated the situation: (i) as income levels rise, young

¹⁵ It is difficult to estimate the impact of labor shortages on the economy. According to a recent study by the Korea Institute of Labor, however, production lost due to labor shortage was estimated at 7.6 percent of GDP.

workers avoid manufacturing jobs preferring service sector jobs, (ii) Korean youngsters have become "over-educated" relative to the available jobs, especially for junior college and college graduates;¹⁶ and (iii) also, while the supply of technical high school graduates is much smaller than demand, the situation for liberal arts school graduates is the opposite.

Table 1.18: Labor Shortage Ratios a/
(%)

	1985	1988	1989	1990	1991
(By type of workers)					
Total employees	1.8	3.5	3.2	4.3	5.5
Of which:					
Office workers	0.9	1.2	1.1	1.3	1.3
Production workers	2.4	5.2	4.9	6.9	9.1
Of which:					
Skilled	2.0	3.9	3.6	5.3	7.3
Unskilled	4.9	12.3	11.8	16.2	20.1
(By industry, production workers)					
Metal mining	--	--	4.3	5.2	16.3
Apparel	--	--	9.7	15.0	18.1
Leather	--	--	6.3	22.7	14.9
Furniture	--	--	9.7	8.4	15.5
Rubber	--	--	4.7	4.9	10.4
Fabricated metal	--	--	6.6	7.6	10.9
Machinery	--	--	7.0	8.4	11.1

a/ Labor shortage ratio = unfilled vacancies / current employees.

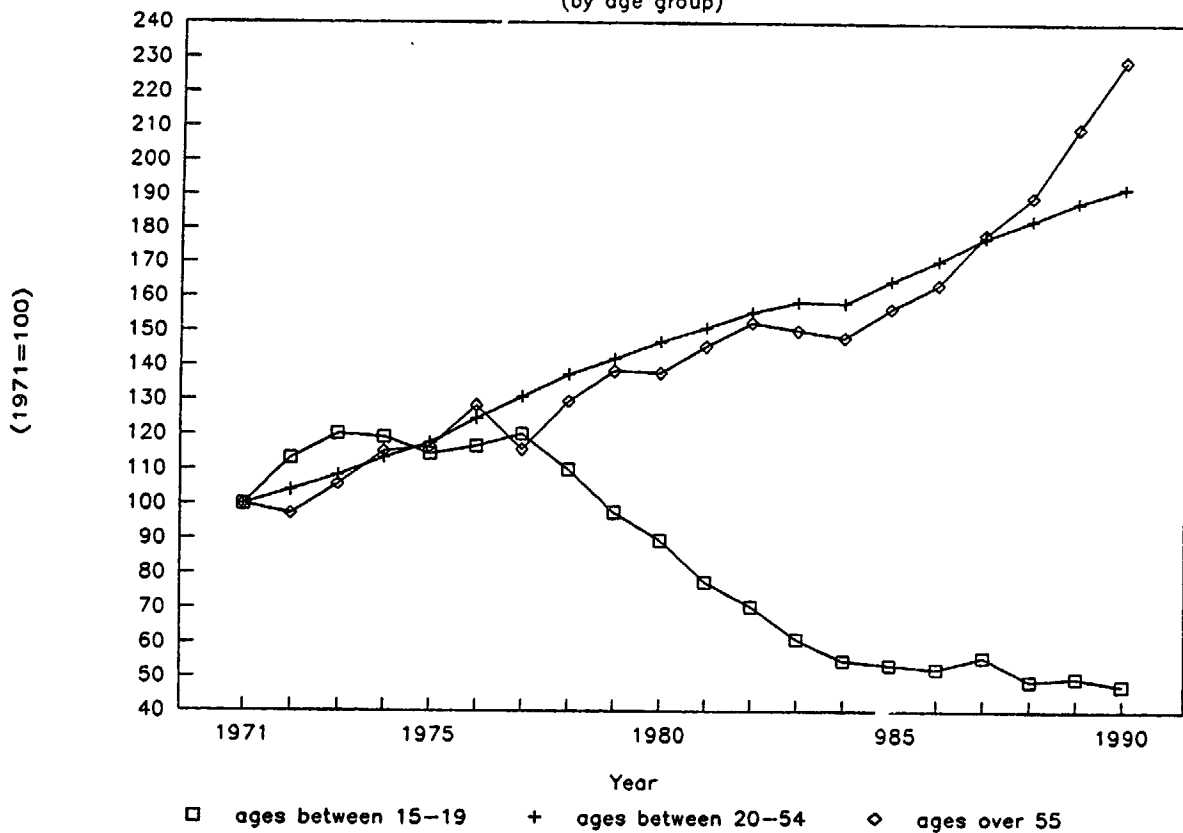
Source: Ministry of Labor.

1.80 Efforts have been made to bring more women, particularly married women, into the labor force. Although the labor force participation rate of women increased from 38.5 percent to 47.5 percent between 1970 and 1991 thanks to a substantial increase in the participation rate for women between the ages

¹⁶ In 1991, the unemployment rate for junior college and college graduates was 3.7 percent whereas unemployment rate for workers with less than junior high school education was 1.1 percent.

of 35 and 54, it is far from satisfactory compared with 74 percent participation rate for men and the government aims to increase it up to 50 percent by 1996. For this purpose, the government introduced the Equal Employment Act in 1988 and plans to increase the number of nurseries from current 700 to 2000 by 1995, including providing tax incentives for companies operating nurseries. In turn, the pool of older workers, especially aged 55 and older, will rise substantially during the next decade. While the average growth rate of the population aged 55 to 64 was about 2.5 percent per year during the past two decades, it is expected to rise to around 3.5 percent during the 1990s. However, due to involuntary retirement age at 55 and insufficient part-time jobs, the aging labor force has not been fully utilized.

Graph 1.4: Economically Active Population
(by age group)



Source: National Statistical Office.

1.81 The government intends to mobilize female, older and handicapped labor (more than 2.4 million altogether) as part-time workers by revising labor laws. In turn, it aims to increase the share of technical high school enrollments in total enrollments from the current 32 percent to 50 percent in the next three years. The government is very cautious in increasing foreign workers, fearing possible undesirable social repercussions. In this regard, economic cooperation with North Korea could be even more appealing due to the homogeneity of workers. The authorities are considering a gradual increase of foreign workers, raising the limit to 200,000 from the current 50,000 (including illegals). On the other hand, the government continues to encourage investments in labor-saving technology; in fact, the employment elasticity with respect to output in manufacturing declined to 0.25 during 1989-91 from 0.65 during 1986-88, due to a sharp increase in automation investment at an annual rate of 53 percent in current prices during 1987-90.

Financial Sector Liberalization

1.82 The financial health of commercial banks, one of the main preconditions for successful interest rate liberalization, has improved significantly since 1987. Substantial capital increases were made during the stock market boom. The amount of capital of commercial banks almost tripled from 2.1 trillion won in 1987 to 6.2 trillion won in 1990. (See Table 1.19.) Also noteworthy is that the non-performing loans, which was a serious concern in mid 1980s in the aftermath of overseas construction and shipping industries bailouts, steadily decreased since 1987. In terms of the share of total loans, non-performing loans decreased sharply from around 10 percent in 1984-86 to 2.1 percent in 1990.¹⁷ This has been made possible by the favorable economic conditions of recent years and also in part by exposing long covered-up non-performing loans and thus writing off some of them. The profitability of commercial banks also improved; for instance, the ratio of net profits to total assets increased steadily from 0.20 percent to 0.63 percent between 1987 and 1990.¹⁸ This improvement has been due to a decline in non-performing loans and also to an increase in income from securities holdings and incomes from trust and credit card businesses. Also improved was the productivity in banking business; for example, value-added per employee increased steadily from 14.8 million won in 1985 to 34.5 million won in 1990. Other productivity indicators such as deposits per employee, lending per employee, and profits per employee showed a similar pattern.

1.83 The improving financial health of the commercial banking system has encouraged government to reduce barriers to entry. Currently, there are 23

¹⁷ Of course, the size of non-performing loans varies depending on the definition. Here, the Office of Bank Supervision and Examination data are used. They represent the part of total credits extended to those firms with bad credit standing, which is not covered by secured collaterals.

¹⁸ However, the profitability of domestic banks is still about half that of foreign banks due to, among others, mandatory policy loans. It is also noteworthy that the profitability of regional banks, which are under less regulations, is substantially higher than that of nationwide banks.

commercial banks (13 nationwide banks and 10 regional banks) compared with only 5 commercial banks in the early 1980s. In October 1991, two groups of merged short-term finance companies chose an option of converting to a bank rather than another option of converting to a securities company. Another commercial bank backed by labor unions is to be established in the second half of 1992. The situation has been similar for the branches of foreign banks. For example, the Citibank has increased branches from 2 to 8, and plans to increase further to 25 in next few years. However, it should be noted that the increase in the number of the banks has not been due to the relaxation in the requirements for establishing a bank. Rather, it has been due to more open attitude of the government.

Table 1.19: Financial Indicators of Commercial Banks a/

	1985	1987	1988	1989	1990
Paid-in capital (billion won)	943	2104	3340	5407	6158
Non-performing loans (billion won)	n.a.	3049	2979	2205	1910
(in % of total loans)	--	5.4	5.0	3.1	2.1
Gross profits / total assets (%)	0.87	0.68	0.96	1.41	1.24
Net profits / total assets (%)	0.19	0.20	0.37	0.58	0.63
Productivity indicators (million won)					
Deposits per employee	336	496	664	754	857
Lending per employee	345	491	513	569	677
Gross profits per employee	5.2	5.5	9.8	16.4	17.1
Value-added per employee	14.8	16.2	21.9	32.7	34.5

a/ For 11 nationwide banks plus 10 regional banks. One special bank was converted a commercial bank in 1987 and three small-size commercial banks were established in 1989.

Source: Office of Bank Supervision and Examination, Bank Management Statistics, 1991.

1.84 On the other hand, the issue of policy loans will need to be evaluated carefully for the effective financial liberalization. Since the early 1960s, the government has tried to ensure adequate funding for "strategic sectors", such as export and heavy and chemical industries, by providing loans with preferential interest rates. The share of loans to these strategic sectors, however, declined sharply since the early 1980s. For

example, export financing, which has received the most favorable treatment in terms of short-term operating funds and also in terms of foreign currency loans for imports of machinery and equipment by the export sector, dropped sharply between 1980 and 1985, as shown in Table 1.20. The share of the National Investment Fund, which mainly has financed the investment in heavy and chemical industries, also declined during 1980s. In turn, the government has increased policy loans for welfare-related sectors, such as housing, and less privileged sectors, such as agriculture and fisheries. Accordingly, although the share of policy loans extended by the banking sector in total domestic credit decreased from 49 percent to 39 percent between 1980 and 1985, since then it increased back to the 46 percent level. Interest rate differentials between policy loans and general loans are not expected to shrink for the time being, since the deregulation of lending rates of policy loans is scheduled only in the third phase (1994-96) of the interest rate deregulation plan.

Table 1.20: Policy Loans Extended by Banks

	1980	1985	1988	1989	1990
Total policy loans (billion won)	8239	16736	29763	36702	44850
(% in total domestic credit)	(49.1)	(39.3)	(46.4)	(46.4)	(46.3)
Of which (% in total policy loans):					
Government Fund	6.1	8.9	7.8	8.1	7.8
National Investment Fund	4.9	5.8	3.6	2.9	2.3
Credit to KDB, KEXIM, and KLTCB	3.0	2.4	17.0	17.1	16.7
Foreign currency loans	31.5	19.7	19.1	17.6	18.4
Foreign trade financing	20.9	18.7	4.0	3.8	4.3
Loans for agriculture and fisheries	5.1	6.6	7.9	7.2	7.3
Housing loans	11.4	15.1	12.8	14.3	15.0

Source: National Statistical Office, Korean Economic Indicators, 1991.

1.85 Another concern is the insufficient supervision system to ensure financial discipline. It should be pointed out that while financial sector liberalization is expected to bring about long-term efficiency gains through better resource allocation, without a proper supervision it may cause a serious adverse selection problem (i.e., lending to projects with higher risks), since commercial banks are not yet capable of making loans based on credit analysis, as opposed to collateral. In this regard, the Office of Bank Supervision and Examination (OBS) introduced a more systematic framework of annual bank management evaluation since 1990. According to this system, the

OBS evaluates all the commercial banks based on more transparent performance indicators such as profitability, stability, and liquidity and gives ratings of AA, A, B, and C, which are announced to the public. In addition, the OBS plans to introduce the BIS type capital adequacy ratios, differentiated by type of loans, by the end of 1993.

1.86 In sum, for successful financial sector liberalization efforts should be made in, among others, the following areas: (i) promoting open market operations, (ii) carefully evaluating the issue of policy loans, (iii) establishing systematic bank supervision and prudential regulations; and (iv) ensuring financial discipline by making loans based on rigorous credit analysis. Recently, the Korean government requested the Bank to provide technical assistance in preparing a blueprint for the financial sector deregulation and market opening, which is to be completed by December 1992 and will be the basis for carrying out further policy changes to liberalize the financial sector. The Bank study will cover the following subjects: (i) interest rate deregulation and credit allocation system, (ii) foreign exchange and capital account transaction liberalization, (iii) opening of the bond market to foreign portfolio investment; and (iv) money market development.

Industrial Restructuring

1.87 The Korean economy has been undergoing significant industrial restructuring. One distinctive trend is the declining light industry. The share of light industry in total manufacturing production decreased to an average of 38 percent during 1988-91 from the average of 43 percent during 1985-87. The share of light industry in total manufacturing exports similarly decreased to an average of 44 percent during 1988-90, 3 percentage points lower than the average during 1985-87. As the economy accumulates capital and makes technological innovation, the share of labor-intensive light industry declines. For example, the share of light industry shrank from two thirds to one half between 1960 and 1980 as Korea accumulated capital and technology. During the recent years, however, high wage increases not accompanied by the corresponding productivity increases, in combination with frequent labor disputes, accelerated the industrial transformation away from the labor-intensive light industry.

1.88 Although the recent trend is not totally negative since it could facilitate the industrial restructuring effectively, away from the less efficient "sunset" industries and towards the higher value-added "sunrise" industries, efforts should be made to help the transformation be smoother. For one, the social safety net will need to be stronghold for the workers in the declining labor-intensive industries and also the mobility of labor should be enhanced through, among others, training. For another, importing more low-wage guest workers could be considered and also more offshore operations should be pursued. In fact, Korea's DFI in the labor-intensive manufacturing sector increased sharply since 1989, especially in low-wage Southeast Asian countries.

1.89 In turn, enhancing productivity will be the key for the successful industrial restructuring. In this regard, one of the crucial elements is technology development. Korea made significant progress in promoting

technology development during the 1980s, as indicated by the fact that Korea's R&D expenditure increased sharply, more than ten-fold. As a proportion of GNP, it tripled from 0.6 percent to 1.9 percent. (See Table 1.21.) The current R&D expenditure / GNP ratio is much higher than the current ratio in Taiwan, China or the ratio in Japan during 1970-75.¹⁹ There has been similar progress in terms of technology manpower; for example, the number of researchers in technology development per 10,000 persons increased sharply from 5 to 16. Nevertheless, Korean firms are concerned about difficulties in domestic technology development. (In recent business surveys, Korean firms consistently reported that difficulties in technology upgrading is one of the most serious obstacles to industrial competitiveness.) They also complain that industrialized countries have become more reluctant to transfer technology.

Table 1.21: Development of R&D Expenditure / GNP Ratios
(Z)

	Korea	Taiwan	Japan	U.S.	Germany (West)
1970	0.39	--	1.59	2.57	2.19
1975	0.42	--	1.72	2.20	2.39
1980	0.58	0.71	1.91	2.29	2.63
1985	1.48	1.01	2.49	2.83	2.77
1986	1.68	0.98	2.48	2.84	2.78
1987	1.77	1.12	2.53	2.82	2.88
1988	1.86	1.22	2.58	2.77	2.86
1989	1.91	--	2.69	2.73	2.89
1990	1.91	--	--	2.74	--
1996 (target)	3 - 4				

Source: Ministry of Science and Technology, Science and Technology Yearbook, 1992.

¹⁹ It is argued that the Korean economy lags behind the Japanese economy by around 15 years. (For example, see "Korea's Export Niche: Origins and Prospects" by P. Petri, World Development (Vol. 16, No.1, 1988.)

1.90 Accordingly, the Korean government has identified technology development as one of the top priorities in the Seventh Five-Year Plan. It aims to mobilize one trillion won in a science and technology development fund and to increase the science and technology budget from the current 3 percent of the total budget to 4-5 percent by 1996, in an effort to boost the R&D expenditure to GNP ratio up to 3-4 percent by 1996. This R&D expenditure target, which surpasses the current level of the U.S. or Japan, seems to be a rather ambitious one. It should be also noted that improving the quality of R&D expenditure would be equally important. In fact, this issue of quality of R&D expenditure could answer the discrepancy between the Korean perception of difficulties in technology upgrading and the recent high level of R&D expenditure. The government also plans to expand the enrollment of college graduates majoring in science and technology by 4,000 every year during 1992-96 and aims to increase the number of technology development manpower to 26 per 10,000 persons by 1996 from current 16. In addition, it plans to strengthen tax and financial incentives for technology development of the private sector, which currently finances 84 percent of total R&D expenditure, with a view to raising the current ratio of R&D investment to total sales in manufacturing from 2.1 percent toward, for example, 3.3 percent in Japan.

1.91 Another element for enhancing productivity is the availability and efficiency of capital. Although the recent surge in private consumption and construction investment did not seem to crowd out equipment investment much, a continuing surge could deplete capital for equipment investment, and thereby hamper productivity enhancement. On the other hand, the ongoing financial sector liberalization would contribute to productivity enhancement by increasing the mobility and efficiency of the capital market more generally.

North-South Korea Economic Cooperation

1.92 Relations between North and South Korea have improved recently, a development which raises the prospect of economic cooperation and perhaps even economic integration in the foreseeable future. Economic cooperation between North and South Korea should be mutually beneficial given the complementary nature of two economies; while N. Korea is abundant in labor and natural resources, S. Korea has capital and technology. Economic integration would help S. Korea solve its labor shortage problem, benefit from a bigger market, and could reduce transportation costs through land access to Europe. Economic exchange began in the form of indirect trade in October 1988 and accelerated in 1991, including some direct trade, as the mood of reconciliation has risen in the wake of joining the U.N., albeit separately, in October 1991. The optimistic mood for speedy N-S Korea economic cooperation escalated further when the two authorities signed an accord on reconciliation, nonaggression, exchanges, and cooperation in December 1991. Since then, however, the mood has abruptly turned around due to the issue of nuclear inspection.

1.93 During the period between October 1988 and December 1991, N. Korea's exports to S. Korea amounted to \$137 million while N. Korea's imports from S. Korea amounted to only \$7 million. More than 70 percent of the trades happened in 1991. All but three transactions took the form of indirect trade, mainly through Hong Kong. Of N. Korea's export items to S. Korea, primary and intermediate products dominated; 55 percent for primary

iron and metal such as zinc, 14 percent for other mineral products, 14 percent for fishery products, and 12 percent for agricultural products. Of S. Korea's export items to N. Korea, 44 percent were chemical products and 31 percent were textile products.

1.94 North Korean Economy. In order to gauge potential benefits from further economic cooperation with N. Korea, it is essential to understand the status of North Korean economy. Research on the N. Korean economy has been limited due to lack of availability of reliable economic data. Recently, since 1990 the National Unification Board (NUB) has been publishing annual report on N. Korean economy, with estimates of major economic indicators based on various N. Korean government publications. However, it should be emphasized that economic data on N. Korea are considered "guesstimate" at best, and accordingly should be interpreted with extreme caution. According to the NUB report, estimated GNP of N. Korea in 1990 was \$23 billion, about one tenth of GNP of S. Korea. (See Table 1.22.) Per capita GNP was estimated at \$1064, about one fifth of S. Korea's, as N. Korea's population was estimated at 21.7 million, about half of population in S. Korea.²⁰ In terms of industrial structure, the share of agriculture was estimated at 27 percent, mining and manufacturing at 43 percent, and social infrastructure and services at 30 percent. Compared with S. Korea, the shares of agriculture and mining and manufacturing are much larger, whereas social infrastructure and services are much less developed. Of manufacturing, about 80 percent is heavy and chemical industries compared with 60 percent in S. Korea. Among agricultural products, maize is the main crop while rice production is about one third of S. Korea's. N. Korea is abundant with natural resources such as coal and iron ore. N. Korea's manufacturing production is lagging far behind, especially in consumer goods such as textile and refrigerators. All in all, it can be argued that the N. Korean economy is lagging behind the S. Korean economy by 15-20 years based on indicators such as population growth rate, agricultural population share, and per capita GNP.

1.95 In order to estimate costs and benefits of economic cooperation with N. Korea, it is imperative to evaluate the N. Korean economy as rigorously as possible. Although the data on N. Korean economy are very limited and unreliable, efforts should be made to estimate reasonable "ballpark" figures, possibly with the help of UNDP which maintains a representative office in Pyongyang, by utilizing the experiences of similar tasks on socialist countries such as Viet Nam. It will be helpful to select promising joint venture projects based on a thorough analysis of comparative advantages. In addition, it will be necessary to analyze the German experience in economic cooperation to draw lessons to be applicable to the

²⁰ Of course, per capita GNP estimate varies depending on assumptions for estimates. For example, while official North Korean figure was \$2530 for 1988, estimates by the Heritage Foundation was \$930 for 1989 and estimates by the International Institute for Economic and Political Studies in former USSR was \$408 for 1989. Recently, the KDI used physical indicators like steel, energy, etc. as explanatory variables for per capita GNP, utilizing regression results for other socialist countries, and obtained a per capita income estimates of \$1268 for 1990.

Table 1.22: Major Economic Indicators of South and North Korea
(as of 1990)

	South Korea	North Korea	North / South (%)
Population (million)	42.8	21.7	51
(growth rate)	(0.97)	(1.61)	--
Area (thousand square km)	99.3	122.1	123
GNP (\$ billion)	238	23	10
Per capita GNP (\$)	5569	1064	19
Government budget / GNP (%)	16.3	71.9	--
Military expenditure / GNP (%)	4.1	21.5	--
(% of GNP)			
Agriculture, forestry, and fishery	9.0	26.8	--
Mining and manufacturing	29.5	42.8	--
Social infrastructure and services	61.5	30.4	--
Agricultural area (thousand ha)	2109	2141	102
Grain production (thousand ton)	6635	4812	73
(of which: rice)	(5606)	(1932)	34
Agricultural population (% of total)	15.1	37.8	--
Coal production (million ton)	17.2	43.3	252
Electricity generation (billion kwh)	107.7	27.7	26
Iron ore production (thousand ton)	298	10300	3456
Iron and steel production (million ton)	25.4	5.9	23
Chemical fertilizer production (million ton)	4.0	3.5	88
Cement production (million ton)	42.1	12.0	29
Automobile production (thousands)	1902	33	2
Ship production (thousand G/T)	3422	214	6
Textile production (thousand ton)	1800	176.8	10
TV set production (thousand)	14500	240	2
Refrigerator production (thousand)	4700	126	3
Railroad (km)	6435	5045	78
Road (km)	56715	23000	41
(of which: paved)	(40545)	(1717)	4
Port capacity (million ton per year)	224.3	34.9	16
Total foreign trade (\$ billion)	134.9	4.6	3
Exports (\$ billion)	65.0	2.0	3
Imports (\$ billion)	69.8	2.6	4
External debt (\$ billion)	31.7	7.9	25

Source: National Unification Board, Comparison of Economies of South and North Korea, 1991.

Korean case. It will be also useful to study the working of export processing zones in socialist countries such as China. Also useful is a research on institutional and legal matters to facilitate the economic cooperation effectively.

Environment

1.96 Despite Korea's remarkable success in sustaining rapid economic growth, there is concern that some of this prosperity has been illusory. Some analysts have argued that Korea has sacrificed too much environmental quality in the interests of economic growth. In this view, the government should have implemented more aggressive policies for environmental protection at an earlier stage of development. Others disagree with this thesis, maintaining instead that if environmental concerns had been taken into account prematurely, substantial losses in economic growth and welfare would have resulted. Moreover, the emphasis placed on economic growth encouraged efficiency in resource use, thereby mitigating the pollution and resource degradation that have resulted, in Eastern Europe for instance, from excessive use of natural resources. A case in point was Korea's success in reducing energy intensity following the second oil shock in 1979. And Korea's economic success has enabled it to invest the resources necessary to address environmental problems such as urban sanitation and water supply.

1.97 It is difficult to evaluate this argument regarding the efficacy of Korea's past environmental stance because, as elsewhere in the developing world, most environmental data are available only for the 1980s. However, it is true that environmental issues were not emphasized by the government until the late 1970s. Industrial pollution control was adopted as a major development objective only in the Fourth Five Year Plan (1977-81). But since the late-1970s, several policies have been introduced for environmental protection and environmental institutions have been strengthened. The Environmental Preservation Act was enacted in 1977. The Office of Environmental Administration was established in 1980, and was expanded in 1990 to the Ministry of Environment (MOE). Several environmental measures were adopted during the 1980s. An Environmental Impact Assessment (EIA) system was implemented in 1982. All large projects in environmentally-sensitive areas are now subject to EIAs, which analyze their environmental impacts and recommend changes in order to mitigate serious adverse impacts. Since 1983, a pollution charge system has been in place to reduce industrial pollution. It allows the government to impose fines against enterprises that violate the Environmental Preservation Act. Finally, the Pollution Prevention Fund was created to encourage businesses to reduce pollution. The fund provides long-term loans to businesses at low interest rates for pollution control investments.

1.98 Trends during the 1980s in some indicators of environmental quality are shown in Table 1.23. These data show improvements for many air and water pollutants. In Seoul, for instance, concentrations of sulfur dioxide have fallen to half their 1980 levels while total suspended particulates (TSP) have shown a similar decrease since 1985. Stringent controls on the use of high-sulfur oil, the mandatory use of liquified natural gas in new buildings, and

Table 1.23: Environmental Quality Indicators

1. Air quality			
Concentration of sulfur dioxide (ppm)	1980	1985	1990
	----	----	----
Seoul	0.094	0.056	0.051
Pusan	0.058	0.047	0.039
Taegu	0.038	0.039	0.041
Kwangju	0.009	0.020	0.017
Ulsan	0.053	0.030	0.031
Concentration of other air pollutants in Seoul		1985	1990
		----	----
Nitro dioxide (ppm)		0.034	0.029
Oxidant (ppm)		0.019	0.008
Carbon monoxide(ppm)		2.7	2.7
Hydro carbon (ppm)		4.3	3.0
Total Suspended Particulates (ug/m ³)		216	131
Acidity of rainfall (pH)		1985	1990
		----	----
Seoul		5.5	5.0
Pusan		5.1	5.2
Taegu		5.4	5.7
Kwangju		6.1	5.5
Ulsan		5.0	5.7
2. Water quality			
BOD level (mg/l)	1981	1986	1990
	----	----	----
Han River	5.2	3.6	3.4
Youngsan River	3.8	5.2	6.7
Nakdong River	3.6	3.6	3.0
Keum River	2.0	3.0	3.1
COD level along the coast (mg/l)		1986	1990
		----	----
Inchon		1.8	1.9
Mokpo		2.4	2.4
Masan		4.3	4.1
Pusan		1.8	1.6
Pohang		1.8	2.0
3. Solid waste			
	1984	1987	1990
	----	----	----
Domestic solid waste (ton/day)	54347	67031	83962
Industrial solid waste (ton/day)	n.a.	40307	61411
4. Noise			
Noise level in Seoul (Leq dB (A))		1985	1990
		----	----
Roadside area average (day)		60	64
General area average (day)		75	77

Source: Ministry of Environment, Korea Environmental Yearbook, 1991.

the expansion of district heating systems contributed to these improvements. Water quality (as measured by biological oxygen demand loads) has also improved on two of the four major rivers, especially the Han River, as new treatment plants were constructed.

1.99 Despite these improvements, air and water quality remain areas of concern. Sulfur dioxide and TSP concentrations still reach unhealthy levels in Seoul and other cities, especially during the winter. For example, according to the WHO standards, the sulfur dioxide level should not exceed 0.05 ppm for more than seven days a year. The quality of air in Seoul, however, reportedly exceeded this level for 87 days in 1991. And as the use of private automobiles continues to grow, levels of nitrogen oxides and hydrocarbons are also rising rapidly, particularly in Seoul. The treatment of household and industrial wastewater remains low--only about 30 percent in 1990--and is the main source of pollution of rivers and coastal waters.²¹ Although three of four major rivers still reportedly maintain a second-class water quality (which is drinkable), the Youngsan River is rated a third-class. With growing affluence and industrial growth, solid waste generation is increasing rapidly both from household and industrial sources. Almost all this waste is disposed in open dumps with attendant ill-effects on health and amenity. And as the sophistication of the industrial sector grows, it can be expected that the generation of hazardous solid wastes will also increase.

1.100 Problems also arise in implementing environmental policies effectively. On the institutional side, the administration of environmental laws and regulations is fragmented because fifteen ministries and offices of the central government are involved in addition to MOE and local authorities. And while MOE is responsible for enforcing laws regarding discharges of industrial firms, its officials lack the power to take offenders to court. There are gaps also in the environmental policies that are in place. The penalties on industrial enterprises for emissions in excess of the legal limits are too low to encourage better compliance with the standards. The EIA system, being project specific, often does not cover smaller projects even when these involve a high risk of affecting the environment adversely.

1.101 As Korea progresses into the ranks of the high-income countries, environmental protection will become an even more important policy objective. This is already reflected in the priority that the Seventh Five Year Plan places on improving environmental conditions. The challenge for the government is to set realistic environmental goals, and design policies and institutions that will allow these targets to be met at relatively low economic cost. In this regard, Korea's experience during the 1980s and the record of the United States, Japan and Western Europe in the last two decades are encouraging. The environmental improvements in Korea since 1980, noted in Table 1.24, have not required massive investments. It has also been possible for many OECD countries, most notably Japan, to make significant environmental improvements without sacrificing economic growth. However, Korea is not as affluent as Japan and the United States were in the 1970s when they began

²¹ The contamination of rivers is exemplified by the incident of massive dumping of phenol into the Nakdong River in 1991.

implementing stringent environmental regulations. Therefore, it is essential that in attempting to improving environmental quality, Korean policymakers pay close attention to the economic costs of various interventions as well as to their anticipated environmental benefits. For this reason, further analysis on environmental issues is considered a priority.

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Table A.1: Population and Employment

Year	Total population (mid-year)	Economically active population		Employed
('000)				
1970	32241	10062		9617
1980	38124	14431		13683
1985	40806	15592		14970
1988	41975	16870		16870
1989	42380	17511		17511
1990	42869	18036		18036
1991	43268	18576		18576
(Growth rate p.a., %)				
1970-80	1.7	3.7		3.6
1980-85	1.4	1.6		1.8
1985-88	0.9	2.7		4.1
1989	1.0	3.8		3.8
1990	1.2	3.0		3.0
1991	0.9	3.0		3.0
Year	Labor force participation rate			Unemployment rate
	Total	Male	Female	
(%)				
1970	57.6	77.9	39.3	4.4
1980	59.0	76.4	42.8	5.2
1985	56.6	72.3	41.9	4.0
1988	58.5	72.9	45.0	2.5
1989	59.5	73.3	46.5	2.6
1990	60.0	73.9	47.0	2.4
1991	60.6	74.7	47.3	2.3

Source: National Statistical Office, Korea Statistical Yearbook, 1991.

Table A.2.1: Social Indicators

	Unit of measure	25-30 years ago	15-20 years ago	Most recent estimate (mre)	Same region / income group		Next higher income group
					East Asia	Upper-middle-income	
HUMAN RESOURCES							
Size, growth, structure of population							
Total population (mre = 1990)	millions	28.53	35.28	42.79	1,577	459	817
14 and under	% of pop.	43.2	37.7	25.7	29.5	33.8	19.6
15-64	% of pop.	53.5	58.6	69.4	65.2	60.9	67.2
Age dependency ratio	unit	0.87	0.71	0.44	0.53	0.63	0.49
Percentage in urban areas	% of pop.	32.4	48.0	72.0	51.0	71.8	78.3
Females per 100 males							
Urban	number	..	100	101	..	..	..
Rural	..	..	97	98	..	..	..
Population growth rate	annual %	2.5	1.9	1.0	1.6	1.7	0.5
Urban	..	5.4	5.0	3.0	6.5	2.8	0.7
Urban/rural growth differential	difference	4.3	5.9	6.9	10.2	3.6	0.5
Projected population: 2000	millions	..	..	46.64	1,816	541	859
Stationary population	..	..	..	56.43	..	..	..
Determinants of population growth							
Fertility							
Crude birth rate	per thou. pop.	35.0	25.9	16.1	22.5	24.9	13.0
Total fertility rate	births per woman	4.87	3.32	1.80	2.66	3.10	1.72
Contraceptive prevalence	% of women 15-49	..	34.0	77.0	73.8	..	..
Child (0-4) / woman (15-49) ratios							
Urban	per 100 women	..	44	32	..	..	..
Rural	..	..	56	36	..	..	..
Mortality							
Crude death rate	per thou. pop.	11.2	7.4	6.2	6.9	7.5	8.8
Infant mortality rate	per thou. live births	62.2	39.8	17.1	33.6	41.8	8.0
Under 5 mortality rate	..	..	..	21.0	66.9	49.8	13.0
Life expectancy at birth: overall	years	56.7	63.9	70.2	68.6	68.3	76.7
female	..	58.4	66.9	73.4	69.9	71.5	80.1
Labor force (15-64)							
Total labor force	millions	9.68	13.05	18.66	871	173	396
Agriculture	% of labor force	55.1	42.8	..	..	..	..
Industry	..	1.1	23.3	..	..	..	..
Female	..	29.1	33.3	33.8	41.8	30.4	38.5
Females per 100 males							
Urban	number	..	103	102	..	..	..
Rural	..	..	97	94	..	..	..
Participation rate: overall	% of labor force	33.9	37.0	41.6	56.9	38.5	48.0
female	..	19.7	24.8	28.4	47.6	23.3	35.8
Educational attainment of labor force							
School years completed: overall	years	..	..	..	..	..	..
male	..	..	..	..	..	..	..
NATURAL RESOURCES							
Area	thou. sq. km	99	99	99	15,572	18,709	32,125
Density	pop. per sq. km	288	356	428	100	24	25
Agricultural land	% of land area	23.0	22.9	22.4	40.2	34.3	35.9
Agricultural density	pop. per sq. km	1,252	1,553	1,912	248	70	70
Forests and woodland	thou. sq. km	66	66	65	3,822	7,116	9,212
Deforestation rate (net)	annual %	0.4	0.0	-0.1	-0.2	-0.5	0.2
Access to safe water	% of pop.	..	66.0	93.0	67.3	80.0	..
Urban	..	..	95.0	76.0	63.3	88.7	..
Rural	..	..	38.0	100.0	83.4	63.8	..

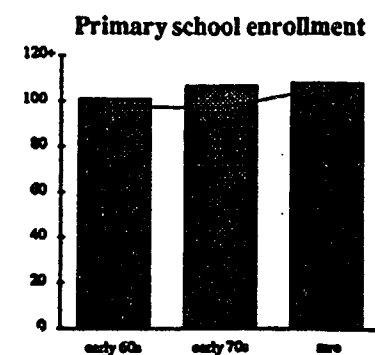
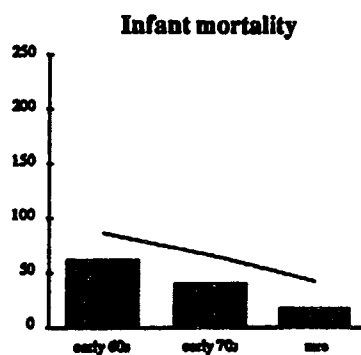
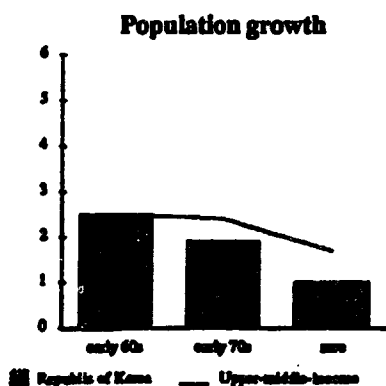


Table A.2.2: Social Indicators

	Unit of measure	25-30 years ago	15-20 years ago	Most recent estimate (mre)	Same region / income group		Next higher income group
					East Asia	Upper-middle-income	
INCOME AND POVERTY							
Income							
GNP per capita (mre = 1990)	US\$	130	580	5,400	590	3,450	19,660
Total household income							
Share to top 10% of households	% of income	..	28	..	..	..	..
Share to top 20% of households	"	..	..	..	..	..	..
Share to bottom 40% of households	"	..	..	..	..	..	..
Share to bottom 20% of households	"	..	..	..	..	..	..
Poverty							
Absolute poverty income: urban							
rural	US\$ per person	..	..	..	..	..	..
Pop. in absolute poverty: urban							
rural	% of pop.	..	..	..	..	..	..
Prevalence of malnutrition (under 5)	% of age group	..	..	..	..	..	..
EXPENDITURE							
Food							
Staples	% of GDP	..	32.1	21.7	..	..	..
Meat, fish, milk, cheese, eggs	"	..	18.1	8.8	..	..	..
Cereal imports	thou. metric tonnes	649	3,124	9,087	30,956	39,280	68,753
Food aid in cereals	"	..	234	..	451	..	..
Food production per capita	1979-81=100	86.8	89.0	107.5	132.5	106.0	101.6
Share of agriculture in GDP	% of GDP	38.0	24.5	9.0	19.7	9.0	2.6
Daily calorie supply	calories per person	2,178	2,686	2,852	2,619	3,013	3,416
Daily protein supply	grams per person	96	75	78	62	77	105
Housing							
Average household size	% of GDP	..	5.6	6.5	..	..	..
Urban	persons per household	6	5	..	..	..	..
Fixed investment: housing	% of GDP	..	4.5	4.6	..	..	..
Fuel and power							
Energy consumption per capita	% of GDP	..	3.3	2.8	..	..	..
Households with electricity	kg of oil equivalent	238.2	666.3	1,897.5	557.9	1,794.4	5,122.9
Urban	% of households	..	..	..	..	..	..
Rural	"	..	..	..	..	..	..
Transport and communication							
Population per passenger car	% of GDP	..	4.9	5.6	..	..	..
Fixed investment: transport equipment	persons	1,750	332	38	319	11	2
Total road length	% of GDP	..	5.4	3.2	..	..	..
Population per telephone	km	..	..	55,778	..	..	..
	persons	..	25	4	..	..	..
INVESTMENT IN HUMAN CAPITAL							
Medical care							
Population per: physician	% of GDP	..	2.8	2.9	..	..	..
nurse	persons	2,684	2,200	1,155	1,029	..	..
hospital bed	"	2,972	1,190	582	1,259	..	..
Access to health care	"	..	1,900	596	513	..	..
Immunized (under 12 months): measles	% of pop.	..	..	..	..	..	..
DPT	% of age group	..	..	70.0	62.9	78.5	73.8
Oral Rehydration Therapy use (under 5)	% of cases	..	..	58.0	70.2	81.5	82.7
Education	% of cases	..	..	..	38.4	..	..
Education							
Gross enrollment ratios	% of GDP	..	3.5	5.5	..	..	..
Primary: total	% of school-age group	101.0	107.0	108.0	130.4	105.9	104.3
female	"	99.0	107.0	110.0	125.9	..	102.7
Secondary: total	"	35.0	56.0	87.0	46.9	56.3	91.6
female	"	25.0	48.0	85.0	41.5	58.9	92.8
Tertiary: science/engineering	% of tertiary students	27.8	28.5	29.5	..	..	..
Pupil-teacher ratio: primary	pupils per teacher	62	52	36	21	25	19
secondary	"	37	40	26	15	..	..
Pupils reaching grade 4	% of cohort	..	95.6	99.5	81.0	77.8	96.2
Repeater rate: primary	% of total enrollment	0.5	0.0	0.0	6.5	17.6	..
Illiteracy rate: overall	% of pop. (age 15+)	..	..	..	24.1	15.1	..
female	% of females (age 15+)	..	..	..	34.0	17.7	..
Newspaper circulation	per thou. pop.	63.2	170.3	146.2	46.9	100.9	333.1

Source: World Bank, Social Indicators of Development, 1991-92

Table A.3: GNP by Expenditure Category (Current Prices), 1986-91

	1986	1987	1988	1989	1990	1991p
(in billion won)						
Consumption	61687	68697	78955	92082	110205	131927
Private consumption	52286	57988	66468	77017	91881	109449
Public consumption	9401	10709	12487	15065	18324	22478
Gross domestic investment	26486	31944	39211	47693	63817	81086
Fixed investment	25993	31131	37354	45259	62992	78765
Changes in stock	492	813	1857	2434	825	2321
Exports of goods and services	36034	45051	51101	48813	53468	60801
Imports of goods and services	30365	36356	40567	44785	54449	66167
Statistical discrepancy	-415	-908	-738	-802	-318	-131
GDP	93426	108428	127963	143001	172724	207517
Net factor income	-2827	-2404	-1732	-1207	-1236	-1490
GNP	90599	106024	126231	141794	171488	206027
(% of GNP)						
Consumption	68.1	64.8	62.5	64.9	64.3	64.0
Private consumption	57.7	54.7	52.7	54.3	53.6	53.1
Public consumption	10.4	10.1	9.9	10.6	10.7	10.9
Gross domestic investment	29.2	30.1	31.1	33.6	37.2	39.4
Fixed investment	28.7	29.4	29.6	31.9	36.7	38.2
Changes in stock	0.5	0.8	1.5	1.7	0.5	1.1
Exports of goods and services	39.8	42.5	40.5	34.4	31.2	29.5
Imports of goods and services	33.5	34.3	32.1	31.6	31.8	32.1
Statistical discrepancy	-0.5	-0.9	-0.6	-0.6	-0.2	-0.1
GDP	103.1	102.3	101.4	100.9	100.7	100.7
Net factor income	-3.1	-2.3	-1.4	-0.9	-0.7	-0.7
GNP	100.0	100.0	100.0	100.0	100.0	100.0

Table A.4: GNP by Expenditure Category (1985 Constant Prices), 1986-91

	1986	1987	1988	1989	1990	1991p
(in billion won)						
Consumption	60726	65657	72058	79797	87874	95967
Private consumption	51712	56020	61520	68235	75283	82220
Public consumption	9014	9637	10538	11562	12591	13747
Gross domestic investment	26247	30893	35583	43008	50889	59020
Fixed investment	25569	29800	33806	39528	49017	54853
Changes in stock	679	1093	1777	3480	1872	4167
Exports of goods and services	35239	42849	48209	46370	48319	53050
Imports of goods and services	31714	37871	42732	49683	56816	66722
Statistical discrepancy	370	277	374	986	1237	1276
GDP	90868	101804	113492	120477	131503	142591
Net factor income	-2694	-2192	-1512	-901	-818	-989
GNP	88174	99612	111980	119577	130685	141602
(Rate of change, %)						
Consumption	8.4	8.1	9.7	10.7	10.1	9.2
Private consumption	8.0	8.3	9.8	10.9	10.3	9.2
Public consumption	10.8	6.9	9.3	9.7	8.9	9.2
Gross domestic investment	10.9	17.7	15.2	20.9	18.3	16.0
Fixed investment	12.0	16.5	13.4	16.9	24.0	11.9
Exports of goods and services	26.1	21.6	12.5	-3.8	4.2	9.8
Imports of goods and services	17.8	19.4	12.8	16.3	14.4	17.4
GDP	12.4	12.0	11.5	6.2	9.2	8.4
GNP	12.9	13.0	12.4	6.8	9.3	8.4

Source: Bank of Korea, Economic Statistics Yearbook, 1992.

Table A.5: GNP by Industrial Origin (Current Prices), 1986-91

	1986	1987	1988	1989	1990	1991p
(in billion won)						
Agriculture, forestry, and fishing	10729	11353	13494	14458	15584	16715
Mining and manufacturing	30483	35820	42545	45463	50683	57967
Of which:						
Manufacturing	29579	34903	41621	44650	49895	57070
Electricity, gas, and water	2897	3197	3365	3463	3612	4257
Construction	6646	8069	10329	13931	22884	32056
Services (including services of government and private non-profit institutions)	42671	49989	58230	65686	79961	96522
GNP	90599	106024	126231	141794	171488	206027
(% of GNP)						
Agriculture, forestry, and fishing	11.8	10.7	10.7	10.2	9.1	8.1
Mining and manufacturing	33.6	33.8	33.7	32.1	29.6	28.1
Of which:						
Manufacturing	32.6	32.9	33.0	31.5	29.1	27.7
Electricity, gas, and water	3.2	3.0	2.7	2.4	2.1	2.1
Construction	7.3	7.6	8.2	9.8	13.3	15.6
Services (including services of government and private non-profit institutions)	47.1	47.1	46.1	46.3	46.6	46.8
GNP	100.0	100.0	100.0	100.0	100.0	100.0

Source: Bank of Korea, Economic Statistics Yearbook, 1992.

Table A.6: GNP by Industrial Origin (1985 Constant Prices), 1986-91

	1986	1987	1988	1989	1990	1991p
(in billion won)						
Agriculture, forestry, and fishing	10830	10098	10903	10780	10232	10147
Mining and manufacturing	29874	35305	39926	41323	44911	48663
Of which:						
Manufacturing	29018	34460	39089	40543	44216	47966
Electricity, gas, and water	2841	3190	3504	3880	4514	4887
Construction	6560	7394	8097	9397	11626	12938
Services (including services of government and private non-profit institutions)	40763	45817	51062	51197	60220	65956
GNP	88174	99612	111980	119577	130685	141602
(Rate of change, %)						
Agriculture, forestry, and fishing	4.6	-6.8	8.0	-1.1	-5.1	-0.8
Mining and manufacturing	18.0	18.2	13.1	7.5	8.7	8.4
Of which:						
Manufacturing	18.3	18.8	13.4	3.7	9.1	8.5
Electricity, gas, and water	25.3	12.3	9.8	10.7	15.3	8.3
Construction	5.0	12.7	9.5	16.1	23.7	11.3
Services (including services of government and private non-profit institutions)	11.2	12.4	11.4	7.9	9.3	9.5
GNP	12.9	13.0	12.4	6.8	9.3	8.4

Source: Bank of Korea, Economic Statistics Yearbook, 1992.

Table A.7: Balance of Payments
(US\$ million)

	1986	1987	1988	1989	1990	1991
Current account balance (% of GNP)	4617 (4.5)	9854 (7.6)	14161 (8.2)	5055 (2.4)	-2179 (-0.9)	-8827 (-3.1)
Trade balance	4206	7659	11445	4597	-2004	-7065
Exports	33913	46244	59648	61409	63124	69522
Imports	29707	38585	48203	56812	65127	76587
Invisible trade balance	-628	977	1267	211	-451	-1615
Credit	8052	10010	11252	12642	14269	15469
Debit	8679	9033	9985	12431	14719	17085
Transfers (net)	1039	1218	1448	247	275	-147
Long-term capital (net)	-1982	-5836	-2733	-3363	548	4349
Of which:						
Loans and foreign investment	704	-1945	-1891	-1105	33	3019
Basic balance	2635	4018	11428	1692	-1632	-4478
Short-term capital (net)	-392	-7	1336	60	3334	362
Errors and omissions	-544	1191	-589	701	-1976	375
Overall balance	1670	5202	12175	2453	-274	-3740

Source: Bank of Korea, Economic Statistics Yearbook, 1992.

Table A.8: Exports, Imports, and Terms of Trade _a/

	1986	1987	1988	1989	1990	1991
Exports						
Total amount (US\$ mil)	34715	47281	60696	62377	65016	71870
Quantity index (1985=100)	111.2	138.9	156.9	146.9	153.3	168.3
Unit value index (1985=100)	102.1	112.4	127.7	140.2	139.8	140.7
Imports						
Total amount (US\$ mil)	31584	41020	51811	61465	69844	81525
Quantity index (1985=100)	108.1	130.7	149.4	173.6	196.6	229.5
Unit value index (1985=100)	93.8	100.8	111.4	113.7	114.1	114.1
Terms of trade (1985=100)	108.8	111.5	114.6	123.3	122.5	123.3

_a/ Reference dates are based on the date when customs clearance was permitted.
Exports are valued at FOB and imports at CIF.

Source: Bank of Korea, Economic Statistics Yearbook, 1992.

Table A.9: External Debt Indicators _a/

	1986	1987	1988	1989	1990	1991
Nominal stock of debt (US\$ bil)	46.7	39.8	35.7	32.8	34.0	39.3
Stock of debt deflated by: (1985=100)						
Export unit prices	45.7	35.4	28.0	23.4	24.3	27.9
Import unit prices	49.8	39.5	32.0	28.8	29.8	34.4
Debt service payments (US\$ bil)	11.2	18.2	10.5	8.8	8.3	n.a.
Debt service ratio (%)	26.7	32.3	14.8	11.8	10.7	n.a.
Debt / GNP ratio (%)	45.5	31.0	21.1	15.6	14.4	14.0
Debt / Exports ratio (%)	111.3	70.8	50.4	44.3	43.9	46.2

_a/ Discrepancies exist between the figures in the World Debt Tables and the Korean government figures.
For example, total external debt in 1990 was \$31.7 billion according to the Korean authorities.

Sources: World Bank, World Debt Tables, for 1986-90;
Ministry of Finance, for 1991.

Table A.10: Consolidated General Government Revenues and Expenditures
(in billion won)

	1986	1987	1988	1989	1990	1991 _a/
Current revenue	19403	23001	28110	33301	42073	45902
Current expenditure	13548	15167	17751	21608	26408	31064
Current balance	5855	7834	10359	11693	15665	14838
Capital revenue	321	315	618	925	1086	1291
Capital expenditure	4999	5544	6600	8307	11120	14500
Capital balance	-4678	-5229	-5982	-7382	-10034	-13209
Overall balance _b/	23	1198	2770	1900	1020	-2418
Financing						
Domestic	123	-1209	-2058	-1300	-692	2519
Foreign	-146	11	-712	-600	-328	-101

_a/ Budget.

_b/ Including net lending.

Source: Bank of Korea, Economic Statistics Yearbook, 1992.

Table A.11: Monetary Survey
(end of year)

	1986	1987	1988	1989	1990	1991
(in billion won)						
Net foreign assets	-6127	-1605	7251	9104	10140	8075
Assets	8333	8647	14901	16155	18041	19230
Liabilities	14460	10252	7650	7051	7901	11155
Domestic credit	49496	57041	64099	79089	96888	118186
Public sector	5915	7854	6761	8825	10233	11898
Private sector _a/	43581	49187	57338	70264	86655	106288
Broad money (M2)	33833	40280	48939	58638	68708	83746
Narrow money (M1)	8809	10107	12151	14329	15905	21752
Quasi-money	25024	30173	36788	44309	52803	61994
(Rate of change, %)						
Net foreign assets	--	--	--	--	--	--
Assets	3.7	3.8	72.3	8.4	11.7	6.6
Liabilities	-8.6	-29.1	-25.4	-7.8	12.1	41.2
Domestic credit	16.3	15.2	12.4	23.4	22.5	22.0
Public sector	193.8	32.8	-13.9	30.5	16.0	16.3
Private sector	7.5	12.9	16.6	22.5	23.3	22.7
Broad money (M2)	18.4	19.1	21.5	19.8	17.2	21.9
Narrow money (M1)	13.5	14.7	20.2	17.9	11.0	36.8
Quasi-money	20.3	20.6	21.9	20.4	19.2	17.4

_a/ Including the claims on official entities and non-bank financial institutions until 1985.

Source: Bank of Korea, Economic Statistics Yearbook, 1992.

**Table A.12: Wages, Prices, and Productivity
(Manufacturing, 1985=100)**

	1986	1987	1988	1989	1990	1991
Wages						
Index	109.2	121.9	145.8	182.4	219.1	256.1
Rate of change (%)	9.2	11.6	19.6	25.1	20.2	16.9
Prices (WPI)						
Index	98.5	99.0	101.7	103.2	107.5	113.3
Rate of change (%)	-1.5	0.5	2.7	1.5	4.2	5.4
Prices (CPI)						
Index	102.8	105.9	113.4	119.9	130.2	142.8
Rate of change (%)	2.8	3.0	7.1	5.7	8.6	9.7
Productivity						
Index	118.0	132.6	148.9	159.1	181.9	203.6
Rate of change (%)	18.0	12.4	12.3	6.9	14.3	11.9

Sources: Bank of Korea, Economic Statistics Yearbook, 1992; Korea Productivity Center;
Ministry of Labor.

Table A.13: Industrial Production
(1985=100)

	1986	1987	1988	1989	1990	1991
All items						
Index	121.0	144.2	163.3	168.5	183.5	199.3
Rate of change (%)	21.0	19.2	13.2	3.2	8.9	8.6
Mining						
Index	107.2	108.5	107.8	97.0	87.0	86.1
Rate of change (%)	7.2	1.2	-0.6	-10.0	-10.3	-1.0
Manufacturing						
Index	122.1	146.6	166.3	171.3	186.5	202.6
Rate of change (%)	22.1	20.1	13.4	3.0	8.9	8.6
Electricity						
Index	111.5	127.6	147.3	162.9	185.6	204.5
Rate of change (%)	11.5	14.4	15.4	10.6	13.9	10.2

Source: Bank of Korea, Economic Statistics Yearbook, 1992.

Table A.14: Distribution of Income by Income Decile

Income Decile	Whole country			Urban			Rural		
	1980	1985	1988	1980	1985	1988	1980	1985	1988
First	1.57	2.59	2.81	1.46	2.26	2.80	1.76	3.18	2.93
Second	3.52	4.37	4.58	3.31	4.05	4.46	3.88	4.91	4.99
Third	4.86	5.48	5.65	4.65	5.21	5.47	5.29	6.04	6.19
Fourth	6.11	6.47	6.64	5.87	6.16	6.39	6.55	7.05	7.28
Fifth	7.33	7.57	7.60	7.12	7.25	7.35	7.83	8.12	8.38
Sixth	8.63	8.73	8.67	8.40	8.48	8.43	9.13	9.32	9.47
Seventh	10.21	10.10	10.01	10.07	9.92	9.79	10.66	10.55	10.74
Eighth	12.38	11.97	11.80	12.23	11.94	11.64	12.71	12.28	12.47
Ninth	15.93	15.10	14.62	16.09	15.33	14.58	15.98	14.96	14.99
Tenth	29.46	27.62	27.62	30.80	29.40	29.09	26.21	23.59	22.56
Gini coefficient	0.389	0.345	0.336	0.405	0.369	0.350	0.356	0.297	0.290

Source: Economic Planning Board.

