

Economic Development and Inflation: Lessons from the Korean Experience

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Inflation in Korea is cost-push inflation originating from the economic growth strategy. This rapid growth-oriented, industrialization-oriented, export-driven, and big firm-oriented strategy has formed both an industrial structure which is dependent on foreign factors and a market structure which is monopolistic. It has, at the same time, caused the slowdown of agriculture.

The external dependency of the industrial structure has in turn generated a price structure in which domestic prices are sensitive to foreign price movements. The monopolistic structure has additionally given rise to a price structure where a cost increase is easily linked to a price increase. In sum, induced by the Korean experience the argument that the inflation must be tolerated for rapid economic growth cannot be justified. (JEL O11, O53)

I. Introduction

Since Korea had entered an era of rapid economic growth in the early 1960s, its GNP grew rapidly at the annual average rate of 8.7% between 1962 and 1991. At the same time, the socio-economic structure in Korea changed greatly. However, many problems occurred in the pursuit of rapid economic growth. One of them was the persistent inflation, which subsequently resulted in the inequality of income distribution, the financial speculation, and the economic instability.

Some economists argue that inflation is an inevitable by-product of

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rapid economic growth. They seem to believe that inflation is the unavoidable cost of rapid economic growth. No matter how one agrees or disagrees with this view, this argument is based on the assumption that the economic development strategy has some significant influence on inflation.

The strategy of Korean economic development can be characterized by four aspects, i.e. rapid growth-orientation, industrialization, export-drive, and high dependency on big firms. In order to implement rapid growth, the government on one hand invested resources in some specific sectors and on the other hand tried to promote export. Industrialization was also achieved by promoting big firms. Although the Korean economy was able to achieve a rapid growth as a consequence of this development strategy, it simultaneously suffered from several structural problems ensued precisely by this rapid growth—high dependency on foreign or external factors, the deepening imbalance between agriculture and manufacturing sector and the concentration of economic power. These problems became major factors in forming the inflationary economic structure in Korea. When the industrial structure was heavily dependent on foreign factors and the monopolistic market structure incurred the cost-push inflation, a cost increase was instantly shifted to a price increase. The slowdown of agriculture often induced an increase in prices of agricultural products. Since inflation problem was regarded as a secondary issue, inflation was believed to be inevitable so far as rapid growth strategy was to be maintained.

This paper is organized as follows. Section II presents a brief history of price changes in the process of economic development since 1962. Section III examines main issues with respect to inflation. A brief conclusion follows in section IV.

II. The Records of Inflation

The period from 1962 to 1991 can be divided into the following five sub-periods in light of trend and feature of price movements.¹

- i) 1962-64: high inflation period
- ii) 1965-69: relatively low inflation period; formation of inflationary

¹For the values which is not specifically mentioned, see tables in the appendix.

structure

- iii) 1970-81: high inflation period; deepening of inflation
- iv) 1982-87: low inflation period; stabilization of price level
- v) 1988-91: recurrence of inflation

A. Inflation at the Outset of Development Planning (1962-64)

Since 1962, the government launched a series of five-year economic plans. The first five-year economic plan started in 1962. As a consequence of the rapid growth-oriented strategy, the annual average GNP growth rate in this period reached 8.3%, which was above the target rate. This high GNP growth, however, caused high inflation. For example, the wholesale price index (WPI) rose at the annual average rate of 27.5% in 1963 and 1964. This high inflation can be explained in the following.

First, the ratio of fiscal investment and loans was high (see Table 1), which led to excessive liquidity. Second, because the supply capacity of the real sector was inadequate to absorb the demand, the inflation occurred due to the shortage of goods. Especially, the low productivity of agriculture induced an increase in agricultural product prices. Third, the 1964 devaluation of Korean won, in the face of the deficit in balance of payments after 1962, increased the prices of imported goods.² These respects considered, the period between 1962 and 1964 may be termed as the era of growth-derived inflation. An inflationary structure caused by the rapid growth-oriented and unbalanced development strategy began to appear in this period.

B. Formation of Inflationary Structure (1965-69)

During the period of 1965-69, prices were stable in comparison with those of the early stage of economic development. Consumer price index (CPI) and wholesale price index (WPI) increased at the annual rate of 11.4% and 7.5%, respectively, between 1965 and 1969. These figures were relatively low with respect to the comparable records of other periods, although they were higher than those of other advanced countries. Such a relatively stable price level can be explained by the following factors: Mitigation of excess demand by the development of manufacturing, increase of imports, and low foreign price disturbance

²Government exercised devaluation from 130 won to 256 won per dollar in May 1964.

TABLE 1
TRENDS OF FISCAL INVESTMENT AND LOANS IN THE 1960s

(Unit: billion won)

Year	Fiscal Investment and Loans (A)	Domestic Credit (B)	A/B
1962	27.2	54.8	0.49
1963	27.3	65.6	0.41
1964	23.6	71.4	0.33
1965	29.5	100.0	0.30
1966	62.5	130.5	0.47
1967	79.0	231.5	0.34
1968	117.6	429.7	0.27
1969	175.5	684.0	0.25
1970	184.3	866.6	0.21

Source: KDI, *Four Decades of Public Finance in Korea*.

The Bank of Korea, *Economic Statistics Yearbook*, each issue.

due to the stable international raw material prices and exchange rate.

Although during this period prices increased at a lower rate than in the early stage of development, price level maintained an upward movement. As the rapid growth-oriented strategy continued, high growth rates of money and investment fuelled inflationary pressure. Domestically the relative price structure between agricultural and manufactured products changed, whereas the price structure remained vulnerable to foreign shocks. Moreover, the industrial structure dependent on external factors, coupled with oligopolistic firms in an unsound financial position, formed a cost-push inflation structure. In short, the period of 1965-69 can be considered as the time when inflationary structure was formed.

C. Deepening of Inflation (1970-81)

It was in the 1970s that the Korean economy entered the stage of full-scale economic growth. At the same time, however, the Korean economy experienced high inflation. The WPI and CPI surged to 18.5% and 16.7%, respectively, on the annual average during the period of 1970-81.

The inflation throughout the 1970s was characterized by cost-push inflation. In contrast to the 1960s, when inflation was mainly caused by demand-pull factors, cost-push factors, such as the two oil shocks and other important domestic supply conditions, primarily contributed to the inflation in the 1970s. Rapid growth strategy brought about the

TABEL 2
BALANCE OF PAYMENTS AND EXCHANGE RATE
(Unit: millions US \$, won/US \$)

Year	Current Balance	Trade Balance	Exchange Rate
1970	-622.5	-922.0	316.70
1971	-845.7	-1,045.9	373.20
1972	-371.2	-573.9	398.90
1973	-308.8	-566.0	397.50
1974	-2,022.7	-1,936.8	484.00
1975	-1,886.9	-1,671.4	484.00
1976	-313.6	-590.5	484.00
1977	12.3	-476.6	484.00
1978	-1,085.2	-1,780.8	484.00
1979	-4,151.1	-4,395.5	484.00
1980	-5,320.7	-4,384.1	659.90

Note: Exchange rate is the Bank of Korea concentration base rate at the end of year.

Source: The Bank of Korea, *Economic Statistics Yearbook*, each issue.

structural problems, such as the dependency on foreign factors and the monopolistic market structure.

A recession in the beginning of the 1970s made firms more vulnerable to the cost-push factors that had remained latent up to then. These factors were excessive investment in equipment, inefficient business management, high financial costs³ incurred by excessive borrowing in the credit market, and the increase in prices of imported raw materials due to the devaluation intended to reduce deficit in balance of payments.

Especially, a sharp increase in prices of international raw materials including crude oil led to the general price surge in the 1970s. Figure 1 clearly shows that the prices of raw materials increased a lot faster than those of capital goods and consumer goods. However, if it had not been for the export-driven industrialization strategy and the rapid growth strategy adopted by the government, the influence of the oil shocks on the general price level would have been much smaller.

The oil shocks had a much greater impact, because it brought about

³The adjustment of official interest rates to the market rates in 1965 contributed to lowering inflation rate and promoting savings. This measure, however, became responsible for not only the unhealthiness of financial institutions by the provision of negative spread of frequency, but also the increase of financial cost.

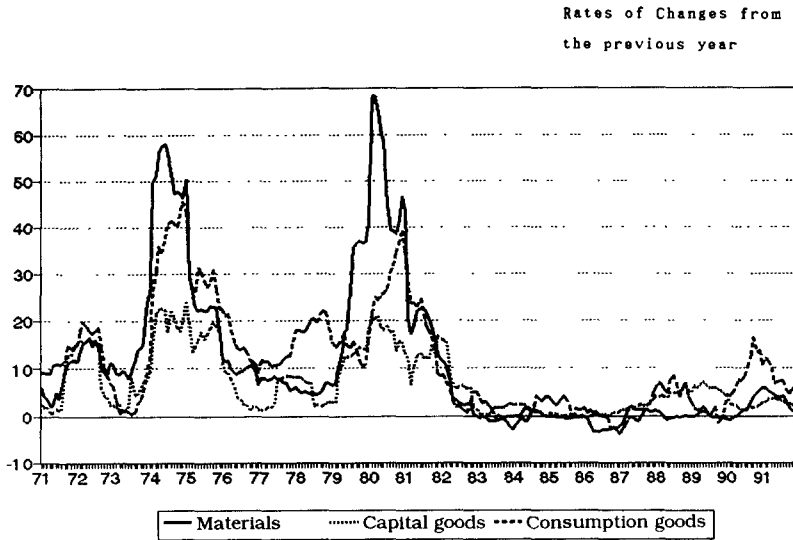


FIGURE 1
WHOLESALE PRICES CHANGES

TABLE 3
COMPARISON OF PRICES OF AGRICULTURAL AND NON-AGRICULTURAL PRODUCTS
(Unit: %)

	1972	1973	1974	1975	1976
Agrucultural	9.1	9.0	47.9	28.0	19.2
Non-agricultural	8.3	16.6	44.0	18.1	6.3

Source: Economic Planning Board, *Price Level and Living Conditions*, 1982.

a bigger deficit in the balance of payments which, in turn, prompted two major devaluations, one in 1974 and another in 1980 (see Table 2). These devaluations first pushed up import prices and then general price level.

The prices of agricultural and marine products also showed a steep upward trend from the beginning of this period. At the turn of the decade of the 1960s, the share of manufactured products in the total GNP became larger than that of agricultural products, and at the same time, the agricultural output fell short of the demand due to increased income and urbanization. These conditions explain why the increase of agricultural prices led to the increase of general prices during the period of 1971-80 (see Table 3).

TABLE 4
INTERNATIONAL COMPARISON OF INFLATION RATES (THE AVERAGE OF 1982-87)
(Unit: %)

	Korea	U.S.	Japan	Taiwan	Singapore
WPI	0.2	0.6	-3.3	-2.0	-3.1
CPI	2.8	3.3	1.4	0.5	0.7

Note: The base year is 1985 (i.e., 1985=100), except for Taiwan (i.e., 1986=100)
Source: National Statistical Office, *Major Economic Indicators Abroad*, each issue.

D. Stabilization of Inflation (1982-87)

After the second oil shock, the price level in Korea became exceptionally stable from 1982 to 1987. During this period, the annual increase rates of WPI and CPI were only 0.2% and 2.8% on average, respectively. Some argue that this stabilization was achieved mainly by the government's anti-inflation policies such as tightened money supply and direct price control. However, the matter of fact was that these policies could not have been the major cause of stabilization, since the inflation rate of Korea was not lower than that of other countries (see Table 4).

The primary factor that led to stabilization was the stabilization of international raw material prices, rather than the government's policy. This external factor significantly helped to keep the prices of manufactured products low and consequently the general price level. The analysis of the price stabilization of this period clearly supports the argument that the Korean economy had high dependency on foreign factors.

Another noticeable change can be traced in the relative price of light and heavy industrial products. During the period of 1971-79, except between 1974 and 1975 when impact of the first oil shock was severe, price increased at the annual rate of 2.3% for light industrial products and 4.9% for heavy industrial products. During the period of 1982-87, the pattern of price variation changed as the price increased at the annual rate of 1.2% and -0.8%, respectively.

As cost-push factors disappeared, the price of non-competitive goods became also stable. While the inflation rate of competitive goods was 1.1%, that of non-competitive goods was -0.8%. These relatively low rates were attributed largely to the favorable conditions of non-competitive market that the heavy industrial sector with high capital intensity

TABEL 5
COMPOSITION OF HOUSEHOLD CONSUMPTION EXPENDITURE
(Unit: %, constant price)

	Durable Goods	Semi-durable Goods	Non-durable Goods	Services
1986	6.8	9.7	47.8	35.7
1987	8.2	9.6	46.9	35.3
1988	8.8	9.7	46.1	35.4
1989	9.1	9.6	45.6	35.7
1990	9.6	9.5	45.0	35.9

Source: The Bank of Korea, *National Accounts*, 1986-90.

and high dependency on international raw material market enjoyed. In sum, the drop of foreign cost-push factors accounts for the stabilization of inflation during these six years.

E. Recurrence of Inflation (1988-91)

From 1988 onward, prices started to rise very sharply. The CPI increased at the rate of 8.6% and 9.3% in 1990 and 1991, respectively. The recent inflation shows different features from the previous inflation. First of all, the gap between WPI and CPI widened. Both of these indices had previously moved in the same direction, although there had been a persistent difference in their increase rates. Recently, however, the difference between CPI and WPI grew larger as a result of the rapid rise in the CPI as compared to the relative stability in the WPI. Second, the prices of the service goods have risen higher than the prices of manufactured products.⁴ Additionally, the relative prices within the manufactured products changed remarkably. The inflation in this period was mainly led by the price increase of manufactured products which belong to light industrial, consumption and labor-intensive sector, whereas the previous inflation was led by heavy industrial, capital-intensive, and intermediate goods.⁵

It is especially remarkable that the recent inflation was unaffected by

⁴The prices of service goods and the prices of manufactured products increased at the annual average rate of 8.3% and 4.6%, respectively, during the period of 1988-91.

⁵The annual price increase rates by sector during 1988-91 are as follows:

- i) Light industrial products: 2.9% vs. heavy industrial products: 2.1%
- ii) Intermediate goods: 1.3% vs. consumption goods: 6.0%
- iii) Labor-intensive products: 7.7% vs. capital-intensive products: 1.4%.

foreign factors. Inflation is mainly due to the increase in money supply and the speculative flow of funds caused by the influx of foreign exchange holdings, the rise of wages and service prices, and the increase in construction investment.

Above all, both the expansion of the domestic market and the changes in consumption expenditure account for inflation. The share of expenditure on durable goods in household consumption increased sharply from 3% at the end of the 1970s to 9.6% in 1990 (see Table 5). The change in the pattern of consumption also led to the price rise by the expanded aggregate effective demand.

It can be concluded that both the wage increase and the changes in consumption pattern accompanied by rising income are the important factors in the recent inflation, a fact which reflects the change in demand structure. However, one should note that the cost-push inflation structure still exists, because the price stability of non-competitive and heavy industrial products is mainly due to the stability in the prices of international raw materials.

III. Main Issues with Respect to Inflation

Major issues connected with inflation will be analyzed in this section. First, the relationships between inflation and money supply as well as cost-push factors are examined. Second, the question whether inflation is unavoidable in the process of rapid growth is reconsidered. Lastly, the relationship between inflation and income distribution is investigated.

A. Money Supply and Inflation

There have been numerous studies on the relationship between money supply and inflation. Although most of the empirical findings report that money supply and inflation have a positive relation, economists disagree as to whether money supply is the most important determinant of the inflation. In other words, the strict monetarist view that monetary expansion is necessarily the main cause of inflation is not verified in Korea. Looking at the movements of inflation rate and money growth rate during the period of 1971-91 (see Figure 2), one finds that the two indicators do not show a close correlation, even if lagged effects are taken into consideration. The reason for the scant support for the monetarist view is largely due to peculiar characteris-

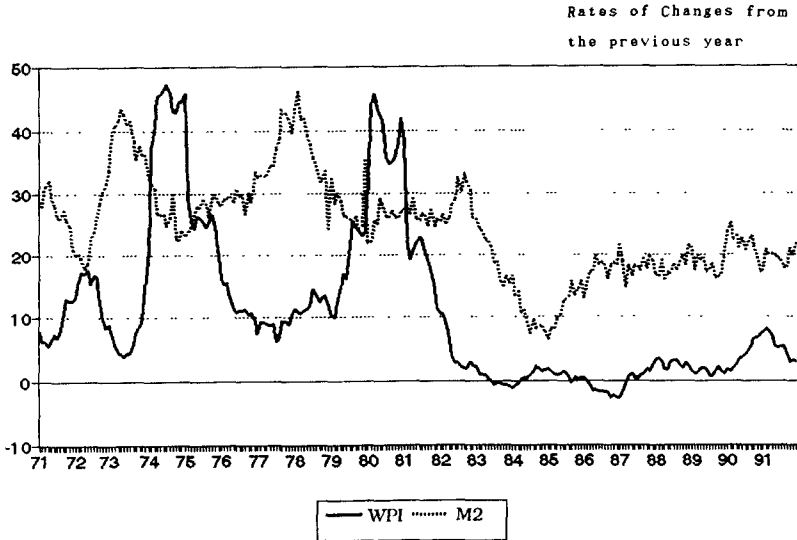


FIGURE 2
MONEY SUPPLY (M2) AND WHOLESALE PRICE CHANGES

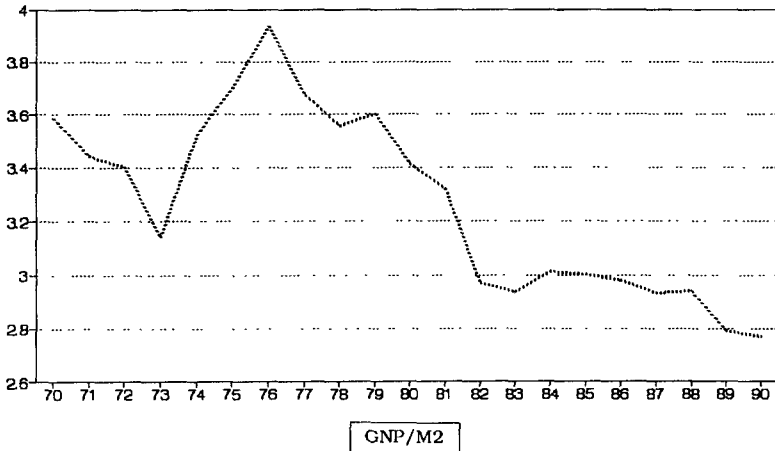


FIGURE 3
INCOME VELOCITY OF MONEY

tics of the Korean economy.

First, the extent of monetization has deepened, as the economy has been growing. As a result of monetization, income velocity of money has decreased since 1975 (see Figure 3).

Second, more importantly, there exist price rigidities in the Korean

economy. The government has pursued a direct price control policy. It has preferred a direct control of prices at the micro level, rather than an adjustment of macro variables via the operation of demand management. In other words, demand changes due to the increase in money supply could not affect prices, because government directly controlled the price of major items including necessities and public utilities. Especially in the 1970s, the prices of major manufactured products and necessities were under the control of the government. Accordingly, price changes were implemented by the so-called 'price realization' at the time. Thus, prices moved in an irregular pattern rather than smoothly. Another factor attributable to the price rigidity was the oligopolistic nature of the market. By monopolistic pricing, some big firms tended to stick to the previous prices, even when cost decreased.

Third, the main objective of monetary policy was not price stabilization. In the 1970s, monetary policy focused on the efficient allocation of the limited funds to promote some selected sectors. Monetary control was carried out in a limited scope to absorb the excessive liquidity by credit increase. Thus, the target variable of monetary policy was the level of domestic credit in the 1970s, because government wanted to effectively supply funds to the domestic sector in order to finance the enormous investment fund without being affected by foreign factors. Furthermore, it did not need to worry about the growth of M1 or M2, as long as the monetary target was domestic credit, while guaranteeing a constant amount of credit to domestic firms. This implied that price stability was not the main objective of monetary policy at that time.

Despite all these arguments against the monetarist view, money should be regarded as one of the important factors of inflation on the demand side. However, even in the 1970s and in the early 1980s, when the monetarist view was supported by basic guidelines of monetary policy, economic circumstances frequently induced the monetary authorities to change the target rate of money growth. Moreover, actual growth rates also deviated significantly from the target rates (see Table 6).

In sum, it can be asserted that money supply did not directly affect inflation in Korea, but had only an indirect effect on inflation by increasing demand pressure, such as government investment, domestic credit for firms, and foreign currency loans.

B. Cost-push Factors and Inflation

A major determinant of inflation in the past two decades in Korea was cost increase. The cost-push was originated from high corporate

TABLE 6
TARGET AND ACTUAL INCREASE RATES OF MONETARY AGGREGATES

(Unit: %)

	Monetary Aggregate	Target Increase Rate	Actual Rate
1970	Domestic Credit (M_1)	27.0	28.0
1971	"	28.0	31.1
1972	"	24.0 ¹	30.4
1973	"	24.0 → 28.0	31.7
1974	"	33.7	54.2
1975	"	35.3	32.2
1976	"	26.1 → 23.8 (20 → 28)	21.7 (30.7)
1977	"	24.1~24.7 (23~25)	23.6 (40.7)
1978	"	34.2 (30.3)	45.9 (34.9)
1979	M_2 (M_1)	25.0 (23.6)	24.6 (20.7)
1980	"	20.0 → 25.0 (15 → 20)	26.9 (16.3)
1981	"	25.0 (23.0)	25.0 (4.6)
1982	"	20~22 → 25 (18~20)	27.0 (45.6)
1983	"	18~20 → 15	15.2
1984	"	11~13	7.7
1985	"	9.5	15.6
1986	"	12~14 → 16~18	18.4
1987	"	15~18	19.1
1988	"	15~18	21.5

Note: 1. Target rate at the end of June.

2. Values in parenthesis indicate auxiliary target values.

Source: The Bank of Korea, *Annual Report*, each issue.

The Bank of Korea, *Economic Statistical Yearbook*, each issue.

financial costs and the devaluation of the currency in the 1970s, price increases of imported raw materials including crude oil in 1974 and 1980, and increase in wages since 1988.

The distinctive feature of cost-push inflation in Korea is clearly illustrated when the WPI increase rates in Korea during the two oil shocks are compared with those in other countries (see Table 7). This table makes it evident that the price in Korea responded more sensitively than that in other countries to the cost increase, as was indicated by a rapid rise in WPI. Then, the question arises as to what the structural feature was in prompting cost-push inflation in Korea.

In the first place, it was the high dependency on the foreign factors. This high dependency contributed to the evolution of inflationary structure in two aspects. One is that domestic prices were immediately

TABLE 7
INCREASE RATES OF WPI DURING OIL SHOCKS

(Unit: %)

	Korea	U.S.	Japan	W. Germany	Taiwan	Singapore
1974	42.0	18.8	32.1	13.6	40.8	-
1980	39.0	18.3	14.9	7.5	21.6	20.0

TABLE 8
IMPORT-DEPENDENCY BY INDUSTRY

(Unit: %)

	1975	1980	1985
Agriculture, Forestry & Fishing	2.4	2.2	1.8
Mining	4.0	0.6	0.7
Manufacturing	21.9	22.7	21.7
Light Industry	13.6	13.7	13.2
Heavy Industry	33.8	31.1	28.2
Services	3.3	7.0	4.7
All Industries	12.8	14.2	12.9

Note: 1. Import-dependency

$$= (\text{Input of intermediates imported} / \text{Total output}) \times 100$$

Source: The Bank of Korea, 1985 *Input-Output Tables*, 1988.

influenced by foreign price changes due to the deepened import-dependency. The average degree of import-dependency marked 12.9% across all industries in 1985, specially 21.7% in the case of manufacturing and 28.2% in heavy industry (see Table 8).

Export-driven industrialization, which prompted the importation of raw materials and intermediate goods for exporting manufactured goods, rendered the industrial structure with a relatively high dependency on the foreign factors (see Table 9).

At the same time, the import increase resulted both in the external deficit and the decrease of foreign currency holdings. To cure this problem, the government adopted devaluation and import restrictions, which brought about inflation.⁶ In this sense, export-driven growth

⁶In the 1970s, under a direct exchange control scheme, the government used devaluation as a tool for achieving export promotion and the improvements in

TABLE 9
COMPOSITION OF IMPORTED GOODS

(Unit: %)

	Intermediate Goods	Capital Goods	Consumption Goods
1975	74.3	20.2	5.5
1980	82.1	13.9	4.0
1985	84.5	11.6	3.9

Source: The Bank of Korea, 1985 Input-Output Tables, 1988.

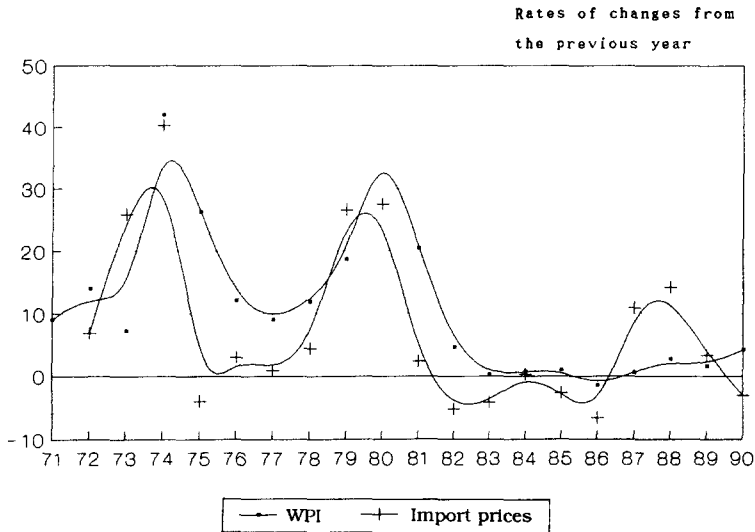


FIGURE 4
WHOLESALE PRICES AND IMPORT PRICE CHANGES

could be achieved only at the expense of price stability. The co-movements between WPI and import price index over the past two decades reflect this fact, as Figure 4 indicates.

In the second place, the establishment of oligopolistic structure and the unbalanced growth in industry caused cost-push inflation. The industrialization-oriented development strategy not only caused severe imbalance between agriculture and manufacturing,⁷ but also altered

the external deficits. Each devaluation in 1970, 1974 and 1980 produced a rapid rise in domestic prices during the respective period (see Table 3).

⁷Note that while the average growth rate of agriculture and fishing was 2.32% during the period of 1965-90, that of manufacturing was 15.58% during the same period.

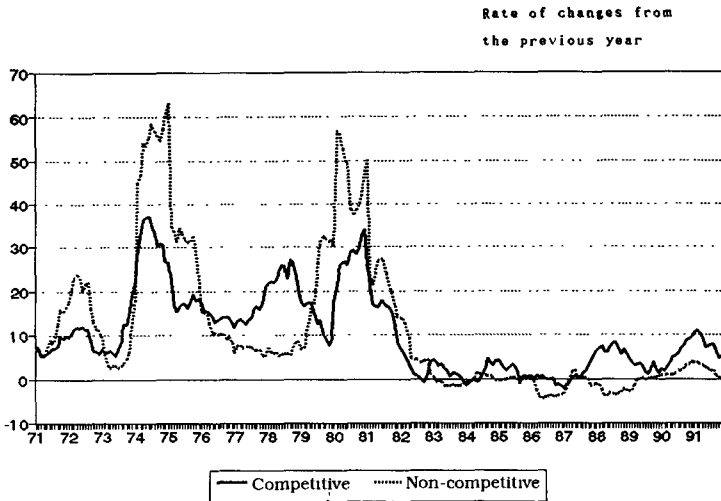


FIGURE 5

COMPETITIVE AND NON-COMPETITIVE COMMODITY PRICES

the structure of relative prices between the agricultural and non-agricultural products.⁸ As manufacturing became relatively important, changes in the price of manufactured products gradually dominated in determining the movements in general price level.⁹

Since the mid-1970s, the prices of heavy and chemical industrial products led general price increase, and this had mainly been due to the price setting of few big firms with oligopolistic power. The mark-up pricing of big firms significantly contributed to the price increase, because the price had downward-rigidity, whereas cost increases raised not only their own prices but also the prices of other products sequentially. The evidence for the two reasons mentioned above are the following. First of all, the ratio of sales costs to total sales exhibits more stability in big firms than in small and medium firms.¹⁰ It can be

⁸The price indices for agricultural and manufactured products were 9.0 and 16.5 respectively, at the end of April 1970. But they were 108.3 and 157.8, respectively, at the end of December 1991.

⁹From 1970 to 1990, 72% of the general price changes can be explained by changes in the price of manufactured products, while 20.3% in the price of agricultural products.

¹⁰Note that the variance of sales costs to total sales ratios in the big firms and the small and medium firms were 0.38 and 0.58, respectively, during the period of 1975-90.

shown that the mark-up ratio in the big firms stayed at a constant level. Another evident fact is, considering the different pricing rule between the competitive and the non-competitive commodities as illustrated in Figure 5, one can easily see that the price increase in a non-competitive commodity was higher than that in a competitive commodity precisely in 1972, 1974-75 and 1980 when the international price of raw materials and the corporate financial costs rose.

In addition to the firms' behavior, the government's price policy contributed to the continuation of mark-up pricing. In 1975, the government adopted 'Fair Trade Act' under which some producers were permitted to raise their prices in accordance with the rate of increase determined by the government. Under this scheme, the government approved the rate of increase for the pre-determined items by just adding some fixed mark-up ratio to cost data offered by the firms. This kind of direct price control accordingly made it possible that firms transfer cost increases to the consumers. The resulting effects were evident whenever firms faced difficult situations throughout the 1970s, during which the Korean economy experienced the two oil shocks.¹¹

C. Inevitability of Growth-derived Inflation

Some economists think that inflation was inevitable for the rapid economic growth of Korea. That is, inflation in Korea was a necessary evil to achieve the rapid growth. It is a general phenomenon in underdeveloped countries that economic growth is accompanied by increases in investment demand due to the need to enhance production capacity which is financed through fiscal and financial expansion. Economic growth is also accompanied by increases in consumption demand which is a result of higher employment. However, as the productivity of industry can not meet the demand, inflationary pressure increases. Some economists have argued to justify inflation in Korea that underdeveloped countries necessarily have to endure inflation, unless they want to abandon rapid growth.

However, it is too doubtful to argue that inflation is an indispensable part in the process of rapid growth. On the contrary, inflation can actually impede the economic growth.¹² As a matter of fact, there were several periods in the Korean economic history during which economic

¹¹For example, government raised the prices of oil and other products around 30% in Dec. 1974, and 31.3% in Dec. 1975.

¹²See Meier (1976, p. 321, pp. 311-5).

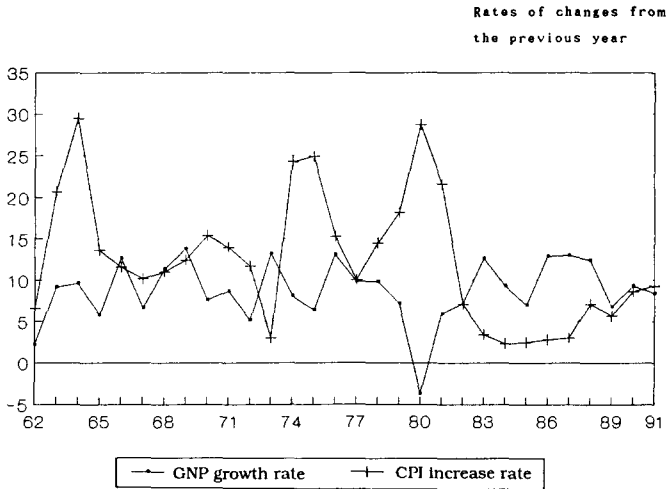


FIGURE 6
ECONOMIC GROWTH AND PRICE CHANGES

growth and inflation did not move in the same direction (see Figure 6). Apart from the periods of the oil shocks which showed severe stagflation, there were also periods when recession went hand-in-hand with inflation, while price remained stable during some periods of rapid growth such as in 1986 and 1987.¹³

One way of analyzing the relationship between economic growth and inflation is by looking at Phillips curve. The coexistence of inflation and economic growth can be justified by what can be termed as the Phillips-curve theory. However, once a Phillips curve is drawn for the Korean economy, it is hard to see that the Phillips curve is downward to the right¹⁴ (see Figure 7).

The assertion that inflation is an inevitable consequence of rapid

¹³The relationship between GNP growth rate and price increase rate is very suggestive. Calculating the cross correlation coefficients between annual GNP growth rate and annual GNP deflator growth rate during the period of 1971-91, the correlation between them does not exist at the significance level of 5%. When GNP deflator growth rate is replaced with CPI growth rate or WPI growth rate, the result is the same. Causality test also suggests the same. Analyzing quarterly GNP and GNP deflator data, we can not find the causality between economic growth rate and inflation rate.

¹⁴There has been no clear conclusion on the debate over the downwardness of the Phillips curve. But a recent study claims to demonstrate that the long run Phillips curve does not have a downward slope. See Jun (1991).

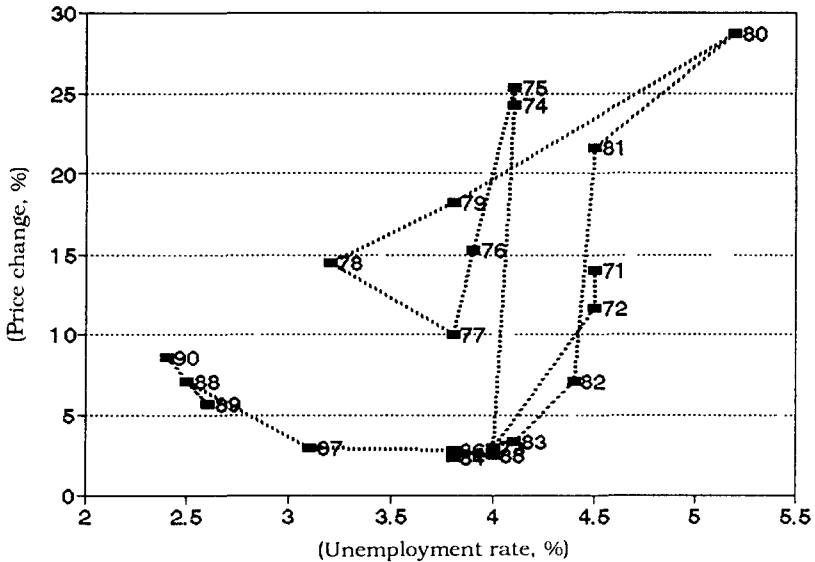


FIGURE 7
PHILLIPS CURVE (1971-90)

growth can be refuted by the comparison between the inflation rate of Korea and that of Taiwan which, like Korea, witnessed a rapid economic growth. During the period of 1971-90, the price level in Taiwan was relatively stable, with an annual average increase rate of 6.9% for CPI and 4.8% for WPI, in contrast to their Korean counterparts, 11.0% and 10.5%, respectively. Moreover, after 1974, the annual average growth rate of money (M2, period-end basis) was 22.2% in Taiwan, whereas in Korea 23.1%. It is indeed remarkable that the gap of inflation rates between the two countries was in spite of the small difference in money supply growth rates quite big. This implies that inflation in a country does not only depend upon economic growth and money supply, but is also strongly influenced by the economy's industrial structure and development strategy.¹⁵

Phillips curve does not have a downward slope. See Jun (1991).

¹⁵According to one study, despite high monetary growth, Taiwan was able to maintain a lower rate of inflation, because the increase in demand for money in Taiwan resulted from the difference in industrial structure and increased desire of people to hold money as an instrument of savings. See Korea Economic Research Institute (1986).

TABLE 10
TRENDS IN GOVERNMENT PRICE CONTROL

Time	Numbers of Items	Number of Firms	Time	Number of Items	Number of Firms
1976. 3	148	247	1983	58	74
1977. 5	157	272	1984	52	73
1978. 7	148	257	1985	47	64
1979. 2	74	124	1986	43	61
1979. 4	46	81	1987	42	59
1979. 12	35	58	1988	38	51
1980. 12	35	58	1989	36	47
1981	97	152	1990	33	45
1982	67	87			

Source: Economic Planning Board. *Economic White Paper*, each issue.

In Korea, the government's policy accelerated inflation under rapid economic growth. Throughout the 1960s and the 1970s, the government did not actively exercise the restraint over aggregate demand to curb inflation. The basic attitude of the government was, to a certain degree, to accept inflation, while alleviating its bad side-effects. That is to say, government adopted a micro-level price policy, such as price controls over specific goods or products of a specific sector, rather than a macro-level anti-inflation policy for restraining aggregate demand. This was largely because government would not abandon the rapid growth strategy (see Table 10).

Even in the 1980s, price stability was placed not in higher priority in government's policy consideration than the rapid growth strategy. During the period of stagflation in the early 1980s, the government put emphasis on overcoming the stagflation and enhancing exports. When the firms were in difficulties and the economy was in recession, the government took action to 'realize' the prices of commodities, which enabled the firms to shift the increased costs to commodity prices. Accordingly, direct control over price was major device of the government's price policy.

Consequently, inflation has been secondary in policy agenda to carry out the economic growth strategy, and the government in implementing its policies has tacitly accepted inflation.

D. Inflation and Income Distribution

Inflation, which caused a discrepancy between nominal and real values, provided firms with favorable conditions for rapid growth by lessening real financial cost and real wage. In the first place, inflation alleviated the financial costs for firms which were mostly dependent on the loans from the financial institutions by reducing real interest rates. Real interest rates are reported in Table 11, which demonstrates that interest rates were kept low over the whole period under consideration.¹⁶ For some years when real interest rates were negative, firms could increase their real incomes by getting loans from the financial institutions. In particular, considering the fact that the interest rates on preferential loans were kept lower than those on general loans and the proportion of the preferential loan was very high,¹⁷ one can easily recognize that low interest rates greatly reduced the financial costs of firms. Low interest rate was a barrier to increasing domestic savings. Since the domestic investment ratio was higher than the domestic saving ratio, the monetary authorities were forced to increase money supply by borrowing from the Bank of Korea, a process which resulted in the inflationary pressure. Under financial structure, the accelerated inflation stimulated firms to shift their financial costs to others.¹⁸

In the second place, inflation also provided firms with favorable conditions for overcoming the recession as production costs were reduced by lowering the real wage rate. With regard to the relationship between wages and prices, the main issue of discussion is the causality between the two variables. The wage-control policy during the early 1980s could be justified by the argument that wages are one of the most important factors of inflation. But it has not been empirically proved yet.¹⁹

¹⁶Owing to the regulation, bank interest rate is very different from the market interest rate as is represented by the curb market interest rate. See Table 11.

¹⁷The gap between interest rates on preferential loans and those of general loans widened as much as 18% points, and the proportion of preferential loans among new loans extended generally remained at about 50%.

¹⁸There is a counter argument that it is a high interest rate policy that causes inflation. According to Taylor, an increase in the interest rate is a source of inflation due to the fact that it reduces aggregate supply rather than aggregate demand in underdeveloped countries, and hence low interest rate policy is more appropriate for price stabilization in the case of underdeveloped countries. See Taylor (1991).

¹⁹Most researchers conclude that the causality between wages and prices goes either way.

TABLE 11
 REAL INTEREST RATES, INCREASE RATE OF REAL WAGE, AND REAL ESTATE PRICES
 (Unit: %)

Year	Real Interest Rate	Curb Market Real Interest Rate	Increase Rate of Real Wage	Increase Rate of House Price	Increase Rate of Land Price
1971	8.0	36.4	8.6	36.7	-
1972	3.8	27.3	4.2	14.6	-
1973	12.3	30.3	8.1	14.9	-
1974	-8.8	16.3	11.0	17.6	-
1975	-9.9	26.0	1.6	38.6	27.0
1976	2.7	25.2	19.4	27.3	26.6
1977	6.0	28.1	24.7	24.6	33.5
1978	4.5	26.7	19.0	30.8	49.0
1979	0.8	24.2	10.4	37.8	16.6
1980	-8.7	16.2	-6.0	26.8	11.1
1981	-5.6	13.7	-1.5	21.2	7.5
1982	2.9	23.5	7.6	2.3	5.3
1983	6.6	22.4	8.8	22.6	18.5
1984	7.7~9.2	22.5	5.8	3.1	13.2
1985	7.5~9.0	21.5	7.4	0.0	7.0
1986	7.2~8.7	20.8	6.4	-3.0	7.3
1987	7.0~8.5	20.0	8.6	5.3	11.2
1988	2.9~5.9	15.6	12.6	15.6	27.2
1989	4.3~6.8	13.4	19.4	17.5	32.8
1990	1.4~3.9	10.1	11.6	16.7	20.0

- Note: 1. Real interest rate = Interest rate on other bills - CPI growth rate
 2. Increase rate of real wage = Increase rate of monthly average nominal wage in manufacturing - CPI growth rate
 3. Curb market real interest rate
 = Curb market interest rate - CPI growth rate

Source: The Bank of Korea, *Economic Statistics Yearbook*, each issue.
 National Statistical Offices, *Annual Report on the Family Income and Expenditure Survey*, each issue.
 Ministry of construction, *Trends in Land Prices*, each issue.

Due to inflation, firms could enjoy rapid growth rates by reducing production costs through the reduction of wage and financial costs, and shifting costs to other agents. In other words, inflation worsened income distribution by redistributing income in favor of firms.²⁰

We should note that inflation had more serious influence on income

²⁰Gini's coefficients and multiples increased when prices rose high. See Appendix Table A4.

distribution than the estimated values suggest. Because inflation was more beneficial to real asset holders, the accelerated inflation led to speculation in real assets as a good hedge against inflation. The popular assets for speculation in Korea were land and houses. Real estate prices that soared reflect heavy speculation in these assets (see Table 11). As a result, the wealth inequality widened between asset holders and non-holders. Furthermore, if we take into consideration the fact that the price of lands and houses is barely included in calculating the price index, the real effects of inflation on income distribution should be much greater than expected.

IV. Conclusion

Inflation has been closely associated with the economic development strategy in Korea. This rapid growth-oriented, industrialization-oriented, export-driven, and big firm-oriented strategy has formed both the industrial structure which is dependent on foreign factors and the market structure which is monopolistic. It has, at the same time, caused the slowdown of agriculture.

The external dependency of the industrial structure has in turn generated a price structure in which domestic prices are sensitive to foreign price movements. In addition, the external deficits had induced the government to adopt devaluation and import restrictions, which spurred inflation. The monopolistic and oligopolistic structure gave rise to a price structure where cost increases were easily linked to price increases which raised other products sequentially. The slowdown of agriculture was another factor that provoked inflation.

It can be concluded that inflation in Korea is cost-push inflation originating from the economic growth strategy. Hence the argument that the inflation must be tolerated for rapid economic growth cannot be justified in the case of the Korean experience.

In fact, the government gave a top priority to rapid growth and took price stability as its secondary policy target. That is the reason why the government always preferred the economic growth to the price stability as a policy target, whenever it had to make a choice between the two, and why it depended mainly on direct price control as its economic stabilization policies, although the effectiveness of the control was limited.

²⁰Gini's coefficients and multiples increased when prices rose high. See Appendix Table A4.

Inflation in Korea did not originate from economic growth itself. It is unacceptable that inflation must be tolerated for rapid growth. This can be supported by the fact that in Korea a correlation between GNP growth rate and inflation rate does not exist.

Inflation in Korea worsened the income distribution by redistributing incomes in favor of firms and stimulating speculations in land and house. In particular, the expansion of speculations due to inflation aggravated the inequality in income distribution.

Appendix

TABLE A1
TRENDS IN PRICES AND MAJOR ECONOMIC INDICATORS

(Unit: %)

	CPI growth rate	WPI growth rate	GNP deflator growth rate	Import price growth rate	GNP growth rate	Consump- tion growth rate	M2 growth rate
1962	6.6	9.8	8.6	8.3	2.2	7.1	24.9
1963	20.7	19.6	29.3	19.8	9.1	3.7	7.4
1964	29.5	35.8	30.0	40.0	9.6	6.5	14.8
1965	13.6	9.6	6.2	20.0	5.8	6.8	52.7
1966	11.6	8.8	14.5	2.3	12.7	6.8	61.7
1967	10.2	5.5	15.6	1.6	6.6	8.9	61.7
1968	11.0	8.7	16.1	-0.1	11.3	10.6	72.0
1969	12.4	6.4	14.8	4.3	13.8	10.3	61.4
1970	15.4	9.0	16.4	8.0	7.6	10.5	27.4
1971	14.0	9.0	12.5	7.1	8.6	8.9	20.8
1972	11.7	13.9	16.7	6.9	5.1	4.8	33.8
1973	3.0	7.2	13.6	25.9	13.2	7.3	36.4
1974	24.3	42.0	30.5	40.3	8.1	8.2	24.0
1975	25.4	26.3	25.2	-4.0	6.4	5.9	29.2
1976	15.3	12.1	21.2	3.0	13.1	7.5	33.5
1977	10.0	9.0	16.6	0.9	9.8	6.0	39.7
1978	14.5	11.8	22.8	4.4	9.8	9.5	35.0
1979	18.2	18.6	19.6	26.6	7.2	7.6	24.6
1980	28.7	39.0	24.0	27.5	-3.7	0.3	26.9
1981	21.6	20.4	16.9	2.4	5.9	4.9	25.0
1982	7.1	4.6	7.1	-5.3	7.2	5.6	27.0
1983	3.4	0.2	5.0	-4.2	12.6	8.2	15.2
1984	2.3	0.7	3.9	0.3	9.3	6.6	7.7
1985	2.5	0.9	4.2	-2.7	7.0	6.3	15.6
1986	2.8	-1.5	2.8	-6.7	12.9	8.4	18.4
1987	3.0	0.5	3.5	10.9	13.0	8.1	19.1
1988	7.1	2.7	5.9	14.2	12.4	9.7	21.5
1989	5.7	1.5	5.2	3.3	6.8	10.7	19.8
1990	8.6	4.2	10.6	-3.1	9.3	10.1	17.2
1991	9.3	5.4	10.9	-3.2	8.4	9.2	21.9

Note: 1. CPI, WPI, GNP deflator, and import prices is based on 1985.

2. CPI's from 1962 to 1965 are the CPI in Seoul. GNP deflator is based on 1975 during 1962-70, and on 1985 after 1971. Import prices is based on 1970 during 1962-71.

3. M2 is a stock as of end of year

Source: The Bank of Korea, *Economic Statistics Yearbook*, each issue.

TABLE A2
WPI INCREASE RATE BY SECTORS

(Unit: %)

	Agricultural & marine products	Manufac- tured products	Light industrial products	Heavy industrial products	Competitive goods	Non- competitive goods
1971	16.7	4.9	3.2	5.8	6.7	7.4
1972	23.8	11.0	9.9	11.7	9.7	17.7
1973	10.8	7.3	8.2	6.8	6.8	9.8
1974	14.6	22.8	14.7	30.1	22.4	17.9
1975	41.2	45.9	26.3	60.4	26.3	63.1
1976	28.8	13.0	15.6	11.6	17.4	15.5
1977	16.0	4.6	8.1	2.5	11.6	5.9
1978	30.2	4.6	4.4	4.8	21.7	7.1
1979	22.7	6.1	8.0	4.9	17.6	6.9
1980	9.9	34.9	27.2	39.7	17.5	30.1
1981	39.9	36.8	27.6	42.3	25.9	50.0
1982	4.2	11.2	8.4	12.6	6.6	13.7
1983	9.3	0.8	2.1	0.1	4.2	0.5
1984	-6.5	-0.1	2.5	-1.3	-1.3	-0.9
1985	10.3	-0.1	0.2	-0.4	4.1	-0.3
1986	2.7	0.1	0.4	-0.1	0.7	0.5
1987	-10.3	-1.3	1.9	-3.1	-2.2	-3.4
1988	17.5	1.2	1.3	1.3	6.4	-1.2
1989	7.6	0.5	1.8	-0.1	4.6	-2.8
1990	4.7	1.4	3.4	0.3	2.2	1.0
1991	20.6	5.1	3.8	5.9	10.1	3.6

Source: The Bank of Korea, *Economic Statistics Yearbook*, each issue.

TABLE A3
CHANGES IN INDUSTRIAL STRUCTURE

(Unit: %)

	Based on Nominal GDP				Based on Labor Power			
	Agriculture, forestry & fishing	Manufacturing	Light industry	Heavy industry	Services	Agriculture, forestry & fishing	Manufacturing	Services
1962	37.0	14.4	71.4	28.6	42.1			
1963	43.4	14.7	70.3	29.7	36.3			
1964	46.8	15.6	69.6	30.4	32.1	61.9	8.2	29.3
1965	38.0	18.0	68.6	31.4	37.2	58.6	9.4	31.0
1966	34.8	18.6	65.9	34.1	39.6	57.9	9.9	31.3
1967	30.6	19.1	65.3	34.7	43.0	55.2	11.7	32.0
1968	28.7	20.1	62.0	38.0	43.5	52.4	12.8	33.6
1969	27.9	20.3	62.4	37.6	43.2	51.3	13.1	34.4
1970	26.7	20.9	61.9	38.1	44.2	50.4	12.1	35.2
1971	27.2	21.3	60.7	39.3	44.3	48.4	13.3	37.4
1972	26.8	21.3	63.9	36.1	44.0	50.6	13.7	35.2
1973	25.0	22.4	60.1	39.9	42.9	50.0	15.9	33.7
1974	24.8	25.1	51.9	48.1	42.5	48.2	17.5	34.1
1975	25.0	26.0	54.1	45.9	41.5	45.9	18.6	35.0
1976	23.6	27.6	53.0	47.0	41.8	44.6	21.3	33.5
1977	22.4	27.5	50.8	49.2	41.6	41.8	21.6	35.8
1978	20.6	28.1	49.5	50.5	40.9	38.4	22.4	38.4
1979	19.2	28.8	47.9	52.1	40.7	35.8	22.9	40.5
1980	14.9	29.7	48.8	51.2	43.7	34.0	21.7	43.4
1981	15.6	29.9	47.9	52.1	43.7	34.2	20.4	44.5
1982	14.7	29.2	47.2	52.8	45.0	32.1	21.1	46.1
1983	13.6	29.9	44.9	55.1	44.8	29.7	22.5	47.0
1984	12.9	30.8	43.9	56.1	44.6	27.1	23.2	48.7
1985	12.8	30.3	43.3	56.7	45.4	24.9	23.4	50.6
1986	11.5	31.7	42.6	57.4	45.7	23.6	24.7	50.5
1987	10.5	32.2	43.0	57.0	46.1	21.9	27.0	50.0
1988	10.5	32.5	39.5	60.5	45.5	20.7	27.7	50.9
1989	10.1	31.2	38.7	61.3	45.9	19.5	27.6	52.3
1990	9.0	28.9	37.6	62.4	46.2	18.3	26.9	54.4
1991	8.1	27.5	35.1	64.9	46.7	16.7	26.6	56.4

Source: The Bank of Korea, *Economic Statistics Yearbook*, each issue.

TABLE A4
INFLATION AND INCOME DISTRIBUTION

(Unit: %)

	1965	1970	1976	1978	1980	1985	1988
Change in GNP deflator	6.2	15.6	21.2	22.8	24.0	4.2	5.9
WPI (1985=100)	10.3	9.0	12.1	11.8	39.0	0.9	2.7
(1980=100)	10.3	9.4	12.1	11.7	38.9	0.9	—
CPI (1985=100)	-	15.2	15.8	14.5	28.7	2.5	7.1
(1980=100)	(13.6)	12.7	15.3	14.4	28.7	2.5	—
Top 20 percent (A)	41.81	41.62	45.34	46.70	45.39	43.71	
						42.72	42.24
Bottom 40 percent (B)	19.34	19.63	16.85	—	16.06	17.71	
						18.91	19.68
Bottom 20 percent (C)	5.80	—	5.70	5.18	5.09	6.08	
						6.96	7.39
Multiples							
A/B	2.166	2.122	2.691	—	2.827	2.468	
						2.259	2.146
A/C	7.207	—	7.954	9.015	8.917	7.189	
						6.138	5.716
Gini's Coefficient	0.344	0.332	0.391	0.400	0.389	0.363	
						0.3449	0.3355

Note: 1. Value in parenthesis indicates change in Seoul CPI

2. A, B and C indicate percentages of income going to the top 20 percent, to the bottom 40 percent, and to the bottom 20 percent, of population, respectively.

3. Upper and lower columns indicate values shown in 1988 edition and 1989 edition, of Social Indicators in Korea, respectively.

Source: Bank of Korea, *National Bureau of Statistics*, each issue.

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