

Korea's Five-Year Economic Plans and Their Impacts*

Hyung-Yoon Byun

Seoul National University

When we examine the process of economic development in Korea, focusing on the five-year economic plans and their impacts, we find that the Korean economy has succeeded in achieving remarkable growth under the leadership of the government through an export-oriented development strategy based on imported capital and technology. The positive effects were rapid growth, the modernization of industrial and export structures, and increases in exports and saving. On the other hand, the negative features of export-oriented development strategies were the high dependency on foreign countries, the disparity between agriculture and manufacture, the inequality of income, the uneven growth between large and small firms, import-augmenting export, the low level of domestic technology, and inflation. In particular, given the current state of the Korean economy, the importance of technological development is highly and appropriately emphasized.

I. Introduction

This paper tries to examine the process of Korean economic development since 1962, when the first five-year economic development plan was adopted. After the first five-year plan¹ was carried out in 1962, the Korean government modified the original plan many times. For instance, during the first five-year plan (1962-66), a complementary plan was made for the period of 1964-66, and modified plans were made during the fifth (1982-86) and sixth

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¹The official term is the First Five-Year Plan for Economic Development. After the fifth plan, the term "Economic and Social Development" was replaced with "Economic Development".

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(1987-91) plan periods.² The first oil shock forced the government to change the execution of the third plan (1972-76), and the second oil shock, along with the readjustment of investment in heavy and chemical industry, made it difficult for the government to follow the original plan.³

However, it is remarkable that the Korean government continued to carry out the five-year plans, in spite of some modifications of annually executing plans. It would be natural to examine the records of the development strategy adopted in these plans, namely, to assess the performance of the Korean economy since 1962. The next section describes the positive impacts of rapid economic growth in Korea, and the third section deals with its negative side effects. The fourth section explains the state of the Korean economy during the period of the fifth and sixth five-year economic plans. The last section summarizes the discussion and assesses the prospects for the Korean economy.

II. Rapid Economic Growth and Its Positive Impacts

The basic strategy of economic development adopted throughout all five-year economic plans was undeniably one of export-oriented industrialization. The emphasis given to heavy industry after the third plan was also to enhance export. A minor difference between the fifth plan and the four prior plans concerned the selection of a "moderate" growth at the annual rate of 7 to 8% or a "rapid" growth at a rate exceeding 8%.

According to this demarcation, the five-year plans up to the fourth seemed to aim at rapid growth. In particular, in the third and fourth plans, the planned growth rates were 8.6% and 9.2%, respectively (see Table 1). In the first and second plans, the planned rates were 7.1% and 7.0%, which were quite high in comparison to the actual growth rates of 3.8%, 1.1%, and 5.6% in 1959, 1960, and 1961, respectively. Moreover, the actual growth rate in the second plan period was 9.6%. However, after the fifth plan, the planned growth rate was lowered to a rate of 7 to 8%.

A brief look at the contents of Tables 1 and 2 shows that export-

²The complementary plan for the first was determined in February 1964, and the modified plans for the fifth and sixth were determined in December 1983, and October 1988, respectively.

³The readjustments were carried out in 1979, 1980, and 1982.

TABLE 1
GROWTH RATES (FIRST TO FIFTH PLAN)

(Unit : %)¹⁾

| | 1st | | 2nd | | 3rd | | 4th | | 5th | | |
|-----------------------|--------------------|---------------|----------------|------------|----------------|------------|----------------|------------|----------------|----------------|------------|
| | 1962-66 planned | 7.8 actual | 1967-71 pl. | 9.6 ac. | 1972-76 pl. | 8.6 ac. | 1977-81 pl. | 9.2 ac. | 1982-83 ac. | 1984-86 pl. | 8.7 ac. |
| GNP | 7.1 | 7.8 | 7.0 | 9.6 | 8.6 | 9.7 | 9.2 | 7.5 | 7.5 | 7.5 | 8.7 |
| Sectoral | | | | | | | | | | | |
| Primary | 5.7 | 5.6 | 5.0 | 1.5 | 4.5 | 6.1 | 4.0 | -0.6 | 5.5 | 3.5 | 3.0 |
| Mining & Manu. | 15.0 | 14.3 | 10.7 | 19.9 | 13.0 | 17.9 | 14.0 | 10.0 | 7.0 | 4.7 | 11.7 |
| Manu- facture | 15.0 | 15.0 | — | 21.8 | 13.3 | 19.0 | 14.3 | 10.5 | 7.3 | 10.0 | 12.0 |
| Service ²⁾ | 5.4 | 8.4 | 6.6 | 12.6 | 8.5 | 8.2 | 7.6 | 6.1 | 8.4 | 7.4 | 7.3 |
| Export | 28.0 | 38.6 | 17.1 | 33.8 | 22.7 | 32.7 | 16.0 | 11.1 | 9.3 | 10.2 | 12.6 |

Source: The Korean Government (1983, 1988).

Note: 1) The base year is 1980.

2) Service sector, social overhead capital production, and production by non-profit organization are included.

TABLE 2
PLANNED AND ACTUAL GROWTH RATES IN THE SIXTH PLAN

(Unit : %)

| | Original Plan | Modified Plan | Actual | |
|-------------------|------------------|------------------|--------|------------------|
| | 1987-91 | 1988-91 | 1988 | 1989 (estimated) |
| GNP | 7.3 | 8.2 | 12.2 | 6.5 |
| Sectoral | | | | |
| Primary | 2.5 | 3.8 | 9.0 | -1.9 |
| Mining & Manu. | 9.3 | 9.6 | 12.7 | — |
| Manufacture | 9.5 | 9.8 | 13.0 | 3.6 |
| SOC | 7.2 | 7.8 | 8.4 | — |
| Service | — | — | 12.6 | — |
| Others | 6.4 | 7.2 | — | — |
| Export | — | 13.9 | 28.4 | 2.6 |

Source: The Korean Government (1988).

Bank of Korea (1989).

Economic Planning Board (1989b).

TABLE 3
INVESTMENT ALLOCATION
(FIXED CAPITAL FORMATION)

| | (Unit : %) | |
|-----------------------------------|------------|---------|
| | 1972-76 | 1972-79 |
| Primary | 10.1 | — |
| Agriculture | 7.9 | — |
| Mining & Manu. | 25.5 | — |
| Manufacture | 24.4 | 23.2 |
| Light | 9.4 | 8.7 |
| Heavy | 15.0 | 14.5 |
| Chemical | — | 4.5 |
| Steel & Metal | — | 4.5 |
| Machine ¹⁾ | — | 5.6 |
| Service & SOC | 64.4 | 66.7 |
| Electricity | 7.5 | 6.0 |
| Transportation & Communication | 20.5 | 24.5 |
| Housing | 15.3 | 15.8 |
| Total | 100.0 | 100.0 |

Source: The Korean Government (1976, 1981).

Note: 1) Electronics and vehicles are included.

oriented industrialization was a basic strategy of economic development. First, the growth rate of the manufacturing sector has been much higher than that of other sectors in both planned and actual values. Second, except in the fourth plan period, the actual growth rate of exports has exceeded the planned rate which had itself been fairly high. As a matter of fact, the balance between imports and exports, which was one of the major objectives of the fourth plan, was supposed to be achieved by the expansion of exports, and export expansion⁴ continued to be pursued in the fifth plan.

Table 3 shows investment allocation across industries on the basis of fixed capital formation. During the third plan period when the building of heavy and chemical industry (HCI) was emphasized, the share of investment in heavy and chemical industry was 15.0% of total investment, or 60.2% of investment in the manufacturing sector. The share of heavy and chemical industry in total investment ranked third, following 20.5% for transportation and communication

⁴The Korean Government (1981, pp. 29, 31).

TABLE 4
MAJOR ECONOMIC INDICATORS OF KOREA

| | 1962 | 1971 | 1981 | 1988 | 1989 |
|---|--------|--------|--------|-------|-------|
| 1. GNP (billion \$) | 2.315 | 9.456 | 66.8 | 169.2 | 204.0 |
| 2. Per capita GNP (\$) | 87 | 288 | 1,734 | 4,040 | 4,830 |
| 3. Unemployment Rate (%) | 8.2* | 4.5 | 4.5 | 2.5 | 2.7 |
| 4. Ratio of Employee to Working Population (%) | 31.5 | 39.4 | 47.1 | 57.0 | 59.1 |
| 5. Ratio of Domestic Saving to GNP (%) | 25.0 | 57.8 | 75.9 | 126.1 | 107.2 |
| 6. Share of Manufacture (%) | | | | | |
| 6a. Product | 14.4 | 21.3 | 30.1 | 31.6 | 29.9 |
| 6b. Employment | 7.9* | 13.4 | 20.4 | 27.7 | 27.6 |
| 7. Share of Service Sector (%) | | | | | |
| 7a. Product | 42.1 | 44.8 | 43.7 | 45.9 | — |
| 7b. Employment | 25.3* | 39.1 | 38.2 | 44.8 | 45.8 |
| 8. Share of Heavy Industry (%) | | | | | |
| 8a. Production | 26.8 | 31.5 | 52.6 | — | — |
| 8b. Value Added | 28.6 | 37.3 | 52.4 | 58.8 | — |
| 9. Share of Manufacture in Export (%) | 51.6** | 86.0 | 92.9 | 93.4 | 93.4 |
| 10. Share of Heavy Industrial Product in Manu. Export (%) | 17.1** | 16.4 | 47.3 | 53.9 | 53.6 |
| 11. Export (billion \$) | 0.055 | 0.107 | 7.59 | 12.61 | 10.72 |
| 12. Trade Balance (billion \$) | -0.367 | -1.326 | -4.877 | 8.885 | 0.912 |
| 13. Foreign Debts (billion \$) | 0.089 | 2.92 | 32.4 | 31.2 | — |

Note: 1) *: the value in 1963.

2) **: the value in 1964.

and 15.3% for housing. The HCI share outranked the 7.8% for agriculture and the 10.1% for the primary sector, including agriculture, forestry and fishing. Similarly, the figures for the period of 1972-79 exhibit the same ranks.

The pursuit of the aforementioned development strategy brought about the growth of GNP, per capita GNP, and exports,⁵ as recorded in Table 4. GNP increased rapidly from \$2.3 billion in 1962 to \$9.5 billion in 1971, \$66.8 billion in 1981 and \$169.2 billion in

⁵See Table 4 for the exact figures.

1988, and is expected to reach \$204 billion in 1989.⁶ On a per capita basis, GNP amounted to \$87 in 1962, \$288 in 1971, \$1,734 in 1981, \$4,040 in 1988, and \$4,830 in 1989. Export increases show more remarkable progress, from \$0.055 billion in 1962 to \$1.07 billion in 1971, \$21.25 billion in 1981, \$60.69 billion in 1988, and \$62.38 billion in 1989.

Next, the unemployment rate has decreased considerably from 8.2% in 1963 to 2.5% in 1989, with the exception of 5.2% in 1980 due to political unrest.

Third, the ratio of domestic saving to investment has increased, even though it decreased during the first and second oil shocks. After 1986, it exceeded 100%. The ratio was 25.0% in 1962, 57.8% in 1971, 75.9% in 1981, 97.3% in 1985, 112.9% in 1986, 126.1% in 1988, and 107.2% in 1989.

Fourth, the employment structure was modernized, in terms of the increase of the share of the employed in total working population, the increase of the share of technocrats employed in administration or management, and the share of workers employed in production lines or distribution. In fact, the share of the employed in the working population was 31.5% in 1963, 39.4% in 1971, 47.1% in 1981 and 59.1% in 1989. Particularly in 1989, the share of the employed excluding those who were employed on a daily basis reached 49.3%. This share began to exceed 50% in 1984. The share of technocrats was 3.3% in 1963, 4.9% in 1971, 5.6% in 1981, and 8.3% in 1989. The share of workers in production lines was 15.0% in 1963, 19.5% in 1971, 28.2% in 1981, and 34.5% in 1989.

Fifth, the transformation of both industrial and manufacturing structures was found, in terms of the increase in the manufacturing sector's share of total production and employment. The share of manufacturing production in national product was 14.4% in 1962, 21.3% in 1971, 30.1% in 1981, and 31.6% in 1988. The share of workers employed in the manufacturing sector was 7.9% in 1963, 13.4% in 1971, 20.4% in 1981, and 27.7% in 1988. In addition, the share of heavy and chemical industry production in total manufacturing production has increased.⁷ Its share in terms of production was 17.1% in 1962, 31.5% in 1971, 52.6% in 1981, and 57.9% in

⁶These representative years are selected because: 1962 was the first year of the first plan; 1971 the last year of the second; 1981 the last year of the fourth; 1988 and 1989 the most recent, or the second and third years of the sixth plan.

⁷The share in terms of employment also increased. The ratio of employment in heavy industry to employment in manufacturing industry was as large as 50.4% in 1988.

1987. This figure grew to exceed 50% in 1980. In terms of value added, the share of heavy and chemical industry in manufacturing production was 28.6% in 1962, 37.3% in 1971, 52.4% in 1981, and 58.8% in 1988.

Finally, the structure of export goods was transformed, in the sense that the share of manufacturing goods in total exports and that of heavy and chemical industrial products in total manufactured products increased. The former had increased from 51.6% in 1964, 86.0% in 1971, 92.9% in 1981, up to 93.4% in 1988. The latter had increased from 17.1% in 1964 and 16.4% in 1971, up to 47.3% in 1981 and 53.9% in 1988. This figure began to exceed 50% in 1982.

The Korean development strategy resulted in the increase of GNP, saving and exports, and the transformation of both industrial and manufacturing structures, employment patterns, and exports structure. In addition to these facts, we observe some signs that the Korean economy has become more capitalistic, as indicated by the increase in the share of commodity production for sale in total production, the share of the employed in total working population, and the financial interrelations ratio.⁸

III. Negative Effects of Korean Economic Development

Some negative side effects of Korean economic development up to 1981 can be pointed out. First, the Korean economy became more dependent upon the foreign sector, or foreign economic conditions. The high dependency may be ascribed mainly to the fact that: 1) Korean export goods were made out of imported parts and technologies; 2) the forward and backward linkage effects were very low in Korean industries; 3) the investment fund was raised by foreign loans. These rendered the Korean economy vulnerable to the first oil shock and even more so to the second.

Looking at some economic indicators during the first and second oil shocks, we find faltering growth, price hikes, and a huge deficit in the balance of payments. The growth rate was 8.5% in 1974 and 6.8% in 1975 (see Table 5). These rates were lower than the average annual growth rate of 9.7% during the third plan (1972-76). The growth rates of -3.7% in 1980 and 5.9% in 1981 were also lower than the average annual rate of 7.5% during the fourth plan

⁸Financial deepening could be witnessed also in terms of the increasing financial interrelations ratio, namely 0.81 in 1983, 2.13 in 1971, 2.59 in 1981, and 3.77 in 1987.

TABLE 5
ECONOMIC INDICATORS IN KOREA, TAIWAN & SINGAPORE

| | 1973 | 1974 | 1975 | 1979 | 1980 | 1981 |
|------------------------------|-------|-------|-------|-------|-------|-------|
| GNP Growth Rate (%) | | | | | | |
| Korea | 14.0 | 8.5 | 6.8 | 7.0 | -4.8 | 6.6 |
| Taiwan | 12.8 | 1.1 | 4.3 | 8.5 | 7.1 | 5.7 |
| Singapore | 11.5 | 6.4 | 4.1 | 9.4 | 1.3 | 9.9 |
| Foreign Saving Ratio (%) | | | | | | |
| Korea | 3.7 | 11.9 | 10.3 | 8.9 | 11.5 | 9.8 |
| Taiwan | -5.3 | 7.7 | 3.8 | -0.5 | 1.6 | -1.3 |
| Singapore | 16.0 | 21.5 | 11.5 | 10.7 | 14.4 | 13.6 |
| Inflation Rate (WPI, %) | | | | | | |
| Korea | 6.9 | 42.1 | 26.5 | 18.8 | 38.9 | 20.4 |
| Taiwan | 22.7 | 40.7 | -5.1 | 13.5 | 21.4 | 7.6 |
| Singapore | - | - | -1.4 | 14.4 | 19.6 | 3.9 |
| Inflation Rate (CPI, %) | | | | | | |
| Korea | 3.1 | 24.3 | 25.3 | 18.3 | 28.7 | 21.3 |
| Taiwan | 8.0 | 47.7 | 5.2 | 9.7 | 19.1 | 16.3 |
| Singapore | 19.4 | 22.4 | 2.7 | 3.9 | 8.5 | 8.3 |
| Current Balance (billion \$) | | | | | | |
| Korea | -0.30 | -2.02 | -1.88 | -4.15 | -5.32 | -4.64 |
| Taiwan | 0.56 | -1.11 | -0.58 | 0.24 | -0.91 | 0.51 |
| Singapore | -0.51 | -1.02 | -0.58 | -0.73 | -1.50 | -1.37 |

Source: Bank of Korea (1990a, pp. 1-2, 9-10).

Economic Planning Board (1987, pp. 120-22).

(1977-81). The wholesale price indices and consumer price indices were 42.1% and 24.3% in 1974, 26.5% and 25.3% in 1975, 38.9% and 28.7% in 1980, and 20.4% and 21.3% in 1981, respectively. These figures were higher than the average annual rate during the corresponding five-year plan periods. Deficits in the current balance amounted to \$2.02 billion in 1974, \$1.88 billion in 1975, \$5.32 billion in 1980, and \$4.64 billion in 1981. These were larger than deficits in years before and after the oil shocks, namely \$0.37 billion in 1972, \$0.3 billion in 1973, \$1.08 billion in 1978, and \$2.65 billion in 1982. Huge deficits in international payments resulted in the accumulation of foreign debts, the size of which was \$4.26 billion in 1973, \$5.94 billion in 1974, \$8.46 billion in 1975, \$14.87 billion in 1978, \$20.3 billion in 1979, \$27.2 billion in 1980, and \$32.4 billion in 1981.

Other countries in the Asian region also suffered from the oil shocks. However, the hardships of Korea were more severe than those of Taiwan or Singapore, especially during the second oil

TABLE 6
THE COMPARISON OF NOMINAL HOUSEHOLD INCOME

(Unit : 1,000 won)

| | 1970 | 1976 | 1981 | 1982 | 1983 | 1986 | 1987 | 1988 |
|--------------------|------|-------|-------|-------|-------|-------|-------|-------|
| Farmer(A) | 256 | 1,156 | 3,688 | 4,465 | 5,128 | 5,995 | 6,535 | 8,130 |
| City- Worker(B) | 381 | 1,152 | 3,817 | 4,327 | 4,991 | 6,732 | 7,796 | 9,663 |
| A / B (%) | 67.2 | 100.3 | 96.6 | 103.2 | 102.7 | 89.1 | 83.9 | 84.1 |

Source: Ministry of Agriculture and Fisheries (1988).

shock. Table 6 indicates that Korea suffered more than Taiwan or Singapore, with respect to a slump in growth, a high inflation rate, and deficits in international payments.

The difference in the degree of hardship was probably due to the higher dependency of the Korean economy on foreign conditions, in terms of a high ratio of imports to GNP, a higher import-inducement coefficient of exports, the larger size of accumulated foreign debts, and more frequent technology imports. The ratio of imports to GNP remained at the relatively low level of 16.6% in 1962 and 26.5% in 1971, but increased rapidly to 47.6% in 1981.⁹ According to Bank of Korea data, the import-inducement coefficient of exports increased from 0.26 in 1970 to 0.38 in 1980. This figure is much higher than that of Japan (e.g. 0.12 in 1985). In 1980, the import-inducement coefficient of the manufacturing sector was 0.38, which is the highest among three sectors. This high coefficient was basically due to a high coefficient of heavy industry (0.50) or chemical industry (0.58), in contrast with a low coefficient of light industry (0.29). Foreign debts increased from \$0.089 billion in 1962 to \$32.4 billion in 1981. Foreign technology imports recorded 33 cases in 1962-66, 338 cases in 1967-72, and 247 new cases in 1981 and 1977 total cases up through 1981. Corresponding payments for these imports were \$8 million in 1962-66, \$26.5 million in 1962-72, and \$107.1 million in 1981, or the cumulate amount of \$564.9 million up to 1981.¹⁰

Next, a growth-oriented strategy spurred inflation. Aside from a price hike due to the aforementioned oil shocks, the price level increased very rapidly over all five-year plans except the second. In terms of the wholesale price index, the average annual inflation rate

⁹Bank of Korea (1987).

¹⁰See Ministry of Science and Technology, each year.

was 16.5% in the first, 7.7% in the second, 20.3% in the third, and 19.6% in the fourth five-year plan period. In terms of the consumer price index, we witnessed double-digit inflation rates over the entire period, namely, 16.5% in the first, 12.6% in the second, 15.9% in the third, and 18.6% in the fourth plan period. To curb inflation, the Act for Price Stabilization and Fair Trade was enacted in April, 1974, and the Over-all Policy for Economic Stabilization was carried out in April, 1979.

Third, the industrialization favoring heavy and chemical industries led to over-investment in these industries. The first adjustment of investment in heavy industry was conducted under the guidance of the Economic Planning Board in May, 1979. This adjustment entailed the postponement of new investment and a readjustment of electric generator and heavy machinery production. Several more readjustment attempts followed, all in vain.

In August and October of 1980, a full-scale adjustment was carried out, including the readjustment of investment in electric generators and facilities, automobiles, diesel vessel engines, copper refineries and electronic switchboard production.¹¹

Fourth, agriculture remained stagnant mainly due to the low backward and forward linkage effects of industrialization, and an export drive based on low wages supported by low prices in agricultural products. A household income in the agricultural sector might seem to have risen, if we compare farm household income with urban household income. Table 6 shows that the ratio of the former to the latter increased from 67.2% in 1970 to 96.6% in 1981. However, if we compare the real household income of a farmer, i.e. nominal income divided by the price index of a farmer's purchases with that of city-worker, i.e. nominal income divided by the city-consumer price index, the ratio of the former to the latter decreased from 108.8% in 1970 to 91.2% in 1981 (see Table 7). Moreover, the gap in true living standards between the two would be larger, if we consider the fact that inventories of agricultural products were usually underestimated, whereas high income families living in the city were often omitted in income surveys.

To make things more gloomy, the debts of farmers tripled in nominal terms from 1970 to 1981. The ratio of farmers' debts to income also increased from 6.2% in 1970 to 11.8% in 1981 (see

¹¹More adjustments followed these (see Economic Planning Board, *Economic Policy in the Development Decades*, 1982, and *Economic Policies in the 1980s*, 1986).

TABLE 7
THE COMPARISON OF HOUSEHOLD INCOME IN REAL TERMS

(Unit : 1,000 won)

| | 1970 | 1976 | 1981 | 1982 | 1983 |
|-------------------------------------|--------|---------|---------|---------|---------|
| Farmer's Household Income | 225.8 | 1,156.3 | 3,687.9 | 4,465.2 | 5,128.2 |
| Price Index of Farmer's Purchase | 16.4 | 46.3 | 128.5 | 144.3 | 156.2 |
| Farmer's Real Income (A) | 559.8 | 2,497.4 | 2,870.0 | 3,094.4 | 3,283.1 |
| City-Worker's Income | 318.2 | 1,151.8 | 3,817.2 | 4,326.9 | 4,900.6 |
| City-wide CPI | 22.2 | 52.1 | 121.3 | 130.1 | 134.5 |
| City-Worker's Real Income (B) | 1433.3 | 2,210.7 | 3,146.9 | 3,325.8 | 3,643.6 |
| A / B (%) | 108.8 | 113.0 | 91.2 | 93.0 | 90.1 |

Source: Ministry of Agriculture and Fisheries (1988)

Table 14 in the next section). The parity between the price of agricultural products and farmers' living costs remained at the fairly constant levels of 94.2% in 1970, 100.0% in 1971 and 99.8% in 1981. The ratio of domestic agricultural production to total consumption of agricultural products decreased from 93.5% in 1965 to 80.5% in 1970, 71.2% in 1971, 56.0% in 1980, and 43.2% in 1981.

Besides the decreasing share of agriculture in terms of employment, the increasing share of women and aged people in agricultural employment drove agriculture into stagnation. The proportion of agricultural employment in total employment kept decreasing from 64.4% in 1963 to 36.7% in 1981. The share of women in agricultural employment was 36.5% in 1963, 41.3% in 1971 and 43.4% in 1981. These figures were higher than the share of women in total employment, namely 34.8% in 1983, 36.6% in 1971 and 38.1% in 1981. The share of farmers over the age of 55 among all male farmers increased from 11.4% in 1963 to 14.4% in 1971 and 21.3% in 1981, while those over 55 for women increased from 8.9% in 1963 to 12.7% in 1971 and 19.2% in 1981. On the other hand, the share of farmers under the age of 19 decreased considerably, as shown in Table 8.

Fifth, development policies in favor of large companies brought about the concentration of economic power and retarded the growth of small companies. These results basically arose from the export drive based on mass production systems and support for export industries through finance and taxation.

Table 9 exhibits the concentration of economic power. The share of thirty large business groups in total revenues rose from 32% in

TABLE 8
THE AGE & SEX COMPOSITION IN AGRICULTURAL SECTOR
(Unit : %)

| | 1963 | 1971 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 |
|-------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Age 15-19 | 12.82 | 12.81 | 5.33 | 4.60 | 3.58 | 3.09 | 2.81 | 2.54 | 2.55 | 1.91 |
| Age over 55 | 10.48 | 13.70 | 20.06 | 20.97 | 21.38 | 23.47 | 24.30 | 25.86 | 28.32 | 30.11 |
| Female | 36.51 | 41.29 | 43.41 | 44.16 | 43.68 | 42.90 | 43.08 | 44.28 | 45.19 | 44.94 |

Source: Economic Planning Board (1988)

TABLE 9
THE STATUS OF CONGLOMERATES
(Unit : %)

| | Total Sale | | | | | Employment | | | | |
|--------|------------|------|------|------|------|------------|------|------|------|------|
| | 1977 | 1978 | 1979 | 1980 | 1981 | 1977 | 1978 | 1979 | 1980 | 1981 |
| Top 5 | 14.8 | 15.9 | 16.2 | 16.5 | 21.5 | 8.5 | 9.5 | 10.5 | 9.9 | 8.4 |
| Top 10 | 5.6 | 6.1 | 6.4 | 4.0 | 6.9 | 3.7 | 4.4 | 3.4 | 4.8 | 3.7 |
| Top 15 | 4.0 | 4.2 | 4.3 | 3.0 | 4.2 | 2.1 | 2.1 | 3.5 | 3.1 | 2.7 |
| Top 30 | 7.6 | 8.3 | 8.1 | 11.2 | 7.1 | 6.2 | 6.1 | 7.0 | 5.9 | 5.0 |
| Total | 32.0 | 39.5 | 35.0 | 34.7 | 39.7 | 20.5 | 22.2 | 24.4 | 23.7 | 19.8 |

Source: Economic Planning Board (1984, p. 102).

Note: The 30 largest business groups in terms of total sales are considered to be conglomerates. The number indicates the share in the manufacture and mining sector.

1977 to 39.7% in 1981. In terms of employment, their share increased from 19.8% to 24.4%.

On the other hand, we find a decreasing share of medium and small size companies. When we take companies with 5 to 199 employees for this category, their share decreased dramatically in terms of number, employment, production, and value-added, as Table 10 demonstrates. Government tried to prevent economic concentration by passing the Act for Price Stabilization and Fair Trade in April, 1976, and the Monopoly Regulation and Fair Trade Act in April, 1981.

Sixth, the deterioration in income distribution accompanied rapid growth. This is symptomatic of the aforementioned results of unbalanced growth, i.e. the stagnation of agriculture, economic concentration, and the shrinkage of small companies. Table 11 shows that

TABLE 10
THE STATUS OF SMALL AND MEDIUM COMPANIES

(Unit : %)

| | Number | Employment | Revenue | Value Added |
|------|--------|------------|---------|-------------|
| 1963 | 98.7 | 66.4 | 58.5 | 52.8 |
| 1966 | 98.3 | 60.3 | 45.6 | 42.5 |
| 1969 | 97.4 | 51.8 | 31.7 | 29.7 |
| 1972 | 96.5 | 45.3 | 28.5 | 27.9 |
| 1975 | 94.1 | 37.6 | 24.1 | 25.3 |
| 1976 | 94.1 | 37.6 | 22.5 | 23.7 |
| 1977 | 93.5 | 37.6 | 23.6 | 25.4 |
| 1978 | 93.6 | 38.1 | 24.8 | 26.5 |
| 1979 | 94.2 | 39.5 | 25.3 | 28.1 |

Source: Bank of Small and Medium Companies (1981, 1988)

TABLE 11
INCOME SHARE

(Unit : %)

| | Upper 20% (A) | Lower 40% (B) | A / B | Gini Coefficient |
|---------------|------------------|------------------|-------|---------------------|
| 1965 | 41.80 | 19.30 | 2.17 | — |
| 1970 | 41.82 | 19.63 | 2.13 | 0.332 |
| 1976 | 45.34 | 16.85 | 2.69 | 0.391 |
| 1978 | 46.70 | — | — | 0.400 |
| 1980 | 45.39 | 16.06 | 2.83 | 0.389 |
| 1982 | 43.00 | 18.8 | 2.29 | 0.360 |
| 1985 | 42.72 | 18.91 | 2.26 | 0.3449 |
| 1988 | 42.24 | 19.68 | 2.15 | 0.3355 |
| Japan (1979) | 37.5 | 17.2 | 2.18 | — |
| Taiwan (1979) | 37.5 | 22.3 | 1.68 | — |
| Mexico (1979) | 57.7 | 9.9 | 5.83 | — |

Source: Economic Planning Board (1987b, 1989a)

the equality of income distribution in Korea grew worse; the ratio of the income share of the highest 20% of income earners to that of the lowest 40% increased from 2.16 in 1965 to 2.82 in 1980. This ratio for Korea in 1980 was higher than that of Japan and Taiwan in 1979, which were 2.18 and 1.68, respectively. The Gini coefficient in Korea also increased from 0.332 in 1970 to 0.391 in 1976, 0.400 in 1978, and 0.389 in 1980.

Finally, the feeble financial structure of firms and the low level of

TABLE 12
THE FINANCIAL STATE OF MANUFACTURING FIRMS

| | Net Worth-Asset Ratio | | | Debt-Equity Ratio | | |
|------|-----------------------|-------|-------|-------------------|-------|-------|
| | General | Large | Small | General | Large | Small |
| 1967 | 21.9 | 22.1 | 20.7 | 151.2 | 148.1 | 173.4 |
| 1971 | 20.2 | 19.9 | 38.3 | 394.2 | 402.1 | 161.4 |
| 1979 | 21.0 | 20.9 | 21.1 | 377.1 | 377.5 | 374.3 |
| 1981 | 18.1 | 18.1 | 18.0 | 451.5 | 451.1 | 453.2 |

Source: The Council for Fostering Small and Medium Companies (1984).

domestic technology can be witnessed. For firms in the industrial sector, the debt-equity ratio increased from 151.2% in 1967 to 394.2% in 1971, and 451.5% in 1981 (see Table 12). In the 1960s and the 1970s, the ratio of net worth to total assets remained at the level of about 20%, namely 21.9% in 1967, 20.2% in 1971 and 21.0% in 1979, and dropped to 18.1% in 1981. The financial weakness of Korean firms was mainly due to the fact that capital for industrialization and export was mobilized mainly from outside companies and even from foreign countries. Many firms did not make much effort to keep financially robust, because the government often bailed out bankrupt companies.

In 1982, the index for Korean technological capability was 3.2, in comparison with 100 for the United States. In 1980, Korea's earnings from technology exports was as small as \$30 million, and the ratio of investment in R & D to GNP was only 0.58%.¹²

To sum up, some negative features of the Korean economy can be enumerated, namely the growing dependency on foreign conditions, the stagnation of agriculture, the increasing disparity between large corporations and small companies, the deterioration in firms' financial structure and equality, and the low level of technology. These factors made the Korean economy vulnerable to the oil shocks, as manifested by high inflation, large deficits in international payments, and the accumulation of foreign debts during the oil shock periods.

¹²Bank of Korea (1990). The ratio of investment in R & D to GNP was 0.38% in 1970, 0.42% in 1975, 0.58% in 1980, 1.59% in 1985, and 1.93% in 1987.

IV. The Korean Economy in the 1980s

To examine the state of the Korean economy during the fifth plan (1982-86) and the sixth plan (1987-90), we divide this period into two sub-periods. The first one was the sub-period of 1982-85 in which the economy was relatively stabilized, and the second one covers the boom after 1986.

To overcome the weaknesses mentioned in the previous section, the Korean government set up the goal of "stability, efficiency, and balance"¹³ for the fifth five-year plan. The planned growth rate was 7 to 8%, which was regarded as the optimum or stable growth rate. As a matter of fact, in 1982-85, the price level remained stable, and the deficit in international payments decreased. However, some of the above-mentioned problems continued to trouble Korea.

Looking at the bright side, we find that the price level grew stable. The inflation rate in terms of wholesale price index remained fairly low, namely at the level of 4.6% in 1982, 0.2% in 1983, 0.7% in 1984, and 0.9% in 1985. In terms of the consumer price index, the inflation rates were 7.1% in 1982, 3.4% in 1983, 2.3% in 1984, and 2.8% in 1985. The deficit in international payments decreased. In the trade balance, the deficit decreased from \$2.39 billion in 1982 to \$1.74 billion in 1983, \$1.38 billion in 1984, and \$0.85 billion in 1985. In the current account, the deficit decreased from \$2.65 billion in 1982 to \$1.60 billion in 1983, \$1.37 billion in 1984 and \$0.87 billion in 1985.

However, some negative features remained. First, foreign technology imports increased. The number of imports in 1982-85 was 1,561 cases which amounted to \$773.9 million (see Table 13). This amount exceeded the amount paid up to 1981 by \$209 million.

Second, foreign debts continued to accumulate, increasing from \$37.1 billion in 1982 to \$40.4 billion in 1983, and \$43.1 billion in 1984. It peaked at the level of \$46.7 billion in 1985.

Third, the debts of farming families kept increasing. The ratio of debt to income was 18.6% in 1982 and 35.3% in 1985, as Table 14 shows. The proportion of those aged over 55 in total farmers increased from 20.9% in 1982 to 24.7% in 1985, whereas the propor-

¹³The objective of the third plan was 'growth, stability, and balance,' and that of the fourth plan was 'growth, efficiency, and equity.'

TABLE 13
TECHNOLOGY IMPORTS IN 1962-1989

| | Number of Cases (A) | Payment (million \$, B) | B / A |
|----------|------------------------|----------------------------|-------|
| 1963-66 | 33 | 0.8 | 0.02 |
| 1967-72 | 338 | 26.5 | 0.08 |
| 1973-76 | 381 | 86.2 | 0.23 |
| 1977-81 | 1,225 | 451.4 | 0.37 |
| Subtotal | 1,977 | 564.9 | 0.29 |
| 1982-89 | 3,785 | 3,115.2 | 0.82 |
| 1982 | 308 | 115.7 | 0.38 |
| 1983 | 362 | 149.5 | 0.41 |
| 1984 | 437 | 213.2 | 0.49 |
| 1985 | 454 | 295.5 | 0.65 |
| 1986 | 517 | 411.0 | 0.79 |
| 1987 | 637 | 523.7 | 0.82 |
| 1988 | 618 | 676.3 | 1.09 |
| 1989 | 452 | 930.3 | 2.06 |
| Total | 5,762 | 3,660.2 | 0.62 |

Source: Ministry of Science and Technology, each year.

TABLE 14
DEBT-INCOME RATIO OF THE FARMING HOUSEHOLD

(Unit : 1,000 won)

| | 1970 | 1975 | 1980 | 1981 | 1982 | 1983 | 1984 | 1985 | 1986 | 1987 | 1988 |
|------------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|-------|
| Income (A) | 1,640 | 2,353 | 2,693 | 3,688 | 4,465 | 5,128 | 5,549 | 5,736 | 5,995 | 6,535 | 8,130 |
| Debt (B) | 102 | 90 | 339 | 339 | 830 | 1,285 | 1,784 | 2,024 | 2,192 | 2,390 | 3,131 |
| B / A (%) | 6.21 | 3.82 | 12.58 | 12.58 | 18.58 | 25.05 | 32.14 | 35.28 | 36.56 | 36.57 | 38.51 |

Source: Ministry of Agriculture and Fisheries (1988)

tion of young people under 19 decreased from 5.3% in 1982 to 3.1% in 1985 (see Table 8).

Finally, economic power continued to be concentrated. The share of the 30 largest business groups increased in terms of value added and fixed assets, although their share remained relatively constant in terms of employment and revenue. In terms of value added, their share increased from 33.1% in 1982 to 34.3% in 1985. The share in terms of fixed assets also increased from 37.2% in 1982 to 39.6% in 1985 (see Table 15).

Since 1986, the Korean economy has been booming because of

TABLE 15
SHARE OF CONGLOMERATES

| Year | Sales (%) | | Employment (%) | | Value Added (%) | | Fixed Asset (%) | | Number of Firms | |
|--------|-----------|------|----------------|------|-----------------|------|-----------------|------|-----------------|------|
| | 1982 | 1985 | 1982 | 1985 | 1982 | 1985 | 1982 | 1985 | 1982 | 1985 |
| Top 5 | 22.6 | 23.0 | 8.4 | 9.7 | 17.4 | 18.7 | 16.3 | 20.4 | 89 | 94 |
| Top 10 | 30.2 | 30.2 | 12.2 | 11.7 | 23.1 | 24.2 | 23.8 | 27.9 | 153 | 147 |
| Top 15 | 33.9 | 33.9 | 14.5 | 14.4 | 26.6 | 27.3 | 27.8 | 31.6 | 187 | 190 |
| Top 30 | 40.7 | 40.2 | 18.6 | 17.6 | 33.2 | 33.1 | 37.2 | 39.6 | 271 | 270 |

Source: Economic Planning Board (1984).

three favorable conditions, namely low international prices of primary resources like crude oil, a low international interest rate and a cheap dollar against the Japanese yen. As a result, the economy began to enjoy a surplus in the trade balance after 1986, and its balance-of-payments deficit dropped significantly. The trade balance surplus increased from \$4.61 billion in 1986 to \$9.85 billion in 1987 and \$14.16 billion in 1988, although it began to decrease sharply from 1989. The remaining foreign debts decreased from \$44.5 billion in 1986 to \$35.6 billion in 1987 and \$31.2 billion in 1988.

The government tried to resolve some economic problems, such as the concentration of economic power, but the Korean economy remained plagued by some adverse factors.

First, technology imports kept increasing. The number of cases was 2,224, which amounted to 38.6% of the total cases over the entire period (see Table 13). The corresponding payments reached \$2.54 billion, or 70.6% of total payments. When it comes to domestic technology, the future is not promising, even though the ratio of investment in R & D to GNP increased beyond the level of 2% in 1987. The absolute size of R & D investment was negligible, and its growth rate during the booming period of 1986-89 was smaller than that of the prior period (1983-85), as Table 16 shows. Thus, technological capability has not much increased since 1982. To make matters worse, the protectionism of advanced countries with respect to property in intangible goods, such as copyrights, makes technology transfer difficult.

Second, the ratio of debt to income in farming families increased from 36.6% in 1986 to 38.5% in 1988 (see Table 14). The share of domestic food supply decreased again from 44.5% in 1986 to 41.0% in 1987 and 39.3% in 1988. The ratio of farm to city household

TABLE 16
ANNUAL GROWTH RATE OF R & D INVESTMENT
(Unit : %)

| | 1983-85 | 1986-89 |
|------------------------|---------|---------|
| Manufacture | 82.5 | 24.0 |
| Electric & electronic | 149.8 | 20.6 |
| Transportation vehicle | 168.7 | 27.9 |
| General machinery | -19.2 | 39.7 |
| Textile | 121.3 | 6.9 |

Source: Jun (1990, p. 80).

Note: The numbers are calculated on the basis of current prices.

income dropped again to a level below 100%, i.e. 89.1% in 1986 and 84.1% in 1988. The median age of farmers continued to increase, as the proportion of farmers over 55 increased from 25.86% in 1986 to 30.11% in 1988, while that of farmers below 19 decreased from 2.54% in 1986 to 1.91% in 1988.

Third, the feeling of relative deprivation is so prevalent that it may harm the smooth working of economic activities, although greater equity in income distribution may be apparent in terms of the Gini coefficient. According to a recent survey, 59.5% of respondents think that income distribution has deteriorated for the last five years, whereas only 18.4% answer positively and 22.1% feel no change.¹⁴ These responses were mainly owing to inequalities in financial assets and land ownership.¹⁵ The problem of economic concentration also has a direct relation to inequality, because the fostering of small companies as the suppliers of parts would contribute to the equity of income distribution.

Fourth, the amount of foreign direct investment increased sharply, although foreign debts were decreasing. Direct investment by foreigners increased from \$0.47 billion in 1986 to \$0.62 billion in 1987, and \$0.89 billion in 1988. The amount of \$0.81 billion in 1989 was larger than the sum of investments in 1982-85 of \$0.68 billion.

Moreover, the import-inducement coefficient of exports remained as high as 0.34 in 1986 and 0.35 in 1987. One more bad factor was a low level of domestic technology, which was still 40 to 60% of the average level in advanced countries in 1987, according to the Minis-

¹⁴Kim (1989).

¹⁵Kang (1989).

try of Commerce and Industry.¹⁶ A mediocre technology, coupled with this high coefficient, might explain why the trade-balance surplus decreased sharply after 1989.

Finally, the price level in terms of consumer price index began to increase from 2.8% in 1985 to 7.1% in 1988. In addition, the share of the service sector increased. In terms of employment, the share of the service industry except social overhead capital increased from 40.3% in 1982 to 45.8% in 1989. These make the prospects for the Korean economy less promising.

V. Concluding Remarks

We examined the process of economic development in Korea, focusing on the five-year economic plans and their impacts. Through these plans in which the export-oriented development strategy was based on imported capital and technology, the Korean economy has succeeded in achieving remarkable growth under the leadership of the government. On the other hand, the negative features of export-oriented development strategies were the high dependency on foreign countries, the disparity between agriculture and manufacture, the inequality of income, the uneven growth between large and small companies, import-augmenting exports, the low level of domestic technology, and inflation.

These problems might prohibit the future growth of the Korean economy, since the tight linkages binding these problems might not be disentangled easily in the short run. For example, the inequality of income involves the stagnation of agriculture and small companies, which naturally accompanied export-oriented growth.

The future of the Korean economy seems to depend on technological development through R & D investment, as well as on the reorganization of economic structure.

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¹⁶In 1987, the overall index for technological development of Korea was 4.1, in comparison to 100 of the United States.

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