INDUSTRIAL PERFORMANCE IN SOUTH KOREA: A DESCRIPTIVE ANALYSIS OF A REMARKABLE SUCCESS

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I. INTRODUCTION

SINCE the early sixties South Korea has performed remarkably well by international standards with regard to both *equity* and *growth*. Not only did the real growth rate of income surpass that of other countries, but also the income distribution in South Korea has shown no tendency towards greater inequality, a tendency that is commonly observed to accompany the industrialization process in many developing countries. Granted the truth of the above, this happy coincidence increases the attractiveness of South Korea as the object of a case study of industrial development. While undoubtedly each developing nation has its own circumstances and objectives, an analysis of the pattern of industrial development of South Korea and the underlying causes of the success could reveal certain strategies of both the private and public sectors that might be useful elsewhere as well. The systematic study of the industrial performance is the main objective of this paper. In Section II, the industrial development of Korea since 1910 is distinguished into several phases. In Section III, the causes behind the success in the sixties and seventies are examined in terms of favorable conditions existing in the private sector, and of supporting government policies. In Sections IV, V, and VI the industrial and trade patterns of South Korea are examined in varying degrees of disaggregation. In Section VII, main conclusions and more recent developments are summarized.

It is necessary to verify the performance regarding equity before taking on the industrial performance. It is well known that as far as income-distribution measures are concerned, South Korea shows a more equitable pattern than most developing countries. A static comparison is not relevant, however. More relevant is a comparison of the trends in the concentration of income in the various countries. The evidence in that respect is affirmative, too. Chae calculates a decline in the Gini coefficient of concentration for South Korea from an average value of 0.45 for the years 1958, 1960, and 1961, down to 0.375 for 1970 [2]. Comparative data for developments after 1970 are lacking, although a simulated socioeconomic development model for South Korea [4] projects a continuation of the tendency towards lower concentration, but at a more modest rate, through the seventies and a stable level afterwards.

II. AN OVERALL VIEW OF DEVELOPMENT PHASES IN SOUTH KOREA

In studying the industrial development of Korea it is important to go back as

far as 1910 since already at that early date Korea started industrializing. Most developing countries started industrializing much later. The economic development of South Korea can be described as falling into five phases, starting from 1910:

1. the colonial period, 1910–40
2. the war period, 1941–52
3. the recovery period, 1953–62
4. the first expansionary phase, 1963–72
5. the second expansionary phase, 1973–82

1. *The colonial period, 1910–40*

The Japanese occupation of Korea lasted from 1910 to 1945. During this period Korea was highly dependent on Japan: for example, the Japanese owned 94 per cent of authorized capital in business establishments in 1940, while the Japanese supplied about 80 per cent of the total technical manpower. The nominal growth rate of the GDP averaged about 7.5 per cent per annum. Exports grew at multiples of this rate; as a result, the export/GDP ratio grew from 10 per cent to about 30 per cent at the end of the period. The share of manufacturing output increased from 0.06 to 0.43, while the shares of manufactured exports increased from 0.24 to 0.46. These are remarkable performances when compared with the growth histories of other developing countries. The examination of import ratios as found in [9] shows that they decreased greatly for the main light manufacturing sectors, indicating the well-known first phase of import substitution in light manufacturing which most developing countries experienced only later.

2. *The war period, 1941–52*

The length and magnitude of the military involvements were devastating for the whole of Korea, probably more so for the South than the North. The manufacturing output of South Korea, which amounted to 248.1 million won in 1940 was reduced to only 52.6 million won in 1948 (both in constant prices of 1948). And although in the next few years there was a recovery, available data for South Korea show that by 1953 their industrial production was approximately one third of the 1940 level. Exports and imports suffered consequently.

3. *The recovery period, 1953–62*

In this period real GDP grew at 4.2 per cent p.a., exports falling first and rising later grew on the average at 10.7 per cent p.a.; the rates for manufacturing output and exports being higher. Given the prewar and postwar state of the economy pointed above, this recovery cannot be explained otherwise than that of "catching up." When one realizes also that South Korea lagged behind the expected norm for a country of its size and characteristics [6], the hypothesis that the growth in 1953–62 was of a catching-up nature becomes more valid.

4. *The first expansionary phase, 1963–72*

Partly due to favorable economic conditions in South Korea (low costs, high

revenue, and easy investment finance) and partly due to government action, real GDP grew at about 10 per cent p.a. During this period manufacturing output grew by 18 per cent p.a. The main emphasis was on the expansion of exports in light manufacturing and an accelerated import substitution in the heavy and chemical industry. The growth drive slowed down somewhat at the end of the period as the favorable conditions tended to be exhausted and inflationary pressure started mounting.

5. *The second expansionary phase, 1973–82*

The entrance of the South Korean economy in a second expansionary phase started hesitatingly in the years 1973–75. This period coincided with the coming of the oil crises, the world recession, and increased prices which necessitated, in many countries, a restructuring of economic policy towards lower but steady rates of growth, inflation, and unemployment. South Korea appears to have the advantage of implementing its growth at a steady rate, about 1 per cent lower than in the previous decade but still a very high 9 per cent by the standards of the post-oil crises. These continued prospects of high growth are to be used according to the South Korea's fourth plan in achieving an export surplus, this time based on more emphasis on heavy industry. South Korea is to become self-sufficient with regard to imports of several heavy goods industries and a major exporter of metals, machinery, shipbuilding, and electronics. If this phase is ended successfully, South Korea should enter the list of advanced countries in another decade.

Table I summarizes briefly the main characteristics of South Korean development plans. In particular, the fourth plan emphasizes the development of industries making intensive use of technology and skilled labor and at internationally competitive levels to permit of high exports. This is to happen within a setup which strives towards steady growth, an export surplus, price stability, and social development.

III. AN OVERALL VIEW OF THE CAUSES BEHIND THE SUCCESS

The industrial performance of South Korea during its first expansionary phase (1963–72) was phenomenal, certainly by Asian standards. As Table II shows, profit rates maintained an average rate of 24.3 per cent in 1963–72 and exceeded that in 1973 and 1974. The manufacturing product of South Korea grew by 18.3 per cent p.a. during 1963–72. Even after the slow-down in 1971 and 1972, and the oil crises which followed in 1973 and later, South Korea started its second expansionary phase ahead of other Asian countries in terms of industrial prospects. This remarkable performance requires an explanation.

The recent success of South Korea's industrial performance can be explained by five main factors:

1. low costs
2. low pricing policies leading to a high turnover and a high output
3. accelerated growth of profits

TABLE I

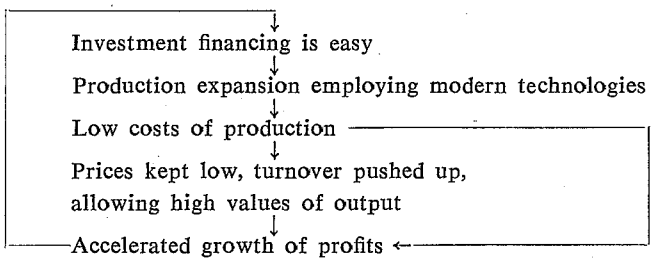
MAIN CHARACTERISTICS OF SOUTH KOREAN DEVELOPMENT PLANS

	——→First Expansionary Phase (1963-72)←——		——→Second Expansionary Phase (1973-82)←——	
	First Plan 1962–66	Second Plan 1967–71	Third Plan 1972–76	Fourth Plan 1977–81
Basic goals	Launching of development era and streamlining of institutional foundation	Attainment of high growth and speady industrialization	Upgrading of industrial structure and stable balanced growth	Steady growth, social development and efficiency
Development strategy:				
1. Agriculture	Increase of agricultural productivity	Increase of farm household incomes through high rice prices, consolidation and irrigation	Self-supply of food, increased rural incomes and standards	Attainment of sustained growth of agriculture, food supply on a stable level, increased rural incomes and standards
2. Industrial finance	Establishing basis for mobilizing investment funds	Mobilization of investment funds as prime mover	Laying the foundation for a self-supporting base for financing investment	Self-sufficiency in financial resources, balance of payments equilibrium, capital exporter
3. Industrial investment	Development of basic industries (energy, i.e., coal, electric power, oil refining) and investment in social overhead capital	Improvement of industrial structure through construction of heavy industries(steel, machinery, petrochemicals), expansion of social overhead capital	Development of heavy and chemical industries	Development of industries using technology and skilled labor intensively (electronics, machinery, shipbuilding)
4. Industrial trade	Substitution of imported consumer goods with domestic products	Substitution of imported consumer, intermediate, and capital goods. Increased exports of consumption goods	Launching of exports of intermediate and capital goods	Greater international competitiveness through increased efficiency and technical innovation. Expanded exports of components and capital goods
5. Industrial technology		Advancement of scientific technology	Evolution and teaching of scientific technology	Increased government support for vocational training, technical and scientific education, and R&D activities
6. Growth industries	Electric power, fertilizer, textiles, cement	Synthetic fibers, petrochemicals, electric appliances	Iron and steel, transport equipment, household appliances, shipbuilding	Iron and steel, industrial machinery, electricity equipment, components, and shipbuilding
7. Other strategies			Reduced inflation	Price stability, promotion of social development and equity

4. the fact that the circumstances made it particularly easy to finance investment for expanding production
5. an effective use of supporting government measures.

One special factor which should not be underrated is formed by the special ties with Japan and U.S.A. The Japanese colonial rule managed to build a strong industrial base in Korea before the war. Although much of it was destroyed, its reconstruction and expansion was achieved fairly quickly with American foreign assistance and very much by the methods that proved so successful in Japan. Besides, land reforms under US military and Korean governments in the fifties relieved the economy of the obstacles and ills of a regressive agriculture. The fact that large holdings that were in the hands of one group of foreigners: the Japanese, were expropriated initially by another group of foreigners: the Americans, made land reform a politically feasible action in South Korea.

The interaction between the first three factors can be demonstrated in a chart, as is done below. The important linking factor is (the prospect of) achievement of high profits. While the high profits are caused by an economic setup permitting low costs, low prices, a high turnover, and a high revenue, the same high profits contributed to the easing of the conditions on which investment is financed. As usual, a sound business is able to secure more credit for investment purposes. The flexible supply of investment credit was crucial in the introduction of more modern technologies with economies of scale and the sustenance of low costs, low prices, a high turnover, etc.[1]



1. *Low costs*

Among eight leading Asian countries, i.e., Hong Kong, India, Japan, Pakistan, Philippines, Singapore, South Korea, and Taiwan, South Korea had the lowest cost share in manufacturing industries[2] during most of the years studied, i.e., 1963–75 (cf. [5]). The cost share is lowest in South Korea not so much because of low remuneration rates for factors of production but rather because of the efficient combination of these factors. Certainly, industrial wage rates and interest rates in South Korea are not the lowest among the Asian countries. Instead, the capital-output ratios of South Korea are the lowest in the sample and experienced a tendency towards lower values over time. The labor-output ratios are also among the lowest indicating a high level of labor productivity, the increases in

[1] On economies of scale and concentration in South Korea, see [8].

[2] Gross costs=(wage rate×employed labor)+(interest rate×employed capital)+(intermediate costs). The cost share is defined as gross costs÷gross output.

TABLE II

INDUSTRIAL PERFORMANCE IN SOUTH KOREA

	1963–72	1973	1974
Cost share	75.7	71.7	70.6
Profit rate	24.3	28.3	29.4
Growth rate of profit rate	0.0	10.9	4.1
Growth rate of export prices	0.4	26.6	
Growth rate of export volume	37.5	68.5	
Growth rate of manufacturing product	18.3	37.5	29.9
Growth rate of manufacturing profits	18.3	48.4	34.0

Source: [5].

labor productivity over time are also the highest in South Korea. As a result, South Korea's manufacturing industry is characterized by the lowest capital-labor intensities: $0.74 of capital stock per man-hour in 1963 climbing to $1.26 in 1973.

The successful mix between capital and labor was to a large extent due to the relatively high interest rates which prevailed (making capital expensive) and to the wage rates which were held stable in real terms during the sixties. Towards the end of the first expansionary phase (1970 and 1971) wage rates increased rapidly while growth in labor productivity did not match them, as a result the cost share increased, but recovered in later years.

The other important component of costs are the intermediate inputs. The proportion of intermediate inputs in gross output for South Korea's industrial sector amount to 0.59 only. Being the lowest among the eight Asian countries, this has contributed further to a relatively low cost share.

Table II reproduces figures from [5]. The estimated cost share for South Korea's manufacturing industries amounted to 74 per cent in 1963, rose to 77 per cent in 1970 and 1971 but fell back in later years to reach 70 per cent in 1974. The profit rate, i.e. 1 − cost share, amounted to 30 per cent in 1974, therefore; the highest in the sample. The profit rate was rather stable during the first expansionary phase but is found to grow by 10.9 per cent in 1972–73 and 4.1 per cent in 1973–74 giving sign of the continuation of the South Korea's industrial boom. These growth rates appear to be the highest in the sample.[3]

2. *High output*

In principle, if low costs are passed on in low prices the extent of the market can be enlarged and, therefore, permit of a larger turnover and output. If the demand is sufficiently sensitive to prices such a policy can bring about very high revenues and profits. This was, in general, very well understood and followed by South Korean manufacturers and traders.

The growth of output of a sector over time is usually split into three categories: domestic demand expansion, import substitution, and export growth. Decom-

[3] Independently derived profit rates from South Korea's financial statements for 1968 in [1, pp. 96–105] show for all manufacturing an average rate of 22 per cent which is very close to our rough estimate of 24 per cent for that period (see Table II).

position of the growth of manufacturing output during 1960–69 shows that domestic demand accounted for 80.0 per cent, import substitution for 6.3 per cent and export promotion for 13.7 per cent.[4] When the contribution of the respective sources to South Korea's growth are compared with the norm for the average developing country, the results show South Korea to be much lower than the norm in terms of import substitution and higher in domestic demand expansion and export growth. South Korea is 0.06 times the norm for import substitution, 1.2 times the norm for domestic demand, and 2.0 times the norm for export growth.[5] South Korea's industry has relied on an expanding domestic and export demand.

In South Korea domestic demand acted as a buffer allowing export demand to become a major impetus for output growth. In the first place, South Korea experienced large increases in domestic prices (wholesale price index grew in 1963–72 by 11.4 per cent p.a. which is the highest among the Asian countries). In spite of the high inflationary pressure in South Korea, real domestic demand in South Korea expanded greatly. The size and safety of this domestic market permitted manufacturer-exporters to price their products for exports at very low prices (cf. [7]), have an edge on competitors from other countries and surpassing them in the growth of exports. Secondly, repeated devaluations of the won during 1963–72 have contributed significantly to maintaining low export prices. As a result, between 1963 and 1972 it was possible to keep the South Korea's export price index from rising (zero growth). Thirdly, government has encouraged exports in various ways, see below. The result was growth of the volume of industrial exports by 37.6 per cent p.a. during 1963–72.

Summarizing, mainly due to the expanding domestic and export demand, industrial growth in South Korea during 1963–72 reached 18 per cent p.a., and in 1973 and 1974 reaching 38 and 30 per cent, respectively, which are probably the highest in the world.

3. *Accelerated growth of profits*

It is obvious that the high profit rate and the high industrial output would result in high profit levels in South Korea. Of more interest are the dynamic aspects. A high *growth rate* of the profit rate together with a high *growth rate* of output brings about a high *growth rate* of profit levels. The expectation of a high growth rate of such profits is very crucial for investment expansion. The relationship can be written as follows:

Growth rate of profit = growth rate of profit rate + growth rate of output.

In South Korea these rates amounted to (Table II):

[4] [6, pp. 86–96] followed the decomposition method of [3] to give these results. [9] also following [3] gives more detailed decompositions by sub-sectors.

[5] Cross-section and time series data are pooled to estimate regressions from which structural norms may be inferred. These regressions are then used to estimate the "normal" structural shares for a country with South Korea's growth levels. See [6, pp. 95–96] and [10, pp. 45–46].

1963–72	18.3 = 0.0 + 18.3
1972–73	48.4 = 10.9 + 37.5
1973–74	34.0 = 4.1 + 29.9

The figures show: (1) a very high growth rate of industrial profits (34 per cent in 1974) which paves the way for easy investment financing and further industrial expansion, and (2) the dominant role of the growth of output (due to an increasing domestic demand and a remarkable expansion of the export market attracted by low export prices and other government policies) in contrast to the secondary role of growth of profitability (cost considerations). Growth of output outpaces growth of profitability by 4 to 1 in explaining South Korea's growth of profits.

As will be emphasized below, government policies encouraged a high growth of business profits.

4. *Investment financing is easy*

Foreign and domestic sources of investment financing have been kept in balance for a long time in South Korea. Foreign savings have remained about 10 per cent of GNP since 1960, while over the years their nature has changed. In the post-Korean War period, most foreign savings took the form of *foreign aid* grants from the United Nations and from U.S. bilateral assistance programs. In the early sixties, foreign aid loans began to replace grants and then, from 1966 onwards, *commercial loans* from a variety of countries became the dominant source. The *prospects of increasing profits* made such borrowings feasible and attractive for both borrowers and lenders alike. The government originally encouraged all forms of foreign borrowing. No significant number of managers and entrepreneurs are foreign. *Foreign direct investment* has been exceedingly small, only about 7.4 per cent of total foreign investments and loans between 1959 and 1971. This situation is to change appreciably in later years.

Although foreign capital sparked the growth of the South Korean economy, domestic savings eventually sustained it. In 1960 domestic savings financed only about 20 per cent of total gross investment. By 1972 this proportion had risen to about 75 per cent. *Household savings* have been very erratic, being very sensitive to both the rates of inflation and interest. *Business savings* (in constant 1970 prices) grew most rapidly at 10.7 per cent p.a. between 1963 and 1972, forming 0.51 of total domestic savings in 1972. A significant factor in increasing business savings was the rapidly increasing industrial product, second factor is the interest rate. *Government savings* grew at 8.0 per cent p.a. between 1963 and 1972, forming 0.28 of total domestic savings. This growth was due to: (a) the 1964 tax reform which raised tax revenues from 0.07 of GNP in 1964 to 0.16 in 1971, (b) a sharp rise in public enterprise profits, and (c) a slow rate of increase in current expenditure. Much of the non-current expenditure went directly to productive assets.

5. *Government policy*

South Korean government engaged actively and mostly indirectly in supporting

each of the four favorable conditions discussed. Such measures are summarized below. After about 1973 there have been a few important changes in government policy. These changes are discussed in a later section. An empirical assessment of the impact of government incentives on industrial growth and efficiency is not possible yet. As it can be concluded from [6] and [10] which have gone some way towards such an assessment for South Korea, such attempts are premature. It is even questionable whether empirical testing in this context could give definitive results.

5.1. Low Cost Measures

(a) Capital costs. Although government subsidized interest rates, when compared with other Asian countries, the South Korean rates were high enough to reflect the relative scarcity of capital. Several specific policies have moderated the cost of capital: many foreign loans were guaranteed by government, capital goods which are not domestically produced were exempted from or paid only reduced customs tariffs, and government investments were allocated to modern infrastructure which contributed to high levels of productivity.

(b) Labor cost. Government policies towards labor prevented real wages from rising during most of the sixties (note that during the transition towards the second expansionary phase wages grew rapidly). Government has maintained a work force which is highly educated, this was a factor in the moderation of real wage increases and in the achievement of higher levels of productivity.

(c) Technology, research, and development. The introduction of foreign technology was encouraged (from four instances in 1965 to eighty-two in 1973). There was also a shift in emphasis (from consumer goods sector to heavy and chemical industries). Systematic research and development was strengthened (R & D expenditure increased twelve times in 1963–73, enterprises carrying out R & D swelled from 12 to 633).

5.2. High Output Measures

(a) Domestic demand. Government was not specially involved in stimulating domestic demand. The growth of domestic demand in South Korea was about what could be expected from an average developing country of the size of South Korea.

(b) Import substitution. Government maintained throughout the expansion of the South Korean economy a low average level of nominal protection. For manufacturing the level of nominal protection estimated from information on comparative international and domestic prices was about 10.7 per cent in 1968 and is probably lower today because average tariff levels have steadily declined.

(c) Export promotion. After 1963, both government officials and private entrepreneurs were more export-oriented. In this respect government policy falls in six categories:

(i) Multiple exchange rates gave way to a system that relied more heavily on high official exchange rates. The devaluation of 1964 was followed by many others over the next eight years. Exchange rates had great effect on export performance.

(ii) Export industries were provided operation funds through foreign capital inducements and foreign currency loans.

(iii) The government prepared in the tax system such supports as exemption from customs and commodity taxes on imported raw materials for exports and exemption from business and commodity taxes on export producers' shipments.

(iv) Export industrial estates were established.

(v) The government continuously strengthened economic diplomacy and exploitation of foreign markets for export promotion. Activities of Korea Trade Promotion Corporation (KOTRA), from 1962, included participation in international exhibitions.

(vi) Other very important factors, perhaps even more important, are the government's attitudes and methods of operation. Several examples. First, rather than dealing with each individual exporter, the government has worked through exporters' associations composed of all the exporters in a particular industry. Wastage allowances, import entitlements, preferential loans, and export targets were often allocated to an association, which in turn devised methods of parcelling the incentives and targets among its members. Second, administrative support was provided, the Monthly Export Promotion Conference has handled all sorts of administrative measures concerning exports. Third, government officials used moral and political arguments to urge private entrepreneurs to meet export targets. Fourth, firms who are successful in promoting exports received favorable treatment by tax officials, an important incentive in a country where effective tax rates are set more by administrative procedures than by law. Fifth, entrepreneurs who are successful exporters are publicly acclaimed and feted by the president and other high officials. Finally, with an atmosphere in which businessmen are certain that government will reward efforts to export (and be lenient against failures), it is relatively easy to take the substantial risks of expanding production for export markets.

5.3. Accelerated Growth of Profits Encourages

Fiscal policy. High profits were encouraged via such measures as tax holidays, ceilings or exemptions, reduction of profit tax, and allowances for accelerated depreciation.

5.4. Investment Financing Made Easy

(a) Foreign sources. In the early stage of foreign capital inducement, the government enacted the Law for the Encouragement of Foreign Capital Inducement in 1961, and took necessary steps to bring about conditions suitable for introducing foreign capital and coping with the sharply swelling demand for foreign loans, in conformity with the economic development plan and the decreasing trend of US aid. Accordingly, basic guidelines were enacted to permit legitimate foreign loans without examining their types, conditions, or amounts concerned, and to provide government guarantees of repayment, if needed. In the 1960s, direct foreign investment did not receive that attention.

(b) Domestic sources. Internally, government diversified the banking business by establishing various specialized banks, enlarged insurance companies so that

they could take over a part of long-term savings, and encouraged capital markets to make it possible for enterprises to raise industrial funds directly. In addition, short-term finance companies and mutual credit companies were established. A special agency was created a la MITI, Japan, to assist medium- and small-scale enterprises in communicating policies and financing.

IV. A TWO-TYPE CLASSIFICATION OF INDUSTRY

Before proceeding to a more detailed description of industry and trade, it is worth while to look into the distribution of industry among the two main categories of light and heavy manufacturing. Light manufacturing is defined to include ISIC groups 31, 32, 33, 34, and 39; food, textiles, wood products, paper, and miscellaneous; heavy manufacturing includes ISIC group 35; chemicals, etc., plus groups 36, 37, and 38; nonmetallic, basic metals, and machinery.

Table III shows the share of light manufacturing in the total manufacturing output to decline steadily and the share of heavy to increase. Both industries are oriented towards the foreign market as can be gathered from the increasing shares of export in domestic output reaching 0.317 and 0.223, respectively, in

TABLE III

SOME CHARACTERISTICS OF LIGHT AND HEAVY INDUSTRY

	Share in Total Manufacturing		Export/Domestic Output		Import/Domestic Demand	
	Light Industry	Heavy Industry	Light Industry	Heavy Industry	Light Industry	Heavy Industry
1953–62	.771	.229	.013	.009	.056	.263
First expansion period:						
1963–67	.666	.334	.067	.027	.047	.311
1968–72	.624	.376	.154	.069	.079	.326
Second expansion period:						
1973	.635	.365	.330	.196	.125	.405
1974	.556	.444	.317	.223	.127	.389

TABLE IV

COMPOSITION OF EXPORTS AND IMPORTS

	Export Share in Total Commodity Exports		Import Share in Total Commodity Imports	
	Light Industry	Heavy Industry	Light Industry	Heavy Industry
1953–62	.218	.067	.127	.329
First expansion period:				
1963–67	.565	.104	.114	.583
1968–72	.636	.148	.115	.521
Second expansion period:				
1973	.553	.181	.155	.506
1974	.608	.341	.129	.512

1974, noting that the heavy is catching more tempo than light industry as an exporting industry. With regard to the share of import in domestic demand the light industry can be described to become more import oriented (due to a more liberal policy towards such imports) while the heavy industry has become no less import oriented (due to high imports of capital goods).

These trends in industry result in a trade pattern of South Korea as described in Table IV. From 1963, exports of light manufacturing fluctuated around 60 per cent of total commodity exports (1974) while the share of heavy exports tripled in about ten years, reaching 34 per cent in 1974. The shares of both industries in total commodity imports have been relatively stable, especially during the last fifteen years.

V. A FOUR-TYPE CLASSIFICATION OF INDUSTRY

The economic performance of the industrial sectors can now be analyzed at a more detailed level. Table V gives data on sectoral output (value and share)

TABLE V

SOME CHARACTERISTICS OF MANUFACTURING SECTORS

	Domestic Output in 1973		Export/ Domestic Output			Import/ Domestic Demand		
	(Million Won)	(%)	1963	1973	Status	1963	1973	Status
All manufacturing	4,298,692	100.00						
Food processing, beverage, & tobacco	944,780	21.98						
Textiles, leather goods	1,045,923	24.33						
(1) Fiber spinning & textile fabrics	448,004	10.42						
1 Cotton yarn	82,713	1.92	.001	.114	S	.005	.069	S
2 Silk yarn	41,957	0.97	.846	.788	L	0	.104	S
3 Wool yarn	28,709	0.66	.025	.340	+M	.145	.163	S
4 Ramie & flax yarn	1,810	0.04	0	.274	+M	.004	.052	S
5 Synthetic fiber yarn	67,466	1.65	.018	.181	S	.744	.249	--M
6 Other fiber yarn	5,096	0.11	0	.103	S	0	.092	S
7 Cotton fabrics	67,331	1.56	.086	.325	+M	.032	.151	S
8 Silk fabrics	15,831	0.36	.056	.173	S	.007	.228	+M
9 Wool fabrics	34,497	0.80	.001	.147	S	.016	.145	S
10 Ramie & flax fabrics	3,326	0.07	.176	.069	S	.021	.064	S
11 Rayon fabrics	14,556	0.33	.008	.287	+M	.016	.302	+M
12 Synthetic fiber fabrics	64,799	1.50	.070	.688	++L	.430	.674	+L
13 Dyeing & finishing	19,899	0.46	0	0	S	0	0	S
(2) Finished textile products	558,763	12.99						
14 Knit goods	132,203	3.07	.129	.497	+M	.004	.075	S
15 Rope & finishing nets	15,347	0.35	.012	.500	++M	.092	.018	S
16 Apparel & accessories	359,991	8.37	.011	.659	++L	.003	.040	S

TABLE V (Continued)

	Domestic Output in 1973		Export/ Domestic Output			Import/ Domestic Demand		
	(Million Won)	(%)	1963	1973	Status	1963	1973	Status
17 Grass floor coverings	8,679	0.20	0	.108	S	0	.001	S
18 Straw articles	5,917	0.13	0	0	S	0	0	S
19 Cotton batting	1,195	0.02	0	0	S	0	0	S
20 Other textile goods	10,453	0.24	.009	.297	+M	.011	.471	++M
21 Other finished products	23,945	0.55	.034	.371	+M	.045	.039	S
(3) Leather products	39,156	0.91						
22 Leather & fur	17,340	0.40	0	.026	S	0	.271	+M
23 Leather & footwear	20,688	0.48	.003	.460	++M	.005	.038	S
24 Other leather products	1,127	0.02	0	.156	S	.003	.202	+M
Wood	192,303	4.47						
(4) Wood products & furniture	192,303	4.47						
25 Lumber	42,744	0.99	.001	.234	+M	.013	.027	S
26 Plywood	126,364	2.93	.475	.834	+L	.011	.013	S
27 Wooden boxes	4,594	0.10	0	.006	S	.003	.002	S
28 Bamboo & cork products	1,387	0.03	.269	.518	+M	0	.084	S
29 Other wood products	8,395	0.19	.013	.707	++L	.231	.114	S
30 Wooden furniture	8,817	0.20	.039	.496	++M	.001	.184	S
Paper	188,053	4.37						
(5) Paper products	115,186	2.67						
31 Pulp	3,681	0.08	0	.009	S	1.000	.896	L
32 Western type paper	50,770	1.18	.001	.112	S	.053	.070	S
33 Paper board	17,825	0.41	0	.042	S	.086	.019	S
34 Korean paper	696	0.01	0	.221	+M	0	.016	S
35 Building paper	305	0.00	0	0	S	0	0	S
36 Processed paper	15,536	0.36	.006	.135	S	.046	.199	M
37 Paper containers	20,898	0.48	0	.016	S	0	.031	S
38 Stationary paper	5,472	0.12	.001	.061	S	.009	.014	S
(6) Printing & publishing	72,867	0.69						
39 Newspaper	22,637	0.52	0	.001	S	0	.006	S
40 Other publishing	50,230	1.16	.009	.196	M	.014	.046	S
Chemicals & related	788,740	18.35						
(7) Basic chemicals	63,891	1.48						
41 Sulfuric acid	6,928	0.16	0	0	S	.008	.002	S
42 Hydrochloric acid	1,203	0.02	0	0	S	0	.007	S
43 Calcium carbide	2,427	0.05	0	.001	S	.135	.002	S
44 Sodium products	5,134	0.11	.013	.003	S	.778	.485	−M
45 Compressed gas	2,206	0.06	.096	.028	S	.082	.283	+M
46 Other organic chemicals	5,587	0.12	.079	.301	+M	.567	.720	L
47 Synthetic dyestuffs	2,345	0.05	.009	.424	++M	.779	.892	L
48 Processed oil & fats	2,804	0.06	.027	.100	S	.241	.491	+M
49 Perfumes	1,546	0.03	0	.052	S	1.000	.647	−L

TABLE V (Continued)

	Domestic Output in 1973		Export/ Domestic Output			Import/ Domestic Demand		
	(Million Won)	(%)	1963	1973	Status	1963	1973	Status
50 Adhesives	2,014	0.04	0	.005	S	1.000	.423	−−M
51 Formalin	15,356	0.35	0	.002	S	0	.418	++M
52 Misc. organic chemicals	15,937	0.37	0	.249	+M	1.000	.783	−L
(8) Other chemical products	298,411	6.94						
53 Explosives	2,795	0.06	0	.010	S	0	.009	S
54 Paints	8,400	0.19	.001	.023	S	.075	.315	+M
55 Printing ink	1,571	0.03	.006	0	S	.031	.045	S
56 Drugs & medicines	69,505	1.61	.001	.185	S	.107	.116	S
57 Soap	20,493	0.47	0	.017	S	.035	.128	S
58 Cosmetic & tooth pastes	15,376	0.35	0	0	S	0	.023	S
59 Agricultural chemicals	13,880	0.32	0	.015	S	.303	.174	S
60 Matches	1,396	0.03	0	.262	+M	0	0	S
61 Pigments	3,938	0.09	0	.018	S	1.000	.488	−−M
62 Synthetic resins	30,447	0.70	0	.140	S	1.000	.509	−−M
63 Plastic products	44,716	1.04	.001	.275	+M	.010	.110	S
64 Chemical fibers	79,417	1.84	0	.039	S	0	.405	−M
65 Misc. chemical	6,472	0.15	.078	.133	S	.152	.803	++L
(9) Chemical fertilizer	42,272	0.99						
66 Nitrogen fertilizer	18,360	0.42	0	.051	S	.814	.055	−−S
67 Other chemical fertilizer	23,911	0.55	0	.037	S	0	.207	−−M
(10) Petroleum & coal products	303,082	7.05						
68 Petroleum products	233,300	5.42	0	.062	S	.924	.055	−−S
69 Briquettes	69,782	1.62	0	.001	S	0	.024	S
(11) Rubber products	81,094	1.88						
70 Tires	25,726	0.59	0	.273	+M	0	.009	S
71 Rubber footwear	47,717	1.11	.034	.628	+L	0	0	S
72 Rubber products	7,640	0.17	.046	.264	+M	.125	.248	M
Nonmetallic	138,557	3.22						
(12) Nonmetallic mineral products	138,557	3.22						
73 Cement	57,227	1.33	.001	.110	S	.267	.002	S
74 Structural clay products	10,493	0.24	0	.344	++M	0	.015	S
75 Clay refractory	2,460	0.05	.420	.012	−−S	.381	.502	M
76 Concrete products	22,868	0.53	.003	.024	S	.007	.002	S
77 Glass products	11,636	0.27	.029	.128	S	.059	.308	+M
78 Flat glass	5,955	0.13	.107	.257	M	.010	.055	S
79 Pottery products	5,789	0.13	.014	.243	+M	.106	.225	M
80 Abrasive products	722	0.01	.013	.233	M	.141	.492	+M
81 Carbon products	540	0.01	0	.200	+M	.280	.258	M
82 Asbestos products	15,276	0.35	0	.018	S	.169	.018	S
83 Other NM-minerals	5,588	0.13	.041	.347	+M	.025	.098	S

TABLE V (Continued)

	Domestic Output in 1973		Export/ Domestic Output			Import/ Domestic Demand		
	(Million Won)	(%)	1963	1973	Status	1963	1973	Status
Metal	384,660	8.95						
(13) Iron & steel	68,101	1.58						
84 Pig iron	1,052	0.02	0	.189	S	.351	.966	++L
85 Steel ingots	67,049	1.55	.003	.015	S	.322	.232	M
(14) Steel products	210,245	4.89						
86 Steel plates & sheets	88,330	2.05	.021	5.77	++M	.828	.680	L
87 Steel bars	33,045	0.76	.076	.058	S	.233	.073	S
88 Other steel	27,185	0.63	.143	.054	S	.236	.428	+M
89 Steel tubes & pipes	24,023	0.55	.142	.045	S	.648	.090	--S
90 Galvanized steel products	14,561	0.33	.775	.572	−M	.395	.258	M
91 Iron & steel castings	15,115	0.35	.050	.214	M	.664	.087	--S
92 Cast iron tubes & pipes	5,642	0.13	.036	.024	S	.533	.028	--S
93 Steel forgings	2,340	0.05	1.000	0	--S	1.000	.169	--S
(15) Non-ferrous metal products	27,557	0.64						
94 Copper	6,844	0.15	.044	0	S	.377	.696	+L
95 Other non-ferrous metal	11,023	0.25	.080	.087	S	.552	.511	M
96 Non-ferrous rolling	8,873	0.20	.077	.217	M	.153	.541	+M
97 Non-ferrous castings	816	0.01	0	0	S	.032	0	S
(16) Finished metal products	78,757	1.83						
98 Metal furniture	7,507	0.17	.017	.399	+M	0	.036	S
99 Structural metal products	34,364	0.79	0	.305	+M	.961	.340	--M
100 Household metal products	18,607	0.43	.020	.553	++M	.034	.087	S
101 Tools	4,304	0.10	.003	.195	S	.283	.539	+M
102 Misc. metal products	13,973	0.32	.011	.399	+M	.233	.567	+M
Machinery, equipment	494,258	11.50						
(17) Machinery	67,578	1.57						
103 Prime movers	3,416	0.07	.166	.150	S	.819	.761	L
104 Boilers	2,410	0.05	0	0	S	0	.612	++L
105 Machine tools	2,571	0.05	0	.106	S	.690	.772	L
106 Metal working machinery	2,840	0.06	.004	.034	S	.696	.801	L
107 Farm machinery	9,814	0.22	.005	.001	S	.166	.380	M
108 Mining construction machinery	3,566	0.08	0	.558	++M	.729	.874	L
109 Textile machinery	9,079	0.21	.032	.080	+S	.810	.875	L
110 Special machinery	4,912	0.11	.004	.232	M	.719	.898	L
111 Other machinery	8,521	0.19	.004	.142	S	.719	.878	L
112 Office machines	11,675	0.27	.043	.813	++L	.300	.752	--L
113 Sewing machines	2,794	0.06	.009	.793	++L	.255	.922	++L

TABLE V (Continued)

		Domestic Output in 1973		Export/ Domestic Output			Import/ Domestic Demand		
		(Million Won)	(%)	1963	1973	Status	1963	1973	Status
114	Machinery spare parts	6,075	0.14	.002	.106	S	.017	.438	++M
(18)	Electrical machinery	283,332	6.59						
115	Generators	3,780	0.08	.071	.159	S	.497	.608	L
116	Electric transmission	17,419	0.40	.004	.493	++M	.593	.664	L
117	General electric machinery	3,015	0.07	0	.020	S	.615	.698	L
118	Communication equipment	16,956	0.39	.015	.052	S	.620	.429	M
119	Radio & T. V. sets	71,458	1.66	0	.495	++M	1.000	.337	--M
120	Electric component	103,922	2.41	0	.807	++L	1.000	.834	L
121	Electric lamps	10,418	0.24	.010	.412	++M	.126	.132	S
122	Household electric machinery	14,656	0.34	.037	.016	S	.082	.191	S
123	Other electrical equipment	8,095	0.18	.216	.078	S	.057	.270	+M
124	Insulated wire & cable	33,609	0.78	.002	.041	S	0	.092	S
(19)	Transportation equipment	143,348	3.33						
125	Steel ships	24,819	0.57	0	.145	S	.813	.500	--M
126	Wooden ships	1,453	0.03	.061	0	S	.005	.454	++M
127	Railroad equipment	13,942	0.32	0	.100	S	.593	.402	-M
128	Motor vehicle	73,838	1.71	.078	.020	S	.469	.319	M
129	Automobile repair	13,786	0.32	0	0	S	0	0	S
130	Bicycle	15,271	0.36	0	.218	+M	.007	.230	+M
131	Other transportation equipment	237	0.00	0	.039	S	.546	.995	++L
Miscellaneous		122,410	2.84						
(20)	Misc. manufacturings	122,410	2.84						
132	Measuring instruments	1,809	0.04	0	.222	+M	.425	.792	+L
133	Medical instruments	664	0.01	.001	.549	++M	.636	.841	+L
134	Optical instruments	4,751	0.11	.080	.734	++L	.802	.566	-M
135	Watches & clocks	14,981	0.34	.015	.246	+ M	.461	.389	M
136	Jewelry	7,294	0.16	.007	.112	S	0	.057	S
137	Lacquerwares	513	0.01	.612	.586	M	0	0	S
138	Worked hair	34,832	0.81	1.000	.938	L	0	.174	S
139	Toys, sporting goods	21,268	0.49	.019	.818	++L	0	.270	+M
140	Musical instruments	6,528	0.15	.024	.341	+M	.296	.159	S
141	Stationary	5,263	0.12	.008	.099	S	0	.041	S
142	Misc. manufactured goods	24,502	0.56	.131	.741	++L	.021	.532	++M

Source: Adapted and recalculated from [9].

and information on the sectoral trade (for each sector the ratios of export/domestic output and imports/domestic demand). In total, about 160 industrial sectors and sub-sectors are distinguished.

To analyze the status of a sector and the speed with which this status is reached, use is made of the following key. The sectors are identified for 1973 as small, medium, and large exporters (or importers) for the following values of the *export/domestic output ratio* and *import/domestic demand ratio.*

Small (S) = 0—0.2
Medium (M) = 0.2—0.6
Large (L) = 0.6—0.10

Changes in these ratios between 1963 and 1973 amounting to 0.2–0.4 are denoted by + or −, larger changes of above 0.4 are denoted by ++ or −−.

In summarizing a table which contains so much detail it is functional to ignore all sectors with domestic output below 10,000 million won in 1973. Considering for the moment sectors *with S and L magnitudes* and *the two ratios,* a large number of sectors can be classified in one of the following four divisions.

Export/ Domestic Output \ Import/ Domestic Demand	S	L
S	SS	SL
L	LS	LL

SL are highly importing sectors, LS highly exporting sectors, and LL high in both exports and imports. SS are sectors which are relatively closed to foreign trade.

The remainder of the sectors can also be accommodated in the four divisions if it could be assumed that a sector with S export ratio but +M import ratio is an aspiring candidate for SL, other aspiring candidates for SL are −ML and −M +M. Aspiring candidates for the LL status are +ML, L +M, +M +M. Aspiring candidates for the SS status are sectors with shrinking export and import ratios and with values M or S in 1973.

Graphically, almost all the sectors with output above 10,000 million won can be arranged in Table VI.

Considering first the quadrant of SL and aspiring candidates, it can be noted that here are sectors which produce mainly intermediate goods. The SL quadrant includes many more sectors than the five sectors enumerated above, such sectors are very small ones with an output below 10,000 million won and often below 4,000 million won. Almost all of these are either intermediate goods, i.e., chemicals, or capital goods, i.e., specialized machinery. They carry the following numbers of SL: 31, 49, 65, 84, 94, 103–6, 109, 111, 115, 117, 131; and for aspirants: 24, 45, 48, 54, 101, 114, 123, 126 (see Table V). The five types of products and the numbers just enumerated will probably continue to be imported in the future by South Korea, but obviously in relatively small amounts.

TABLE VI

SUMMARY OF INDUSTRIAL PATTERN

SS: relatively closed sectors Most of the remaining sectors *Aspiring sectors* Most of the remaining sectors	*SL: predominantly import sectors* None *Aspiring sectors* 8. Silk fabrics 22. Leather & fur 51. Formalin 77. Glass products 88. Other steel
LS: predominantly export sectors 2. Silk yarn 16. Apparel & accessories 26. Plywood 71. Rubber footwear 138. Worked hair *Aspiring sectors* 3. Wool yarn 7. Cotton fabrics 14. Knit goods 15. Rope & finishing nets 21. Finished textile 25. Lumber 23. Leather footwear 70. Tires 68. Plastic products 74. Clay products 99. Structural metal products 100. Household metal products 119. Radio & TV 121. Electric lamps	*LL: export-import sectors* 12. Synthetic fiber fabrics 112. Office machines 120. Electric component *Aspiring sectors* 11. Rayon fabrics 20. Textile goods 86. Steel plates & sheets 102. Misc. metal products 116. Electric transmission 130. Bicycle 139. Toys, sporting goods

The quadrant in which LS sectors and aspirants fall contains the exporting sectors of South Korea. The products include more and less durable consumer goods, such as ready made textiles and footwear, wood products, metal and electric articles mainly for household. The export market has become the major outlet for these product and if the past trends are maintained, this may continue to be so.

The quadrant in which LL sectors and aspirants fall contains light as well as heavy manufactures which for both exported and imported. At the aggregate level a sector can be both an exporter and importer because of three reasons: (1) South Korea is known to have a high import context for certain exports.[6] (2) South Korea can be exporting quality goods and importing less sophisticated goods, both goods are substitutes to each other and fall within the same sector. (3) The sophisticated good may be imported and the simpler one exported, although this may be the least likely. There is little information to make a preciser quantitative judgement. In a sense, the sectors in this quadrant require further disaggregation to sort out which specific products are exported and which are imported, and especially for the sectors of synthetic fiber fabrics, electric component, and steel plates and sheets which are relatively large sectors.

The SS and related sectors are major sectors; they are evidently nationally oriented, although some of the sectors aspiring to this category are relevant for trade relations. It is important to distinguish in this respect between the import substituting sectors which are diminishing their import trade, and the export contracting sectors who, probably proved to be noncompetitive, are withdrawing from trade, too. As such, the import substituting sectors in this category include

[6] Direct import content of South Korea's exports amounted to about 42.5 per cent during 1967–73, according to the Ministry of Finance, cf. [6].

the following (see Table V), mostly chemical products and heavy goods:[7] 5. Synthetic fiber yarn, 66. Nitrogen fertilizers, 67. Chemical fertilizers, 68. Petroleum products, 73. Cement, 89. Steel tubes and pipes, 91. Iron and steel castings, 118. Communication equipments, 125. Steel ships, and 127. Railroad equipment. More recent developments prove that the iron, steel, and ships sectors, i.e., 89, 91, 125, 127 along with fertilizers have been successfully domesticated in South Korea and are already in the list of South Korea's exports. In particular, South Korea is becoming a major exporter of shipbuilding. The only contracting exporting sector as defined above is 90, Galvanized steel products.

Import substitution is probably the first step in an industrialization process, it often paves the way for the domestication of a product; and if the product proves to be sufficiently competitive, the product may even turn to become an export product. Different products are found at different phases with regard to the type of demand they cater for. In general, there is an easy and a difficult stage of import substitution. The easy stage is mainly characterized by import substitution in light manufacturing which requires relatively simple technology and low capital-labor intensities. Once this easy import substitution is completed or in the process of being completed, further import substitution (the difficult stage) may occur in chemical and heavy intermediate and capital goods, for short, heavy manufactures.

South Korea was engaged in the easy stage of import substitution during most of this century and until 1962. During these years the relative importance of light manufacturing imports decreased and that of heavy manufacturing imports increased. The years 1962–73 are those of the further expansion of light manufacturing for home consumption and export markets indicating the successful completion of the easy stage of import substitution. During these later years South Korea entered the difficult stage of import substitution and specifically in such basic industries of fertilizers, petroleum products, iron and steel, and heavy transport equipment (see SS sectors indicated above). In the early seventies South Korea was in a position to move towards substantiating its exports of heavy manufactures, and make a start with domesticating these too.

VI. TRADE COMPOSITION AND TRADING PARTNERS

The industrial development described above resulted in a composition of exports and imports of South Korea as found in Table VII, where the percentage distribution of manufacturing commodities in total commodity exports and commodity imports are shown for the average of the transitional years between the first and the second expansionary phases, i.e., 1971–75. The commodities have been arranged to compare in a reasonable way with the industrial classification of Section V. The table includes items which exceeded 1 per cent of total commodity exports or imports during 1971–75 or have shown remarkable shifts from

[7] At the aggregate level South Korea shows little import substitution. Decomposition of growth at the sub-sectoral level shows high degree of import substitution in chemicals and especially fertilizers, and certain heavy goods, cf. [9].

TABLE VII

TRADE COMPOSITION AND TRENDS

Exports		% Share in Total, Average 1971–75	Trend	Imports		% Share in Total, Average 1971–75	Trend
All commodities				All commodities			
Food, beverages, crude materials				Food, beverages, crude materials			
Textiles, leather goods:				Textiles, leather goods:			
6516	Yarn or synthetic fibers	1.28	=	6516	Yarn or synthetic fibers	1.33	↓
6535	Woven synthetic fabrics	2.43	~	6535	Woven synthetic fabrics	2.09	↓
6531	Silk fabrics woven	1.43	=	Wood-products			
6521	Grey woven cotton fabrics	0.96	↓	Paper			
831	Travel goods, handbags	1.02	↑	Chemicals & related:			
841	Clothing not of fur	24.58	↓	332	Petroleum products	0.64	↑
85102	Footwear leather	2.17	↑	512	Organic chemicals	3.76	↑
Wood-products:				561	Fertilizers manuf.	0.88	↑
631	Veneers, plywood, etc.	8.25	↓	53	Dyes, tanning, color pr.	0.85	↑
Paper				581	Plastic materials, etc.	1.52	↓
Chemicals & related:				Nonmetallic			
332	Petroleum products	1.16	↑	Metal:			
512	Organic chemicals	0.43	↑	672	Iron, steel primary forms	2.95	~
561	Fertilizers manuf.	0.29	↓	673	Iron & steel shapes	0.62	↑
6291	Rubber tyres, tubes	0.86	↑	674	Iron or steel univ., plate, sheet	1.04	=
85101	Footwear rubber, plastic	1.34		68	Nonferrous metals	0.94	=
Nonmetallic:				69	Metal-manufactures, n.e.s.	1.44	↓
66	Nonmetal mineral manuf., n.e.s.	1.61	↑	Machinery, equipment:			
Metal:				722	Elec. power mach. switch gear	1.62	↓
672	Iron, steel primary forms	0.33	↑	7249	Telecommunication equipment, n.e.s.	1.13	=
673	Iron & steel shapes	0.46	↑	7293	Transistors, valves, etc.	2.71	~
674	Iron or steel univ., plate, sheet	2.45	~	735	Ships & boats	2.40	~
678	Iron, steel tubes, pipes, etc.	0.68	↑	711	Power mach., non-elec.	1.45	~
Machinery, equipment:				715	Metalworking mach.	1.20	=
722	Elec. power mach. switch gear	0.62	=	7171	Textile mach.	3.02	↓
7249	Telecommunication equipment, n.e.s.	0.67	↑	7191	Heating, cooling equipment	1.19	
7293	Transistors, valves, etc.	4.72	~	7192	Pumps, centrifuges	0.82	~
735	Ship & boats	1.05	↑	7193	Mechanical handling equipment	2.71	~
7241	Television receivers	0.55	=	7198	Other mach., non-elec.	1.01	~
7242	Radio broadcast receivers	0.85	=	732	Road motor vehicle	1.68	↓
Miscellaneous:				734	Aircraft	1.99	↓
86	Instruments, watches, clocks	0.82	↑	Miscellaneous:			
893	Articles of plastics, n.e.s.	0.90	↑	86	Instruments, watches, clocks	1.10	=
894	Toys, sporting goods, etc.	1.06	↑				
899	Other manuf. goods	4.01	↓				

TABLE
TRADE PARTNERS OF

	Exports					
	1970	1971	1972	1973	1974	1975
World	835	1067	1624.1	3225.0	4460.2	4722.4
Industrial countries	721	904	1379.1	2737.7	3611.5	3604.2
United States	395	531	759.0	1021.2	1492.2	1459.9
Japan	234	262	407.9	1241.5	1380.2	1224.5
EEC	64	73	143.9	332.5	522.5	679.5
Germany	27	31	51.2	120.3	241.8	291.3
United Kingdom	13	14	28.7	75.0	106.7	150.0
Netherlands	13	15	33.0	57.2	106.6	114.2
OPEC countries	15	33	43.3	64.6	143.5	241.2
Other countries	98	129	201.7	422.7	705.2	877.0

a firm base. The exported commodities included outnumbered those imported indicating the more diverse composition of imports and the smaller values involved in individual commodity imports. Underlined commodities are simultaneously exported and imported.

In a country undergoing a high diversification of exports, most items increase their share (↑, see Table VII). Items with the highest share in total exports tend to fall down (↓), these are food etc., clothing not of fur, veneer plywood, and other manufactured goods. Another falling share is that of fertilizer largely because of increased domestic use. Fertilizer export is planned to increase when production capacities exceed domestic use. Three major items whose export share are subject to large fluctuations (∼) are woven synthetic fabrics; iron or steel univ., plate, sheet; and transistors, valves etc. Some of the established exports of South Korea in textiles and electronics tend to have a stable share (=).

Among the imports those with an increasing share (↑) are mostly found in chemicals, those falling (↓) are intermediated goods in which South Korea is becoming self-sufficient: yarn or synthetic fibers, and plastic materials, or capital and durable goods which are undergoing import substitution: electric power machines, metal manufactures, road motor vehicles. There is a large number of imports with fluctuating shares (∼) or stable (=), especially among the heavy goods.

Summarizing this section, we can state that the composition of exports shows a fall in the shares for food etc., textiles (not footwear), and wood products and an increase in the shares for other aggregates. Among the imports there are clear falls in the shares of textiles, wood, paper, and miscellaneous, a less definite fall for metal, machinery, and equipment and a rise for chemicals and related.

The high labor-capital intensity which was observed earlier for South Korea's manufacturing and which reflects efficient resource allocation can be also observed in the factor intensity of South Korea's trade. Frank, Kim and Westphal estimated the following labor-capital ratios (the man-years per billion of capital in world prices) [6].

VIII
SOUTH KOREA

Imports							
1976 J–O	1970	1971	1972	1973	1974	1975	1976 J–O
6218.1	1984.5	2394.3	2522.0	4240.2	6854.4	7209.6	7143.7
4722.8	1629.4	1927.1	1974.7	3222.3	4772.1	5030.1	4831.9
2081.9	584.8	678.3	647.2	1201.9	1701.5	1851.4	1552.3
1461.4	809.3	953.8	1031.1	1726.9	2620.5	2472.7	2567.1
852.5	207.4	252.4	256.8	191.2	320.8	520.5	566.3
	67.2	73.7	66.9	32.0	140.3	192.8	
	32.5	56.2	73.9	68.9	90.4	109.0	
150.2	23.3	14.8	21.2	9.2	13.6	18.0	26.5
470.9	128.3	190.0	249.3	404.4	973.7	1271.5	1401.7
1024.4	226.8	277.2	298.0	613.5	1108.6	728.0	910.1

	Direct Factor Requirements		Total Factor Requirements	
	Exports	Imports	Exports	Imports
1963	3.02	1.93	3.71	2.40
1968	3.55	2.33	4.29	2.74

The two major trading partners of South Korea are USA and Japan, accounting together for 57 per cent of South Korea's foreign trade, which reflects a very high dependence. As Table VIII shows, the European Economic Community was the third trading partner until recently. From 1974 onwards the OPEC have taken over the third position, not only because of highly increasing imports of oil from OPEC, but also because of the even more highly increasing exports of manufactures to OPEC.

South Korea reached a surplus of exports on imports with regard to other countries already in 1975, to EEC in 1973, and to USA in 1976. The gap is still to be closed with regard to Japan and OPEC. If the trends of Table VIII are carried further, one is led to believe that South Korea exports are on their way to exceeding imports, South Korea becoming a net exporter of capital flows. Projections and plans of the government are very positive in that regard.

VII. THE SECOND EXPANSIONARY PHASE

South Korea passed through a first phase of import substitution for light manufacturing prior to the sixties. At around the mid-sixties, South Korea entered a second phase of import substitution for heavy manufactures. Although on the aggregate the degree of import substitution was very low, more disaggregated analysis has shown substantial import substitution for chemicals and certain heavy goods. These tendencies are expected to continue in the future. Besides, manufacture exports of South Korea which were mainly light are also giving way to heavy.

During the years 1963–70 industry grew by about 20 per cent p.a. The main factors behind this performance were:

(1) The low costs of production (this due more to an efficient allocation of resources and a low capital labor intensity than to low remuneration rates for labor and capital).

(2) Low costs were transmitted in low prices for the products. Besides, repeated devaluations made South Korea's export prices especially competitive. Other supporting measures to expand exports were taken. All this led to a high growth of industrial output for the export market. Production for the domestic market contributed also significantly to the overall growth of industrial output.

(3) With the level of profits increasing, investment financing became particularly easy. South Korea's investment depended greatly on foreign loans. Domestic sources increased substantially. Government took an active role in encouraging investment financing. More investment meant more activity, modern techniques of production, low costs, etc.

(4) The South Korea's potential for development along the above lines seemed to be exhausted in the early seventies. On the domestic front the economy started showing signs of overheating. Wages and prices increased greatly (such an inflation is partly due to the repeated devaluations), capacities were nearing full utilization and factor productivity tended to stabilize indicating technological bottlenecks. At the foreign front, South Korea's trade demonstrated an alarming dependence on US and Japan. Besides, foreign debts became rather excessive (not only due to the accumulation effect but also to the repeated appreciation of the foreign currencies in which the loans were to be repaid).

(5) The oil crises in 1973 and later (South Korean authorities speak simply of a shock) has increased the inflationary pressure which was already there and increased the dependence on OPEC countries.

Post-1972 government policies are characterized by important departures from those in previous years. In view of the inflationary pressure and the need to diversify, the objectives have become a steady and stable growth policy and a wider industrial base at the home front, and changed emphasis with respect to trade dependence and foreign capital at the foreign front.

1. *A steady and stable growth in the fourth plan*

In anticipation of the fourth plan 1977–81, government policy envisaged every possible effort to stabilize prices so that the GNP deflator can be held at 7 per cent a year during for the duration of the plan. GNP growth is planned at 9 per cent p.a. National savings should cover 98 per cent of the plan's costs, thus consolidating a selfsupporting base for mobilizing financial resources for development purposes. To such an end, the national-savings rate is projected to rise from 18.1 per cent in 1975 to 24.9 per cent in 1981. Tax burden is to rise from 18.6 per cent to 21.5 per cent.

2. *A wide industrial base in the fourth plan*

In projecting the state of the South Korean economy attainable in the course of the eighties, the authorities anticipated that major industrial will shift increasing-

ly into high-technology, information-intensive industries, while late-starting developing countries will expand their participation in simple labor-intensive industries, leading to progressively stiffer international competition in this category of business. In view of such anticipated developments, South Korea, an early starter among developing countries, is planned to occupy a place in between the developed countries and the less developed nations. In other words, the country would concentrate on the development of industries requiring relatively high technology in combination with large amounts of skilled labor. At the same time, South Korea would strive to further improve the international competitiveness of its industries through upgraded efficiency and technical innovation, in order to meet competition from developed countries and other countries that started developing at an early date.

The government has selected *six* heavy industries—*petrochemicals, iron and steel, nonferrous metals, machinery, shipbuilding,* and *electronics*—as major types to be emphasized. It was decided to expand these industries with plants of unit production capacity reaching international standards so that they achieve full competitiveness on the world market. To avoid public nuisances and foster interindustrial dependency, a special estate was designated for each of the six selected industries. High priority is given to the teaching, research and development of modern industrial technology. As a result of these developments the share of light industry in total manufacturing is planned to fall from 58.2 per cent in 1976 to 49.0 per cent in 1981. Heavy industry is to increase its share from 41.8 per cent to 51.0 per cent.

3. *Foreign trade*

Under increasing pressure from business interests the government adopted late in 1972 a basically different strategy—thus characterizing the second expansionary phase—in which the exchange rate would be held stable and price inflation and interest rates reduced. South Korea abandoned the gliding peg in 1972. Many South Korean firms had accumulated large foreign debts and were financially precarious. Continuous devaluations increased the amount of their dollar-specified liabilities in terms of won. Other firms producing mainly for the domestic market saw the costs of imported inputs rising and joined the resistance.

In spite of the suspended devaluations, the volume of exports are planned to grow during the fourth plan at an annual rate of 16 per cent (which is attainable considering an actual rate of 36 per cent in 1963–72 and 29 per cent 1972–77). Volume of imports is to grow during the plan by 12 per cent p.a. only, thus leading to a surplus which is partly to be used in providing low interest long-term credits for exports of goods, manpower and construction contracts and for opening the South Korean domestic market for more imports from countries to which South Korea exports substantially, this with an eye to avoiding arguments in the later countries for protectionist measures. Trading partners are also to be diversified but exports to US and Japan will still form 54 per cent of total exports in 1981 (was 56 per cent in 1977).

4. *Foreign capital*

In the light of the exchange risk on the part of enterprises borrowing foreign funds (resulting from drastic changes in foreign exchange rates in the sixties and early seventies), and as a way of assuring a sustained transfer of technology from advanced countries, the government began encouraging direct investment rather than foreign loans. Consequently, a series of measures were taken, such as:

a. applying a ceiling system on commercial loans by maturities,
b. providing industrial facilities through free export zones, creation of industrial estates,
c. approval procedures for foreign investments were drastically simplified, and
d. national treatment with virtually no foreign exchange restrictions and domestic requirements.

Some have expressed concern about the debt service burden on the South Korean economy in view of the continuous inflow of foreign capital. But foreign currency receipts under current account is anticipated to increase significantly faster than the debt servicing requirements, with the result that the ratio of debt service to current account receipts is projected to decline from 12.8 per cent in 1975 to 11.2 per cent in 1981—instead of going up, as some might fear. Moreover, South Korea's foreign exchange holdings in 1981 are projected to rise to $4 billion, corresponding to 25 per cent of its current-account receipts.

Looking back at actual South Korea's performance in the last few years the following observations substantiate the belief that the economy will be able to meet the planned targets:

(1) In the years 1974, 1975, and 1976, the consumer-price index increased by 26.4 per cent, 25.4 per cent and 12.2 per cent, respectively. The wholesale price index increased by 42 per cent in 1974, down to 20.2 per cent, which is equivalent to the target plan for 1975. The index was 9.2 per cent up in 1976, which is below the 1976 target.

(2) In April 1977, the government was considering liberalizing the imports of shoes and textiles on the grounds that these are now believed to be able to compete internationally.

(3) By May 1977, South Korea was already secured 60 per cent of the required US$10,000 million for the fourth plan 1977–81.

(4) In view of the above, the fourth five-year plan (1977–81) has already been reviewed and the figures proposed in June 1976 have been revised upwards. This was necessary because of the unexpectedly favorable achievements in the past two years. In the revised plan the annual average economic growth rate is adjusted upwards to 9.2 per cent from the originally projected 9 per cent. Basic policy directions remain as before, but the current account of the international payments position is now projected to balance in 1979 rather than in 1981 as originally projected.

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