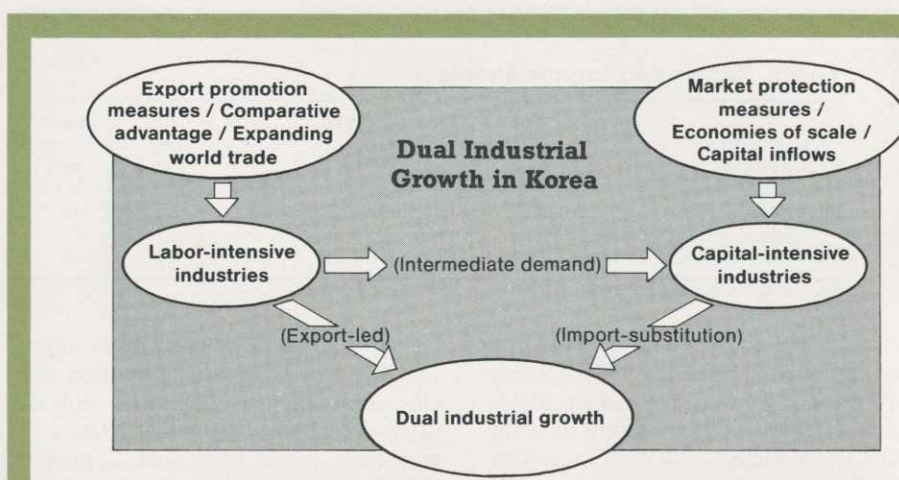


Dual Industrial Growth

By Koichi Ono and Hideki Imaoka

Korea has made remarkable economic progress since the early 1960s. Supported by rapid industrial development, real GNP grew by 8.5% and 9.5% annually respectively in the 1960s and 1970s. The average annual growth rate in the manufacturing sector has been especially high—16.5% in the 1960s and 17.9% in the 1970s. As a result, the share of manufacturing in total GNP has risen from 8.4% in 1960 to 14.2% in 1970 and 28.8% in 1980. Manufacturing sector exports have also increased, so rapidly that the share of exports in GNP has grown from 2.7% in 1960 to 33.7% in 1980. Manufacturing alone accounted for 92.3% of all exports in 1980.



Labor-intensive exports like textiles are only half of Korea's development picture.

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Photo: JETRO

Table 1 Structural Change in the Korean Economy (%)

		Primary	Manufacturing	Others	GNP
Growth rate	1960-1969	5.0	16.5	9.4	8.5
	1970-1979	3.7	17.9	9.2	9.5
	1980-1984	8.4	9.1	5.9	7.2
Share	1960	44.3	8.4	47.3	100.0
	1965	42.9	11.1	46.0	100.0
	1970	28.7	14.2	57.1	100.0
	1975	24.2	21.6	54.2	100.0
	1980	14.4	28.8	56.8	100.0
	1984	15.1	30.9	54.0	100.0

Source: The Bank of Korea, *National Income Accounts 1984*

Table 2 Export and Import Shares (%)

	1960	1965	1970	1975	1980	1984
Exports/GNP	2.7	5.7	11.4	21.8	33.7	38.9
Imports/GNP	12.3	11.8	22.4	29.0	41.4	40.0
Manufactured exports ratio	—	62.3	83.6	88.3	92.3	95.0

Source: Economic Planning Board, *Major Statistics of the Korean Economy 1985*

This rapid growth-cum-industrialization has been dubbed "export-led industrialization" or "outward-looking industrialization." It is often referred to as the "Korean Miracle," and is even recommended as a development strategy for developing countries. But what actually made this miracle possible?

Three points are usually cited to account for the achievement. In the first place, Korea's trade regime was altered in the early 1960s, from a more restricted scheme keyed to import-substitution to a more liberalized one designed to promote exports. Again, under this more liberalized trade scheme, Korea's comparative advantage in labor costs was utilized to increase exports of labor-intensive manufactured goods. And lastly, the increase in exports financed overall industrialization.

Although these explanations are both clear-cut and in line with current economic theory, more careful consideration of the nation's domestic industrial structure exposes some anomalies in the process. First, not only labor-intensive manufacturing industries but also some capital-intensive ones expanded rapidly in the 1960s and 1970s. Moreover, the direct contribution of exports to total supply in the manufacturing sector was limited; indeed, the increase in the domestic supply of intermediate goods

seems to have been even more important. And third, export-promotion policies and import-substitution policies, often considered mutually-exclusive alternatives, in fact co-existed throughout the period in question.

Dual growth in manufacturing

Looking at the development process in the manufacturing sector in terms of production factor intensity, it is clear that the expansion of the sector was not attained only through production increases in labor-intensive industries. Most industries with high export ratios were indeed labor-intensive, bearing out the principle of comparative advantage in a labor-abundant country. On the other hand, capital-intensive industries, which would seem to violate this rule, also achieved significant growth rates. The share of heavy and chemical industry in manufacturing, for instance, increased from 34.0% in 1965 to 48.2% in 1975 and 60.1% in 1984.

The development of these capital-intensive industries has often been criticized in terms of economic efficiency, as an adverse result of excessive protectionist policies. But they must be re-appraised if Korea's experience of indus-

trial development is considered to have been a success.

There are also problems with the demand creation effect of exports. In fact, the ratio of exports to total manufacturing sector demand was below 25% through the 1960s and 1970s. The remaining 75% was occupied by domestic final demand and induced intermediate demand. The effect of exports on domestic production is usually measured in terms of "direct and indirect" effects, using data from input-output tables. "Direct" effect means the volume of exports themselves as supplied by domestic industries. "Indirect" effect comes from the intermediate demand induced by exports. It is not wholly supplied by domestic industries, but may include some imports. Evaluating industrial development strategy requires calculating how induced intermediate demand has promoted domestic production.

These two points—factor intensity and domestic production of intermediate products—deserve fuller consideration. In Table 3, the manufacturing sector is classified by factor intensity and intermediate output ratio into four groups of industries: (1) capital-intensive and intermediate products; (2) capital-intensive and final products; (3) labor-intensive and intermediate products; (4) labor-intensive and final products.

Industries in group (1) include chemicals and chemical products; iron and steel manufacturing; and primary non-ferrous metals. In group (2) are found transportation equipment and tobacco. Group (3) industries include textiles; lumber and wood products; paper and paper products; and chemicals. Group (4) has leather and leather products; food; fabricated textile products; and other manufacturing.

The figures in Table 3 are average annual growth rates for production in each group. Production by the capital-intensive, intermediate product industries of group (1) expanded relatively rapidly in both periods. The average growth rate in 1960-77 was 26.9%, while the manufacturing sector as a whole increased by only 18%. Group (1) can be regarded as a significant growth pole in manufacturing.

The production of the labor-intensive industries in group (3) and group (4) also increased by a good rate and these categories can also be considered another significant growth pole. Group (3) industries, labor-intensive and producing intermediate products, have performed especially well in both periods—24.9% in the 1960s and 18.8% in the 1970s. By comparison, the sluggishness of group (4)

Table 3 Manufacturing Sector Growth Rates (%)

Industry Groups of	Production growth rate			Export ratio		Import ratio	
	1960-1970	1970-1977	1960-1977	1966	1978	1966	1978
(1) Capital-intensive and intermediate products	33.14	18.52	26.91	6.9	10.2	18.7	26.7
(2) Capital-intensive and final products	15.24	15.88	15.51	3.4	12.28	14.6	12.31
(3) Labor-intensive and intermediate products	24.91	18.80	22.35	8.8	25.4	13.6	13.0
(4) Labor-intensive and final products	9.7	20.01	13.84	12.9	32.4	14.8	22.8
Average of all manufacturing industries	17.41	18.77	17.95				

Source: Imäoka et al. (eds.), *Chushinkoku no Kogyo-hatten* (Industrial Development of Middle Income Countries), IDE, Tokyo, 1985, p.26

in the 1960s would reflect the fact that Korea's export promotion policies were not particularly effective prior to the late 1960s, even though industrialization policy was already shifting in the first half of the decade.

Thus, most of the growth in the manufacturing sector in Korea has occurred in two industry groups. Both labor-intensive and capital-intensive industries have expanded simultaneously, in a pattern of "dual industrial growth." This pattern de-

serves attention as a potential development strategy. It is significantly different from the "export-led industrialization" usually assumed for Korea.

Export ratios increased in all four manufacturing sector groups from 1966 to 1978. The ratios of the labor-intensive industries were particularly high in 1978: 25.4% in group (3) and 32.4% in group (4). Import ratios increased in capital-intensive, intermediate product industries and in labor-intensive, final product

industries in the same period. Net export ratios (exports minus imports) in 1978 were very low in capital-intensive industries: -16.5% in group (1) and -0.03% in group (2).

In brief, the features of Korea's "dual industrial growth" in manufacturing can be summarized as follows: (1) Under the export-promotion policy, labor-intensive industries grew through expansion of exports; (2) In response to increasing investment and intermediate input, mainly



Dual growth key: Produce your own capital-intensive inputs.

Photo: JETRO

Table 4 Import Liberalization Ratio (1968–June 1984; %)

1968	1975	1976	1977	1978	1979	1980	1981	1982	1983	1984
61.7	49.5	50.5	51.0	53.9	68.2	69.1	68.6	—	—	—
							(69.4)	(74.7)	(76.6)	(80.4)

Notes: Figures based on 4 digits of CCCN until 1981.

Figures in parentheses based on 8 digits of CCCN.

Source: Ministry of Commerce and Industry, *Quarterly Announcement of Import and Export*, various issues

induced through backward linkage with labor-intensive industries, capital-intensive, intermediate product industries also increased rapidly at the same time.

Factors behind successful dual industrial growth

How was Korea's success with dual industrial growth attained? What factors made it possible? Three points are central to answering these questions: co-existence of alternative strategies, inflow of foreign capital, and economies of scale.

From the mid-1960s to the late 1970s, the Korean economy was managed under a dualistic policy consisting of export-promotion and import-substitution measures.

In most discussions of development strategy, such policies are treated as alternatives. While import substitution is intended to protect the domestic market and domestic products, even at the cost of distorting resource allocations, export promotion liberalizes trade in pursuit of world markets, and is suggestive of a free trade regime. From the early to the mid-1960s, the Korean government strove to shift gears from a protectionist regime aimed at import substitution and utilizing import quotas, tariffs, and subsidies, to a more liberal one which sought to correct price distortions and promote exports.

Many studies on industrial development in Korea have attempted to show that the country's success after the switch was a result of the free trade approach. They prefer to ignore the import substitution portion of the equation. In fact, however, imports remained only nominally liberalized until the late 1970s, while the domestic market was heavily protected. Actual import liberalization ratios did not rise until the 1980s (Table 4).

Under such a protective trade regime, labor-intensive industries required the help of export-promotion measures in order to compete in world markets. Various export incentives were estab-

lished. Imports of intermediate and capital goods for export purposes were given preferential treatment as regards import quotas and tariffs. The government even granted loans to firms in proportion to their export volume.

Inflows of foreign capital also played an important role in Korea's dual growth. Given current international capital movements, even a labor-abundant economy can still enjoy a comparative advantage in capital-intensive industries. In fact, foreign capital inflows into Korea increased through the 1960s and 1970s. Foreign investments and loans went from \$49 million in 1965 to \$454 million in 1970, \$1.35 billion in 1975, and \$3.01 billion in 1980. These inflows supported the high rate of investment and made possible the growth of capital-intensive industries.

Finally, as a reason for the rapid growth in capital-intensive industries, it was important that there were economies of scale in capital-intensive intermediate product industries, especially chemicals, chemical products, and primary nonferrous metals. Protection of industries embodied with economies of scale is justifiable for long-term industrial development in developing countries. Market structure in such industries also tends to be monopolistic or oligopolistic, and free competition would likely have undesirable results. Under such circumstances, government intervention in the market can be justified. The implication of the Korean experience, then, is that a labor-abundant economy should not necessarily specialize in labor-intensive industries. It could actually be wiser to expand capital-intensive industries.

Success and problems

The mechanism of "dual industrial growth" in Korea in the 1960s and 1970s can be abstracted as follows: It is, first of all, misleading to assert that industrial development took place under a free trade regime. Actually, it was marked by the coexistence of alternative strategies—

export promotion and import substitution. Under such policies, labor-intensive industries have increased exports and production, supported by export promotion policies. At the same time, in response to rising demand for intermediate and capital goods induced by exports, capital-intensive industries producing intermediate products were able to expand, thanks to protection under import-substitution policies and large inflows of foreign capital, enough to realize economies of scale.

Recently, the economic environment surrounding Korea has taken a turn for the worse. Economic growth in developed countries has slowed, and interest rates in international financial markets remain high. There seem many problems and difficulties ahead in Korea's attempt to pursue further industrial development.

In the 1960s and 1970s, increases in exports, mainly by labor-intensive manufacturing industries, generated demand for intermediate and capital goods. This demand ensured certain levels of production in capital-intensive industries, which grew large enough to enjoy economies of scale. But under the recent world economic recession, it is difficult to increase exports as rapidly as in the past. Indeed, a new difficulty has appeared in the shape of looming protectionist legislation in the United States.

Moreover, some capital-intensive industries—primarily the steel and automobile industries—have already begun to venture out into the world export market. Since these industries already have the merit of economies of scale, trade frictions with the developed countries are likely to be even more severe.

Again, in the period of high economic growth, inflows of foreign capital played an important part in industrial growth, and the burden of interest payments was relatively light. But at a time of low economic growth and high foreign interest rates, the ratio of interest payments to GNP is already running near 5%. This, too, will be a constraint on future development.

It may be that only small developing countries can take advantage of the Korean model of dualistic development policy. Korea today is an excellent example of a newly industrialized country, and has come to wield some influence upon world trade. Protectionist policies are no longer an acceptable option for a country of its size. Although efforts to reform its regulated economic system are already under way, the nation will come under growing pressure to liberalize its entire economy in the future. ●