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INTERNATIONAL BANK FOR RECONSTRUCTION AND DEVELOPMENT
INTERNATIONAL DEVELOPMENT ASSOCIATION

THE ECONOMY
OF
KOREA
(in eight volumes)

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VOLUME I
MAIN REPORT

June 17, 1966

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BASIC DATA

<u>Area:</u>	38,426 sq. miles
<u>Population (1965):</u>	29.1 million
Rate of growth (1960-65):	2.84% per year
Population density (per sq. mile):	759
Population density, per sq. mile of arable land	3,591
<u>Political status:</u>	Republic
<u>Gross national product (1965):</u>	Won 779 billion
Rate of growth (average 1955/57 to average 1963/65):	5.3%
(1965):	8.0%
Per capita (1965):	US\$99
<u>Gross domestic product at factor cost (1965):</u>	Won 772 billion
of which, in percent, Agriculture:	36.9%
Fisheries:	1.1%
Manufacturing:	19.6%
Transport:	4.0%
<u>Percent of GNP at market prices</u>	
	<u>1965</u> <u>1960-65</u>
Gross investment	11.7 13.1
Gross savings	3.2 3.2
Balance of payments current account deficit	8.5 9.9
Government current revenues	11.3 12.5
<u>Resource gap as % of investment</u>	72% 75%
<u>Money and credit</u>	<u>Annual</u> <u>Rate of change</u>
	<u>1965</u> <u>1962-65</u>
Total money supply	33% 18%
Time and savings deposits	94% 33%
Bank credit to private sector	31% 18%
Rate of change in prices	10% 26%

Public sector operations (in billion won)

	<u>1965</u> (consolidated budget)
Government current receipts*	88
Government current expenditures	77
Surplus/deficit	11
Government capital expenditures	34
Budget support by U.S.	28

External public debt including government-guaranteed private debt (in US\$ million)

	<u>Debt outstanding as of</u>	
	<u>Dec. 1963</u>	<u>Nov. 1965</u>
Total debt outstanding	187	391
Peak debt service	20 (in 1967)	34 (in 1970)
Peak service on this debt as percent of expected foreign exchange earnings	5.9% (in 1967)	7.4% (in 1970)

Balance of payments (in US\$ million)

	<u>1965</u>	<u>Annual rate of increase during 1960-65</u>
	Total exports f.o.b.	175
Total imports f.o.b.	420	7%
Net invisibles	47	35%
of which investment income	1	-
Net current account deficit	199	-5%
	<u>Ave. 1960/64</u>	<u>1965</u>
Gross foreign exchange reserves	160	146
	(or $\frac{5}{2}$ months' imports)	(or $\frac{4}{4}$ months' imports)

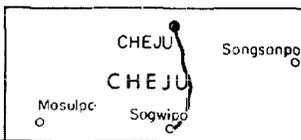
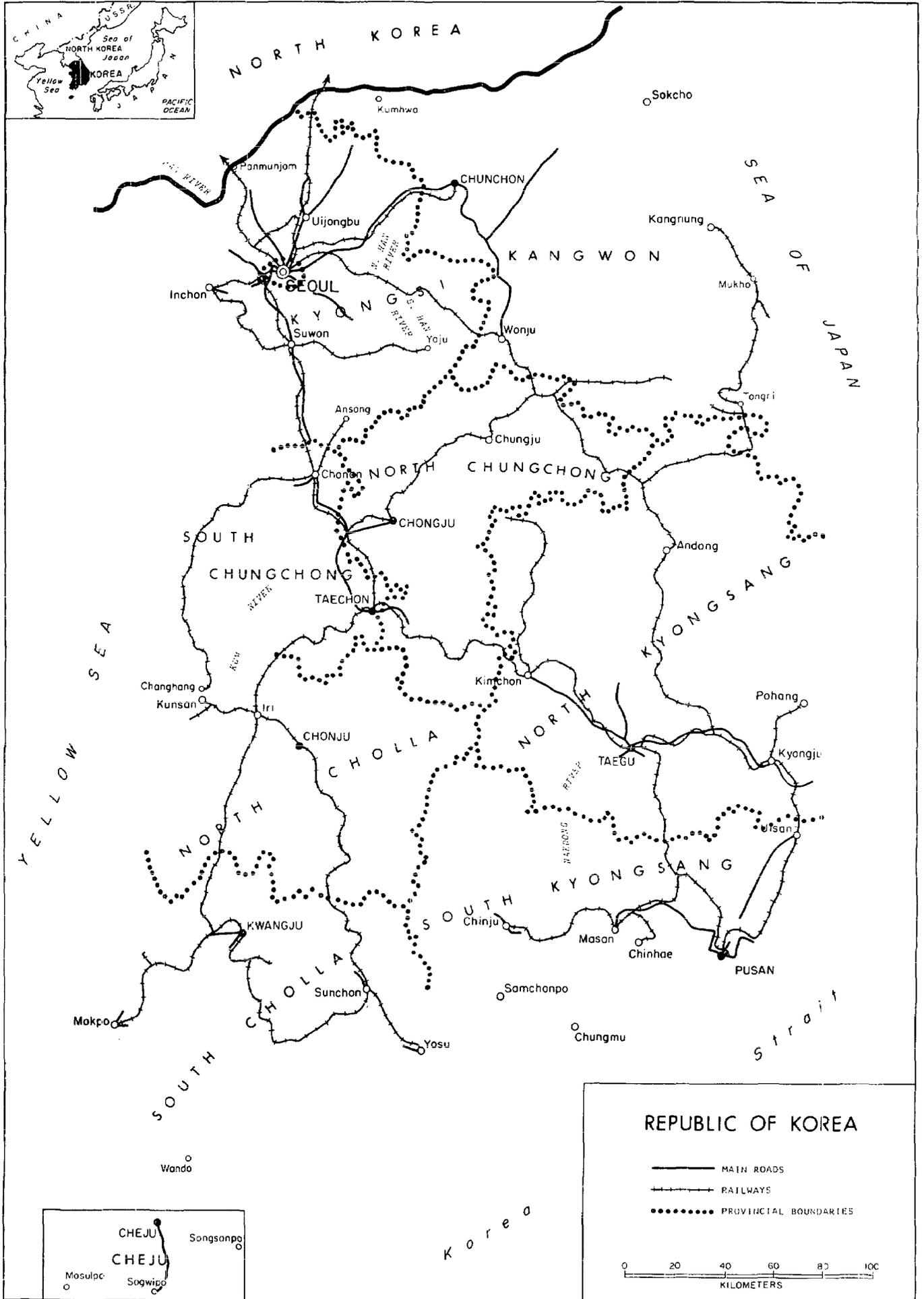
IMF position (in US\$ million)

	<u>Ave. 1960/64</u>	<u>1965</u>
Quota	18.8	18.8
Drawings	-	-

External financial assistance (in US\$ million)

	<u>Ave. 1960/64</u>	<u>1965</u>
<u>Total disbursements</u> (excl. short-term loans)	259	238
of which U.S. grant aid	201	133
Private donations	37	69

* Excluding budget support by United States.



REPUBLIC OF KOREA

- MAIN ROADS
- +—+— RAILWAYS
- PROVINCIAL BOUNDARIES

0 20 40 60 80 100
KILOMETERS

SUMMARY AND CONCLUSIONS

From Economic Report "The Economy of Korea"

A. Production and Investment

1. A marked acceleration in the growth of real income took place during the 1960's under the stimulus of the First Five Year Plan (1962-66). Korea's growth rate of 6.3 percent per year was considerably above that of most developing countries. The speed up in production was partly the result of a rise in the rate of fixed capital formation to 13.6 percent of GNP during the First Plan. Available data, admittedly imperfect, also indicate a substantial improvement in the overall productivity of investment.

2. Korea is one of the few developing countries where food production rose faster than population growth. Total agricultural output rose 4.3 percent per year. Accidental and transitory influences play a small role in explaining recent trends. By and large, the acceleration of agricultural production was related to a set of policies which expanded the cultivated area, raised the extent of double cropping and provided incentives as well as prerequisites for increasing yields. Opportunities for agricultural expansion in the near future are impressive, although non-repetitive to some extent. The Mission postulates annual output growth of 5.0 percent during the Second Plan (1967-71). Korea may find it difficult to sustain such a pace of expansion during the 1970's, owing to the exhaustion of virgin land. The Mission endorses self-sufficiency in foodgrains as one of the objectives of agricultural policy; it should be possible to reduce substantially foodgrain imports by 1971. However, the Government should place more emphasis on diversifying the cropping pattern, presently dominated by cereal production. The aim of policy should be not only to stimulate production but also to increase efficiency and reduce subsidies. The Mission recommends sizeable investments for land reclamation, irrigation and land consolidation.

3. The fisheries sector provides a livelihood for more than a million people at very low levels of productivity. The main reasons are the dearth of capital equipment and the technological as well as organizational backwardness of this sector. However, the natural resource position is relatively permissive and the outlook for demand, both domestic as well as foreign, is good. Korea should be able to capitalize on the opportunity to build a deep-sea fleet and establish a foothold in the international tuna market, provided timely action is taken to alleviate the training bottleneck.

4. Manufacturing was a leading sector of the Korean economy; value added expanded much more rapidly (9.4 percent per year) than in most developing countries. The growth of Korean manufacturing was stimulated by the process of import substitution. Furthermore, a phenomenal growth of exports in recent years provided additional impetus. Manufacturers earned handsome profits partly owing to the low exchange rate, low or negative interest rates charged by organized banking and a variety of tax exemptions and quantitative restrictions on competing imports. The protective

umbrella over Korean manufacturing was more or less impenetrable and domestic prices for major industrial products were considerably above those in Japan or USA. Despite a high cost-price structure and excess capacity in some branches, the Mission is impressed by the recent growth and diversification of output and the prospects of further industrialization. Given the sparse endowment with known natural resources, manufacturing will have to play a leading role in the country's development. No other long-term growth strategy is conceivable.

5. Industrial wages are relatively low and they are likely to remain low, in view of existing underemployment and the expected growth in the labor force. Korean workers are not only inexpensive to hire but literate, hard-working and disciplined. Furthermore, there is no dearth of entrepreneurial talent, although few industrialists can boast of long experience. Owing to the scarcity of mineral and agricultural resources, Korean manufacturing depends heavily on imported materials and this characteristic is likely to persist. An ample supply of low-wage labor is the country's chief asset and the main basis of her comparative advantage in international trade. The Mission visualizes a growth in manufacturing production of 10% per annum during the Second Plan. Detailed work at the project and industry level will be necessary to test the operational feasibility of this production target and to determine whether or not such a pace of development will strain Korea's managerial or technical resources. The obvious lines of import substitution are nearing completion. Certain of the heavy industrial projects now under consideration require very careful assessment of costs and benefits. Failure to apply the right criteria for project selection and to supply the right incentives to industrialists may have far-reaching consequences for the competitiveness of Korea's manufacturing industry.

6. The Republic of Korea started its independent career with a tremendous gap in its infrastructure. As a result power consumption was rationed for the best part of the last decade. During the First Plan installed generating capacity was more than doubled and restrictions on power-use were removed in April 1964. During the Second Plan, demand for power is expected to rise at 12% per annum. A recent survey, sponsored by the U.S. Government, proposed an investment program, consisting mainly of thermal plants, to expand capacity in line with demand. The Mission recommends a change in the price relation between coal and oil designed to promote the use of oil in thermal plants. Such an adjustment is necessary from the standpoint of the country's overall energy balance.

7. The First Plan emphasized the modernization and development of the railroad to meet transport requirements. A survey team sponsored by the World Bank has recommended an overall program for the transport sector which rightly stresses the role of highways; the acceptance of these proposals would constitute a major departure from past policies.

8. The tentative framework for the Second Plan, formulated by the Economic Planning Board (EPB), envisages a growth in total real income of 7% per year. From the standpoint of production possibilities, such an increase seems quite feasible provided there is no financial constraint. Korea has the administrative capacity and the know-how (suitably supplemented

by foreign technical assistance) to implement such a program, assuming political stability and a favorable climate of economic policies. However, we have serious reservations about Korea's capacity to finance such a growth rate.

B. Savings and Foreign Capital

9. The financial feasibility of the tentative target of raising income by 7 percent per year depends on the validity of several assumptions made by the EPB regarding investment requirements, the behavior of domestic savings and the net inflow of foreign capital. The planned values of foreign capital inflow are high but even if achieved the Mission is sceptical about the chances of reaching the very ambitious savings target proposed by the planners. The assumption is that 35 percent of the expected increment in income will be saved. Unfortunately, it is not easy to compare this target with the historical record, owing to serious statistical problems. Available data in current prices indicates a savings rate of 2.3 percent in 1960-62 and 5.8 percent during 1963-65. The low level of savings reflects the economy's structural characteristics - poverty, relatively equal distribution of income and wealth, a large subsistence sector, backward financial institutions and an undeveloped tax system.

10. Public savings were negative till recently. The size of these budgetary deficits, relative to GNP, diminished and a positive balance was achieved for the first time in 1964. This was a notable achievement; it illustrated the Government's determination to follow disciplined financial policies. However, the budget was balanced not by raising public revenues but by a very sharp reduction in current expenditures, relative to GNP. The austerity in public spending had certain undesirable side effects - a 50 percent decline in the real value of public salaries, a deterioration in standards of elementary education and erratic fluctuations in agricultural subsidies.

11. Private savings did not describe any clear trend. There is evidence that inflationary developments undermined household savings and impaired the efficiency of organized banking as an instrument of resource mobilization. Recently progress has been made in controlling inflation. After increasing by 21 percent in 1963 and 35 percent in 1964, prices rose by only 10 percent in 1965. However, confidence in price stability is not yet firmly established. Relaxation of ceilings on deposit and interest rates has improved the competitiveness of organized banking. The Government should continue to follow disciplined monetary policies to convince key elements in the financial world that price stability will be maintained.

12. Considering this history, Korea would be showing satisfactory progress in the field of resource mobilization if she achieved a marginal savings rate of 20 percent during the Second Plan. This increase in savings has to take place in both the public and the private sector and Government policy should be designed to foster increased savings in both. However, there is no doubt that a major effort will have to be made in the public sector. Korea's present tax effort is comparatively small. Sharp increments

in revenue can be realized by raising the scope and rate of indirect taxes as well as by improvements in tax administration. Provided the Mission's recommendations are implemented, the ratio of public savings to GNP will increase to 5.5 percent by 1971 while total savings approaches 10 percent.

13. If Korea would carry out the necessary saving effort, including the suggested tax reform, and if external aid were forthcoming on a scale to match domestic savings, it should then be possible to finance investment at a level which would maintain the growth in income at an annual rate of about 6 percent. The required net inflow of foreign aid, on these assumptions, would average \$275 million per annum compared to \$264 million during 1961-1965. Considering, however, all the uncertainties surrounding prospective foreign aid flows and domestic savings patterns, it is important that the Second Plan be devised in a way which would permit an orderly reduction in investment in the event of shortfalls in either domestic saving or external aid. This means that there should be a fairly clear idea of the relative priorities among investments included in the plan as well as an understanding of adjustments that would be necessary in the components of the Plan if the over-all size of the Plan had to be reduced.

14. Korea has been one of the major recipients of foreign aid on concessional terms. She obtained three times as much soft aid, on a per capita basis, as the overall average for all developing countries. The future outlook for foreign aid to Korea is not at all clear, except for the Japanese commitment recently spelled out in the normalization treaty. Responsible U.S. spokesmen have indicated that supporting assistance will be phased out. Recent events foreshadow a shift from grants to soft loans and suppliers' credits. Considering the long time it will take to eliminate the resource gap between investment requirements and domestic savings, the ideal solution would be to extend soft aid to Korea. However, a global shortage of soft aid may well rule out this solution. In this event, soft aid may be supplemented with conventional loans, provided Korea demonstrates her capacity and willingness to raise sharply the economy-wide marginal rate of savings. Korea's existing debt is not very large and with an adequately rising trend of saving the country would be able to service a significant increase in conventional debt.

C. The Balance of Payments

15. Korea's balance of payments deficit has declined noticeably compared to the mid-fifties. This is the result of considerable import substitution and, more recently, of a startling rise in export earnings (37 percent per year). Partly this increase in exports reflects an extraordinarily low base. Also non-recurring events created a temporary demand for some Korean products. However, much the greater part of credit for buoyancy of the export sector should be given to an important switch in Government attitudes from exclusive emphasis on import substitution to a more balanced trade policy. This reorientation was reflected in successive devaluations as well as in a number of complementary measures designed to compensate exporters for the persisting gap between official and "realistic" exchange rates. The most conspicuous promotional measure was a system of

preferential credit arrangements which generated powerful incentives for producers to enter the export market. However, the present system does not distinguish between products in which Korea can hope to acquire a comparative advantage and other commodities.

16. The EPB expects a growth in merchandise exports at a rate of 21 percent per year during the Second Plan. This is a very ambitious target in the context of the likely expansion in world trade. The Mission suggests a scaling down of the export target to a growth rate closer to about 15 percent per year.

17. The macro-framework envisaged by the Mission allows Korea's imports to increase by 7.6 percent per annum during the Second Plan. Although we cannot rigorously test the consistency of assumptions underlying the analysis of production and investment on the one hand and imports on the other, we feel reasonably certain that such a growth rate of imports will suffice. The historical behavior of imports is enigmatic and a precise analysis is ruled out by serious data deficiencies. During the past decade, imports lagged behind production. However, during the sixties imports increased faster than GNP. These ambiguities notwithstanding, it is clear that Korea has secured substantial import substitution, although the cost-price structure is high. The Government is aware of this situation. In these circumstances it would probably be advisable to consider a phased program of decontrol. Quantitative import restrictions might be replaced by protective tariffs in the first instance and then followed by a schedule for lowering tariffs, allowing time for rationalizing management and reducing production costs. During the Second Plan savings should be realized in imports of foodgrains, selected capital goods and possibly chemicals.

18. Future developments in the balance of payments will be greatly influenced by changes in the exchange rate. Broadly speaking, it would seem advisable to continue the present policy which had its beginning in May 1964 and which culminated in the establishment of the floating exchange rate system.

D. Is Korea Another Taiwan?

19. The question raised in the title of this section is important from the standpoint of policy. The growth path chalked out by Taiwan has led to a rapid phasing out of concessional aid to that country. Is it possible to foresee a similar termination of the need for concessional assistance to Korea?

20. The Mission's view is that the analogy with Taiwan is interesting and useful, provided we also bear in mind several important differences between the two cases. First of all, the similarities. Both countries have received substantial foreign assistance and scored impressive growth rates in production as well as exports. Both have very high population densities, although Taiwan is probably somewhat better off with respect to natural resources. Populations in both countries are highly literate and receptive to socioeconomic change. Taiwan has already witnessed a substantial decline in fertility, while Korea appears to be on the brink of such a demographic transition.

21. And now the differences. Korea's per capita income is much lower than that of Taiwan. Korea's civil service and business community lack the seasoned maturity of their counterparts in Taiwan. Finally and most important, while Taiwan has already achieved a high savings rate, Korea is far in the rear. A sizeable inflow of foreign aid into Korea helped to finance a rise in capital formation and to accelerate income growth. Whether there was equal success in raising the Korean savings rate is problematic. Even under optimistic assumptions regarding resource mobilization policies, but barring a miracle, Korea will take a long time to arrive at the stage where she can generate sufficient domestic savings to finance an adequate rate of growth without substantial foreign assistance on concessional terms.

From Economic Report "The Economy of Korea"
(Report No. FE-55, dated June 2, 1966)

Far East Department

THE ECONOMY OF KOREA

MAIN REPORT

I. INTRODUCTION

1. A study of Korea's economic history and future is of considerable value in judging the effectiveness of massive foreign aid and technical assistance in securing economic development. While this report does not pretend to be an exhaustive analysis of this kind, some of its conclusions are relevant in this context. The aim of this paper is to present a bird's eye view of past developments and future prospects of the Korean economy. An attempt is made to identify the major growth impulses and to evaluate economic policies of the Korean Government.

2. Recently, many observers have drawn attention to the success story of Taiwan; an economy which has derived considerable growth impetus from foreign aid leading, recently, to a termination of U.S. grant assistance. Responsible spokesmen of the U.S. Government have indicated that Korea is likely to follow a similar path and that grant assistance will be phased out in the foreseeable future. Is Korea another Taiwan?, therefore, sounds like a question which is not only academically interesting but also pertinent from the standpoint of practical policy. An important concern of this report is to point out similarities as well as differences between Korea and Taiwan, which are relevant in answering this question.

3. For the convenience of the reader, a few words about the sequence of this report may be useful. The document consists of a Main Report, which summarizes the highlights of the Mission's findings, and seven additional volumes which present the detailed analysis and statistics. The general reader may prefer to overlook Volumes II through VIII, which may be of some interest to the specialist. The first four chapters of the Main Report are concerned with various aspects of past economic growth; trends in production, capital formation, savings, the role of foreign aid and developments in the balance of payments. The last three chapters deal with the future outlook for the Korean economy. The provisional framework for the Second Five Year Plan (1967-1971) is discussed and the Mission's observations regarding the feasibility of tentative targets of total savings and investment are presented. This is followed by an evaluation of production possibilities and investment requirements in commodity-producing sectors as well as transport and power. A rough assessment of prospects for major exports is made; a firm forecast would require much more intricate, time-consuming analysis. The Mission is unable to project import requirements at all precisely. Detailed work at the project and industry level would be necessary for such an exercise. Finally, we discuss the net and gross foreign capital inflow required to sustain the momentum of the Korean economy as well as the related issue of the terms on which foreign resources should be made available. The calculation of foreign capital requirements rests mainly on our assessment of the savings-investment gap; the analysis of the balance of payments provides a rough consistency check only.

4. Before tackling this agenda, we will spell out some of the salient features of the Korean economy so that the reader can identify the country on the variegated map of the developing world. Readers familiar with such background information are urged to turn to Chapter II.

5. The Republic of Korea is among the poorest countries in the less developed world. Official statistics indicate that Korea's per capita income in 1965 was the equivalent of U.S. dollars 88, i.e., approximately the level at which Taiwan was 15 years ago. Apparently, Korea's poverty is not much less than that of India, Pakistan, Nigeria, Sudan and East Africa. However, international comparisons of per capita income are hazardous: visual impressions do not corroborate entirely the statistical finding of extreme poverty. Perhaps this is due to the fact that disparities in Korean income and wealth are not as glaring as in other developing countries. In terms of sheer numbers, the problem of Korea's poverty is not colossal as in South Asia. With a population of 29 million in 1965, Korea belongs to a group of about a dozen medium-sized countries such as Philippines, Thailand, UAR, and Turkey.

6. In general, Korea's demographic characteristics are shared by many developing countries; high fertility, rising life expectancy, rapid growth in numbers and a very young population (See Volume II). The rate of population growth in Korea (about 2.8 percent per annum) is considerably lower than in Taiwan (3.5 percent per annum), largely because the death rate in the latter country has already fallen to a very low level. Both countries suffer considerable unemployment and underemployment. Korea is more urbanized than one would expect on the basis of the economy's productive structure and the stage of development. Seoul, the capital city, has a population of 3.4 million. The rate of urban unemployment is much higher than the country-wide average and there is a severe housing shortage.

7. The pressure of population growth in Korea is the more keenly felt because the country has a sparse endowment of natural resources. The climate and topography are such that only one-fifth of the total land area is under cultivation. The farmed area, per capita, is 0.08 hectares ¹/_; among the lowest figures in the world. The soil conditions are not favorable. The organic matter of the soil is depleted owing to heavy rainfall concentrated in a few months and deforestation caused by war as well as excessive cuttings. Mineral deposits are thin and generally low grade. Korea has considerable hydro-potential but the cost of generation is likely to be high owing to certain physical impediments. There is only one exception to this story; marine resources in the seas surrounding the Korean peninsula are large enough to sustain a significant expansion of the fishery industry. All considered, the Mission suspects that Korea's known natural resources compare unfavorably with such assets in other developing countries. Although Taiwan has a higher population density, her resource endowment is not as bleak as Korea's.

¹/_; The corresponding figure in Taiwan is even less 0.075 hectares.
See Volume III.

8. Although nature has not been kind to South Korea, the country's human resources are impressive. A massive campaign waged after independence reduced illiteracy from 78 percent of the adult population to 11 percent in 1962 according to official data. The country is also well endowed with university and high school graduates; in fact, there is an excess of supply over demand for graduates of a liberal arts orientation. The pay-off of the investment in human capital is visible in many forms; the popular awareness of economic policies and plan targets through newspapers and other communication media, the willingness to learn, and the assiduous collection and processing of statistics on every conceivable subject.

9. The Mission is also impressed by certain intangible factors in the Korean situation. These factors, although difficult to quantify, are of considerable importance to the climate of economic development. The social upheaval, caused by the Korean War and by the political events after the Syngman Rhee regime, seem to have reduced the weight of elements of rigidity in the Korean psyche and society. 1/ Willingness to accept socio-economic change is evident in many aspects of life. The Government is not pre-occupied with political problems, unrelated to the development drive. Political issues, (language, regional loyalties, disparity in wealth or status) which absorb so much time and create so much tension in many developing countries, do not attract much attention. Korea seems to have a genuine sense of national identity.

10. Of course, political problems do exist and representative government is not firmly established. Korean students, in particular, have shown considerable restiveness on issues such as relations with Japan, civil liberties, re-unification with North Korea, etc., in recent years. The desire to leave the country and establish residence abroad on a virtually permanent basis is widespread among the intellectual elite. Frequent changes of cabinet ministers and re-assignment of top-ranking officials are part of the Korean landscape, although there is some evidence that the incidence of such

1/ A few facts regarding the modern history of the Republic of Korea may be cited. After 35 years of Japanese rule, the country was divided into hostile political blocs at the end of World War II. This was followed by the Korean War which caused widespread destruction and a large inflow of refugees into South Korea. Syngman Rhee, the first President of the Republic of South Korea, held office till April, 1960, when he was compelled to resign and go into exile. This was followed by a government headed by John M. Chang which was overthrown in May, 1961, by a military coup d'etat. The military junta ruled the country till in 1963 elections were held and General Park Chung Hee, who was the Chairman of the military junta, and his Democratic Republican Party won office by narrow margins. The Republic of Korea's external relations were dominated by the confrontation with North Korea and mainland China, the internal debate about normalization of relations with Japan and the military as well as economic involvement of the United States in the country's affairs.

disturbances has diminished lately. After dragging on for more than a decade, negotiations with Japan for the re-establishment of diplomatic and commercial relations were concluded successfully in December, 1965. The Republic of Korea is deeply involved in fighting the Viet-Nam war. The Mission is not competent to judge the prospects for political stability but competent observers are reasonably optimistic. The next elections are scheduled for 1967; the first year of the Second Plan.

11. On the premise that political stability is assured for the foreseeable future, the Mission's judgment is that social and cultural factors in Korea are more favorable to development than in most developing countries. On the whole the situation is comparable with Taiwan, although Korean civil servants and business leaders lack the tradition and experience of the emigres from mainland China who manage economic affairs in the former country.

II. INVESTMENT, OUTPUT AND EMPLOYMENT (1955-1965)

A. Macro-economic Picture

12. A marked acceleration in the growth of real income took place during the 1960's, under the stimulus of the First Five Year Plan. Nearly all sectors of the economy participated in this expansion but gains in the speed of manufacturing were particularly impressive. The growth process involved structural changes in the composition of demand, output and employment. There was a perceptible increase in the rate of fixed investment accompanied by a rise in productivity. Employment opportunities increased in many sectors but particularly in non-agricultural activities. The total number of jobs probably increased faster than growth in the labor force.

13. These generalizations regarding the Korean growth process can be supported by relevant statistical series. There is no dearth of data in official publications; if anything, Korea is relatively well-endowed from a statistical standpoint. Nevertheless, the Mission encountered considerable difficulties in judging the reliability of these numbers. For example, it was recently discovered that official statistics seriously underestimated the production of rice and barley (two of the most important crops) as well as manufacturing. Furthermore, many of the basic numbers are difficult to interpret on account of the undervalued exchange rate and price inflation. Now that the exchange rate and the price level have been "normalized", in official jargon, the economic statistics will be easier to comprehend than heretofore. This is one of the incidental by-products of economic reforms which have pervasive repercussions throughout the economy.

14. Available data regarding value added, investment and employment are summarized in Table 1. The Mission has linked national income accounts for 1960-1965, revised in December 1965, with unrevised data for earlier years. ^{1/} Admittedly, this procedure is technically imperfect but it serves to illustrate long-term growth trends and to place recent events in a somewhat longer time perspective.

15. The rate of growth of total output, in constant prices, fluctuates considerably. GNP rose at a record rate of 9.3 percent in 1963 when an import boom permitted manufacturing output to grow by nearly one-fifth and when the harvest was above normal. By contrast, the total volume of output declined slightly in 1960 when bad weather depressed agricultural production and political instability inhibited the manufacturing sector.

^{1/} The average percent difference between revised estimates and data published in B.O.K. Economic Statistics Yearbook 1965 for 1960-64 was applied to data for 1953-59 in this yearbook. This procedure was used to establish the series for GNP by industrial origin and for various expenditure categories. See Volume VIII.

Table 1: PAST TRENDS IN INVESTMENT, EMPLOYMENT AND VALUE ADDED

Item	Agriculture and Forestry	Fishing	Manufacturing	Power ^{/1}	Transport	Housing	All Sectors
1. <u>Annual Growth in Value Added /2 (%)</u>							
(a) Average 1955/57 to Average 1963/65	3.7	4.5	9.4	11.5	11.7	2.1	5.3
(b) Average 1959/61 to Average 1963/65	4.3	5.5	12.1	11.1	12.7	2.4	6.3
2. <u>Annual Growth in Value Added per Worker /2 (%)</u>							
(b) Average 1959/61 to Average 1963/65	-----2.0-----		3.0	15.1	9.8	n.a.	2.3
3. <u>Incremental Capital-Output Ratio /3</u>	-----0.69-----		1.35	9.4	4.4	10.0	1.76 /4
4. <u>Composition of Value Added Percent</u>							
(a) Average 1955-57, (1960 prices)	37.0	0.9	12.4	0.6	3.5	7.3	100.0
(b) Average 1963-65, (1960 prices)	32.8	0.8	16.8	1.0	5.6	5.7	100.0
(c) 1965 (1965 prices)	36.9	1.1	19.6	1.2	4.0	3.6	100.0
5. <u>Composition of Employment Percent</u>							
(a) 1960	-----65.9-----		6.8	0.2	2.1	n.a.	100.0
(b) 1964	59.8	2.2	8.1	0.2	2.0	n.a.	100.0
6. <u>Composition of Fixed Investment Percent</u>							
(a) Cumulative 1960-64, (1960 prices)	-----11.0-----		21.5	9.3	22.3	12.8	100.0
(b) 1965 (1960 prices)	-----7.9-----		25.3	7.6	20.9	11.9	100.0
2a <u>Value Added per Worker Average 1963/65</u> Average All Sectors = 100	54	39	206	618	284	n.a.	100.0

^{/1} Includes water supply and sanitation.

^{/2} Compound rate; 1960 prices.

^{/3} Fixed investment in 1960 prices 1960-64 (cumulative) divided by increase in value added 1960-65 also in 1960 prices.

^{/4} If the relation is expressed in terms of total investment including changes in inventories, the coefficient is 1.97.

16. Evening out these fluctuations by the use of three year averages, the long-term growth rate was 6.3 percent per annum, during the 1960's compared to 4.4 percent in the late 1950's. On this basis, Korea's growth rate during recent years was considerably above that of most developing countries. However, Israel, Taiwan and Thailand are among the few countries who experienced a higher growth rate than Korea. On a per capita basis, Korean GNP increased 3.5 percent per year.

17. Comparison of actual achievements with targets of Korea's First Plan are difficult on account of statistical problems. However, if suitable adjustments are made, then it appears that actual GNP in 1965 is about 8 percent higher than the target of the Original Plan and about 11 percent higher than the target of the Adjusted Plan. Per capita national income in 1965 amounted to won 23,630 or the equivalent of \$88 at the prevailing exchange rate.

18. The acceleration in the growth of production was partly the result of a rise in the rate of capital formation. The ratio of fixed investment to GNP according to available data, was less than 11 percent 1/ in the mid-fifties and fluctuated around that level till the inauguration of the First Plan. There was a steep increase in 1962 and 1963, followed by a partial retrenchment in the next two years in the interest of financial stabilization and economic consolidation. The average rate of fixed investment during the First Plan period was 13.6 percent. 1/

19. The rise in the rate of capital formation took place in a climate of strong inflationary pressures. The annual rise in prices was nearly twice as fast in the 1960's than in the second half of the 1950's. 2/ The inflationary process brought about notable changes in the price structure which must have influenced both the tempo and the pattern of capital formation. For example, prices of investment goods lagged behind the overall price level during the 1960's reflecting the subsidy via the exchange rate system. In such an environment, investors who managed to secure import licenses and cheap credit through the Government controlled banking system reaped tremendous windfall profits. Fortunes were made not only by manufacturers and other producers but also by speculators who manipulated inventories of artificially cheap imported goods.

20. Nevertheless, a substantial improvement seems to have occurred in the overall productivity of investment. The incremental capital-output ratio (the relation between increase in fixed capital and rise in value added) declined from 2.71 in the later 1950's to only 1.76 in the 1960's. The present Korean ratio appears in a rather favorable light when compared with other countries at similar stages of development. Indeed, there is

1/ Expressed in 1960 prices.

2/ The wholesale price index increased by 63 percent during 1955-60 and by 121 percent during 1960-65.

scarcely a developing country which has recorded a lower ratio in the recent past. 1/ The Mission finds it difficult to interpret the significance of this rather low capital coefficient in Korea. Partly, this is the result of a downward bias in the statistical estimation of investment. The Mission has reason to believe that national income accounts underestimate investment in the form of construction, particularly in the agricultural sector. (See Volume III) Other observers have drawn attention to omissions of construction in public utilities, railroads, mining and urban housing. 2/ Furthermore, the too low exchange rate implied that imported machinery and equipment (about 40-50 percent of total) was underestimated in terms of won. Korean investors were receiving a substantial subsidy from the rest of the economy.

21. A sizeable proportion of capital formation is controlled by the public sector. Direct investment by the Central and Local Governments as well as Government enterprises account for about 30 percent of total investment in the economy. 3/ The role of the public sector is considerably higher in power, transport and agriculture than in other sectors. In addition, the Government influences private investment decisions through its role as a financial intermediary. Loans and grants for investment purposes are nearly one-fourth of total public capital expenditures and about 15 percent of private sector investment during the First Plan. These capital transfers from the public sector are administered through Government departments and specialized institutions such as the Korean Reconstruction Bank (KRB) and the National Agricultural Cooperatives Federation (NACF).

22. Acceleration in the pace of capital formation generated job opportunities and an increase in labor productivity. (See Table 1) Employment increased at an annual rate of 4 percent per annum during 1960-64, compared to a growth of 2.6 percent per annum in the working age population (15-59 years). In all probability, the pressure of unemployment and underemployment was alleviated somewhat during recent years. However, the present position is far from reassuring. According to the quarterly survey of the economically active population, the rate of unemployment averaged nearly 8 percent during 1963 and 1964. Furthermore, nearly a quarter of those classified as "employed" by this survey were looking for additional work. According to another source, chronic and seasonal underemployment affected half the labor force. 4/

1/ Taiwan, Philippines and Thailand are reported to have capital coefficients (fixed and inventory investment related to rise in value added) centering around 2.50 compared to 1.97 in Korea.

2/ L. Grose: "Evaluation of Korean National Income Accounts", Consultant, Nathan Advisory Group, November, 1965.

3/ See Volume VII.

4/ See Volume II.

23. The Mission could not evaluate systematically the efficiency of resource allocation in Korea. The framework of Government policies during the sixties were not conducive to optimum results. First, inflation and the undervalued exchange rate introduced distortions. Secondly, Government controlled banks were charging interest rates which proved to be negative after allowing for price inflation. Not only were interest rates too low but they varied according to set of criteria - source of financing, notion of priority of activities - which was difficult to rationalize. Nevertheless, despite these shortcomings, the overall results in terms of growth of GNP, employment and the observed capital-output ratio are quite impressive. Furthermore, recent economic reforms - the attempt to stabilize prices, the establishment of a floating exchange rate and the upward adjustment of interest rates by the organized banking system - should bring about a far reaching realignment of costs, prices and profits in the economy.

B. Dynamics of Agriculture 1/

24. Although agriculture has lagged somewhat behind the rest of the economy, it remains the largest sector from the standpoint of value added and employment. (See Table 1) Korean agriculture, in large part, belongs to the sizeable subsistence sector of the economy. Nearly three-quarters of all farms are less than 1 hectare. This is explained in terms of the scarcity of cultivable land, the pressure of population and a relatively successful land reform after World War II. Grains, mainly rice and barley, occupy a place of commanding importance in the farm economy; they account for 64 percent of total agricultural income. Value added per worker in agriculture is just about half of the national average.

25. Given these structural characteristics one would not expect Korean agriculture to display many dynamic properties. And yet, enigmatically enough, the recent growth record is certainly impressive. (See Tables 1 and 2) Korea is one of the few developing countries where food production rose faster than population growth. The growth of total agricultural production in Korea of 4.3 percent per annum compared favorably with Taiwan (3.8% per annum), the Far East (2.7% per annum), Latin America (2.9% per annum) or Africa (2.5% per annum). 2/

Table 2: THE DIMENSIONS OF GROWTH IN AGRICULTURAL OUTPUT, YIELDS AND AREA

<u>Crop</u>	<u>Distribution of Total Cropped Area 1962-1964</u> (% of total)	<u>Average Annual Percent Change</u>		
		<u>1955-57 Average</u>	<u>1962-64 Average</u>	<u>Yield</u>
Rice	36.3	3.4 ^{3/}	1.0 ^{3/}	2.4 ^{3/}
Barley	27.3	4.9 ^{4/}	1.9 ^{4/}	2.9 ^{4/}
Pulses	10.4	1.0	1.0	0.0
Potatoes	4.5	9.4	6.8	2.6
Fruits	0.8	7.5	3.2	4.3
Vegetables	4.1	2.3	2.4	- 0.1
Tobacco	0.8	12.5	2.5	10.0
Cereals	75.4	3.7	1.2	2.5

Source: EPB, Korea Statistical Year book, 1965

1/ Based on detailed analysis in Volume III.

2/ See FAO Production Yearbook Vol. 18, 1964.

3/ Average 1955-1957 to Average 1963-1964.

4/ Average 1955-1956 to Average 1962-1964.

26. The Mission is convinced that accidental and transitory influences play a small role in explaining recent trends. By and large, the acceleration of production during the 1960's was related to a set of policy variables which speeded up the increments to area under cultivation, which raised the extent of double cropping and which provided the incentive as well as the prerequisites for raising yields per hectare.

27. The area under cultivation scarcely changed during 1955-61 but since then it has increased at an annual rate of 2.3 percent. The recent impetus is largely the result of the Government sponsored "upland reclamation program." Idle and eroded lands with gentle slopes have been developed for cultivation mainly through bench-terracing techniques. This labor-intensive reclamation operation has received support from the U.S. foreign assistance program in the form of PL 480 flour, used as wages in kind, and from the United Nations Special Fund, mainly in the form of technical assistance.

28. The extent of double cropping (area double cropped as a percent of total cultivated area) had diminished from a high of 52 percent in 1957 and 1958 to 48 percent in the following two years. Since then there was a steady increase upto 55 percent in 1964. The recovery and spread of double cropping was stimulated by the recently started land consolidation (commonly called "paddy rearrangement") program as well as by the increase of irrigation facilities. The area benefiting from large irrigation projects was substantially bigger during the First Plan than during previous years. Presently, about 57 percent of rice lands are fully irrigated.

29. The average yield of irrigated paddy in Korea is about 40-50 percent higher than rain-fed paddy. Also fluctuations in yields under rain-fed conditions are almost double those experienced in irrigated areas. The increase in irrigation facilities, therefore, was one of the factors underlying the substantial rise in yields secured by Korean farmers. (See Table 2) Also, rapid increments in the utilization of fertilizer and pesticides were recorded. The consumption of chemical fertilizers declined from 1957 to 1959 but since then there has been a regular increase; the 1964 level was more than double the previous peak. Similarly, the consumption of pesticides which had varied between 4-6 thousand tons during 1955-61 suddenly jumped up and reached a level of 23 thousand tons in 1964.

30. The break-through in the use of fertilizer, pesticides as well as other inputs was achieved through a reorganization of credit and marketing facilities as well as a strengthening of extension services. The NACF, with a membership of 92 percent of all farm households, became the sole distributor of fertilizer in 1962. The sale of fertilizer is not openly subsidized although low interest rates on NACF fertilizer loans constitute a hidden subsidy. The fertilizer loans could be repaid in cash or partly in kind (i.e. a predetermined quantity of rice). The sale of various other inputs, important for agricultural productivity, were subsidized. Limestone received a subsidy of 50 percent and pesticides of about 20 percent.

31. More important than subsidies on particular items was the fact that the Korean Government adopted various measures to reduce seasonal fluctuations of rice prices. These attempts have become quite successful. During the mid-fifties pre-harvest prices used to reach a peak 30 percent above the annual average; in recent years, the corresponding figure was only 12 percent. Similarly, post-harvest prices used to touch a low of 21 percent below the annual average; in recent years, the corresponding figure was 14 percent.

32. Not only was there a measure of price stabilization but there was a distinct improvement in the terms of trade of the farmer vis-a-vis the rest of the economy. Whereas grain prices had lagged behind non-grain prices during the late 1950's, this relationship was reversed during the 1960's. 1/ More sophisticated calculations by the Bank of Korea confirm that the farmer's terms of trade have improved significantly during the 1960's. 2/ Since 1961 the Government has been supporting the prices of rice and barley and since 1963 the support price is fixed on the basis of prices paid by farmers for agricultural inputs as well as for household consumption.

33. Altogether, policies of the Republic of Korea have proved fairly effective in igniting a spark of dynamism in the agricultural sector. This is not to say that weaknesses do not exist or that improvements are not feasible. The following instances come to mind:

- (1) Knowledgeable observers have drawn attention to signs of some deterioration in the situation regarding tenancy and absentee land ownership; recent surveys show that 14 percent of the cultivated area is farmed by non-owners.
- (2) Despite recent improvements, the NACF only supplies 27 percent of total farm credit at present; the remainder comes from private lenders on exorbitant terms.
- (3) The Ministry of Agriculture and Forestry is handicapped by a shortage of technicians and project analysts. Some of the irrigation projects have proved to be extremely expensive.
- (4) Budgetary constraints have prevented the Government from following a consistent policy regarding provision of subsidies for agricultural inputs; the extent of subsidy has fluctuated erratically.

1/ From 1955-57 to 1959-61 the wholesale price index of all commodities, excluding grains, increased by 37 percent while grain prices rose by 11 percent. From 1959-61 to 1963-65 the former index increased by 80 percent while grain prices rose by 132 percent.

2/ However, in 1965 the farmers experienced a deterioration in their relative position. The terms of trade index (base 1960) declined from 115 to about 110.

- (5) The small size of farms has inhibited mechanization and limited the growth of agricultural activities, such as livestock and fruit growing. Government policies are not conducive to the diversification of the cropping pattern.

C. The Role of Manufacturing 1/

34. Manufacturing was a leading sector of the Korean economy. Its growth rate during the first half of the sixties was nearly double that in the late 1950's. Value added in manufacturing increased 1.77 times as fast as GNP during the decade under observation. (See Table 1) This growth momentum means that Korean manufacturing expanded much more rapidly than manufacturing elsewhere in the less developed world. Taiwan was one of the few countries where the manufacturing sector expanded at a higher speed (14.8% per annum) than in Korea (11.0% per annum). 2/ Most of manufacturing industry is in private hands. However, the Government has played a very large role in industrial decisions, through its control over the banking system, its approval policy on investments requiring foreign exchange outlay, the licensing of raw materials imports and the prohibition of competitive imports. Recently there has been some liberalization and a partial shift from direct to indirect controls. However, the influence of the Government in major investment decisions remains large.

35. The growth pattern of various segments of Korean manufacturing reflected changes in the composition of demand and the impact of Government policy measures. Industries producing finished capital goods, inputs for capital goods and semi-processed commodities destined for the construction sector expanded much more rapidly than other branches. (See Table 3) The growth rate of these investment good industries was 1.65 times as fast as the rise of gross domestic fixed capital formation. A fair measure of import substitution was achieved in this area. Consumer good industries, on the other hand, were much less buoyant because consumer expenditures increased relatively slowly and because the process of displacing imports was exhausted by the end of the 1950's. Production of manufactured consumer goods increased 1.40 times as fast as consumption outlays during the whole decade; this coefficient dropped to 0.93 during the sixties. The output of manufactured branches classified into the category of intermediate goods industries kept pace with total manufacturing production. Here too there was a substantial increase in the share of local production in the total market, at the expense of imports.

1/ Based on detailed analysis in Volume V.

2/ According to the index of industrial production. See Table 3.

Table 3: GROWTH RATES AND COMPOSITION OF OUTPUT IN MANUFACTURING

<u>Branch</u>	Rate of Growth 1955-57 to 1963-65 (% p.a.)	Share in Total Value Added	
		<u>Actual</u> /4 (%)	<u>Normal</u> /3 (%) 1965
<u>Investment Goods</u>	<u>13.9</u>	<u>22.9</u>	<u>24.2</u>
Transport Equipment	13.8	4.7	11.9
Electric Machinery	30.0	1.7	
Machinery	2.1	3.3	
Metal Products	12.0	2.2	
Basic Metals	14.2	2.7	4.0
Non-Metallic Minerals	16.0	8.3	8.3
<u>Intermediate Goods</u>	<u>11.4</u>	<u>36.8</u>	<u>29.3</u>
Wood	6.1	2.7	4.1
Paper	19.0	3.2	1.2
Textiles	6.2	16.6	14.4
Rubber	11.3	2.4	0.9
Chemicals	23.0	6.8	8.7
Petroleum and Coal	?	5.1	
<u>Consumer Goods</u>	<u>6.6</u>	<u>38.3</u>	<u>45.3</u>
Food	5.1	13.1	30.0
Beverages	6.1	6.6	
Tobacco	7.1	10.3	
Clothing and Footwear	n.a.	3.6	5.7
Printing and Publishing	13.0	3.8	2.1
Leather and Products	1.3	0.9	2.0
<u>Total Manufacturing</u>	<u>11.0</u> /1	<u>100.0</u> /2	<u>100.0</u> /2

/1 Corresponds to growth of value added in constant prices of 9.4 per cent per annum. See Table 1.

/2 Including other manufacturing not classified above.

/3 For explanation see paragraph 37 in the text.

/4 Expressed in 1960 prices.

Source: Volume V

36. The growth of the manufacturing sector was stimulated by the process of import substitution. Furthermore, in recent years a phenomenal growth in manufactured exports provided additional impetus. Whereas during the mid-1950's the export market absorbed 0.4 percent of gross output, the corresponding proportion in 1965 was 6.9 percent. (See Chapter IV for analysis of manufacturing exports and imports as well as related policy measures.)

37. Economic development during the last decade has enhanced the importance of the manufacturing sector in the overall economy. The share of value added in this sector in GNP increased significantly and now stands at nearly 20 percent. (See Table 1) Manufacturing played a considerably bigger role in the Korean economy than one would "normally" expect in a country of 29 million people with a per capita income of less than U.S. \$90. 1/ Not only was Korean manufacturing relatively large in size but the composition of its output among various branches displayed signs of premature development, considering the size of the domestic market for industrial goods. For example, the share of consumer good industries in total output in 1965 was less than "normal" while the share of intermediate good industries was above "normal". (See Table 3) Although the Mission does not attach too much importance to these deviations, they are instructive from the standpoint of understanding the present Korean industrial structure.

38. Food processing industries in Korea are relatively undeveloped in terms of production, although sizeable investments have been made. The rate of capacity utilization in some of these branches (wheat flour, refined sugar, canned fish) was extremely low despite the fact that the volume of food consumption increased fairly rapidly in recent years. The Mission was unable to offer a satisfactory explanation for this enigma. To some extent, it may reflect Korean tastes for foods processed at home rather than in the factory (fresh fish, kimchi etc.) and the large non-monetized sector of the economy which subsists on food grown on the farm or caught at sea. Processing has not developed also because transport and power facilities in rural areas are inadequate. The negative deviation for the clothing and footwear industry was probably more a statistical phenomenon than anything else. 2/

1/ This conclusion is based on a cross-section regression analysis of a sample of 53 countries (1953) and 42 countries (1958). The coefficient of the "relative degree of industrialization" for Korea in 1965 is 1.404. Regression equations have also been formulated for the distribution of value added among various manufacturing branches. See UN: A Study of Industrial Growth, 1963.

2/ The negative deviation for the clothing and footwear industry was almost wholly offset by the positive deviation for textiles.

39. The complex of inter-industrial relations in Korea were rather well developed. According to the 1963 Input-Output Table, nearly half of total manufacturing production was consumed within manufacturing or sold to other sectors in the form of producer goods for further processing. The comparable proportions in other countries were as follows: Philippines 1956, 17 percent and India 1960, 50 percent. Despite a surprising high share of intermediate goods production, Korean manufacturing was heavily dependent on inputs imported from abroad. In 1963, imported inputs, valued at the actual exchange rate, were 26 percent of total raw material and semi-processed items purchased by manufacturing industries. If these imports were revalued at a more realistic exchange rate, then the above proportion would be 33 percent. 1/ Dependence on imports was particularly high in the petroleum, rubber, wood, chemicals, textiles and metal industries. These high proportions reflected, in large measure, the paucity of Korea's natural resource endowment - both agricultural and mineral.

40. Although investment goods industries expanded rapidly during the last decade, they are still quite limited in size and character. This is particularly the case of the basic metal industry. For example, Korea's iron and steel industry consists of several units of sub-optimum size which are based on smelting scrap. These productive facilities are not equipped to produce structural steel, large plates or steel alloys for which there is some demand. The industry is also handicapped by heavy transport costs; pig iron is transported from Sanchok in the Northeast around the whole peninsula to Incheon on the West coast. Similarly, the machinery industry is circumscribed; nearly two-thirds of its output is produced in small units employing less than 50 workers each.

41 Growth of the manufacturing sector during recent years absorbed more than one-fifth of total fixed investment in Korea. (See Table 1) About 9 percent of manufacturing investment was carried out directly by the Central Government. Another 5 percent was financed by equipment loans from the organized banking system, largely from the Korea Reconstruction Bank (KRB). 2/ Interest rates charged by KRB before the recent reform were less than 10 percent on a nominal basis and negative on a real basis, considering the rate of price inflation.

42. There are considerable doubts about the way in which manufacturing investment was utilized. The incremental capital-output ratio, as recorded in official data, (see Table 1) is certainly not high by

1/ Details are shown in Volume V.

2/ Increase in outstanding loans for equipment to the manufacturing sector as a percent of fixed investment in this sector. On the basis of gross lending, the importance of the banking system is much higher. For example, KRB gross lending for equipment during 1962-65 was nearly 12 percent of fixed investment.

international standards. And yet, considerable excess capacity is known to exist in several industries - food processing, parts of textiles, rubber and basic metal industries. Admittedly, data regarding the rate of utilization of installed equipment are far from reliable. In some cases, for example, pig iron and canned fish, the capacity figures are too high in so far as obsolete and unserviceable machines are included. In other areas - segments of the food, textile and rubber industries - idle capacity is simply a reflection of overinvestment in relation to the size of the market. There may also be instance - plastics, metal products - in which the unavailability of imported inputs caused a cut back in the production schedule.

43. The quantity of machinery and equipment probably increased faster than employment in most branches of manufacturing during recent years. The statistical evidence is weak; data on fixed investment by branches is not available and employment numbers may contain errors. 1/ Nevertheless, the Mission's impression was that the production process was gaining in capital intensity. The ratio of the horsepower of productive equipment to employed workers increased in all branches, except beverages, printing and metal manufacture. 2/

44. The capital-labor ratio seemed to rise despite the fact that wage rates, extraordinarily low to begin with, barely increased in terms of constant prices. During the last five years, real wages in manufacturing actually declined by 6 percent while value added per worker rose by nearly 16 percent. Therefore, we might conclude that the rise in capital intensity was induced not by movements of relative factor prices but by changes in composition of output among and within branches as well as by the adoption of new technology.

45. Profit rates secured by manufacturing concerns were fairly high. According to the Bank of Korea's sample study, net profit as a proportion of net worth was 23 percent in 1962; a rate considerably higher than in most other sectors of the economy. 3/ Attractive profits

1/ Manufacturing employment in 1964, according to the KRB sample survey, was 377,000 compared to an estimate of 670,000 derived from EPB's survey of the Economically Active Population.

2/ See Industrial Censuses of 1958 and 1963.

3/ Apparently the profit rate declined in 1963 to 19 percent and in 1964 to 15 percent. The Mission suspects that these declines reflected accounting changes, such as an upward revaluation of net worth. This theory is confirmed by observing the ratio of net profits to sales; 7 percent (1962) 9 percent (1963) and 9 percent (1964). In 1963, net profit as percent of net worth in other sectors were as follows: Trade 26 percent, Mining 15 percent, Construction 14 percent, Transport 5 percent and Electricity 3 percent.

partly resulted from the fact that the exchange rate was undervalued, that the dependence on imported inputs was high, that many manufacturers enjoyed a variety of tax exemptions or concessions, that interest rates charged by organized banking were low or negative and that international competition was rendered impotent by various restrictions.

46. How did recent economic reforms - the devaluation and the upward adjustment of interest rates - affect rates of profit in the manufacturing sector? Unfortunately, the Mission was not able to provide a definitive answer to this fairly important question. The devaluation, undoubtedly raised material costs, in terms of won, for many industries. The impact was much greater for the rubber, plywood, chemicals, textiles and metal industries than for the rest of manufacturing. Firms which imported directly at the undervalued exchange rate now had to pay higher won prices. Other manufacturing concerns who purchased foreign materials through Korean trading companies were already paying what amounted to post-devaluation prices; these were less affected by changes in the official exchange rate. Although the process of adjustment must have varied greatly, the Mission ventures the generalization that increased costs were passed on to the consumer in the form of higher prices, in most cases. During 1963-65, wholesale prices increased as follows: rubber goods 60-80 percent, chemicals 80 percent, textiles 73 percent and metal products 72 percent.

D. Fisheries: A Backward Sector 1/

47. The fisheries sector is large, providing a livelihood for 1.2 million people which is about 4 percent of the total population. However, there is a large degree of underemployment in this sector. Small scale fishing everywhere attracts many part-time fishermen; and in Korea, where incomes are low and jobs are scarce, this is significant. According to the narrower definition used by the Survey of the Economically Active Population, fishing only provides 2 percent of total employment. (See Table 1)

48. The backwardness of the sector is reflected in extremely low productivity levels. Value added per worker in fishing is far below that in agriculture and less than 40 percent of the economy-wide average. (See Table 1) The low level of productivity is, in the first place, due to a lack of capital. The fishing fleet is small in relation to the number of workers in the fisheries sector, the boats are small (3.4 tons on average) and only half of the tonnage is powered. Moreover, fishermen are lacking in knowledge of modern fishing methods. Although there is probably a widespread willingness to learn these methods, the curriculum of fisheries schools, of which there are many, includes too little practical instruction. Fisheries education is also in need of greatly increased budgets for equipment and staffing.

1/ Based on detailed analysis in Volume IV.

49. The development of the fisheries industry is also hampered by the fact that marketing facilities are poor. The fish markets are mostly primitive and a high degree of waste and loss in quality occurs through rough handling of the fish and inadequate preservation. The facilities for fish transportation and distribution are equally deficient leading to further waste, and deterioration of quality. Because of the lack of proper preservation and distribution facilities, the trade prefers to carry minimum stocks. This often leads to shortages and very high prices at the ultimate selling point, regardless of the fact that fish may be abundant and very low priced at the landing point. As in many developing countries, the price spread from fisherman to consumer is very large, at times ranging up to 250 percent. This price differential is entirely absorbed by middlemen who dominate the fish market. The result has been a very weak economic position of the fishermen who are without funds to invest in more modern vessels or equipment.

50. During the last decade, there has been a steady increase in fish production by about 6.5 percent a year. Since 1962, there has however, been an acceleration in the growth of production to 10-12 percent a year. ^{1/} Total landings in 1964 amounted to almost 600,000 tons. The most rapid increase in production occurred in aquiculture, especially in oyster cultivation. The acceleration in the growth of production during recent years is partly due to the program of general improvements in fishery conditions under the Government's First Five-Year Plan. This program included improvements in communications equipment, motorization of vessels, modern fishing gear, and the development of tidal flats for oyster and clam cultivation. The program was fairly modest in size but implementation during 1962-65 was on schedule and for certain items, ahead of schedule. A further factor in the increased fish production is the expansion and to a certain extent, the modernization of the fishing fleet. The total tonnage of the fleet was declining slowly until the end of the 1950's, but since then, it has risen from 107,000 tons in 1960, to 167,000 tons in 1964. The progress in modernization was not very impressive, according to official data which are subject to many defects. According to these statistics, the share of powered vessels in total tonnage of the fleet, rose from 42 percent in 1955, to 52 percent in 1964, and the average tonnage per boat rose during the same years from 3.2 to only 3.4.

51. Fish processing, of declining importance because of growing consumer preference for fresh fish, underwent a significant change during the last few years by the introduction for the first time of frozen fish. By 1964, frozen fish amounted to 30 percent of the total output of processed fish. About half of the frozen fish is exported. There was a corresponding decline in the output of dried, salted, and cooked fish.

^{1/} The growth in physical volume bears little relation to value-added figures in national accounts. See Table 1.

52. An important new development in recent years is the acquisition by Korea of vessels suited for distant water fishing. By the end of 1965, 70 of these vessels had been acquired and 70 more will be delivered during 1966, mainly financed by a \$40 million loan to the Korean Government by a French-Italian consortium. The vessels, longliners and trawlers, are engaged in tuna fishing in the South Pacific and off West Africa. Since the vessels now fishing have mostly been in operation for less than two years, it is still early to form a judgment about their economic performance. Daily catch rates have generally equalled and in some cases exceeded those realized by Japanese and Chinese (Taiwan) fishermen on the same grounds. Given the Koreans' lack of experience, this is encouraging. However, total operational costs are still on the high side and the debt service on the suppliers' credits which financed the purchase of these vessels, is generally heavy. The potential for reducing operational cost is probably good because of low wages and great willingness to work of the crewmen.

E. Electric Power: A Bottleneck Removed 1/

53. The Korea Electric Company (KECO) was established in its present form in 1961, after the merger of three companies. The Government owns 70 percent of the share capital. In addition, there are more than 320 independent power systems operating in rural areas; these account for less than 1 percent of total installed capacity in S. Korea. No statistics are available regarding power facilities owned and operated by industrial concerns on their own premises.

54. Nearly 90 percent of electric power capacity of undivided Korea was located in the North i.e. above the 38th parallel. Therefore, the Republic of Korea started its independent career with a tremendous gap in its infrastructure. Power consumption was rationed for the best part of the last decade. The First Plan singled out the "power crisis" as one of the most serious bottlenecks impeding industrialization. 2/ During the plan period, installed capacity was more than doubled. (See Table 4) More than 70 percent of present capacity consisted of thermal units; many of rather small size. Although a few thermal plants used oil, the main source of energy was coal.

55. Power consumption in the manufacturing sector increased much more rapidly than in other parts of the economy. (See Table 4) Electricity sold by KEKO to manufacturing concerns increased twice as fast as total manufacturing production; partly because manufacturing firms substituted KEKO supplies for their in-factory power facilities. In recent

1/ This section is partly based on the report entitled "Korea Electric Power Survey" prepared for U.S. Mission in Korea.

2/ ROK, Summary of the First Five-Year Economic Plan 1962-66, p. 11.

Table 4: POWER CONSUMPTION AND CAPACITY

A. Pattern of power consumption

Category	Average 1956-57 (million KWH)	Average 1963-64	Annual Growth Rate (%)	Percent Composition 1963-64
TOTAL	<u>709</u>	<u>1,864</u>	<u>14.8</u>	<u>100</u>
Industrial	<u>368</u>	<u>1,178</u>	<u>18.1</u>	<u>63</u>
Manufacturing	278	1,006	20.0	54
Mining	65	147	12.4	8
Agriculture	25	25	0.0	1
Non-Industrial	<u>340</u>	<u>687</u>	<u>10.6</u>	<u>37</u>
Government	105	187	8.6	10
Residential	125	296	13.1	16

Source: BOK: Economic Statistics Yearbook

B. Expansion of electric power capacity

	1950	1961	1965 <u>/1</u>
	(000 KW)		
TOTAL	<u>230</u>	<u>367</u>	<u>769</u>
Thermal	167	224	554
Hydro	62	143	215

/1 September

Source: EPB: Korea Statistical Yearbook
Korea Electric Company: The Status of the Company

years, manufacturing accounts for more than 50 percent of total consumption. The textile, food processing, chemical and paper industries are the bulky consumers. Residential consumption also increased fairly rapidly. At present, about 34 percent of non-farm households are electrified; the corresponding proportion for village households is less than 10 percent.

56. Restrictions on electricity consumption were removed in April 1964. This was one of the notable successes of the First Plan. However, a number of problems remain. The first concerns Korea's pattern of utilization of natural energy resources. (See Chapter VI) The present price relation between coal and oil encourages the power company to use coal in thermal plants. The fact is that, on the one hand, recoverable reserves of anthracite coal are fairly limited. On the other, the pressure of demand for coal will grow rapidly as the household sector substitutes briquets for wood and straw for domestic heating purposes. Also, further growth of metallurgical industries may require increasing quantities of coal. The question then is whether the Government should reconsider its price policy in the interest of making the most economic use of coal supplies.

57. The second problem relates to rural electrification. The KECO, pre-occupied with expanding the major power network, did not concern itself with providing facilities in the countryside. Meanwhile, public funds on a grant basis were used to finance the construction of a large number of petty power systems operating independently of KECO in rural areas. These facilities have catered to a genuine demand for electricity outside the cities. The problem is that these small plants, described as "micro-hydros," are extremely expensive, shortlived and unreliable. 1/ The Government should reconsider its approach towards rural electrification.

F. The Transport Network 2/

58. Korea has a relatively simple transport network consisting of about 3,000 km. of railway lines, connecting most major economic centers of the country, a few paved highways in length totaling 1,660 km. and a number of ports of which Pusan and Incheon are the most important. The output of the transport sector increased at a rapid rate of 11.7 percent a year; more than twice as fast as GNP during the past decade. (See Table 1) However due to low rates, especially for railway passengers and highway transport, there has been a drop in the contribution of transport to GNP, measured in current prices. During the second half of the 1950's most of the Government's activities in the field of transport were directed at restoring the severe damages sustained in the

1/ See USOM Survey ... op. cit., Vol. II, pp. 333-334.

2/ This section is partly based on the preliminary report of the IBRD Transport Survey Team.

Korean war. During the period of the First Plan, the Government aimed at modernization and a modest expansion of the transport system. The emphasis was on development of the railroad. Development expenditure on the railroad during the plan was almost six times the expenditure devoted to highway development and four times the expenditure on ports.

59. The Korean National Railroad, established during the Japanese occupation and wholly owned by the State, is the only railroad in Korea. The railroad lines cover the country fairly well, although certain rural areas and provincial towns, especially on the East coast have no connection. The main emphasis in line construction was initially on the link between Japan and Manchuria through Pusan and Seoul. This line which connects a number of other important cities as well, is still the mainstay of the railroad. The volume of passenger and freight traffic increased during the last decade at an average rate of respectively 7.5 percent and 9.5 percent a year. During the 1960's, however, the rate of increase has accelerated to respectively 9 percent and 10 percent a year. This acceleration is connected with the speed-up in the overall growth of the economy. In the case of passenger traffic it is moreover due to low rates. On average, passenger rates increased by a third between 1960 and 1964. Wholesale prices, however, doubled during the same period. The increase in freight rates has roughly been in line with the general increase in prices.

60. The railway program during the First Plan consisted of the construction of new lines, dieselization and the expansion of rolling stock. About 250 km. of new lines, chiefly intended to provide better connections with the coal and ore mining areas in the Northeast will be completed by 1966. Provision was also made for double tracking part of the important Seoul-Inchon line.

61. In spite of substantial addition to stock, largely financed by U.S. assistance, the railroad has been in a very tight rolling stock position ever since the Korean War. By maintaining a good state of repair and long average daily hauls, the railroad managed to prevent excessive delays in transport. As far as locomotives are concerned, the railroad is expected to complete the dieselization program by 1966.

62. The target in the railroad's program for the local production and import of passenger coaches will also be fulfilled by the end of 1966. This has made it possible to retire almost all of the converted boxcars which had been in use since the Korean War. The import of freight cars, has proceeded on schedule, but the local production of freight cars is behind schedule.

63. The role of highway transport is much less important than the role of the railroad. The motor vehicle density is very low, even for a country at Korea's stage of development. At the end of 1964 the motor vehicle fleet consisted of 5,400 buses, 18,000 trucks and 15,000 passenger cars. During recent years, (1960-64) the rate of growth of the fleet has

been slow: 6 percent a year was the average annual increase in the number of buses and trucks and only 4 percent in the number of passenger cars. A large part of this small fleet consists of used army material, often with rebuilt bodies. The import of motor vehicles is subject to special licensing and so far the number of licenses issued has been very small.

64. Development of the highway system traditionally has had a low priority in Korea. At the beginning of the First Plan there were only 500 km. of paved highways, mostly short stretches around Seoul and other major cities. The plan aimed at doubling the length of paved roads mainly by improving and paving the Seoul-Pusan highway and the highway from Seoul to the East coast. In addition, the (revised) plan included the repair and construction of highway bridges over an aggregate length of 17 km. and construction of 120 km. of industrial roads. On the whole, this not very ambitious plan is progressing well.

65. Ports are an important part of Korea's transport system. Having no trade relations with the North, South Korea is an island from the economic viewpoint. Given the dependence of the economy on foreign trade, the ports play a vital role. A considerable amount of coastal shipping adds to the importance of ports. The country has many natural harbors on the south and west coast but fewer on the economically less developed east coast. Pusan, by far the largest port, handling 4-5 million tons of cargo a year, has alongside berthing facilities for ships up to 20,000 tons. Inchon, the second port, suffers from very high tides. It has alongside facilities up to 4,500 tons in a tidal basin which, however, is being used almost exclusively by the U.S. Army. Ports of growing significance are Ulsan, because of the refinery complex, and Mukho, the coal port on the east coast.

66. The total volume of cargo handled in all ports has doubled during the last four years 1/, reaching 11 million tons in 1965. The increase in the dollar value of foreign trade during the same period was only about 70 percent. This is due to the greater bulkiness of foreign trade. On the export side there has been a large increase in coal and iron ore shipments. On the import side there has been a shift from finished and intermediate goods to raw material imports. The ports section of the first five-year plan aimed at improved efficiency and increased capacity of the major ports or construction of facilities such as breakwaters, jetties, and quay walls. No provision was made for additional operating equipment except in Mukho. The plan also provided for the construction of industrial harbors at Ulsan and Chinhae. In order to enable fuller utilization of existing port capacity the program provided for dredging of 9 million m³. Unfortunately, the Mission does not know the extent to which the plan has been executed.

1/ Average 1959-61 to 1963-65.

III. PUBLIC SAVINGS, PRIVATE SAVINGS AND FOREIGN AID
(1955-65)

A. The Overall Perspective

67. The Korean savings rate was abnormally low throughout the past decade, even allowing for a significant downward bias in the statistics (see paragraph 20). A sizeable inflow of foreign resources helped to finance a rising rate of capital formation and to accelerate income growth. Whether there was equal success in raising the Korean savings rate is problematic. Although some improvement did take place in recent years, it was not as striking as in Taiwan. 1/

68. How much improvement took place in Korea is difficult to measure precisely. Nevertheless, it is clear that real GNP increased rapidly while the dollar value of foreign aid (roughly measured by the deficit on the current account of the balance of payments) declined. Chart II shows these relative movements expressed in terms of index numbers, based on three year moving averages. 2/ While GNP increased by 52 percent, the dollar value of foreign aid declined by 16 percent during the period under observation. This result was achieved partly through better resource allocation policies (see paragraph 20) and partly through a fall in consumption relative to total resources available to the Korean economy. The contribution of these two factors cannot be segregated without overhauling the entire set of national income accounts through the substitution of realistic exchange rates for those presently in use.

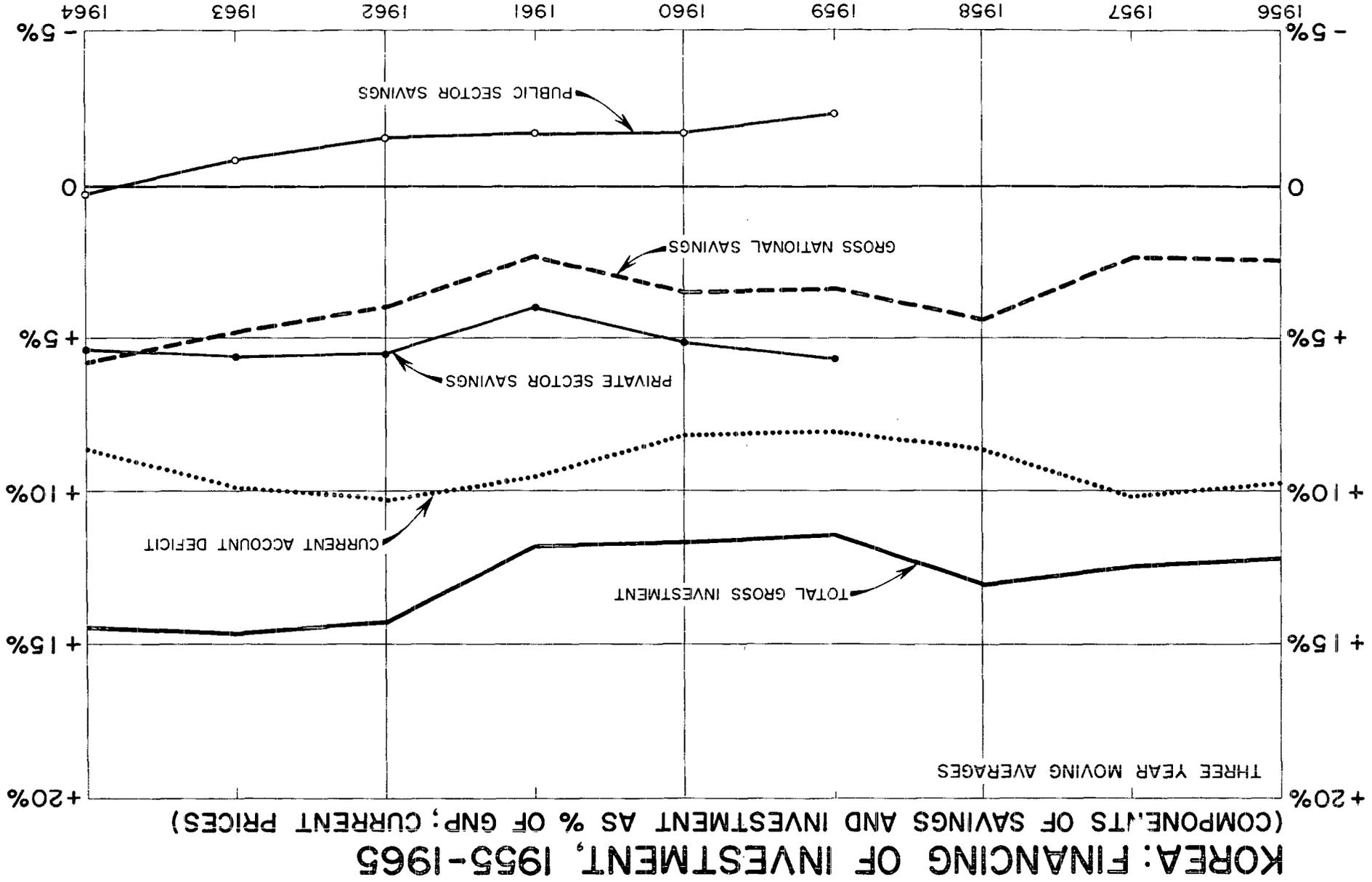
69. Savings can also be viewed as a financial flow determined by the prevailing structure of prices, interest rates, foreign exchange rates and incomes. In this sense, savings is best measured by the present version of national accounts, expressed in current prices. Three year moving averages of gross investment, the current account deficit, gross national savings, public savings and private savings are plotted on Chart I. 3/ All these variables are expressed as a proportion of GNP. This chart shows that the gross savings rate has moved in the range between 2 and 5 percent for most of the period. An upward movement can be seen from the average centered on 1961 (2.3 percent) to the average centered on 1964 (5.8 percent). Despite this rise, the present level of savings is far below the target set by the First Plan. 4/

1/ The rate of savings in Taiwan climbed up from less than 10 percent in the mid-fifties to more than 20 percent in 1964.

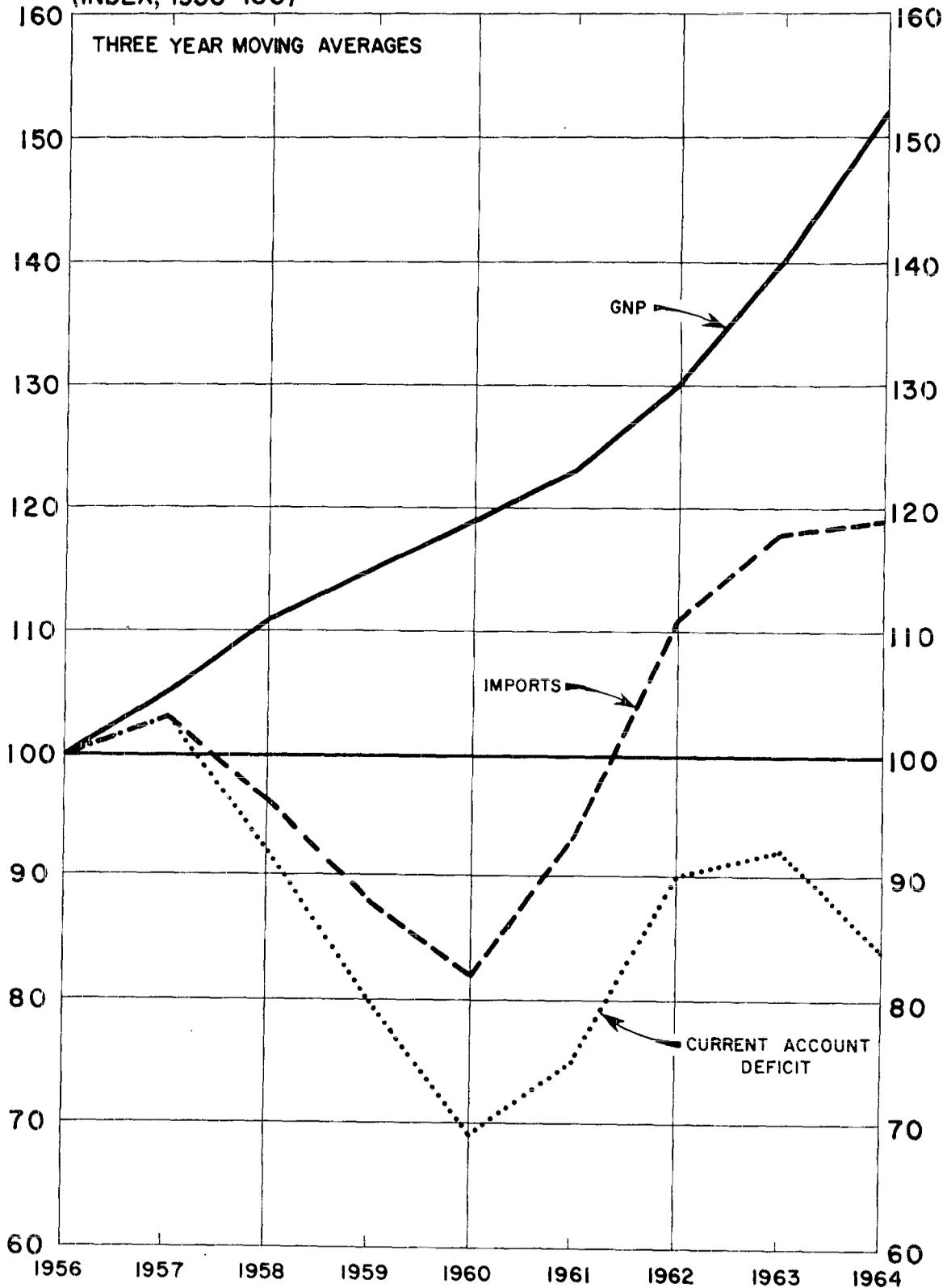
2/ The use of three year moving averages helps to focus on the movement underlying erratic changes in imports, the current account deficit and GNP.

3/ Gross national savings are measured as the difference between gross investment (fixed and inventory) and the deficit on the current account of the balance of payment (import-exports).

4/ According to data in the Original Plan document, the proportion of consumption to GNP was to fall from 101.8% in 1960 to 88.0% in 1965.

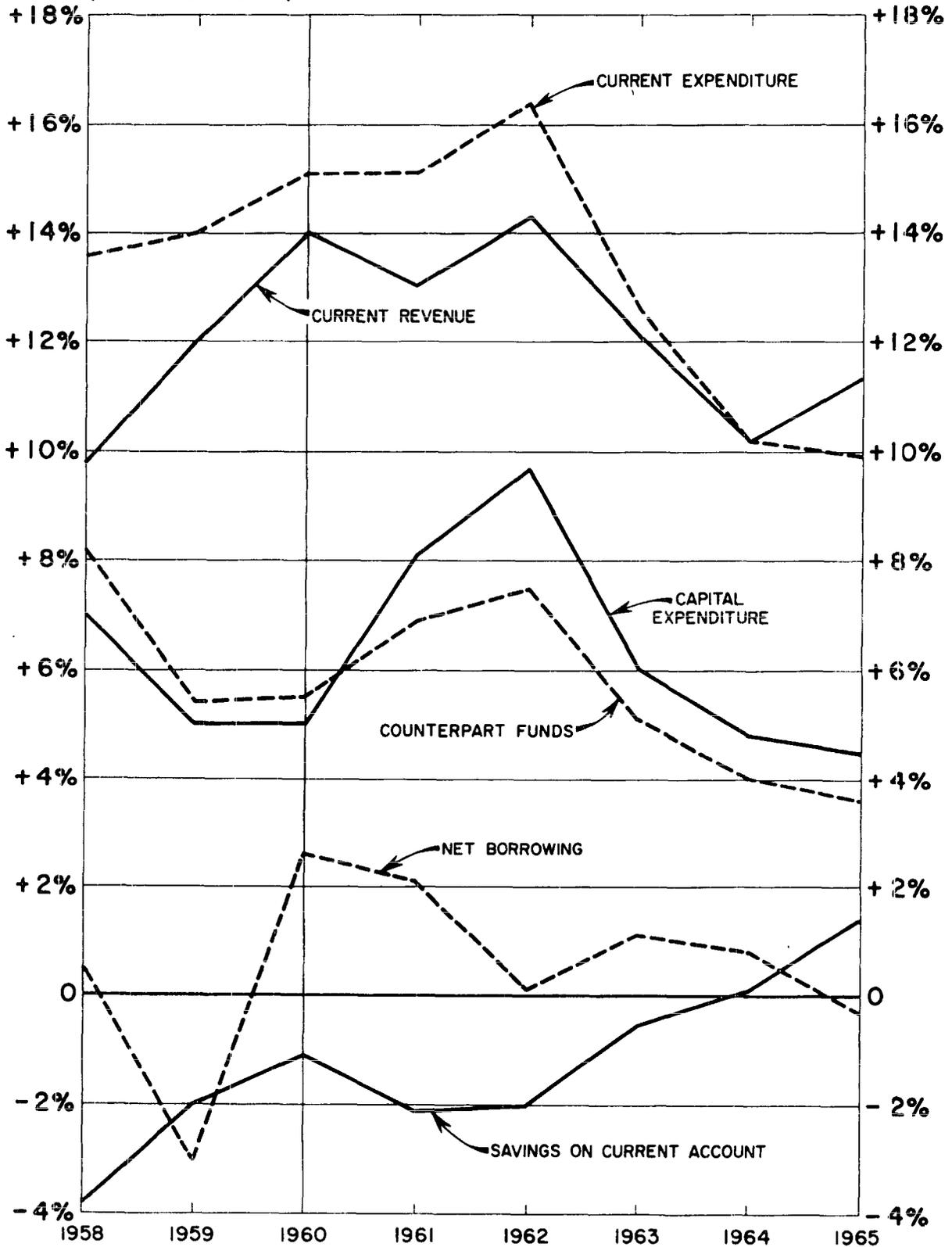


**KOREA: RELATION BETWEEN GNP (1960 PRICES),
COMMODITY IMPORTS (U.S. DOLLARS) AND CURRENT
ACCOUNT DEFICIT (U.S. DOLLARS), 1955-1965**
(INDEX, 1956=100)



KOREA: PUBLIC REVENUES AND EXPENDITURES, 1958-1965

(AS % OF GNP)



70. Why is the rate of savings so low in Korea? National income per capita is certainly low (less than \$90) but there are many countries - India, Pakistan, Sudan, Nigeria, Uganda, Tanganyika - with lower or equal per capita incomes who have achieved higher savings rates than Korea. Furthermore, Korea has a relatively large industrial sector which should, in theory, facilitate the accumulation of savings. The reasons for low savings in Korea will be examined separately for the public and private sectors.

B. Public Savings ^{1/}

71. Unlike a number of developing countries, Korea's public sector does not make an important contribution to the flow of savings. In fact, Chart I shows that public savings were negative till recently. The size of these budgetary deficits, relative to GNP, was shrinking and a positive balance was achieved for the first time in 1964. This was a notable achievement; it illustrated the Government's determination to follow disciplined financial policies. However, equilibrium on the current account of the budget was secured not by raising public revenues^{2/} but rather by a very sharp reduction in current expenditures, relative to GNP. (See Chart III) The nature of the equilibration can be better understood by identifying, seriatim, the factors operating on the revenue side and the expenditure side.

72. The ratio of public revenues to GNP described a hill-shaped curve with two peaks. This ratio increased from less than 10 percent in 1958 to peaks of about 14 percent in 1960 as well as 1962 and then fell to 10 percent in 1964. The downward slope in recent years could be explained in terms of the following factors:

- (1) erosion of an important part of the tax base i.e. imports;
- (2) discretionary reduction in tax rates and the granting of exemptions;
- (3) non-adjustment of specific tax rates and Government prices in the context of inflation;
- (4) system of land taxes.

73. Import taxes - customs duties, the foreign exchange tax, commodity taxes on imported items - accounted for 41 percent of total tax revenues in 1960. Revenues from these taxes lagged behind GNP partly because of import substitution and partly because of a considerable reduction in the average effective tax rate. The dollar value of imports increased at a much slower pace than real GNP during 1960-64. Moreover, there was a reduction in tariff schedules, following the devaluation of 1961. Textile and plywood exporters were exempted from the commodity tax on imported materials. Altogether, the average tax revenue, per dollar of imports, declined from 34 won in 1960 to 23 won in 1964.

^{1/} For a detailed analysis see Volume VII.

^{2/} Counterpart fund receipts by the Government are treated in this report as receipts on public capital account.

74. Although the manufacturing sector expanded at a much faster rate than the total economy and although the rate of the corporate income tax was raised, the revenue yield from this tax did not show much buoyancy. This was because of widespread evasion and the proliferation of legal exemptions. The revenue loss from exemptions was estimated as 37 percent of the potential yield of this tax. The strategy for industrialization followed during this period proved fairly costly in terms of public revenue foregone. The emphasis of policy was on securing increments in production rather than on raising the savings rate.

75. The agricultural sector is subject to the land tax administered by Local Governments. Revenues from this source averaged 1.8 percent of agricultural income in the early 1960's but more recently this ratio declined to 1.3 percent. This fall is related to the specific design of the tax on lands growing food grains. The assessment is based on "standard" yields valued at current prices. Revenues from this tax are responsive to price changes but not to increments in agricultural productivity. The "standard" crop yields have not been revised since 1959, although sizeable increments in productivity per hectare have taken place. The fundamental difficulty in taxing agriculture arises from the largely "subsistence" character of this sector. The land reform has ironed out inequalities of wealth and income. The tax administrator confronts small-sized and scattered farms producing, in great measure, for self-consumption rather than for urban or export markets.

76. Revenue from the liquor tax, the travel tax, the Government tobacco monopoly, the railways and communication services were adversely affected by the fact that rates and prices determined by the Government either failed to keep pace with the general inflation or were adjusted only after significant delays.

77. During 1965, a vigorous attempt was made to reverse the declining ratio of public revenue to GNP. A determined campaign to improve tax administration combined with changes in the foreign exchange rate and adjustment of commodity tax rates as well as coverage resulted in some improvement. Beginning January 1966, rates of the corporate income, liquor and travel taxes have been raised. These are welcome changes. However, the Mission believes that a substantial tax reform will be necessary to finance the Second Five Year Plan. The Korea tax effort, at present, is far below that of many developing countries at a similar stage of development.

78. The achievement of budgetary balance, during a period when public revenues were lagging behind, required a drastic curtailment of public current expenditures. The ratio of these outlays to GNP dropped from 16.4 percent in 1962 to 9.9 percent in 1965. (See Chart III) In terms of constant prices, public current expenditures scarcely increased at all during these three years. Economies were secured in defense outlay, probably to a large extent because the salaries of military officers were not adjusted in line with the rise in the price level.

Previous Bank reports argued that Korean defense expenditures were extraordinarily high; the proportion of these expenditures to GNP has come down considerably^{1/} but may rise again somewhat when salaries are adjusted.

79. The austerity in public spending had certain undesirable side-effects as well. First, the civil servant suffered the brunt of the inflation. The real value of public salaries declined by about 50 percent during 1962-65. The present position is clearly untenable from the standpoint of either efficiency or morale. The senior-most civil servant draws an annual salary equivalent to U.S. \$1337 only. Corresponding salaries in other developing countries, at lower or equal levels of per capita income, are considerably higher than in Korea.

80. Secondly, unavailability of funds led to a decline in the standard of elementary education. Enrollment ratios continued to rise but this quantitative expansion was at the expense of quality, in large measure. Overcrowded classrooms, reduced hours of instruction owing to the double or triple shift system and inadequate teaching materials pose many serious problems ^{2/}. Expenditures on education, nearly one-fifth of total current outlays, are obviously inadequate on a per student basis.

81. Thirdly, budgetary constraints interfered with the implementation of policies designed to provide incentives to farmers in the form of subsidies for limestone, pesticides and seed distribution. The rate of subsidy varied from budget to budget depending on the release of funds. These changes confused the farmer and the agricultural administrator in the field.

82. The Mission concludes that Korea's budgetary equilibrium, at the present juncture, is not at the optimum level of public sector activity. It is commonly recognized that many items, conventionally classified as current public expenditure, are not without considerable developmental significance. Good examples are elementary education and selected agricultural subsidies. Consequently, financial balance achieved at the expense of such outlays may turn out to be a false economy. The Korean public sector should generate a growing flow of savings and at the same time finance an adequate volume of current expenditure.

^{1/} See IBRD: The Current Economic Position and Prospects of the Republic of Korea, August 1964. Defense outlays as a percent of GNP were about 6 percent upto 1962. The corresponding proportion in 1965 is 3.7 percent. Comparative ratios in other countries are as follows: Taiwan 8.5%, Israel 8.0%, UAR 7.2%, Greece 4.7% and Turkey 5.0%.

^{2/} See UNESCO Regional Advisory Team; Long-Term Projections for Education in the Republic of Korea (Preliminary draft report), Bangkok, May 1964.

C. Private Savings and Inflation

83. Savings of the private sector, calculated as the difference between national and public savings, did not describe any clearly defined trend. (See Chart I) Private savings as a percent of GNP varied between 4 percent and 6 percent, on the basis of three year moving averages. Low savings rates in the private sector may be partly explained in terms of the relatively equal distribution of income and wealth in Korea. Unlike other developing countries, Korea did not have conspicuous concentrations of riches, except perhaps the few families who acquired wealth through manufacturing and trading operations during the last decade. The land reform was relatively successful and the Korean War proved a powerful leveler of disparities in social status and material well-being. Since poverty is equally distributed, there are few surpluses in family budgets.

84. Available data indicated that corporate savings were growing rapidly. The proportion of corporate profits to national income rose from less than 1 percent in the mid-fifties to about 5 percent in recent years. This expansion reflected not only the familiar transformation in the legal structure of enterprises in the normal course of events but also the redistributive impact of inflation. As mentioned before, money wage rates tended to lag behind the movement of prices for fairly long intervals. (See paragraph 44) Consequently, real wages declined during periods when labor productivity rose significantly and there was a redistribution in favor of profits. Apparently, at least 79 percent of post-tax corporate profits were saved 1/.

85. The Mission could not establish the reliability of these data, derived from the present set of national accounts. If corporate sector savings really increased to a level of 5%, then the implication is, that other private savings were extremely small. It is possible that the national accounts underestimate the savings rates of unincorporated business and households. On the other hand, however, considerable dissaving may take place by household receiving private donations from abroad (2.4% of GNP in 1965).

86. The inflation may have contributed to the growth of corporations but it has seriously impaired household savings and the efficiency of organized banking as a financial instrument for resource mobilization. There could hardly be strong incentives to make time and savings deposits during a period in which rates of price increase were much higher than legal ceilings on interest rates offered by commercial or specialized banks. 2/ Under these circumstances, confidence was undermined and

1/ Comparable rates in industrialized countries are as follows: Japan 79 percent, U.K. 55 percent, Germany 68 percent and USA 41 percent. See UN: World Economic Survey 1960.

2/ The legal ceiling on rates offered by commercial banks for time and savings deposits ranged from 9-15%. Similarly, commercial banks could not charge borrowers more than 16-18.5%. These ceilings compare with price rises of about 30% per year during 1963 and 1964.

expectations were geared to a continuation of the inflationary process. A thriving curb market for credit, charging 4-5 percent a month, competed with the organized banking system. These extraordinary transactions were not a peripheral phenomenon; outstanding loans from operators on the curb market amounted to a third or half of outstanding loans from the organized banks. The psychological climate and legal constraints on financial institutions inhibited the habit and attitude of thrift and encouraged instead the speculative tendency.

87. Recently progress was made in controlling inflation. Stabilization programs for 1963 and 1964, jointly designed by the Korean Government and the United States Operations Mission, failed to check prices. Owing to excess liquidity created in the preceding two years and bad grain crops, prices increased by 21 percent 1/ in 1963 and 35 percent 1/ in 1964, despite the fact that money supply rose at a modest pace. The expansionary effect of the credit expansion in 1963 was neutralized by a drastic fall in foreign exchange reserves. By and large, the villain of the piece was not monetary expansion but a rise in velocity of money. In 1965, the Government attempted to adhere to stabilization programs with the U.S.A. and the IMF. The emphasis of policy shifted from direct price controls and detailed credit quotas to indirect controls and overall credit ceilings. Also, monetary policy received reinforcement from other quarters - the budget, the exchange rate and measures affecting interest rates - in the fight against inflation. Prices increased by about 10 percent 1/ and the Bank of Korea accumulated foreign exchange reserves during 1965.

88. The moderate price rise in 1965 should not be interpreted to mean that the inflationary problem has ceased to exist. There are three reasons for caution. First, the relatively low increase in the wholesale price index in 1965 is influenced by a fall in grain prices. The index for other commodities increased by 14 percent. Secondly, although the formal scope of price control has diminished, the Government continues to exert considerable pressure on producers to limit price hikes. In the absence of such pressures, the wholesale index might have registered a bigger increase. Thirdly, the inflationary problem continues to exist at the psychological level. Many private sector groups are not yet convinced that Korea's long history of inflation is over. Confidence in price stability is not yet firmly established.

89. An important step was taken in October 1965 to improve the efficiency of the organized banking system. Legal ceilings on deposit rates paid and interest rates charged by banks were relaxed. Rates on savings deposits were raised considerably, up to 30 percent for deposits longer than one year, with the result that the value of such deposits doubled during five months. A part of this increase probably represents a switching of funds from the curb market to commercial banks. It is also possible that attractive rewards for savings, not only owing to the

1/ On an annual average basis.

interest rate reform but also due to relative price stability, have caused people to raise their rate of savings. However, there is no conclusive evidence on this question at this time.

90. Lending rates of commercial banks were raised to 26 percent in October 1965. Even at this high interest rate, demand for funds exceeded the supply. Also, there were no indications of a recession in the curb market. Business continued, apparently at a brisk pace, and the prevailing interest rate did not decline, according to available information. The extraordinary structure of interest rates prevailing now indicates that key elements in the Korean financial world expect that inflation will continue. If the Government continues to demonstrate firmness and discipline in financial matters, then Government policy should carry conviction before long.

D. Foreign Resources

91. The inflow of foreign aid has declined in recent years. The current account deficit of the balance of payments fell from an annual average of \$301 million during 1955-60 to \$264 million during 1961-65. For 1965, the estimate is about \$200 million. Despite this decline, Korea remains one of the major recipients of foreign assistance from official sources. In 1963, she ranked ninth in the list of recipients, arranged according to the magnitude of total official capital inflow. 1/ Korea is even more prominent in the list of recipients of foreign aid on concessional terms; 2/ she occupies the fifth place after India, Pakistan, Algeria and Vietnam. Even more telling is the comparison in terms of per capita receipts of concessional aid. During 1961-63 Korea averaged \$9 compared with less than \$3 for all developing countries and about \$8 for Taiwan.

92. Grants from the United States and United Nations as well as private donations from foreign missionary groups or charities filled the entire balance of payments gap during the late 1950's. (See Table 5) A large inflow of foreign resources thus entered the Korean economy without creating any debt servicing obligations whatsoever. More recently, this picture has changed and long-term official loans as well as medium-term commercial loans have begun to replace grant assistance.

93. In particular, the role of U.S. grant assistance has diminished greatly. From the peak of \$341 million in 1957, these grants have declined to a level of about \$130 million in 1965. U.S. grant assistance is extended in the form of Supporting Assistance and under PL 480. In order to support the Government's defense effort and to develop the economy of the country the United States makes annually available through the Agency for International Development large amounts of aid in the form of raw materials, the most important of which is fertilizer. These commodities are either directly imported by the Korean Government or by private businessmen. In the latter case, the won proceeds are made available to the Korea Government. In recent years, the total amount of supporting assistance has come down considerably, from about \$260 million a year in the late 1950's to an average amount of \$93 million a year during 1963-65. In 1966 supporting assistance will be further reduced to \$60 million.

94. A further important contribution by the United States to the Government's budget consists of the won proceeds of the sale of agricultural commodities which are in surplus in the United States. Korean imports of these commodities are mostly wheat, barley and cotton. Grants

1/ The order is India, Pakistan, Algeria, UAR, Mexico, Vietnam, Turkey, Brazil, Korea etc.

2/ Foreign aid at less than 3 percent interest rate and with a maturity of over 20 years.

of this nature are made under PL 480, Title I. The agricultural commodities are sold in Korea through commercial channels. The U.S. Government allocates part of the won proceeds (79 percent in 1966) as grants to the Korean Government and keeps the remainder for its own use which includes a large amount of technical assistance to Korea and a small amount (1 percent in 1965 and 1966) for the Cooley Fund which finances local currency loans to private businessmen. PL 480, Title I arrivals reached a peak of \$97 million in 1963 and have since then declined gradually. The amount agreed for 1966 is \$52 million. U.S. farm surplus commodities are also used for a number of other purposes ^{1/} such as disaster relief, school lunches and for payment of wages in food-for-work programs. The latter have become very important in Korea. A major portion of the upland reclamation effort is based on the distribution of U.S. wheat flour to laborers. During the twelve months ending May 1966 around 240,000 MT of wheat equivalent (about \$14 million) is estimated to arrive in Korea for this purpose.

Table 5: THE FINANCING OF THE CURRENT ACCOUNT DEFICIT
(in percent of total)

	<u>1955-60</u> <u>Average</u>	<u>1961-64</u> <u>Average</u>	<u>1964</u>
<u>Current Account Deficit</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
<u>Grants to Public and Private Sector</u>	<u>101.7</u>	<u>82.6</u>	<u>88.9</u>
Grants by U.S. Government	90.7	67.3	63.3
Grants by U.N.	4.0	0.3	1.0
Private Donations	7.0	15.0	24.6
<u>Loans to Public and Private Sector</u> <u>(Net Disbursements)</u>	<u>-</u>	<u>8.9</u>	<u>10.6</u>
Long and Medium-Term Loans	-	8.5	12.6
Official Loans	-	5.4	11.8
Commercial Loans	-	3.1	0.8
Short-Term Loans	-	0.5	- 2.0
<u>Direct Investment</u>	<u>-</u>	<u>0.4</u>	<u>- 0.3</u>
<u>Use of Assets</u>	<u>- 1.7</u>	<u>8.8</u>	<u>2.1</u>
<u>Errors and Omissions</u>	<u>-</u>	<u>- 0.7</u>	<u>- 1.3</u>

^{1/} Under Title II and III of PL 480.

95. Disbursements of official loans financed nearly 12 percent of Korea's balance of payments deficit in 1964. (See Table 5) By November 1965, loan commitments totaled \$182 million, mostly for manufacturing and overhead facilities. Most of the official loans (84%) were made by the United States. Other lenders were IDA, Germany and the United Kingdom. The conditions on these loans are lenient. The AID loans mostly have repayment periods of 30 years after 10 years grace and interest rates of 2 - 2.5 percent (0.75 percent during grace period). The conditions on the IDA loans are even more advantageous, but those on the German and British loans are slightly stiffer. Debt service payments on the total of official loans outstanding are low, about \$3 million a year until the mid 1970's.

96. Commercial loans are also coming into prominence. Loan commitments totaled \$209 million by November 1965, mostly for manufacturing and deep-sea fishing. The U.S. and Japan accounted for about \$60-70 million each and the remainder came from Germany, France, Italy and Switzerland. Conditions on these suppliers' credits are, of course, much less favorable than on the official loans. Although there is considerable variation, the typical interest rate level seems to be 6-7 percent and the typical repayment period 5-7 years. According to information obtained in Korea the maximum debt service obligation on suppliers' credits committed at the end of November 1965 will occur around 1970 and will amount to about \$30 million. Suppliers' credits require Government approval and most credits have also received a repayment guarantee by the Bank of Korea. Certain suppliers' credit in 1962-63 apparently were approved without adequate examination, but since then there has been a marked improvement and most projects obtaining approval now appear of high priority.

97. Direct investment by foreigners has thus far been small, about \$2 million a year during 1962-64. Most of the investments have come from the United States. The legal provisions for foreign direct investments are attractive (full tax exemption for corporate income and foreign management remuneration; liberal provisions for remittance of profits and repatriation of capital). The improved economic prospects of Korea have recently attracted many potential investors and as a result direct investment in 1965 was higher than in the preceding years. A further liberalization of profit remittances and repatriation is under consideration by the Government.

IV. IMPORT SUBSTITUTION AND GROWTH IN EXPORTS

A. The Exchange Rate Policy

98. The noticeable decline in Korea's balance of payments deficit (See Chart II) is the result of considerable import substitution and, more recently, of a startling increase in export earnings. In 1965, exports of goods and services financed nearly 60 percent of total imports compared to less than 20 percent in the mid-fifties. There is no doubt that, on the whole, Korea's trade and balance of payments policies have produced impressive results. One may point out a number of shortcomings in the design or implementation of these policies but the fact remains that, in a rough and ready way, they proved effective. One of the major policy instruments was the foreign exchange rate.

99. The exchange rate increased from 50 won per dollar in August 1955 to the present floating rate of 272 won per dollar in a series of devaluations. Broadly speaking, these moves lagged behind the increase in the domestic price level and marked undervaluation of foreign currencies persisted right upto 1964. Whether or not this undervaluation was deliberately contrived, it did have the incidental effect of obtaining more United States assistance in dollar terms for defense and budget support purposes than would have been necessary under a realistic exchange rate policy.

100. The present exchange rate policy had its beginning in May 1964. At that time a decision was made to move towards a realistic parity, to abandon a number of multiple exchange rate practices and to liberalize gradually some of the quantitative restrictions on foreign trade. In March 1965, Korea established a floating exchange rate system i.e. the determination of the rate as the price which equated demand and supply of foreign exchange certificates, traded in a limited free market. These certificates can be bought by anybody without limit. The validity of the certificates is only 15 days, however, and they can only be used for purchasing imports. They cannot be used as collateral for bank loans. These limitations on the use of foreign exchange certificates are designed to prevent speculation. In principle, the exchange rate is allowed to fluctuate freely but the Bank of Korea can intervene by buying certificates to prevent the exchange rate from becoming less than 255 won per dollar. Contrary to expectations, the rate has depreciated by only 7 percent in the year since the certificate market started operating. Apart from the above mentioned institutional limitations on the use of certificates, the slow rate of depreciation is due to the relative stability of domestic prices in recent months. (See Volume VI)

101. The depreciation would have been even smaller if the Bank of Korea had not increased its net holdings of foreign assets by \$70.5 million between March and December 1965. Apparently the Bank of Korea has kept exchange certificates in fairly short supply and thus influenced the exchange

rate, at least slightly, in favor of exports. ^{1/} The alternatives to the improvement in the net foreign assets position of the Bank of Korea would have been (i) a lower exchange rate which would have meant less expensive imported inputs and a weaker incentive to export or (ii) the same exchange rate but a greater degree of trade liberalization. It would be hard to argue, however, that the Bank of Korea in its action to improve its foreign assets position has followed an unduly conservative policy. The net foreign assets position of the Bank of Korea in March 1965 was negative and improvement was obviously necessary.

102. The present floating rate cannot be called an "equilibrium" exchange rate. According to the usual definition, an equilibrium rate should satisfy three conditions:

- (1) imports should be in basic balance with the sum of exports and foreign capital, attracted by long-term profit opportunities;
- (2) absence of quantitative trade restrictions and
- (3) there should be a high level of economic activity, unaffected by cyclical recession or deflationary policies.

The Korean floating rate is not an equilibrium rate because the balance of payments is still heavily supported by official foreign aid motivated by considerations other than commercial profit. Also, the weight of quantitative restrictions, although lighter than before, is still quite heavy (see paragraph 114). Although the floating rate is not at the equilibrium level in the textbook sense, this fact is hardly relevant from the operational standpoint. The Mission is satisfied that the present exchange rate policy of Korea is pointed in the right direction. The dependence on concessionary foreign aid should decline over a period of time, if the right policies are followed with respect to resource allocation and resource mobilization. ^{2/} No conceivable value of the exchange rate is likely to eradicate instantaneously the economy's fundamental disequilibrium.

^{1/} It is possible for the Bank of Korea to do this because foreign exchange certificates are required not only for imports financed commercially but also for imports financed by U.S. foreign aid (Supporting Assistance). The certificates for imports financed by U.S. Supporting Assistance do not originate from the surrender of foreign exchange by an exporter but are supplied to the market by the Bank of Korea. Apparently the Bank of Korea has not issued certificates to the full value of Supporting Assistance and has thus maintained a fairly high - and stable - foreign exchange rate.

^{2/} At various points in this report, we have used the notion of a "realistic" exchange rate in contrast with the official exchange rate. The point of departure is the present floating rate of 272 won per dollar, which is assumed to be "realistic". The value of the "realistic" rate in previous years is determined crudely by deflating the present floating rate by the index number of wholesale prices. These "realistic rates" are as follows:

(in won per U.S. dollar)

<u>1960</u>	<u>1961</u>	<u>1962</u>	<u>1963</u>	<u>1964</u>	<u>1965</u>
127	114	157	189	255	272

B. Phenomenal Growth in Exports

103. Korean merchandise exports in the late 1950's were virtually stagnant at a very low level. During 1957-59 exports averaged 19 million dollars only, or 0.4 percent of GNP at the official exchange rate. Although this proportion would be somewhat higher at a realistic exchange rate, it would still remain far short of the typical proportion in developing countries. Apparently, Korea's production pattern was extremely insular in character. The exports consisted mostly of mineral products as well as fish and fish products. (See Table 6) Exports of manufacturing products, however, were almost negligible in spite of the relatively large size of the manufacturing sector. The main explanation for this very low level was the undervalued exchange rate which made exporting unprofitable.

104. By contrast, the rapid growth in exports during the 1960's can only be described as phenomenal. Merchandise exports shot up at an amazing rate of 37 percent per year 1/ and reached \$175 million in 1965. This compares with a growth rate of 6.3 percent per year for all developing countries, 2/ and 19.0 percent per annum for Taiwan. 2/ The spectacular increase in Korean exports is partly the result of an extraordinarily low base. The present proportion of export to GNP in Korea (6 percent) is comparable with that of large closed economies such as India, Pakistan or Brazil but it is still relatively low compared to Taiwan (20 percent) and many other medium-sized Far Eastern economies.

105. A portion of the recent increase in exports is due to non-recurring and exceptional events which created a temporary demand for Korean products. Deliveries of galvanized iron sheets and other products to Vietnam, financed by U.S. foreign aid to that country, is an example. Exports of rubber tires to Thailand are another instance of the same phenomenon. Korea had no comparative advantage in this line of production, exports were made at a financial loss and future prospects are bleak since Thailand has built her own tire factory.

106. Even after allowance is made for such non-repetitive events the growth of Korean exports remains impressive. Rapid growth was accompanied by a significant diversification in the commodity structure and the market structure of exports. One of the most important factors in the recent expansion is the amazing increase in manufactured good exports. Their share in total exports has risen from 16 percent in the late fifties to more than 60 percent in 1965. Exports to almost all destinations have risen rapidly, but not at equal speeds. (See Table 6) The relative importance of the Japanese and the Hong Kong market diminished, whereas the share of exports to other destinations went up. The most remarkable development is the almost ten-fold increase in exports to the United States. The overall share of Korean exports in the gigantic U.S. market is, of course, still negligible.

1/ Average 1957-59 to 1965.

2/ 1959-65.

However, in the case of a few commodities, such as plywood, cotton textiles, raw silk, tungsten ore, Korea has become a supplier of some importance. The expansion of the U.S. market for some of these articles is slow compared with the increase in Korean exports. Korea has been able to increase its share at the expense of its competitors. (See Chapter VII)

107. Much the greater part of credit for the development of the export sector in Korea should be given to an important switch in Government policy from exclusive emphasis on import substitution during the later 1950's to a more balanced trade policy in recent years. This reorientation was reflected in successive devaluations as well as in a number of complementary measures designed to compensate exporters for the persisting gap between official and "realistic" exchange rates (see paragraphs 99-102). Many of these export promotion measures lapsed at the end of 1964, in preparation for the establishment of a unitary floating exchange rate. 1/ However, the following export incentives are still in use:

- (1) Preferential credit facilities (see below paragraphs 108-110).
- (2) Tax exemptions. Import duties and commodity tax on imported raw materials for export production are waived. Export sales are exempt from the business activity tax. Half the profits on exports are deductible from taxable income for the purposes of the personal and corporate income taxes.
- (3) Rebate on electricity and railway tariffs for bulky export items e.g. minerals.

1/ During 1960-64, the Government operated an export-import linking system. Exporters were compensated for the unattractive official exchange rate by extending to them import rights for a percentage of their export earnings. The exporter could either use these import rights himself or sell them in a limited free market to importers at a price established by demand and supply. Exports to a certain country, for instance - Japan, were linked to imports from that country, and exports of an article not exported before were linked to imports of a heavily restricted item, which could command a high premium in the local market. A range of premiums was then established which gave Korea what amounted to a multiple exchange rate system. Another multiple exchange practice during 1960-64 was the direct subsidies extended by the Government to encourage the export of certain commodities. The size of the subsidy and the number of commodities eligible for receiving the subsidy have varied during these years. Special encouragement was given to commodities which had not been exported before or that were exported to a new market. In 1962 the amount of export subsidies reached a peak of won 666 million (about \$4 million), and applied to roughly half of the exports in that year. The subsidies in that year varied between 10 and 25 won per dollar, which compares with an official foreign exchange rate at the time of 130 won and a "realistic" rate of perhaps around 157 won.

Table 6: GROWTH AND STRUCTURE OF EXPORTS

A. Growth of exports by major commodity

Commodity	Average 1957-59 (million dollars)	1965 Amount	1965 Percent Composition
Fish and Fish Products <u>/1</u>	3.3	22.4	12.8
Fruits and Vegetables	n.a.	5.5	3.1
Iron Ore	2.2	6.8	3.9
Tungsten Ore	3.0	6.3	3.6
Raw Silk	1.1	7.1	4.1
Textile Yarn and Fabric	0.9	26.3	15.0
Clothing	-	20.7	11.8
Plywood	-	18.1	10.3
Iron and Steel	-	12.7	7.3
Non-Electrical Machinery	-	2.5	1.4
Radio Receivers	-	1.4	.8
Rubber Footwear	-	4.1	2.3
Human Hair and Wigs	0.4	6.5	3.7
Other Exports	8.4	34.7	19.8
TOTAL EXPORTS	<u>19.3</u>	<u>175.1</u>	<u>100.0</u>
Manufactured Exports	2.9	106.4	

B. Composition of exports by destination

Country	Percent Share in Total Korean Exports	
	1961	1965
Japan	47	25
U.S.A.	17	35
Europe	8	12
Vietnam	--	8
Hong Kong	18	6
Others	10	13

/1 Includes laver and agar-agar.

108. The most expensive promotional measure and one which is most conspicuous is the arrangement regarding credit. The total effect of various facilities (export credit, foreign payment guarantee and import usance credit) is to provide short-term accomodation for exporters up to 75 percent of the value of gross sales abroad at an interest rate of 6.5 percent, compared to normal commercial bank rate of about 26 percent and the curb market rate of 60 percent per year. In the special monetary and credit situation of Korea, access to cheap money creates powerful incentives for producers to enter the export market. There are also obvious dangers of abuse since producers cater both to the domestic and export markets. The authorities recognize the importance of checking diversion of preferential credit to finance operations for the home market, but how successful they are in preventing it is not known. 1/

109. Without questioning the general desirability of providing export incentives in the Korean context, the Mission has some reservations regarding the technique presently in use. First, there is too much emphasis on short-term credit and too little on long-term assistance in financing basic facilities for expanding export production. Secondly, the present system encourages the perpetuation of a high import component of exports. Thirdly, it is the exporter rather than the producer who has access to cheap credit. It would be surprising, for example, if the benefits of the credit subsidy was transferred by the middleman to the fishermen. Given the strong position of the merchant in the marketing process, the subsidy in all probability is enjoyed by him rather than the producer who remains starved of credit. (See paragraph 49 and Volume IV)

110. Export incentives have a special significance in the manufacturing sector. Domestic prices and costs, in many instances, are much higher than world market prices. Access to cheap credit and tax exemptions permits producers to reduce the financial loss in overseas operations and increase their overall profit margin. Examples are sheet glass, rubber tires, bicycles and possibly textiles. (See Volume V) These are industries in which there is considerable excess capacity and the marginal cost of production for the export market is much lower than the average cost. Producing for the overseas market enables these firms to spread their overhead costs and realize economies of scale. There is some justification for incentives leading to the exploitation of idle capacity which already exists. However, this can scarcely be described as a tenable long-term export strategy. The present system of incentives does not distinguish between products in which Korea can hope to acquire a comparative advantage and other commodities whose exports are largely fortuitous. It is conceivable that such incentives give signals via the price and profit mechanism which distort the pattern of resource allocation.

1/ According to one source 25 percent of export loans are unmatched by actual exports. See Peggy B. Musgrave; "Trade Targets and Policies in Korea's Economic Development", August 1965, p. 44.

C. Behavior of Imports

111. There have been marked annual fluctuations of imports for two reasons. First, imports play the role of stabilizing Korea's food supply. Imports rise when the harvest is bad and drop when there is a bumper crop. Over the last decade, food imports have averaged about \$60 million a year, but in 1957 and 1963 they rose to \$108 and \$121 million respectively. Secondly, imports have varied in response to overall economic policies of the Government. The expansionary policies of the reconstruction period during the mid-fifties were accompanied by very large imports. The stabilization effort during the following years 1959-1960 which eventually caused a depletion of raw materials stocks and a slow down in the growth of industrial production led to a sharp reduction in the amount of imports. Afterwards, expansionary policies in 1962 and 1963 raised imports to record levels.

112. Apart from these short-run fluctuations, the Korean economy has secured import substitution on an impressive scale. (See Chart II) While GNP rose by 56 percent, imports increased by 13 percent only during the last decade. 1/ Imports lagged behind output despite the fact that manufacturing, a sector with high import dependence, expanded relatively faster than other activities. The degree of import substitution is also remarkable from another point of view. The decade witnessed a perceptible rise in the rate of fixed investment; a category of expenditure which is much more demanding of imported items than consumption outlays.

113. A precise analysis of the pattern of import substitution is hindered by a serious deficiency in the underlying data. A sizeable share of total imports during the mid-fifties and early sixties cannot be classified properly. The reader should interpret Table 7 with these reservations in mind. Apparently, there was a considerable reduction in the role of imports in the Korean market for manufactured intermediate products (particularly textiles, paper, rubber) and investment goods (particularly cement and other building materials). 2/ Also, a large reduction in coal imports took place. Available evidence suggests that the import component of consumption outlays declined during the decade. Imports of food, other than cereals, was nearly halved. Clothing imports shrunk in size to negligible proportions and foreign exchange outlays on other consumer goods did not increase.

114. The main instruments of industrial policy during the past decade were import prohibitions combined with long-term credit facilities at preferential interest rates and tax exemptions. The exchange rate persistently undervalued the dollar and tariff duties, on the whole, were moderate in magnitude. However, the list of prohibited items was extensive and covered nearly every important item likely to encounter foreign competition.

1/ Average 1956-57 to Average 1963-65.

2/ See Volume V.

Table 7: COMPOSITION OF IMPORTS AND PATTERN OF IMPORT SUBSTITUTION

A. Composition of imports

Category	Average 1956/57		Average 1963/65	
	Amount Million \$	Percent	Amount Million \$	Percent
<u>Consumer Goods</u>	<u>94</u>	<u>23</u>	<u>89</u>	<u>19</u>
Cereals	58	14	72	15
Other Food	18	4	10	2
Other	18	4	7	2
<u>Intermediate Goods</u>	<u>209</u>	<u>51</u>	<u>255</u>	<u>55</u>
Crude Materials	77	19	111	24
Manufactured Intermediates	132	32	144	31
<u>Manufactured Investment Goods</u>	<u>69</u>	<u>17</u>	<u>119</u>	<u>26</u>
<u>Unclassified</u>	<u>40</u>	<u>10</u>	<u>1</u>	--
<u>TOTAL IMPORTS</u>	<u>414</u>	<u>100</u>	<u>465</u>	<u>100</u>

B. Share of imports in total supply (%)

	Average 1956/57	Average 1963/65
<u>Manufactured Intermediates</u>	<u>38</u>	<u>16</u>
Chemicals <u>/1</u>	34	49
Paper	32	3
Textiles	12	7
Rubber Manufacturing	9	0
Wood, Furniture	2	0
<u>Manufactured Investment Goods</u>	<u>42</u>	<u>33</u>
Transport Equipment	26	27
Electrical Machinery	82	44
Other Machinery	50	57
Metal Products	11	18
Basic Metals	63	36
Non-Metallic Minerals	31	4

/1 Includes fertilizer. For notes and sources, see Volume V.

Consequently, the protective umbrella over Korean manufacturing was more or less impenetrable and prices for major industrial products were considerably above those in Japan or USA. For example, in October 1965 the differential between Korean and international prices was as follows: cotton yarn 36 percent 1/, steel bars 35 percent 1/, newsprint 31 percent 2/, ammonium sulphate 12 percent 1/ and cement 18 percent. 1/ These high prices may have meant high profits to certain efficient producers, but on the whole the feeling of the Mission is that a comparatively high cost structure is the main explanation.

115. The Korean Government is aware of the high cost price structure of domestic manufacturing and is taking measures to improve the competitiveness of local firms. In 1964, a step towards the liberalization of quantitative restrictions was taken. Presently 77 percent of imports financed by export earnings are not subject to quantitative restrictions but the list of prohibited items remains long. The Government should consider a phased program of decontrol. A sudden removal of physical barriers may cause excessive dislocation. Domestic industry needs time to rationalize management and cut costs. Quantitative restrictions should be replaced by protective tariffs in the first instance and there should be a schedule for lowering tariffs in graduated steps over a period of time.

1/ The comparison is with Japan.

2/ The comparison is with USA.

V. THE TENTATIVE FRAMEWORK OF THE SECOND FIVE-YEAR PLAN

A. The Nature of the Planning Process

116. Generally speaking, the Mission was impressed by the enthusiasm, ambition, and sophistication of Korean planners. Unlike other planning agencies, the Economic Planning Board in Korea is not divorced from other Government Agencies and a beginning has recently been made in seeking the collaboration of the private sector. There is widespread awareness of plan targets inside and outside the Government. Korean planners are receiving considerable technical assistance from abroad in the formulation of the Second Plan, which will begin in January 1967. Hopefully the Second Plan, scheduled to be ready in July 1966, will turn out to be a well-considered, operational document which provides valuable guidance to government agencies and private parties in Korea as well as to members of a Consultative Group, if one is organized, and potential foreign investors.

117. Readers familiar with the most recent developments in Korea may find that the Mission's observations are somewhat dated. Probably, many things have changed in Seoul since the Mission's visit towards the end of 1965. At that time Korean planners were working at three levels of analysis: (a) the project-program level, (b) the sectoral level, and (c) the level of macro-economic magnitudes.

118. Work at the level of specific projects and programs seemed to be languishing at the end of 1965. In March 1965, the Economic Planning Board (EPB) requested ministries and other government agencies to submit proposals regarding potential investments during the Second Plan. In turn, the Ministry of Commerce and Industry sought the cooperation of various trade and industrial associations in the private sector. Many useful studies were prepared in response to this request. However, the data assembled did not lend itself to a systematic screening of projects. Frequently, the information was unreliable or incomplete. Work is now under way to overcome these shortcomings and prepare a revised list of projects for inclusion in the Second Plan.

119. At the sectoral level, there is more sophistication. Korean planners are concentrating on the implementation of a 43 sector inter-industry model based on the 1963 Input-Output Table. Work is under way to assess present industrial capacity, to establish investment coefficients based on past data and to project private consumption, public consumption as well as exports by sector. Altogether, this work represents an ambitious application of formal planning techniques which may prove to be valuable, provided several formidable data problems can be solved. In this connection, technical assistance is being furnished by the U.S. Operations Mission, the Nathan Advisory Group and the German Advisory Group.

120. Input-output analysis has already proved useful. Not only has it yielded valuable information concerning the present structure of the economy, but it has led to a basic revision of national income accounts, particularly for the manufacturing sector. Furthermore, the discipline of manipulating the inter-industry model for the purposes of the Second Plan should foster the valuable habit of collaboration among various agencies of the Korean Government. If successful, this experiment in the operational use of econometric methods may provide insights regarding the feasibility and consistency of the planned investment program.

121. However, it would be dangerous to expect too much out of an exercise of this type. First, activities or sectors in the Korean input-output table are not operational categories; a great deal of diversity is hidden behind the numbers in many cells of the table. Therefore, conclusions which apply to a sector may not be relevant for a particular project within the sector. Secondly, Korean planners concede the impossibility of constructing an optimizing model. 1/ Therefore, the present exercise cannot illuminate the efficient path of import substitution or export growth. Only rigorous analysis of likely rates of return (financial and economic) of particular projects, within a macro-economic framework, can provide glimpses of the optimum pattern of resource allocation. Thirdly, there is the danger that planners in trying to implement an elaborate inter-industry model may get trapped in the morass of statistical quandaries (for example adjusting the 1963 Input-Output Table for the undervalued exchange rate and movements in relative prices). This pitfall should be avoided at any cost, in the interest of formulating an action-oriented program.

B. The Macro-Economic Framework

122. The provisional thinking of the EPB is embodied in the following principal targets at the level of macro-economic magnitudes: 2/

- (1) Total population will increase at an average annual growth rate of 2.39 percent and reach 32.4 million in 1971.
- (2) GNP will rise at a rate of 7.0 percent per annum and reach 1159 billion won in 1971.
- (3) Gross domestic investment during 1967-71 will total 981 billion won or 19.3 percent of GNP.
- (4) Gross savings during 1967-71 will total 624 billion won or 12.3 percent of GNP. About 29 percent of total savings will be generated in the public sector. The ratio of tax revenues to GNP will be raised to 13.1 percent in 1971.

1/ A framework for determining the best way to achieve economic growth in a given economic environment.

2/ Value figures expressed in 1965 prices.

- (5) Merchandise exports will increase at a rate of 21 percent per year and reach \$550 million in 1971.
- (6) Merchandise imports will rise at a rate of about 11.1 percent per year and reach \$789 million (f.o.b.) in 1971.
- (7) Net inflow of foreign resources required during 1967-71 will total \$1,347 million or 7 percent of GNP. On a gross basis, required foreign resources will total \$1,669 million or \$334 million per year. Foreign exchange reserves will increase by \$131 million during the plan period.

C. Reduction in Population Growth

123. The government's program to control the growth of population is ambitious. ^{1/} From 1955 to 1960, the population increased by about 2.9 percent per year. This high rate resulted from demographic forces presently affecting many developing countries; a continued high level of fertility (40-45 births per 1,000 population) accompanied by declining mortality (16 deaths per 1,000 population in 1955-1960). The implicit assumptions underlying the EPB's target are that the death rate during the Second half of the 1960's will decline to about 11 while the birth rate will fall to a level of less than 35.

124. The expectation of a sharp decline in the birth rate is tied to the government sponsored family planning program, initiated in 1962. The target is to get about one-third of all married couples in the fertile age-group to practice birth control. About 15 percent of the target was achieved by the middle of 1965. This is a promising start. Circumstances are propitious; the will to control family size is spreading, a largely literate population facilitates mass communication, and organized religious opposition is absent. However, those responsible for the program are aware of several shortcomings - hastily trained medical staff, inadequate facilities for follow-up etc. Presumably, the program so far has touched the easily accessible and the highly motivated couples. Further progress may be slower because it depends on the ability to reach couples who are remote and recalcitrant.

125. Economic planners will be well-advised to err on the side of caution. As a working hypothesis the Mission envisages that fertility will decline less rapidly (from 40-45 to 37) and that total population will grow at a rate of 2.66 percent and reach 34 million by 1971. If this target regarding fertility is secured, Korea will have achieved a major triumph with few parallels in world demographic history. The only other comparable break-through in reducing a high level of fertility during a short time-span is the case of Taiwan.

^{1/} See Volume II for details.

D. Feasible Growth in Income

126. From the standpoint of production possibilities, the EPB target for growth in GNP seems to be quite feasible. The projected rate of increase of 7 percent is higher than past growth in Korea, sustained over reasonably long periods, (although somewhat lower than growth during 1963-65) and is, of course, much higher than the speed of income growth in most other developing countries. Nevertheless, the Mission feels reasonably confident that Korea can attain the production target set by EPB, provided policies are favorable and there is no financial constraint. This view is fortified by the discussion in Chapter VI of growth prospects in agriculture, fisheries and manufacturing, although in this last sector the Mission was unable to appraise all production possibilities and thus speaks with less assurance.

127. However, we have serious reservations about Korea's capacity to finance the 7 percent growth target. The EPB's aggregate plan implicitly assumes the following macro-economic coefficients:

- (1) One unit of extra income will require 2.54 units of fixed investment (ICOR) compared to 1.76 in the past.
- (2) About 35 percent of the expected increment in income will be saved (MRS) compared to the present average savings rate of about 5-6 percent.
- (3) The inflow of foreign resources will fill the gap between investment requirements and domestic savings; the postulated net inflow of \$1,347 million during 1967-71 compares with the 1961-65 deficit on the balance of payments of about \$1,337 million. 1/

128. The feasibility of the 7 percent growth target, in a financial sense, depends on the validity of these parameters. If the actual relation between investment and output is not as favorable or if planners prove to be over-optimistic about the possibilities of domestic resource mobilization, then a higher volume of foreign resources will be required to avoid serious financial disequilibrium. The quantitative implications of marginal variations in the planned value of parameters is illustrated in Table 8. It shows the size of net foreign resources, required during the Second Plan, on the basis of specified values of growth of GDP, the incremental capital-output ratio (ICOR) and the marginal savings rate (MRS). The financing of a 7 percent growth rate will require more than \$3 billion of foreign resources at one end of the spectrum (ICOR 3.00 and MRS 10 percent) and only slightly more than \$600 million at the other end (ICOR 2.00 and MRS 35 percent). The range of variation is very wide indeed and the skill of the planner consists in selecting hypotheses which minimize the margin of error.

1/ Goods and services account, excluding factor income transaction.

129. Prima facie, the implicit value of ICOR in the EPB's calculation is not implausible. It is considerably higher than the historical value of the coefficient and seems to recognize the tendency for capital-intensity to increase as excess capacity is exhausted, as the transport system is rehabilitated and as heavier lines of import substitution are undertaken. However, the EPB's ICOR does not as yet take into account the results of sector and project studies. When the planners revise the preliminary macro-framework in the light of these studies, they will be in a better position than now to select a more realistic value for the ICOR.

Table 8: NET FOREIGN RESOURCE REQUIREMENT 1967-71

(Million US dollars)

Marginal rate of savings	Incremental Capital-Output Ratio				
	2.00	2.25	2.50	2.75	3.00
A. <u>Growth rate of GDP 6 percent per annum</u>					
10	1352	1626	1900	2170	2444
15	1163	1437	1711	1981	2256
20	974	1248	1522	1793	2067
25	778	1052	1326	1596	1870
30	589	863	1137	1407	1681
35	396	670	944	1215	1489
B. <u>Growth rate of GDP 7 percent per annum</u>					
10	1744	2074	2404	2733	3063
15	1341	1670	2000	2330	2659
20	1293	1622	1952	2281	2611
25	1059	1389	1719	2048	2378
30	837	1167	1496	1826	2156
35	611	941	1270	1600	1930

Source: Mission estimates

130. While the EPB's implicit value for ICOR is within the bounds of probability, the postulated MRS is of heroic dimensions. The Mission applauds the planners' ambition in shooting for a 35 percent marginal savings rate but it has grave doubts about the feasibility of this target from an administrative or technical standpoint. The reader will recall that there was a serious shortfall in the savings target of the First Plan; perhaps Korean planners can be persuaded to avoid repeating the same mistake. If the Second Plan is geared to a virtually impossible savings target, then the economy faces the prospect of either financial disequilibrium (inflation, depletion of foreign reserves, accumulation of short-term foreign debt) or a disruption of the development program in mid-course

(delays, incomplete projects, excess capacity, false economies in public current expenditures). Of course, these consequences can be avoided if suppliers of foreign aid are prepared to come to Korea's rescue by pumping in additional external resources to offset the shortfall in domestic savings. For example, an extra amount of about \$680 million during the Second Plan (i.e., over and above the \$1347 million postulated by EPB) would be required to fill the financial gap that would arise if the actual MRS turned out to be only 20 percent, compared to the target of 35 percent (see Table 8).

131. The Mission believes that Korea should not count on the availability of external resources in quantities much larger than she received during the past. This impression is based on public statements of major suppliers as well as an assessment of the total foreign aid climate. Given this financial constraint and the Mission's judgment that a 35 percent MRS is out of question, the feasibility of the 7 percent growth target for GDP is doubtful. Korean planners should think in terms of a more modest growth rate, unless a big increase in foreign assistance is forthcoming. Meanwhile, the implications of a 6 percent growth in GDP are presented in Table 9 on the basis of sectoral explorations (see Chapter VI) and our assessment of financial availabilities (Section E below and Chapter VII).

E. Domestic Resource Mobilization

132. Korea would be showing satisfactory economic performance if she geared her policies to secure a marginal savings rate of 20 percent during the Second Plan. This suggested target should be considered in the light of Korean history and the economy's structural characteristics - relatively equal distribution of wealth, subsistence agriculture, backward financial institutions, undeveloped tax system - impeding quicker progress on the savings front. The achievement of this objective during the next five years will lay the foundation for securing a higher marginal savings rate in the Third Plan, say 25-30 percent. Such a phased approach to the solution of Korea's savings problem may be more constructive and more realistic than the attempt to take giant strides at once.

133. The public sector should play the central role in achieving the recommended savings target. While the EPB tentatively postulates that only 29 percent of total savings will come from the public sector the Mission suggests that this proportion should be raised to 45 percent. (See Table 9) Our emphasis on public savings is not linked to any predilection for Government investment. Once generated, public savings can be redirected to the private sector. The Mission assigns more importance to public savings because there can be little certainty regarding the behavior of private savings under present conditions in Korea. Although the recent inflation might have led to increased corporate savings, it has had an unfavorable effect on household savings. Expectations regarding future price movements are in a transitional phase. The financial system is just beginning to be reconstructed. If a strong upward movement in private savings should materialize, the planners can always readjust their strategy.

134. Meanwhile, policy makers should focus on the ways and means of raising sharply the ratio of public savings to GNP as well as the magnitude and character of the tax reform required to accomplish their objective. In this context, it will be necessary also to estimate the desirable increase in public current expenditures. The Mission's suggestions are shown in Table 9 and their rationale is discussed in Volume VII.

135. Briefly, our conclusions are as follows: Public current expenditures are projected to rise by 73 percent during 1965-1971. Salaries of public servants will have to be adjusted to make up for the losses incurred during the recent inflation. If the Government implements the suggested program, real salary levels in 1968 will rise by a modest 13 percent compared to 1962. Meanwhile, real per capita income will have risen by approximately 30 percent in this period. It is important that the time-sequence of salary adjustments should be coordinated with the tax reform. Salary hikes without increased tax revenues will, of course, lead to budget deficits. The public sector should expand educational facilities so as to allow for the expected rise in enrollment and to secure at least some improvement in the quality of schooling. These and other requirements will raise the ratio of public current expenditures to GNP from 9.8 percent in 1965, to an average of 12.2 percent for 1966-71.

136. Public revenues should increase by 120 percent to accommodate the essential increments in current expenditure as well as to generate the required surpluses for financing public and private investment. This implies that 33 percent of the increment in GDP during 1965-1971 should be tapped by fiscal instruments. Evidently, there is room for increasing revenues by this order of magnitude. Korea's present tax effort is quite low compared to other developing countries, or compared to her own performance in the early 1960's. The revenue target, suggested by the Mission, will not be achieved automatically. Administrative improvements in tax collection are essential but some officials tend to exaggerate the potential of raising revenue in this fashion. The Mission is convinced that the achievement of the revenue target will depend, in large measure, on increments in tax rates, on extension of tax coverage and on rise in prices of goods and services produced by Government enterprises.

137. No visiting team from abroad can formulate the precise details of a tax reform in Korea. This is one among many subjects on which the Government will have to formulate their own policy position after careful study of alternative revenue measures and their implications for resource allocation and equity. The Mission's judgment is that sharp increments in revenue can be secured through indirect taxes, which already contribute about 70 percent of tax revenues. Adjustments in rates and coverage should be engineered in such a way that harmful side-effects on resource allocation or equity are minimized. The following proposals are among the principal suggestions offered for consideration:

Table 9: PROPOSED MACRO-ECONOMIC FRAMEWORK 1966-1971

(1965 prices)

	Value Added			Fixed Investment	
	1965 (billion won)	1971	1965-1971 (% p.a.)	1960-1965 /7 (billion won)	1966-1971
A. <u>Results of sectoral analysis</u>					
<u>Total Economy</u>	<u>772</u> /2	<u>1096</u>	<u>6.0</u>	<u>463</u>	<u>917</u>
Agriculture	287	385	5.0	45 /1	100
Fisheries	9	13	7.2		28
Manufacturing	153	269	9.9	106	252
Power				40	57
Transport	323	429	4.9	104	200
Residual				168	280

B. <u>Sources of finance for investment</u>					
		<u>1965</u>	<u>1971</u>	<u>1966-1971</u>	
		(billion won)			
Total Fixed Investment		88 /3	150	808	
Inventory Investment		6 /3	17 /6	85 /6	
<u>Total Investment</u>		<u>94</u> /3	<u>167</u>	<u>893</u>	
Net External Savings		55 /5	63	445	
Gross Domestic Savings		39 /4	104	448	
Private Sector Savings		n.a.	43	246	
Public Sector Savings		11	61	202	
Public Revenues		88	194	906	
Public Current Expenditures		77	133	704	

/1 Includes fisheries.

/2 Gross domestic product. See Bank of Korea revised accounts January 1966.

/3 Average of 1964 and 1965.

/4 Average 1963-65.

/5 This figure is notional in view of serious valuation problems.

/6 Calculated on the assumption that stock increases will amount to 1.5 percent of GDP on the average. See Simon Kuznets; Economic Development and Cultural Change July 1960, Part II. The actual proportion during 1955-65 was 2.0 percent and during 1960-65 it was 1.1 percent.

/7 Fixed investment expressed in 1965 prices by the use of implicit deflators.

Source: Mission estimates

- (1) Gasoline prices in Korea are half the level in Western Europe. A significant increase in tax rates should be possible. However, taxes on fuel oil should not be increased too much in view of the desirability of promoting the substitution of fuel oil for coal. (See Chapter VI)
- (2) The share of Government revenue in the Korean retail price of tobacco is less than one-fifth, compared to nearly half in many countries. The Korean Government tobacco monopoly should substantially raise the whole structure of its sale prices. Higher increments should apply to "superior" brands consumed by the urban rich than to the popular economy cigarettes, smoked by low-income groups. Taxes on liquor should be raised side by side with improved measures to control evasion. The present specific duty should be converted into an ad-valorem tax.
- (3) Existing effective rates of the business activity tax on goods are less than 1 percent; they should be increased to 1.5 percent. The extent of rate increments should be higher on "luxury" goods and services. Similarly, revision of the rate structure of commodity taxes should differentiate between articles of mass consumption and those which are seldom purchased by low-income groups.
- (4) There should be a more selective approach than heretofore in granting exemptions from the corporate and other taxes to new industries and to firms engaging in export trade. Also, the 20-year tax holiday for newly reclaimed land should be reduced.
- (5) The rate of the corporate income tax in the first bracket should be raised from 20 to 25 percent.
- (6) The personal income tax, paid by nearly a quarter of the non-agricultural labor force, can scarcely be described as a progressive fiscal instrument. There are no personal exemptions, evasion is practiced on a considerable scale by income earners not subject to withholding and the system is schedular, i.e. different income categories are not treated uniformly and incomes earned by the same individual in various tax districts are not added up for assessment purposes. The long-term aim of policy should be to gradually move toward a global system, i.e. where people are taxed on their income irrespective of whether it is salary or profit and irrespective of where it is earned. How quickly this change takes place will depend on the pace of improvement in tax administration. The authorities should experiment with operating a global system for high income brackets in the first instance.

138. The main tax measures, outlined above, should be thoroughly studied and then resolutely implemented during the initial years of the Second Plan. Such a timing would facilitate the adjustment in salary levels (see paragraph 135), and raise the public savings ratio. If the Mission's recommendations are accepted, the ratio of public savings to GNP will increase from 1.5 percent to 5.5 percent during 1965-71 while the total savings ratio will approach 10 percent by the end of the Second Plan compared to about 5 percent in the base period. (See Table 9) Under these conditions, per capita consumption would increase at about 2.4 percent per annum.

F. Foreign Resources and Investment Requirements

139. On the condition that the Republic of Korea agrees with our recommendations regarding domestic resource mobilization and shows readiness to implement the tax reform, outlined above, the Mission suggests that the net inflow of foreign resources should be geared to total \$1,650 million during 1966-1971, i.e., an average annual of \$275 million. On this basis foreign savings available for financing Korean capital formation, during the period as a whole, will match domestic savings on a one to one basis (see Table 9).

140. Given these assumptions, Korea can secure a 6 percent growth in income provided the actual ICOR does not exceed 2.35 compared to 1.76 in the past. Preliminary sectoral studies undertaken by the Mission and other qualified teams 1/ suggest that planners may encounter some difficulty in containing the rise in capital intensity within these limits. 2/ (See Chapter VI) When we add up the sectoral requirements for fixed investment during 1966-71, the total is won 917 billion compared to won 808 billion of available financing. (See Table 9) Initial explorations at the sectoral level reveal a weighted overall ICOR of 2.67. However, these are rather rough calculations and a deeper study should permit planners to refine estimates, and eliminate double counting. Moreover, further iterations, based on systematic screening of projects, probably, will permit planners to limit fixed investment to the level of available financing. 3/

1/ The World Bank sponsored Transport Survey Mission and the USA sponsored Power Survey Team.

2/ The first trial of the sectoral planning model of EPB yielded a level of investment requirements much higher than that assumed in their aggregate plan.

3/ The use of the ICOR in this exercise is no more than a methodological device. The link between investment and output over a relatively short period, such as the Second Plan, is subject to a considerable margin of variation (see paragraph 128 and Table 8) owing to changes in capacity utilization, weather conditions, gestation periods of large projects and other factors.

VI. PRELIMINARY SECTORAL EXPLORATIONS

A. The Overall View

141. Assuming that GDP will increase by 6 percent per annum, what should be the future composition of output and the sectoral allocation of investment? The answer to this question is largely determined by Korea's stock of natural resources, the growth momentum built up in the past and the expected evolution in the consumption pattern. The future sectoral pattern will also depend on Korea's opportunities in international markets and the scope for efficient import substitution. Broadly speaking, these are the considerations on the basis of which the Mission has examined the prospects for three commodity producing sectors - agriculture, fisheries and manufacturing. We also report, briefly, on the recommendations of the U.S. sponsored power survey team and the preliminary findings of the IBRD Transport Survey Mission. The main conclusions are shown in Table 9, Chapter V.

142. The basic premise underlying the Mission's thinking is that manufacturing will continue to play the role of a leading sector in the Korean economy. Given the scarce natural resources of the country, no alternative long-term strategy for development is feasible. Wages are relatively low and they are likely to remain low for the foreseeable future, in view of existing underemployment and the expected growth in the labor force. Whereas the average annual increment to the working-age population was estimated at 200,000 during the past five years, the corresponding figure during the Second Plan is likely to exceed 250,000. (See Volume II) This acceleration in the supply of workers will tend to intensify competition for jobs. An ample supply of low-wage labor is the country's chief asset and the main basis of her comparative advantage in international trade. Korean workers are not only inexpensive to hire but they also have considerable training potential. Literacy is already high and by all accounts, Korean workers have a reputation for hard work, discipline and ingenuity. Furthermore, there is no dearth of entrepreneurial talent although few industrialists can boast of long experience in factory management or the art and technique of marketing. There are shortages of qualified middle-level manpower (technicians, supervisors etc.) and high caliber professional categories. Both the efficiency and rate of growth of manufacturing will depend on the potential market; domestic and foreign. If Korea can persuade neighboring South East Asian countries (eg. Taiwan, Thailand etc.) to formulate complementary investment programs for certain industries in which there are significant economies of scale, then she will have taken a step which will be important not only for her but also for the industrialization of South East Asia.

143. The emphasis on manufacturing does not imply, of course, that investment opportunities in other sectors should be neglected; on the contrary, every effort must be made to raise income and employment in rural areas through the development of agriculture and fisheries. In fact, opportunities for agricultural expansion in the near future are impressive

although non-repetitive to some extent. There is the prospect of reducing dependence on imported foodgrains by expanding the cultivated area. However, long-term growth will be circumscribed by constraints on the supply side (unavailability of virgin land) and on the demand side (exhaustion of scope for further import replacement). Further development in agriculture will be based on intensive farming, diversification of the cropping pattern and the search for market outlets in Korean cities and abroad. In the fishing sector, the natural resource position is relatively permissive and the outlook for demand, both domestic and foreign, is good. The chief obstacles and the main reasons for low productivity are the dearth of capital equipment and the technological as well as organizational backwardness of this sector. A development policy focused on alleviating these bottlenecks should obtain a ready response from the fishing industry. Korea can also capitalize on the opportunity to build a deep-sea fleet and in this way establish a foothold in the international tuna market.

144. Although agriculture, fisheries and manufacturing compete with each other for scarce capital and foreign exchange, there is no competition with respect to labor. Indeed, the problem of unemployment and underemployment faced by the Korea economy is such that economic policy should aim at maximizing the number of new jobs to keep pace with growth of the labor force. The capacity of the manufacturing sector to generate direct employment opportunities is fairly limited, compared to agriculture or fisheries. For this reason alone, if for no other, development strategy ought to aim at a balanced growth of these sectors. If fuller and additional employment in rural areas leads to some slowing down in the rate of urbanization and some savings in costs associated with city living, then an important objective will be secured.

145. Planners should recognize that many other inter-sectoral relations are complementary. The development of primary sectors will raise purchasing power in the Korean countryside and among coastal fishermen. This growth in incomes will expand the market for Korean manufactures and ease one of the important constraints inhibiting the development of this sector. Similarly, expansion in the local production of fertilizers, pesticides, fishing nets, fishing boats, animal feeds etc. in the manufacturing sector should facilitate the flow of inputs to the primary sectors.

146. The development of the commodity-producing sectors will generate additional demand on Korea's transport and power networks. The ruling criterion in selecting projects in this field should be to minimize costs per ton-kilometer or per kilo-watt-hour. However, the cost criterion is not always easy to interpret or apply. For example, planners face an important choice between concentrating future industrial activity in the already crowded Incheon-Seoul-Pusan corridor or creating two or three new industrial poles around other ports. There is no doubt that investment requirements for infrastructure during the Second Plan would be much lower in the former case than in the latter. Nevertheless, from a longer-term point of view there is much to be said for reducing the regional concentration of economic activity. If Seoul continues to grow as in the past, then before long such a pattern of development will require a major rebuilding of the

whole metropolis, necessitating large outlays. The present Mission is not competent to pronounce on this issue but Korean planners should certainly consider it very seriously. A decision on this crucial question of regional location will have widespread ramifications for Korean development strategy.

147. The first round of sector studies suggest the following investment pattern during 1966-71; agriculture 11 percent, fisheries 3 percent, manufacturing 27 percent, transport 22 percent and electric power 6 percent. (See Table 9, Chapter V) The assumptions behind these numbers are explained in detail in various volumes; the following sections discuss the salient points and identify some of the main programs or projects in each sector. To repeat, these conclusions are strictly tentative. A great deal of work remains to be done before the investment program is finalized.

B. Prospects for Agriculture 1/

148. Korean agriculture can grow fairly rapidly during the Second Plan. Reclamation and other land development can bring under the plough sizeable new areas. Also, there is the prospect that intensive farming can secure substantial yield increments. Korea can reduce her dependence on imported foodgrains and thus approach the target of self-sufficiency. All these developments are in the cards and the Mission foresees no insuperable difficulties in the way. However, policy should also focus on devising solutions to some of the more intractable problems of Korea agriculture such as the following:

- (1) lack of a diversified cropping pattern;
- (2) heavy reliance on Government subsidies;
- (3) reappearance of "quasi-tenancy" and the related problem of rural credit.

Land Reclamation

149. The targets for production and investment, envisaged by the Mission, are summarized in Table 10. Value added and production in the agricultural sector is projected to increase at an average annual rate of 5 percent per annum. This is quite an ambitious growth target compared to Korea's past performance and compared to rates of agricultural development in other countries. There are extraordinary opportunities for expansion in Korea during the next five years. If these opportunities are grasped, the cultivated area will increase by 3.2 percent per annum. By 1971, the farmed area will be approaching the physical frontier. Unless surveys reveal new potential for land development, there will not remain much room for extending the margin of cultivation during the Third Plan. Although a relatively high growth rate appears feasible during 1966-71, Korea may find it difficult to sustain such a pace of expansion during the seventies.

1/ Based on detailed analysis in Volume III.

Table 10: AGRICULTURAL INVESTMENT AND PRODUCTION TARGETS

(1965 Prices)

<u>Program</u>	A. Fixed Investment		Unit Cost Per ha. 000 won
	Amount (billion won)	Physical Target 000 hectares	
Total 1960-65	44.7		
Total 1966	10.0		
<u>Total 1967-71</u>	<u>90.0</u>	<u>n.a.</u>	<u>n.a.</u>
Upland Reclamation	21.0	350	60
Tidal Reclamation	2.4	10	240
Large Irrigation	12.0	100	120
Small Irrigation	1.3	100	13
Improvement of Existing Irrigation Schemes	0.4	120	n.a.
Flood Control	5.0	n.a.	n.a.
Land Consolidation	10.5	175	60
Other <u>/1</u>	37.4	n.a.	n.a.
B. <u>Production</u>			
<u>Activity</u>	Growth Rate per Annum		
	Past <u>/2</u>	% Future	
<u>Total Agriculture</u>	<u>3.7 /3</u>	<u>5.0</u>	
Cereals	3.4	5.1	
Potatoes	9.4	6.8	
Vegetables	2.3	6.8	
Fruits	7.5	8.0	
Cotton	decline	0.0	
Sericulture	8.2 <u>/5</u>	25.0	
Livestock	2.6 <u>/4</u>	n.a.	
Forestry	11.9 <u>/4</u>	n.a.	

/1 Includes agricultural implements, special crops (sericulture, horticulture, etc.), forestry, animal husbandry, creation of viable farms, research etc.

/2 1955-57 Average to 1962-64 Average.

/3 Value added in 1960 prices; average 1955-57 to average 1963-65.

/4 Value added in 1960 prices; 1960-61 Average to 1964-65 Average.

/5 Cocoon production 1960-61 Average to 1963-64 Average.

Source: Volume III

150. Nearly a quarter of proposed agricultural investment is allocated to projects which will reclaim new land. (See Table 10) Most of this investment is assigned to the upland reclamation program, which has considerable potential. A land capability survey conducted by the UN Special Fund has already accumulated valuable data, covering 1.3 million hectares, which will permit the scientific designing of upland projects on a watershed or sub-watershed basis. Such a systematic approach will facilitate anti-soil erosion work, increase the probable life of bench-terraces and reduce costs per hectare. Hitherto, upland projects were selected on a piecemeal basis and they were scattered in many places throughout the country.

151. Past experience indicated that tidal reclamation was much more expensive than upland projects. Average cost of reclaiming tidal areas during the First Plan was 400,000 won per hectare compared to 60,000 won for upland projects. ^{1/} The Ministry of Agriculture and Forestry (MAF) recommends the development of 40,000 hectares through tidal reclamation projects. The Mission has reduced this target to 10,000 hectares and suggests that planners screen out the more costly projects. We also have serious reservations regarding the priority of the Mokpo Yangsan Project estimated to cost \$97 million spread over 10-20 years. The high capital cost and long gestation period of this project makes it less attractive than other schemes for achieving the same objective.

Measures for Yield Improvement

152. Present yields per hectare of rice in Korea are considerably above the Asian standard. (See Table 11) Korean rice yields are comparable with Taiwan and approximately two-thirds the Japanese level. However, Korean yields of other crops are lagging far behind. In the case of soyabeans and potatoes, Korean yields are considerably below the Asian average. The conclusion is that there is considerable room for improvement in farm productivity.

153. An important technique for raising yields, under Korean conditions, is to extend irrigation facilities. Readers will recall that presently 57 percent of rice lands are fully irrigated and average yields of irrigated paddy are 40-50 percent higher than rain-fed paddy. The increase of irrigation works should help to raise rice yields, reduce seasonal fluctuations in production, enhance the feasibility of double cropping and facilitate the diversification of the cropping pattern. Realizing the contribution that irrigation can make to Korean agriculture, the Mission has tentatively earmarked sizeable outlays to this program. (See Table 10) However, we are not confident that the Korean Government has the information and the professional expertise required to carry out this undertaking. Some of the projects completed in the past proved to be quite expensive. This was partly a reflection of the terrain but partly a reflection of poor project design and sub-optimum utilization of the capacity of irrigation pumps.

154. Two pre-investment surveys are presently under consideration, which will yield valuable information. The Korean Government, in collaboration with the U.S., will soon embark on the formulation of a multi-purpose coordinated master plan for the Han River Basin which covers one-fourth of the

^{1/} Expressed in 1965 prices.

country. A complete network for hydrological observations will be established. A similar study of the Naktong River Basin, which covers another quarter of the country, may get started with the help of the UN Special Fund. However, the results of these studies will not be available till the end of the Second Plan period.

Table 11: COMPARISON OF YIELDS PER HECTARE
(100 Kg)
(Average 1961/62 - 1963/64)

<u>Crop</u>	<u>Korea</u>	<u>Taiwan</u>	<u>Asia</u>	<u>Japan</u>
Rice	30.9	33.4	17.4	51.9
Barley	8.1	n.a.	10.5	23.4
Wheat	10.5	18.0	9.1	21.7
Soyabeans	5.5	9.5	7.3	13.2
Potatoes (white)	66.3	83.0	96.0	n.a.
Sweet Potatoes	85.0	121.3	104.0	200.0
Cotton Seed	3.6	5.5	3.5	n.a.
Tobacco	14.9	22.7	8.5	21.9

Source: FAO: Production Yearbook 1964

155. Meanwhile, there is the important task of preparing suitable projects for construction during the next five years. The Government's "All Weather Farming" program, consisting of five projects, is a valuable beginning. Unfortunately, this document is not complete. There are many gaps in information and some deficiencies in the analysis of costs and benefits. The Mission has recommended and the Bank-FAO have already started furnishing technical assistance to the Korean Government in this context. Hopefully, enough can be accomplished in a short time to devise acceptable solutions to outstanding problems. The object is not to close all gaps in data, for this may prove very time-consuming, but to help Korean officials in making practical judgements so as to avoid expensive mistakes.

156. Another program for raising yields involved the consolidation of scattered farm holdings. This program is promising; although it is difficult to comprehend why costs per hectare are as much as for upland reclamation. (See Table 10) The Mission has scaled down the MAF target for land consolidation by about 25 percent because we are less optimistic about the speed with which farmers can be persuaded to cooperate in this venture. The program should improve drainage facilities, increase the incidence of double cropping and promote experimentation with crops other than rice and barley.

157. Increase in the use of fertilizers, pesticides and improved seeds should help to realize yield increments. The soil fertility survey conducted by the UN Special Fund shows favorable responses to the application of chemical fertilizers in the proper combination. Also experiments conducted by the Suwon Station demonstrate the possibility of raising yields by 20 percent (rice) 70 percent (barley) and nearly 200 percent (corn). The Mission agrees with the MAF target of increasing fertilizer use by about 6 percent per annum; in fact, the expansion proposed is rather modest. However, we fear that the MAF target for pesticides may prove too ambitious and we recommend some scaling down.

Cropping Pattern

158. The Government is determined to achieve self-sufficiency in foodgrains by 1967 or 1968 and to develop an exportable surplus of rice by the end of the Second Plan. The objective of reducing dependence on food imports is not only understandable from a socio-political standpoint but it is also eminently rational from the economic point of view. Apparently, rice cultivation is much further advanced than other crops in Korea. (See Table 11) The very small size of farms as well as the soil and climatic conditions presumably confer a comparative advantage to rice growing in Korea.

159. Rough and ready calculations indicate that Korea should be able to reduce its dependence on foodgrain imports from about 13 percent in 1963-65 to about 5 percent by 1971. Demand was calculated on the basis of assumptions regarding growth of farm and non-farm population, consumption expenditure elasticity coefficient for grains, requirements for industrial use, feeds, seed, wastage and stock increments. Local production was expected to rise at a growth rate of 5.1 percent per year. (See Table 10) By and large, we are as optimistic as Korean officials regarding the absolute increase in domestic production that can be expected. However, the Mission is less sanguine about the speed at which the growth rate of population can be reduced and therefore, our demand forecast is higher. The fact that Korea may not fully attain self-sufficiency is neither here nor there; the important point is that if these expectations materialize, Korea will have secured a substantial measure of import substitution.

160. While the Mission endorses self-sufficiency in foodgrains as an objective of agricultural policy, the Government's excessive preoccupation with it may not be desirable. The entire array of policy instruments seem to be designed with rice cultivation as the center of attention. There is far too little experimentation with other types of production. The Government should explore possibilities, channel knowledge and expertise through NACF and the extension services. Also, new price policies should be devised to provide appropriate incentives for diversification within the bounds set by Korea's soil and climatic conditions.

161. Despite the fact that Korean rice yields are approximately double the yields in Burma and Thailand, Korean wholesale prices for rice are considerably above the level in these countries. 1/ The high Korean price reflects restrictions on rice imports and the consumer preference for rice vis-a-vis substitute grains. 2/ This artificial situation probably provides a powerful incentive for farmers to grow rice rather than any other crop.

162. Recently, the Government has put pressures on producers to restrain meat prices without doing very much to stabilize the prices of animal feeds. This anomaly and the frequent unavailability of feeds has impeded the development of animal husbandry. The Mission believes that the broiler industry holds some promise under Korean conditions, if the feed problem is resolved.

163. Much more emphasis should be given to fruit production than presently contemplated by the MAF. Considerable investments in irrigation facilities, envisaged above, should make it possible to secure a growth rate slightly higher than in the past. (See Table 10) Also steps should be taken to expand further mulberry plantations, although the MAF target for cocoon production is probably out of reach.

Subsidies, Credit and Tenancy

164. The aim of agricultural policy in Korea should be not only to stimulate production but also to increase efficiency, reduce costs and mobilize domestic resource for reinvestment. The past program made liberal use of subsidies as a tool for providing incentives (limestone and pesticide distribution etc.) and for financing bulky investments (irrigation, land reclamations and consolidation etc.). In fact, the amount of open subsidies constituted about 75 percent of total development outlays in agriculture during the First Plan. The proportion would be higher if the subsidy hidden in the NACF's preferential interest structure was also taken into account.

165. The Mission questions the desirability of paying heavy subsidies on projects and programs which are inherently productive. We recognize that farmers encounter genuine financial constraints in undertaking lumpy investments but there is no reason why the Government and the NACF should not extend assistance in the form of loans on appropriate terms (grace period, interest rate and amortization schedule) rather than on a grant basis. The Government should seriously consider the possibility of strengthening the resources and machinery for administering long-term agricultural credit. Such a substitution will not only improve the long-term financial position of the public sector (including NACF) but it will also generate a sense of financial discipline among the farming community. There will be less local pressure for initiating high-cost irrigation and tidal reclamation schemes and more incentive for realizing fully the benefits of selected projects which are undertaken.

1/ See FAO: Monthly Bulletin of Agricultural Economics and Statistics, Vol. 14, September 1965. The Korean rice price is, however, lower than the Japanese level although Japanese yields are much higher.

2/ The Government purchase price for rice is fixed on the basis of a price parity formula. Generally, wholesale prices are higher than the Government price.

166. The Government should also re-evaluate the merits of the present agricultural tax system which exempts lands reclaimed for cultivation for a period of 20 years. This provision is expensive to the public sector in terms of revenue foregone. A substantial reduction in the tax holiday is not likely to impair investment incentives.

167. Similarly, present legislation permits absentee land ownership and tenancy cultivation in areas newly developed by reclamation and irrigation projects. The Mission finds little justification for this loophole. The fundamental aim of the land reform law is also jeopardized by shortcomings in the system of rural credit through institutional sources. Readers will recall that NACF supplies only 27 percent of total farm credit. Many farmers, particularly those with small holdings, have accumulated so much debt that they are in danger of becoming subservient to moneylenders in a functional sense. ^{1/} The Government should take measures to strengthen the framework of institutional credit to deal with this problem.

C. Prospects for Fisheries 2/

168. The tentative plan of the Bureau of Fisheries is to expand total fish landings at a rate of 9.8 percent per year, to raise export earnings almost four-fold and to invest substantial sums in expansion of the fleet and for related facilities. The Mission's judgement is that the Korean plan understates investment requirements and that it is over-optimistic regarding the fish catch and exports. Our views are set forth in Table 12.

169. The main emphasis of the Government's tentative investment plan is on expansion of the fleet. 823 mechanized boats ranging from small and medium sized coastal fishing vessels (20 to 50 tons) to large trawlers for distant water operations (over 300 tons) are to be added to the fleet. About 40 percent of the increase in tonnage, consisting mostly of large vessels, is to be imported from abroad. The remainder is to be constructed at the Pusan Shipyard whose facilities are considered adequate for this task by naval architects. This expansion would increase the tonnage of the Korean fishing fleet by about one-third. The investment plan appears, however, to understate the cost of vessels. Roughly estimated, 25 percent more money may be required to finance the proposed expansion of the fleet.

170. From the point of view of the resource base it seems likely that considerable increase in production is feasible. The Korean authorities are of the opinion that the waters surrounding Korea are at present under-exploited and that a large increase in production is possible without leading to a depletion of stocks. However, for the formulation of long-term objectives it is necessary that a systematic review be made by competent marine biologists of the extent and potential of fish resources in the waters surrounding Korea.

^{1/} UN Special Fund and FAO: Korean Upland Project, July 1963 (unpublished).

^{2/} Based on detailed analysis in Volume IV.

171. The proposed increase in distant water operations are not likely to strain the total population of tuna fish. The Korean deep-sea fleet will be marginal in relation to the global tuna fishing industry. It has been observed that increases in the fleet in recent years have been accompanied by declining catch rates. The Mission's calculations of fish landings in 1971 take this tendency into account. The reasons for the decline in catch is as yet unknown, owing to many uncertainties regarding the migration patterns of tuna. With regard to the economic feasibility of expanding tuna operations in these circumstances, Korea having the advantage of very low wages, should be able to conduct tuna operations profitably at catch rates which are unremunerative for many high-wage countries. This, of course, presupposes that Korean fishermen are equally efficient. This condition is not yet fulfilled because of the lack of trained officers and crewmen.

Table 12: FISHERIES: INVESTMENT & PRODUCTION OUTLOOK

A. <u>Fixed Investment</u> (1965 prices, billion won)		
<u>Estimate for 1966</u>	<u>3.9</u>	
<u>Second Plan 1967-71</u>	<u>24.1</u>	
Coastal and Offshore Boats	7.6	
Distant Water Boats	6.0	
Fish Processing Facilities	1.2	
Aquiculture Development	2.8	
Fishing Port and Bases	3.1	
Research and Guidance	2.0	
Other	1.4	
<u>Total 1966-1971</u>	<u>28.0</u>	
B. <u>Production, Consumption & Export</u> 000 Metric Tons		
	<u>1965</u>	<u>1971</u>
<u>Total Landings</u>	<u>625</u>	<u>950</u>
Domestic Consumption	455	610
Total Exports	100	268
Wastage	70	72

Source: Volume IV.

172. The implementation of the program will require large increases in the number of trained officers and crewmen. The present fisheries schools do not provide the necessary practical experience and technical competence. The exception is the training center in Pusan set up with the support of the United Nations Development Program. This center trains about 150 men annually in navigation, engineering, and the use of radio equipment and gear. However, this number is sufficient to satisfy the need of only 30 vessels; present facilities are inadequate to meet the manpower requirements of the proposed fleet expansion. A determined effort should be made to expand and accelerate the training program and it seems desirable for Korea to seek additional technical assistance to help organize this.

173. The implementation of this very large expansion and modernization program hinges also on improvement in fisheries administration. Both from the point of view of organization and personnel, the Bureau of Fisheries in the Ministry of Agriculture seems inadequately equipped at present to implement the fisheries plan. A general improvement in organization and division of responsibility is needed. In order to devise solutions for problems posed by the large development program, the Bureau should also acquire the services of highly qualified personnel in the fields of vessel design, fishing technology, economics and resource management.

174. The Mission envisages an average annual rate of growth of fish production of 7.2 percent. (See Table 12) On the basis of the expected increase in population and a rough estimate of the consumption expenditure elasticity of the demand for fish on the basis of experience in other Far Eastern countries, domestic consumption may increase during the same period by at least 5 percent a year. ^{1/} There will be a fast increase in the exportable surplus, from 100,000 tons to 268,000 tons per year. Exports are treated in this calculation as a residual and total production is the chief limit on exports. The underlying assumption is that foreign market conditions will continue to be favorable for Korean fish. This assumption is discussed in Chapter VII.

D. Prospects for Manufacturing

175. The basic premise underlying the Mission's thinking, as explained above, is that manufacturing will continue to play the role of a leading sector in Korean development (paragraphs 141-147). Our views rest on the following pieces of information and analysis:

- (1) interviews with Government officials, various industry associations, and managers of manufacturing firms.

^{1/} Consumption rose at about 7 percent per annum during the last seven years according to estimates made by the Mission on the basis of available data.

- (2) trends in the home market for manufactures in the context of overall growth of the economy, envisaged above (see Table 9);
- (3) study of export demand for Korean products in major world markets and
- (4) a preliminary analysis of the feasibility of various opportunities for import substitution, now under discussion.

176. The principal conclusion is that value-added in manufacturing can increase at a rate of about 10 percent per annum during 1965-71, that is at a somewhat faster pace than in the past. (See Table 13) If this expansion is achieved, then the coefficient relating the growth rate of manufacturing to that of GNP would be 1.65 compared to 1.77 in the past. Such an expansion will require a substantial volume of new investment. Including estimates of outlays required to maintain the present capital stock, gross investment may amount to 252 billion won. This implies an incremental capital-output ratio of about 1.98 compared to 1.35 in the past period.

177. The Mission was not equipped to formulate an operational investment program for the manufacturing sector. Nevertheless, we have attempted to visualize the likely lines of expansion by studying in rough and ready fashion, demand and supply influences for particular branches or sub-branches. The results are presented, for illustrative purposes, in Table 13, which also shows the distribution of net investment among various branches. We should reiterate that much more detailed work at the project and industry level is necessary to assess investment costs and benefits before the industrial plan is finalized. The Mission is aware that some of these studies are underway in Korea.

Investment Good Industries

178. Our tentative view is that industries producing investment goods (Group A) will grow at a faster rate than total manufacturing, as they did in the past. Since the Mission expects a substantial rise in the rate of fixed investment during the Second Plan, the domestic demand for finished investment goods should increase rapidly. Also, the derived demand for intermediate goods, such as steel and cement, is bound to rise at fast rates of growth. For example, rough calculations indicate that the market for steel products should increase from about 323,000 MT to nearly 570,000 1/ MT during 1965-71. (See Table 14) This projection is based on the following assumptions:

- (1) The composition of demand for steel in 1965 is the same as shown in the 1963 Input-Output Table.

1/ Equal to 680,000 MT of steel ingots. On a per capita basis, ingot consumption per capita may increase from 13 kg to 20 kg.

Table 13: LINES OF EXPANSION IN MANUFACTURING
(1965 Prices)

Branch	Growth Rate per Year		Composition of Value Added			Composition of Net Fixed Investment 1966-71
	1955-57 to 1963-65 /3	1965-71	1965	1971		
			Mission	Normal	/1	
(percentages)						
A. <u>Investment Goods</u>	<u>13.9</u>	<u>14.4</u>	<u>18.6</u>	<u>23.7</u>	<u>27.7</u>	<u>39.5</u>
Transport Equipment	13.8	10.5	3.8	3.9	} 14.9	6.6
Electrical Machinery	30.0	18.6	1.6	2.5		2.7
Machinery	2.1	16.0	2.5	3.5		8.8
Metal Products	12.0	5.0	1.6	1.2		-
Basic Metals	14.2	14.4	3.6	4.6	4.8	13.7
Non-Metallic Minerals	16.0	16.9	5.5	8.0	8.0	7.7
B. <u>Intermediate Goods</u>	<u>11.4</u>	<u>10.7</u>	<u>14.8</u>	<u>47.0</u>	<u>30.2</u>	<u>57.7</u>
Paper	19.0	11.0	2.4	2.6	1.5	2.9
Textiles	6.2	8.2	25.4	23.2	14.5	16.6
Rubber	11.3	8.4	2.4	2.2	0.9	-
Wood	6.1	4.8	3.3	2.5	4.2	0.6
Chemicals	23.0	20.0	7.5	12.8	} 9.1	34.0
Petroleum and Coal Products	40.0 /4	9.9	3.7	3.7		3.5
C. <u>Consumer Goods</u>	<u>6.6</u>	<u>5.9</u>	<u>35.5</u> /2	<u>28.5</u> /2	<u>38.9</u> /2	<u>2.8</u>
Food	5.1	5.8	12.1	9.6	} 31.3	1.6
Beverages	6.1	4.8	6.7	5.1		-
Tobacco	7.1	5.8	6.3	5.1		-
Clothing	n.a.	8.0	4.1	3.6	5.4	1.2
Printing and Publishing	13.0	7.0	4.9	4.2	2.2	-
<u>Total Manufacturing</u>	<u>11.0</u> /5	<u>9.9</u>	<u>100.0</u> /6	<u>100.0</u> /6	<u>100.0</u> /6	<u>100.0</u>
Total Manufacturing (billion won)			(153.0)	(268.8)		(183.0) /

/1 See paragraph 37, Chapter II

/2 Including leather, furniture etc.

/3 Based on BOK Index Numbers.

/4 1959/61 to 1963/65.

/5 Corresponds to growth rate of value added of 9.4 percent per year.

/6 Including miscellaneous industries not listed in the table.

/7 Gross investment estimated as 252 billion won.

Source: Mission Estimates

- (2) Exports should be excluded from the base year figure. Present exports, largely to Vietnam, are extraordinary in character. They may continue and even increase but Korea should not undertake a large investment on the basis of an analysis which assumes that such exports will continue to grow.
- (3) Output of engineering industries (machinery, transport equipment and metal products) will rise at rates shown in Table 13.
- (4) The use of steel in construction will increase in line with the growth of fixed investment.

179. The present capacity for producing steel ingots is 235,000 MT. If demand grows as expected, then there will be room for an additional plant of about half a million tons. The Government of Korea is investigating the possibility of building an integrated iron and steel plant. For this purpose, the Ministry of Commerce and Industry (MCI) earmarked \$90 million for investment during the Second Plan, 1967-71. Various Government agencies (MCI and EPB) as well as several outside teams (the German Advisory Group and a Japanese Group) have surveyed the steel industry and made forecasts of steel demand in this context. The Japanese team proposes an investment of \$167 million, presumably during 1967-71, for two plants of half a million tons each. The Mission is not in a position to resolve the outstanding issues but it is possible to highlight the main points which should be considered.

180. From the standpoint of economies of scale, a half million ton facility is acceptable provided the raw material situation is favorable. ^{1/} Existing iron-ore reserves with an iron content of more than 25 percent are estimated at about 16-18 million MT. However, reserves of medium and relatively high grade ore (iron content of more than 40 percent) are of the order of 7-10 million MT. If ores with high titanium content are excluded, then the reserve figure is reduced to 6 million MT only. Furthermore, the location of the iron mines on the east coast implies a heavy transport cost either to Pusan or Inchon - the main steel manufacturing centers. Everything considered, it may prove preferable to continue to export Korean ores to Japan where they are blended with other ores. If a new steel plant is established in Korea, it will probably have to depend on imported iron ore.

^{1/} The unit cost of production of a 430,000 ton plant is 8 percent lower than that of a 250,000 ton plant. However, a million ton plant can produce at a unit cost which is 24 percent lower than a 250,000 ton plant. See E.C.L.A.: A Study of the Iron and Steel Industry in Latin America, New York 1964, p. 113.

Table 14: FORECAST OF STEEL DEMAND

Consuming Sector	1965		1971		1965-1971 Growth Rate per Year %
	Share in Total Consumption of Steel %	Demand 000 MT	Demand 000 MT	Share in Total Consumption of Steel %	
Engineering Industries /1	30.2	97.5	195.0	34.3	12.3
Construction	39.1	126.2	218.4	38.5	9.3
Others	18.3	59.0	83.2	14.6	6.0
Basic Metals	<u>12.3</u>	<u>40.1</u>	<u>71.0</u>	<u>12.6</u>	<u>10.0</u>
	100.0	322.8	567.6	100.0	9.9

/1 Machinery, transport equipment and finished metal products industries.

181. Korea has no reserves of coking coal. The Mission is not competent to judge the probability of success of experiments, now being conducted, designed to use Korean anthracite coal for steel making. Even if these experiments establish the technical and economic feasibility of using anthracite, there will remain the problem that there is not much room for expanding Korean coal production. Viewed in the perspective of Korea's overall energy balance, fuel for a new steel plant should either be imported or anthracite (if technical experiments are successful) should be diverted from the power sector by appropriate changes in price policy. (See paragraphs 190, 191) Another solution is offered by the electric reduction process; however, under Korean conditions this alternative may prove to be fairly expensive. Domestic collections of scrap have been dwindling since 1962. Even at the present level of steel production, Korea is likely to require imports of scrap of about 100,000 tons during 1966. This dependence on imports is likely to increase in the future.

182. Under these rather unfavorable conditions of raw material supply, the Mission suspects that the proposed steel plant will involve rather high costs of production. Korea can achieve a measure of import substitution with respect to pig-iron and steel ingots but only at the expense of rising dependence on imports of iron-ore, coal and scrap. At present, the ex-factory price of 50 m.m. billet is about \$90 in Korea, compared to a Japanese f.o.b. price of about \$69 and European quotations f.o.b. of about \$60. The Mission cannot determine the extent to which the proposed plant will succeed in reducing Korean production costs below their present level.

183. We cannot furnish any operational advice to the Korean Government. There are too many unknowns in the situation to permit the formulation of a clear cut conclusion. Studies of demand indicate that a half million ton plant might find a market by 1971. However, the raw material situation is unfavorable, there are a number of technical difficulties and very little is known about the likely cost position of the proposed plant.

184. Demand for cement is expected to rise from 1.3 million MT in 1965 to 3.4 million MT in 1971; that is at the same annual rate (17.5 percent per annum) as during 1956-65. There is in Korea, as in other developing countries, a preference for permanent structures which implies a displacement of other building materials by cement. The combined capacity of seven plants operating at present is about 1.7 million MT. The industry plans to expand capacity to keep up with domestic demand. Limestone of adequate quality is available but gypsum must be imported. Domestic prices are about 18 percent higher than import prices c.i.f.; however, the industry expects to reduce costs by about 6 percent through economies in quarrying and in use of power and labor. 1/

185. The Ministry of Commerce and Industry has proposed ambitious targets for the ship-building industry. The idea is to triple capacity, presently idle to the extent of 70 percent. The Mission has serious reservations regarding these proposals. Present costs of production in Korea are considerably above Japanese prices and the Government has subsidized purchasers to the extent of 30 percent. The industry does not have the skills or experience to build large ocean liners or oil tankers. Therefore, the Mission suggests that the MCI plan should be trimmed down to reasonable proportions.

186. Tentative proposals of the MCI for the machinery-industries (electrical and other) also need to be examined critically. A total investment target of \$71 million during the Second Plan is under consideration. At present, the scope of production is limited to small diesel or electric motors, pumps, lathes, transformers, sewing machines, batteries, radios etc. The transformation of existing production facilities into an efficient capital goods industry is one of the crucial processes in Korean industrialization. Failure at this juncture will have far reaching consequences which may plague the whole manufacturing sector for decades and compromise Korea's ability to compete in world markets. The point is that economies of scale are important in determining the cost structure of machinery industries. Therefore, efficient production depends on consolidating market demand into a limited number of standardized items which can be produced on an adequate scale. Present demand is import-oriented and fragmented into compartments. Instead of attempting to produce a large number of machines in small quantities, Korea should produce a few items and import the rest. Complementary investment program and common market arrangements with neighboring Asian economies would be desirable. (See paragraph 142) Import substitution in

1/ The cement industry produces nearly two-thirds of the gross output of the non-metallic minerals branch. Other industries in this branch are sheet glass and ceramics. These are expected to develop export outlets during the Second Plan; their prospects are discussed in Chapter VII.

this area requires a careful step by step approach. On this theory, the Mission has cut down the MCI production target from about 25 percent per annum to about 17 percent per annum. Even this may prove to be excessive, in the light of detailed product by product studies.

187. Altogether, the output of investment good industries may expand faster than the expected rise in the total market for investment goods, thus securing a measure of import substitution. However, the Mission's judgment is that the pace at which imports are replaced by domestic production should slow down compared to the past decade. Thus the coefficient relating growth of output of Group A industries to the increase of total capital formation in the economy should be 1.55 compared to 1.65 in the past.

Intermediate Goods Industries

188. The Mission expects that intermediate good industries will expand at a somewhat slower rate than during the past decade. The process of import substitution is very nearly exhausted in the field of textiles, paper, rubber, wood and petroleum refining. Consequently, production should rise no faster than domestic demand, except for those products (various textiles and plywood) for which a growing export outlet may materialize. 1/

189. The Mission expects that the demand for petroleum products will increase at a growth rate of 11.6 percent per annum. 2/ (See Table 15) Underlying the Mission's forecast are the following hypotheses:

- (1) Gasoline consumption, one-tenth of the total, will rise faster than the fleet of motor vehicles. The latter will increase 8 percent per annum. 3/
- (2) The consumption of the power sector will increase at a faster rate than power use. The assumption is that oil will be substituted for coal in the new thermal plants in response to changes in price relations. (See paragraphs 190, 191)
- (3) The consumption of the industrial sector will rise rapidly on the assumption that a petro-chemical complex and the fifth fertilizer plant will be established before the end of the Second Plan. (See paragraphs 193-196)
- (4) The bulk of military consumption will continue to be imported.

1/ The prospects for exports are discussed in Chapter VII.

2/ Civilian consumption of petroleum products increased 12.6 percent per annum from the average of 1956-58 to the average of 1963-65. However, demand increased by only 5.9 percent per annum during 1962-65.

3/ Transport Survey Mission: Korea Transportation Survey Tentative Investment Plan, April 1, 1966.

190. On the basis of the present relation between the price of coal and fuel oil, the total annual cost per kwh of thermal plants using coal is 5 percent lower than that of plants using fuel oil. The Mission recommends a suitable reduction in price of fuel oil, offset by an increase of gasoline prices, to provide an incentive to the power company to invest in oil-burning plants rather than plants using coal. 1/ Not only will such a change reduce investment requirements in the power sector, it will also be conducive to making the most economic use of Korea's limited coal reserves. 2/

Table 15: DEMAND PROJECTION FOR PETROLEUM PRODUCTS

<u>Consuming Sectors</u>	<u>1 9 6 5</u>			<u>1 9 7 1</u>		
	<u>Gasoline</u>	<u>Fuel Oil</u>	<u>Total</u>	<u>Gasoline</u>	<u>Fuel Oil</u>	<u>Total</u>
			(thousand barrels)			
Transport	812	3889	4701 <u>/4</u>	1876	5708	7584
Industry	94	2095	2536 <u>/2</u>	137	2735	6457 <u>/3</u>
Power	-	52	1247 <u>/2</u>	-	1464	2659 <u>/2</u>
Household	-	-	427 <u>/1</u>	-	-	517 <u>/1</u>
Military			1363			
<u>Total</u>	<u>906</u>	<u>6036</u>	<u>8911</u>	<u>2013</u>	<u>9907</u>	<u>17,217</u>

/1 Kerosene

/2 Includes Bunker C

/3 Includes 2490,000 barrels of naphtha for the petro-chemical complex and 1,095,000 barrels of Bunker C.

/4 Includes sales to the military of 1363,000 barrels which was 24 percent of total military consumption.

Source: Mission Estimates

1/ The price of gasoline was reduced by 21 percent in January 1966.

2/ The investment cost per kw of net capacity is 25 percent lower in oil-burning plants compared to coal-using plants. See Korea Electric Power Survey, Vol. I, page 66.

191. Coal supplies 43 percent of Korea's total demand for energy. About 70 percent of total coal production is consumed in the household sector for heating and cooking purposes. The use of wood and straw in urban households has declined sharply as the consumption of coal brickets has increased. The Mission agrees with the Government's policy of controlling the volume of wood cuttings, in the interest of preventing further deforestation and soil erosion. However, this will put tremendous pressure on the country's coal deposits unless measures are taken to substitute oil for coal, wherever feasible. 1/

192. The refinery at Ulsan is now operating at full capacity. If the Mission's assumptions are correct, then demand should increase from 8.9 to 17.2 million barrels during 1965-1971. The refinery's capacity can be expanded easily to produce about 14 million barrels. Such an expansion can take care of domestic demand till the end of the 1960's. Requirements for petroleum products are expected to jump sharply after the completion of the fifth fertilizer plant, the new thermal plant at Seoul and the proposed petro-chemical complex. A second refinery will be needed towards the end of the plan period. If technical problems of Incheon harbor can be solved, then the second refinery should be located on the west coast in the proximity of the main market. This locational decision is of some importance in determining the cost of petroleum products to consumers.

193. The Government of Korea is seriously considering the establishment of a petro-chemical complex, utilizing naphtha from the second refinery as the primary input. MCI proposes an investment of \$127 million for this project. The merits of this venture are being assessed currently by a team sponsored by the United States AID. Present demand for petro-chemicals is concentrated around the synthetic textile and plastic industries. Imports of products which could be produced by a fully developed petro-chemical industry amount to about \$30-35 million per year. The figure would be much higher if there were no quota restrictions. For example, the plastic industry, allowed to import limited quantities of synthetic resins, was operating at 30-40 percent of capacity. Domestic demand for products using plastics (shoes, handbags, materials for packing fertilizer, furniture, construction materials, insulation for electrical goods, etc.) was already buoyant and showed every sign of rapid development. Similarly, textiles made of synthetic fibers were displacing cotton and rayon based products. 2/

1/ The magnitude of Korea's energy problem was recognized by the Power Survey Report by the Thomas Team. (See Vol. I, pp. 68-69) Notwithstanding, the Report advocates the continued use of coal for thermal plants.

2/ The share of synthetic fibers in total Korean fiber consumption rose from 0.2 percent in 1955/56 to 11.8 percent in 1962/63.

194. The future course of demand for these products will determine the size of the plant which should be built. This is a critical factor because economies of scale play a considerable role in determining the efficiency of production. The Government is presently thinking of a medium-sized plant to form the "core" of the petro-chemical complex. ^{1/} The cost of producing ethylene, the principal product of the "core" unit, is expected to be 40 percent higher than U.S. prices if the proposed plant is fully exploited. The Mission is unable to say whether demand for petro-chemical products by the end of the Second Plan will justify adequate utilization of such a facility. The Mission's doubts are reinforced by the fact that a competing facility - the production of synthetic resins from calcium carbide - is nearing completion. The price of these locally manufactured resins is expected to be 60 percent higher than the import price; probably much more expensive than comparable production within the proposed petro-chemical complex.

195. Abstracting from the question of when is the right time to start, the Mission is sympathetic to the idea of building a petro-chemical industry in Korea. If successful, it will compensate to some extent for the country's dearth of natural materials - fibers, rubber, high grade metallic ores and coal. Over a period of time the manufacturing sector will be able to reduce its heavy dependence on imports of crude materials. Once the decision to go ahead is taken, the process of substitution of petro-chemical products for imported materials should be accelerated by tax and tariff policy. Admittedly, such a strategy raises a host of issues - impact on existing industries using imported materials, capital intensity of the proposed complex etc. - which the Mission is not equipped to resolve.

196. Another industry interlocked with oil-refining is the manufacture of chemical fertilizers. Two urea plants in the public sector are presently meeting about a third of Korea's consumption of nitrogenous fertilizer. Another two are under construction; they will produce urea and complex fertilizers (mixtures of nitrogen, phosphate and potash) utilizing naphtha from the refinery and imported phosphate rock, sulphur and potash. Both of them are joint ventures between the Korean Government and foreign private interests. A fifth plant is under consideration to produce a large quantity of urea; part of this urea will be exported under contract with International Ore and Fertilizer Company which is a world-wide marketing organization.

197. The pulp and paper industry should also expand briskly. Consumption of paper and paper products was growing at a rate of 6 percent per annum till 1962; during the last three years there was a sharp jump in demand. The Mission believes that future demand will increase 11 percent per annum, chiefly on account of the steep rise in the use of packaging papers. As there

^{1/} MCI wants a plant with a capacity of 35,000 MT of ethylene per year. The Japanese started in 1958 with a plant which produced 14,000 MT but now optimum size is associated with capacity ranging from 100-150 thousand MT.

is no more room for import substitution, production should increase at the same rate. There is considerable scope for displacing imports of pulp but domestic supply bottlenecks and technical difficulties cloud the prospect. A reduction in the availability of ground woodpulp resources from local forests has prevented the full utilization of installed capacity. A new producer of semi-chemical pulp has encountered severe production and marketing problems. There is a proposal to convert barley straw into chemical pulp but the chances of efficient production are bleak.

Consumer Goods Industries

198. If the macro-economic framework postulated by the Mission is realized (see Table 9), then the domestic market for industries producing manufactured consumer goods is not likely to grow as rapidly as in the early sixties. Total consumption expenditures will increase at a slower rate than GNP, because of the high marginal savings rate. We have projected the outlook for domestic sales of different commodity groups, on the basis of the following elasticity coefficients, related to consumption expenditure:

(1) Printed books, etc.	1.80
(2) Clothing	1.00
(3) Tobacco	1.00
(4) Beverages	0.90
(5) Processed Foods	0.82
(6) Rubber Footwear	0.64

199. Government officials expect that most industries in this group will secure a foothold in the export market. The Mission's appraisal of the Economic Planning Board's export targets is discussed in Chapter VII. It is sufficient to say here that the Mission expects the share of exports in total output of consumer good industries to rise from 4 percent to nearly 9 percent by 1971. Chiefly for this reason, the production of these manufacturing branches will increase 1.16 times as fast as consumption expenditures; the corresponding coefficient during the early 1960's was 0.93.

200. Many of the consumer good industries will not require large investments (See Table 13) since they are presently operating at rather low levels of capacity. However, the Mission hopes that readers will not interpret literally the illustrative figures in Table 13. It is quite possible that we have underestimated investment requirements of consumer good industries.

E. Need for Transport Investment 1/

201. The World Bank sponsored transport survey team calculated investment requirements on the basis of alternative growth rates for GNP. Accordingly, a 6 percent per year increase in GNP would require fixed investment totaling 188 billion won, while a 7 percent growth in GNP would require 207 billion won. The higher variant would necessitate larger outlays on rolling stock for the railways and motor vehicles for the highways. In line with the macro-framework envisaged above (see Table 9), we only present the transport investments associated with a 6 percent growth rate (see Table 16). The most important feature of the Survey Team's proposals is the stress on highway construction and on vehicles for highway transportation. Together, these items account for almost 40 percent of the proposed investment. The acceptance of this emphasis by the Government would constitute a major departure from past policies which stressed the role of the railroad and accorded low priority to highway transportation.

202. The proposed program for the railroad makes relatively minor provisions for the construction of new lines. The largest construction is the connection between Chinju and Suncheon in the south; an obvious gap in the existing system. The Team further recommends the construction of a few small lines to improve transportation in the mining areas in the East. Circular suburban lines for Pusan and Seoul deserve additional study. By contrast, the Korean National Railroad proposed construction of 1500 km of new lines, mainly in rural and coastal areas with low traffic potential. The Team did not find sufficient economic justification for most of these projects. The areas in question can be more economically served by improvement in the highway system. Accordingly, the expenditure on line construction proposed by the Team is only one-sixth of the Railroad's proposal.

203. The Team envisages substantial expenditures on rolling stock. About 22 percent of the present fleet of freight cars and passenger coaches need to be replaced. Also, capacity for moving freight should be raised by 35 percent and for moving passengers by 68 percent. The Team recommends outlays for structural improvement of existing railway lines, improved passenger and cargo handling facilities in the Seoul area and improved marshalling yards.

204. Instead of an expansion of railroad lines the Survey Team proposes an expansion of the paved highway system. The expenditure proposed by the Team is twice as large as the original proposal of the Ministry of Construction. The Team's proposal is based on present traffic density (more than 200 vehicles per day) and estimated potential for economic development. Implementation of this program would give Korea paved highways along its entire east, south and west coast and would

1/ Mainly based on World Bank Transport Survey Mission; Korea Transportation Survey Tentative Investment Plan, April 1, 1966.

Table 16: PROPOSED TRANSPORT INVESTMENT 1966-1971

(Billion won; 1965 prices)

Total 1960-65 1/	103.9
Estimate for 1966 1/	15.3
Proposed 1967-71 1/	184.7
<u>Total 1966-71 1/</u>	<u>200.0</u>
<u>Proposed 1967-71 (including land acquisition)</u>	<u>188.3</u>
<u>Railroad</u>	<u>55.6</u>
Construction of new lines	8.1
Rolling Stock	28.0
Improvement of facilities	19.5
<u>Highways</u>	<u>41.2</u>
Road Paving 3,200 km	19.3
Road Improvement 1,420 km	4.5
Bridges 25,000 meters	4.7
Toll Roads and Bridges 143 km	5.1
Other	6.6
<u>Motor Vehicles (26,700)</u>	<u>30.8</u>
<u>Ports</u>	<u>22.8</u>
Inchon Second Tidal Basin	5.5
Other Main Harbors	6.9
Small Harbors	2.0
Dredgers and Dredging	7.6
Other	0.8
<u>Shipping</u>	<u>17.0</u>
<u>Airports and Aircraft</u>	<u>8.3</u>
<u>Residual</u>	<u>12.5</u>

1/ Excluding cost of land acquisition.

Note: There may be some double counting of investments shown above and those included in other sectors.

Source: Korea Transportation Survey Tentative Investment Plan,
April 1, 1966.

provide, in addition to the existing Seoul-Pusan highway, a number of cross-country highway connections. Especially the accessibility of the east coast and the relatively isolated Southwest area would be improved. The total length of the paved system would increase from 1,660 km to about 5,200 km.

205. In spite of import restrictions on motor vehicles, inadequate highways and poor maintenance standards, the elasticity of demand for highway transport in Korea is quite high. The Survey Team envisages an expansion of the motor vehicle fleet at a rate of 8 percent per year. The average yearly distance covered per vehicles will probably also increase during the plan period because of the improved road conditions. The load capacity per truck now at a low average of 3 tons per vehicle, is moreover expected to increase to 4 tons during the plan period. This expectation for rapid growth should be viewed in the light of an extremely low motor vehicle density at present. The realization of the forecast will, of course, depend on the implementation of the Team's highway construction proposal and the adoption of a sensible rate policy by the railroad.

206. The Survey Team envisages a growth of 9.1 percent per year in ocean-going cargo (exports and imports in tonnage) and some increase in coastal traffic for bulky items, such as coal, petroleum products and cement. The most important single project in the port development program needed to cope with this traffic increase is the construction of a second tidal basin at Incheon. (See Table 16) This basin will enable Incheon to handle all traffic for the Seoul area and will reduce pressure on the Pusan harbor and the railway line between Seoul and Pusan. Another important aspect of the harbor program is the construction of industrial harbors at Ulsan, Biin, and Chinhae connected with industrial projects in these places. Although siltation in Korea's harbors is considerable, there is not yet a reliable estimate of its extent and of the required amount of dredging. In view of the technical and administrative complications of utilizing a dredging fleet, it may be advisable to use the services of foreign dredging contractors rather than acquiring, as proposed by the Ministry of Construction, nine new dredges.

207. The Ministry of Transportation proposed a four-fold increase in the capacity of the Korean shipping fleet during the Second Plan; the Survey Team has reservations regarding this proposal. Korea may acquire some comparative advantage in shipping because of low wages, as she builds up her stock of managerial and administrative talent. However, the expansion of the fleet is not needed to remove a bottleneck situation, since Korea is well served by foreign ships. The Survey Team's proposal, which is somewhat of a compromise, aims at doubling the present fleet.

208. The size of the country and the limited scope for speeding up of surface traffic make it necessary for Korea to continue operating a modest network of domestic civil aviation. However, as far as international connections are concerned, Korea seems well supplied by foreign airlines. These airlines enjoy internal and external economies which

would be inaccessible to a Korean international airline. From an economic point of view, it would therefore be desirable to postpone plans for establishing a Korean international airline.

F. Program for Electric Power 1/

209. The Thomas Team forecasts that power demand will rise at an annual rate of about 12.0 percent per annum. The following hypotheses underlie this projection:

- (1) industrial production will increase at a rate of 9.5 percent per annum,
- (2) population will grow at a rate of 2.8 percent per annum,
- (3) the proportion of total households electrified will rise from about 22 percent in 1964 to about 29 percent in 1971.

These assumptions are close to the macro-economic framework adopted by the present Mission. We envisage a growth rate in manufacturing of about 10 percent per annum (see paragraph 176) compared to the Thomas Team's hypothesis of 9.5 percent for both manufacturing and mining. We envisage a growth rate in population of 2.66 percent (see paragraph 125) which is somewhat slower than (2) above. Despite these minor differences, the present Mission has adopted the main findings of the Thomas Team regarding the requirements of the power sector. (See Table 17)

210. While the Korea Electric Company proposed a program of investment which included a number of hydro projects, the Thomas Team is in favor of thermal generation facilities as a rule. More than 80 percent of new installed capacity recommended consists of thermal units. Except for the Pusan project, already under construction, each of these plants will exceed 100 mw. There are considerable economies of scale associated with thermal units and the optimum size under Korean conditions depends on a reasonable balance between capacity and regional demand.

211. Although Korea has considerable unutilized hydro potential, the cost of hydro power is likely to be relatively high, for the following reasons:

- (1) While rainfall is concentrated during four months in the summer, peak demand for power occurs during the dry winter.
- (2) River grades are flat and this makes it difficult to build large storage reservoirs. Also large reservoirs will submerge valuable farm land and involve heavy outlays in relocating displaced farm families.

1/ Mainly based on "Korea Electric Power Survey", a report prepared for U.S. Mission in Korea by the Thomas Team.

- (3) Wide river beds require a long dam.
- (4) Spillways with large discharge capacity are required to pass flood waters. Lack of adequate hydrological observations implies that spillways must be over-designed to provide safety.
- (5) Size of generating equipment is limited by rail and harbor facilities available in Korea.

Table 17: PROPOSED POWER INVESTMENT 1966-1971
(1965 prices; billion won)

<u>Total Investment 1960-1965</u>	<u>40.3</u>
<u>Total Investment 1966-1971</u>	<u>57.2</u>
Generation	28.8
Transmission	7.9
Distribution	18.7
Other	1.9

Breakdown of Generation Facilities

<u>Projects</u>	<u>Completion Date</u>	<u>Capacity</u> (M.W.)	<u>Investment 1966-71</u> (million won)
Kunsan thermal	1967	66	1630 <u>/1</u>
Seoul thermal	1968	125	5243 <u>/2</u>
Pusan thermal	1971	150	6120
Paldang hydro	1970	80	6597
Improvement & Replacement	--	--	809
Others <u>/3</u>	Third Plan	<u>/3</u>	7900

/1 Only during 1966; expenditures in 1965 were won 2,139 million.

/2 Excludes won 17 million in 1965.

/3 Consists of Yongdong 125 mw, Seoul 200 mw thermal plants to be started during the Second Plan period.

212. Despite these reservations, the power program includes the Paldang hydro project. Estimated investment cost of this project is \$300 per kw compared to \$168 for thermal units. Although recurring costs of the hydro project are much lower, the total cost of power generation at Paldang will be relatively high. The Thomas Team points out that this is a marginal project.

213. The suggested outlay includes about won 2 billion for a rural electrification program. The target is to provide a power connection for about 18 percent of village households in 1971 compared to less than 10 percent now. 1/ The Thomas Team anticipated the following benefits from this program.

- (1) Facilitates preservation (via ice-making) and processing of fish and other marine products. (See paragraph 49)
- (2) Permits mechanization of grain processing.
- (3) Expands egg production by lengthening the "light day" in winter and stimulating poultry production by providing power for incubation and brooding.
- (4) Makes more meaningful the high literacy rate in the country.
- (5) Retards urban migration and thus alleviates unemployment as well as other social problems in the cities.

214. There is no doubt that unsatisfied demand for electric power exists among Korean farmers and fishermen. Apparently, many of them can afford to pay for the service. The past practice of installing small diesel units and "micro-hydro" all over the countryside on a strictly ad-hoc basis has proved wasteful. A systematic and properly phased program or rural electrification undertaken by the Korean Electric Company, merits the consideration of the Government. However, in formulating and implementing this program care should be taken to emphasize the productivity aspects of electrification (see paragraph 213 above) rather than the consumption aspects i.e. promotion of household electrical appliances.

1/ The target for 1984 is 34 percent.

VII. OUTLOOK FOR THE BALANCE OF PAYMENTS

215. Viewed from the standpoint of investment requirements and domestic savings, Korea may require a net inflow of foreign resources averaging \$275 million per annum during 1966-1971. Ideally, this estimate should be checked by making an independent evaluation of export prospects and import requirements. We have attempted a rough projection of exports, although the Mission did not command the kind of expertise or the length of time required for a definitive analysis. The problems of estimating imports are even more formidable and we confine ourselves to a few consistency checks. The last section of this chapter presents the results of some calculations regarding gross foreign capital requirements.

A. Assessment of Export Potential

216. The EPB envisages a growth in merchandise exports at a rate of 21 percent per year. Although this expansion is considerably lower than Korea's performance in recent years, it is a very ambitious target when viewed in the context of the likely increase in world trade or the expected expansion in major foreign markets for Korean products. Officials believe that the rising pressure of wages in Japan confronts Korea with a unique opportunity to displace that country to some extent from her traditional markets. Planners are confident that they can accomplish this in many lines of production and they are prepared to take whatever measures are necessary for this purpose.

217. There is an element of validity in the thesis about wage pressures in the Japanese economy. The labor market there is fast assuming the character of its counterparts in Western industrialized countries. Wages lagged behind productivity for the best part of the fifties, but now they are running well ahead in some instances, leading to moderate increments in wholesale prices. However, these wage and price movements are neither widespread nor large in magnitude. The overall wholesale price index in Japan is fairly steady and the aggregate export price index in 1965 is slightly below the level in the early 1960's. Export prices of textiles and wooden products (a category which includes plywood) have declined in recent years, partly owing to recessionary conditions. However, there was some rise in export prices of processed foods, ceramics and miscellaneous manufactures. In a word, it is rash to conclude, as some Korean officials and businessmen do, that Japanese exports in general are becoming non-competitive. This is simply not so, although Korea can capitalize on specific opportunities and raise her share in particular overseas markets. Many Korean officials appear to believe that export targets are worth achieving no matter what the real cost to the economy and no matter how large the offsetting outflow of foreign exchange on account of imported inputs. It is well to point out that the fundamental object of policy should not be to raise exports at any cost but rather to improve resource allocation, to raise savings and to contain the balance

of payment deficit. To repeat, export subsidies are only worthwhile if there is a reasonable chance of developing comparative advantage in the foreseeable future (see paragraphs 108-110). Promotional measures should be re-designed with the aim of maximizing net rather than gross foreign exchange earnings.

218. On this basis, the Mission has attempted to adjust the EPB export targets for major commodities. (See Table 18) Altogether, the net impact of these adjustments is to reduce the projected growth rate for total exports to about 14.8 percent per year. The reasons for scaling down the EPB forecast are explained in the following paragraphs. Some of these adjustments (for example, marine products), are based on detailed analysis of demand conditions in foreign markets and export availabilities in Korea. Other adjustments are much more impressionistic in character, owing to the fact that it is impossible to trace the market prospect for each individual item. This is particularly so for new manufactured good exports.

219. The EPB envisages a growth of 20 percent per year in Korea's exports of manufactured goods. During the past decade, manufactured goods exports from all developing countries rose at a rate of 8.2 percent per annum. 1/ Starting from an extremely low base, Korea increased her share in total manufactured exports from developing countries to a level of 1.99 percent in 1965. A recent study of the trade prospects of developing countries envisages a growth in their manufactured exports of about 5.6 percent per annum 2,. This rate appears too low. Assuming 8.2 percent as in the past, then the EPB target implies Korea's share in total manufactured exports from developing countries will rise by 1971 to 3.80 percent. The Mission's impression is that Korea will continue to increase her share but perhaps not as rapidly as the EPB target implies. We have assumed that Korea's share will rise to 2.90 percent by 1971 which implies a growth rate of 15.0 percent per annum.

220. The EPB envisages growth in plywood exports at an annual rate of 17.4 percent per annum during 1964-1971. This target is distinctly ambitious, although not outside the realm of possibility. To achieve it, Korea will need to incur heavy foreign exchange outlays on imported materials and to compete with exporting countries whose production is based on local inputs. In a long-term sense, Korea does not appear to enjoy a decisive comparative advantage in this type of activity. Therefore, the Mission suggests a lower growth rate of about 14 percent per annum. Allowing for the 59 percent increase in 1965, the projected growth rate works out to only 7.8 percent per annum. (See Table 18)

1/ See U.N. Monthly Bulletin of Statistics Nov. 1965. The period covered is 1953-55 to 1962-64.

2/ Bela Balassa; Trade Prospects for Developing Countries, p. 388. The period covered is 1960-70. We have cited the mid-point of two variants.

Table 18: GROWTH OF EXPORTS

(in million dollars)

	1965	1971	
		EPB	Mission
1. <u>Manufacturing products</u>	<u>106.8</u>	<u>328.0</u>	<u>250.0</u>
Fertilizer	-	-	8.7
Rubber tires	0.9	1.7	1.0
Rubber footwear	4.1	12.1	5.0
Plywood and veneer	18.1	35.0	28.4
Textiles and clothing	47.0	154.4	138.4
Yarn	(1.5)	(7.4)	(7.4)
Silk fabrics	(0.4)	(10.0)	(8.0)
Cotton fabrics	(10.5)	(49.0)	(35.0)
Other fabrics ^{/1}	(13.9)	(34.0)	(34.0)
Clothing ^{/2}	(20.7)	(49.0)	(49.0)
Cement	0.8	4.0	-
Sheet glass	0.4	1.7	1.7
Ceramic tiles	-	8.0	8.0
Ceramic products	-	20.0	6.5
Iron and steel	12.7	9.3	9.3
Radio receivers	1.4	8.0	4.0
Other	20.8	73.8	39.0
2. <u>Agricultural, Fisheries & Mineral Prod.</u>	<u>68.3</u>	<u>222.0</u>	<u>150.0</u>
Rice	3.6	10.0	4.0
Tobacco	0.9	6.0	6.0
Fish ^{/3}	22.4	94.7	75.7
Raw silk	7.1	42.7	25.0
Coal	1.9	5.0	2.0
Iron ore	6.8	5.0	9.0
Tungsten ore	6.3	6.3	6.3
Other	19.3	52.3	22.0
3. <u>Total exports</u>	<u>175.1</u>	<u>550.0</u>	<u>400.0</u>

^{/1} Includes rayon, woolen and synthetic fiber fabrics; knitted, embroidered and sewing goods.

^{/2} Includes outer garments, sweaters and socks.

^{/3} Includes laver and agar-agar.

Source: Mission Estimates.

221. More than 90 percent of Korean plywood is sold in the U.S. market. Consumption of hardwood plywood in the U.S.A. increased at about 9.5 percent per annum during the last decade and this expansion is expected to continue in the future. Korea started to export for the first time in 1961 and now holds about 12 percent of the US import market. 1/ The other competitors are Japan, whose share in the U.S. market has dropped from 73 percent to 35 percent, 2/ Taiwan and the Philippines. To achieve the export target set by EPB, Korea must double her share in the U. S. market. The Mission has reservations about the desirability of this target.

222. Korean wage rates are slightly lower than in Taiwan or Philippines and only one-third of the Japanese level. However, this differential in wage rates is more than fully made up by higher productivity in Taiwan and the Philippines and almost entirely, but not fully, offset by higher productivity in Japan. In any case, labor costs do not constitute a high proportion of production costs in the plywood industry. A much more significant item is the cost of logs. Here Korea has the disadvantage of being farthest removed from the source of supply (Philippines) and therefore having to pay a higher price for transportation of the logs and to incur higher inventory expenses. This disadvantage is, of course, strongest in comparison with Taiwan and the Philippines. The latter country has the added, although temporary, advantage of a preferential import duty in the United States. If Korean plywood producers did not enjoy very cheap export credit and other export subsidies, it is doubtful whether exports would be very profitable. However, the economic justification for subsidizing plywood exports is far from obvious. The industry is fairly capital intensive and entirely based on imported raw materials. It does not use idle manpower or other unutilized domestic resources to any great extent.

223. Korea's exports of cotton fabrics increased five-fold during the last five years. In 1965, more than a quarter was sold in the U.S., another 24 percent in Hong Kong and another quarter in Europe. Total world trade in cotton textiles expanded rather slowly and Korea's share increased from a very low base to barely 2 percent in 1965. This should not be interpreted to mean that Korea is a strong competitor; the Mission believes that world prices are below Korean costs and exports take place because there is excess capacity and because exports are subsidised.

224. The EPB has set an ambitious target for cotton fabric exports, which may be quite difficult to achieve for two reasons. First, Korea does not have a strong competitive position in this field. Owing to the trend towards mechanization, low wages are of diminishing importance in determining total production costs. Meanwhile Japanese export prices

1/ This was the position in 1964. In 1965, Korea's share must be considerably higher than 12 percent.

2/ During 1960-64.

are tending to decline (see paragraph 217). Secondly, many importing countries have imposed quantitative restrictions. Under the International Cotton Textile Agreement 1962-67, imports into the U.S. from developing countries will not be allowed to increase by more than 5 percent per year. Reportedly, a bilateral agreement between U.S. and Korea for 1966 may turn out to be more permissive. On the whole, however, the prospects for an increase in cotton textile exports are fairly limited and for these reasons, we have scaled down the EPB export target. The figure we have suggested may turn out to be still too high.

225. In contrast to the slow growth of world textiles exports, there has been a very marked increase (about 14 percent a year during 1953-64) in world clothing exports. This increase is likely to continue. Clothing production is labor intensive and there is only limited scope for mechanization of the production process. As a result, high-income countries in Europe and North America will find it to their advantage to increase their purchases of clothing and made-up apparel from low-wage producers such as Korea. International trade in clothing is relatively free from restriction and may, on the whole, be expected to remain so. Korean exports increased at an extremely rapid rate in recent years, from \$1 million in 1960 to \$21 million in 1965. Over half this amount was shipped to the United States. Another market was Sweden which bought \$3.4 million of knitwear (sweaters), one of the most promising export lines. In view of the rapid expansion of this industry, and the demonstrated ability to meet the quality requirements of foreign markets, future expansion will be rapid in all likelihood. The Mission, therefore, accepts the EPB target for this item.

226. Nearly 90 percent of rubber footwear is sold in the U.S. market. The U.S. imports about 50 million pairs of shoes per year; of this Korea supplies 4 million and Japan the entire residual. The total import market for footwear has not expanded more than 1.7 percent per annum during the 1960's. Korean exports have to compete not only with Japan but also with plastic products from Italy and elsewhere. In spite of all these facts, Korea scored a spectacular increase in exports from \$0.9 million in 1964 to \$4.1 million in 1965. This was mainly caused by a speculative build-up of stock by importers in anticipation of a rise in tariff duties from 12.5 percent to 37.5 percent in December 1965. Under these circumstances, the Mission doubts whether the EPB target of trebling the value of exports can be achieved.

227. Exports of rubber products from Korea, shoes or tires, are heavily dependent on imported materials. The labor component barely reaches 10 percent of the total sales price in both cases. The prospects for tire exports appear quite unfavorable. Several Asian countries, including Thailand, are building their own factories and Korean export opportunities are diminishing. In any case, Korea does not seem to have a comparative advantage in tires; the export price falls short of the cost of production.

228. The Mission accepts the EPB target with respect to sheet glass. Korea has local materials for such production and the location of the plant is favorable. Wages constitute 25 percent of total cost. Exports of this item started in 1962; the main markets are U.S.A. and Vietnam. To achieve this target Korea will have to take measures to improve quality and compete effectively with Taiwan, Japan and Belgium. Investments are under consideration which are expected to secure some economies in production costs by improving mechanical installations.

229. We also accept the EPB target regarding ceramic facing tiles. Local raw materials are available and the quality of the product is acceptable. Reportedly, the industry is likely to attract Japanese funds and technical know-how; presumably sales to the U.S. market will be channeled through Japanese agents. Japan supplies three-quarters of the U.S. market at present; other suppliers are Mexico and the U.K.

230. The Mission is skeptical about the EPB target regarding other ceramic products (pottery and chinaware). Although, this Korean industry has access to local raw materials and a long tradition, it is not yet established as a successful exporter. The industry is riddled with considerable waste, high costs and unattractive designs. A sizeable contract for exports to the U.S. was concluded in 1965 but failure to meet quality standards disrupted this arrangement. Despite these problems, it should be possible to build the Korean ceramic industry into a substantial earner of foreign exchange, provided a phased program is adopted instead of rushing into large-scale investments. The Mission suggests the creation of a pilot plant within a medium-sized ceramic technological center to study the technical problems, train specialists and to experiment with designs.

231. In addition to manufactured goods, the Mission envisages a substantial increase in Korea's exports of primary commodities, particularly marine products and raw silk. According to Mission estimates, the share of all primary commodities in total exports will fall slightly from 39 percent in 1965 to 37.5 percent by the end of the Second Plan.

232. Korean planners are counting on a tremendous increase in fish exports. ^{1/} (See Table 18) This optimism is based on past performance, a favorable market outlook for Korean products abroad and the premise that the fish catch will grow by leaps and bounds in response to investments underway and those proposed for the Second Plan period. The Mission is also enthusiastic about Korea's market opportunities abroad but fears that supply bottlenecks and domestic demand for fish will make it difficult to achieve fully the tentative EPB target (See paragraphs 168-174).

233. At present, Japan is the main market for Korean marine products accounting for two-thirds of total dollar earnings. Since 1962, Japan's fish output has been declining as a result of retrenchment in the industry. Difficulties of keeping crews at sea for extended periods and rising

^{1/} Based on detailed analysis in Volume IV.

wages have led Japanese fishing interests to retreat. Imports of marine products rose nearly seven times between 1961 and 1964, to fill the gap in fish supplies. Korea is Japan's principal supplier; the only significant competitor being mainland China. Although future increments of Korean exports to Japan cannot be as big as in the last few years, the prospect for expansion is good. Given the structural difficulties troubling the Japanese fishing industry, Korea should have no trouble disposing of its surplus catch. A growth in volume of these exports of about 11.9 percent per annum (see Table 19) seems easily attainable, taking into account also other markets, especially Hong-Kong for dried fish and Europe for frozen shell-fish. The unit value of these exports is expected to rise by about 8 percent during 1964-71 in response to changes in composition from the less valuable pickled, salted and cooked items to the higher priced fresh, chilled and frozen varieties. The trend in this direction dates back to the mid-fifties.

234. Korea also hopes to gain a foothold in the world market for tuna. Japan's retrenchment in deep-sea fishing operations and the current shortage in tuna supplies should facilitate Korea's entry in this sphere. In 1963, Japan accounted for nearly half of the global landings of tuna and tuna-like fish. However, during the last two years Japan is reported to have reduced her deep-sea operations. An incident of botulism poisoning in the U. S. in the first half of 1963 led to a sharp drop in prices and sales. The Japanese fleet, spread out in the Atlantic and Pacific oceans, reacted slowly to these developments and suffered heavy financial losses. As a result, many vessels were returned to home bases, converted to other uses or scrapped. Rising crew wages accentuated the impact of these changes. Informed sources believe that Japan will not reinstate her fleet to its original size. Meanwhile, the market situation has recovered appreciably, there is a shortage in supplies and prices have soared to unprecedented levels. The future market outlook is quite favorable and Korea's exports depend essentially on the speed with which she can deploy her recently acquired vessels and equip them with trained personnel. If the target suggested by the Mission is achieved, Korea's landings of tuna will probably reach 4 percent of the world total.

235. Exports of raw silk have increased almost six-fold since 1960. Nearly 90 percent of the Korean product is marketed in U.S.A. Total U.S. imports have expanded by less than 4 percent per annum in recent years, owing to the heavy inroads made by synthetic fibers. Korea's share in this market has increased from about 5.5 percent in the early sixties to nearly 18 percent at present, chiefly at the expense of Japan. The EPB postulates a rapid rise in Korean exports (see Table 18). The Mission has scaled down the official targets for two reasons. First, the planners are over-optimistic regarding the prospects of quickly expanding production (see Volume III). Secondly, any significant acceleration in the growth of U.S. imports is unlikely. Although Korea can continue to displace Japan, owing to increasing labor costs in the latter, a massive sales effort by Korea may precipitate a fall in prices.

Table 19: EXPORT FORECAST FOR MARINE PRODUCTS

	Catch other than deep sea			Deep sea catch			Total	
	V o l u m e		Unit Value	Value	Volume	Unit Value	Value	Value
	000 M/T (Landed Weight)	(Product Weight)	\$ per M/T of product weight	Million \$	000 M/T (Landed weight)	\$ per M/T of landed weight	Million \$	Million \$
1955	13.5	5.0	200	1.0	0.0	262 ^{/2}	0.0	1.0
1960	33.0	15.0	599	9.0	0.0	248	0.0	9.0
1964	86.9	38.8	601	23.3	n.a.	n.a.	0.4	23.7 ^{/1}
1966	95.0	42.3	617	26.1	20.5	275	5.6	31.7
1971	191.0	85.0	650	55.3	77.0	265	20.4	75.7

^{/1} Figure is somewhat higher than \$21.5 million recorded by Bank of Korea; Economic Statistics Yearbook.

^{/2} 1956.

236. Silk weaving is not well organized in Korea. Production is fragmented in small units and a large part of the equipment is obsolete. Because of the rapid growth in raw silk exports, the industry has been plagued by a raw materials shortage. As a result, capacity utilization is low and the financial condition of the industry is unsatisfactory. Silk fabric exports remained below the Government's target. In contrast with this situation, the EPB forecasts an increase in exports by 1971 to a level of \$10.0 million. Certainly, the achievement of this target would require an improvement of the raw material situation and concerted action to overcome technical and financial shortcomings of the industry. However, in view of the low wage costs and the local availability of the raw material, Korea should certainly be able to develop a comparative advantage in silk weaving.

237. In spite of the expectation of a fast growth in cereal production Korea is unlikely to attain self-sufficiency in grains until after 1971 (see paragraphs 158-163). Rice exports in 1971, will depend as at present, on the agreement of the U.S. who are supplementing Korea's grain deficiency with PL 480 wheat and barley. Under these circumstances, there is no basis for assuming that rice exports in 1971 will exceed the present level. Despite some difficulties due to inexperience, recent export efforts have stimulated the interest of foreign buyers in Korean tobacco. Tobacco yields per hectare are good, and provided the area under tobacco is allowed to increase, the EPB target can be realized. The EPB's expectation of a decrease in iron-ore exports is based on the assumed domestic use of the ore by an integrated iron and steel plant to be established in Korea. However, the technical and economic feasibility of such use of the Korean ore has still to be demonstrated. (See paragraph 180) Although this question is still in doubt, we have assumed

that it will be more economical to import ore when a mill is established while Korean ore will continue to be exported to Japan where it is blended with higher grade ores. There seems to be little basis for the Government's expectation of increased coal exports. Rising demands of the household, power and industrial sectors are likely to strain Korea's reserves. (See paragraphs 181, 182) There is no prospect of increasing the exportable surplus. Even the \$2 million estimated by us may be on the high side.

B. Invisibles and Merchandise Imports

238. The aggregate plan prepared by EPB postulates that Korea will continue to have a favorable balance of nearly \$60 million on account of exports and import of services, otherwise called "invisibles". 1/ (See Table 20) This expectation is based on the premise that Korea can achieve a substantial expansion in her merchant marine and tourist trade. The reader will recall that the Ministry of Transport proposes a four-fold increase in the capacity of Korea's shipping fleet (See paragraph 199). Also, the EPB envisages a six-fold increase in the tourist traffic and a 50 percent rise in the average income per tourist. The Mission is much less optimistic about both these developments, taking into account the country's inexperience in maritime business and the fact that Korea's geographic location is unfavorable from the standpoint of attracting tourists. Our estimates show that Korea's favorable balance on account of "invisibles" will diminish to a level of about \$14 million by 1971.

239. On this basis, Korea's merchandise imports can reach \$645 million in 1971. This implies a deficit on goods and services account of \$231 million or about won 63 billion in 1971, (see Tables 9 and 20) which is the assumed level of net foreign capital inflow in that year. The macro-framework envisaged by the Mission allows Korea's imports to rise at a rate of 7.6 percent per annum during the next six years compared to 9.8 percent per annum during the sixties. 2/ The Mission foresees a measure of import substitution in the area of investment goods, but at a slower pace than in the past. (See paragraph 187) The process of import replacement is almost exhausted in the field of manufactured intermediate goods; the sole exception being chemicals (see paragraph 188). However, imports of agricultural and mineral raw materials are expected to rise briskly in response to the growth of manufactures for the home and foreign markets. Although we cannot rigorously test the consistency of assumptions underlying the analysis of production and investment on the one hand and imports on the other, we feel reasonably certain that a 7.6 percent per annum growth in imports will suffice.

1/ Investment income receipts and payments are excluded from this discussion. They will be considered in Section C, together with problems of gross foreign capital inflow.

2/ Average 1959-61 to Average 1963-65. However, during the decade 1955-57 to 1963-65 imports increased very slowly i.e., 2.2 percent per annum. See Chart II.

Table 20: FRAMEWORK FOR THE BALANCE OF PAYMENTS: CURRENT ACCOUNT /1

(million U.S. dollars)

Item	1965		1971	
	Estimate	EPB	EPB	Mission
<u>Total Receipts</u>	<u>285.6</u>		<u>682.2</u>	<u>510.5</u>
<u>Merchandise Exports</u>	<u>175.1</u>		<u>550.0</u>	<u>400.0</u>
<u>Total Invisibles</u>	<u>110.5</u>		<u>132.2</u>	<u>110.5</u>
Sales to UN forces	74.0		63.0	63.0
Freight and Insurance	4.5		10.4	7.4
Other Transport	3.4		11.4	6.8
Travel	7.7		28.3	14.2
Other Services /1	20.9		19.1	19.1
<u>Total Payments</u>	<u>480.0</u>		<u>862.0</u>	<u>741.3</u>
<u>Merchandise Imports (f.o.b.)</u>	<u>415.9</u>		<u>789.2</u>	<u>645.0</u>
<u>Total Invisibles</u>	<u>64.1</u>		<u>72.8</u>	<u>96.3</u>
Freight and Insurance	32.4		27.7	44.7
Other Transport	10.7		14.9	21.4
Travel	1.7		4.8	4.8
Other Services /1	19.3		25.4	25.4

/1 Excluding investment income.

C. The Magnitude and Pattern of Future Foreign Capital Inflow

240. The outlook for future foreign aid to Korea is not at all clear, except for the Japanese commitment recently spelled out in the normalization treaty. According to this document, Japan will furnish \$300 million in grants and \$200 million in soft loans during the next decade. Also the Japanese Government will approve commercial credits amounting to "at least" \$300 million. As far as the U.S. is concerned, responsible spokesmen have indicated that "supporting assistance" will be phased out, although no time-table has been drawn up. The U.S. Congress is currently debating an Administration proposal to terminate by 1971 the sale of surplus commodities for local currency, under the PL 430. Future sales are likely to be financed to an increasing extent by long-term, low-interest loans repayable in dollars. Recently, the U.S. has signed a number of loans, carrying concessional terms, under the program of \$150 million authorized by President Johnson in May, 1965. Disbursements from these loans should rise rapidly in the near future. Other suppliers

of foreign resources - Germany, U.K. etc. - have not indicated the size or pattern of their future contributions. Meanwhile, there has been a sharp rise in the volume of suppliers' credits. Annual commitments, under this category, have increased from less than \$2 million in 1962 to nearly \$80 million in 1965. According to our information, the Korean Government intends to guarantee a sizeable amount of suppliers' credits during 1966.

241. Whether or not net foreign capital inflow will average \$275 million per annum, envisaged in this report, we do not know. The amount is not much higher than Korea has obtained during recent years. However, the present climate of foreign aid introduces a significant margin of uncertainty into the planning process. Owing to her special relations with USA and Japan, Korea is probably less vulnerable in this respect than many other developing countries. Nevertheless, Korean planners should be prepared to reduce the scale of investment in the event that foreign resources do not materialize according to expectations. Provided thought is given to this problem beforehand, and there is a clear idea of priorities, it should be possible to readjust the size of the Second Plan in an orderly fashion so as to minimize the extent of dislocation.

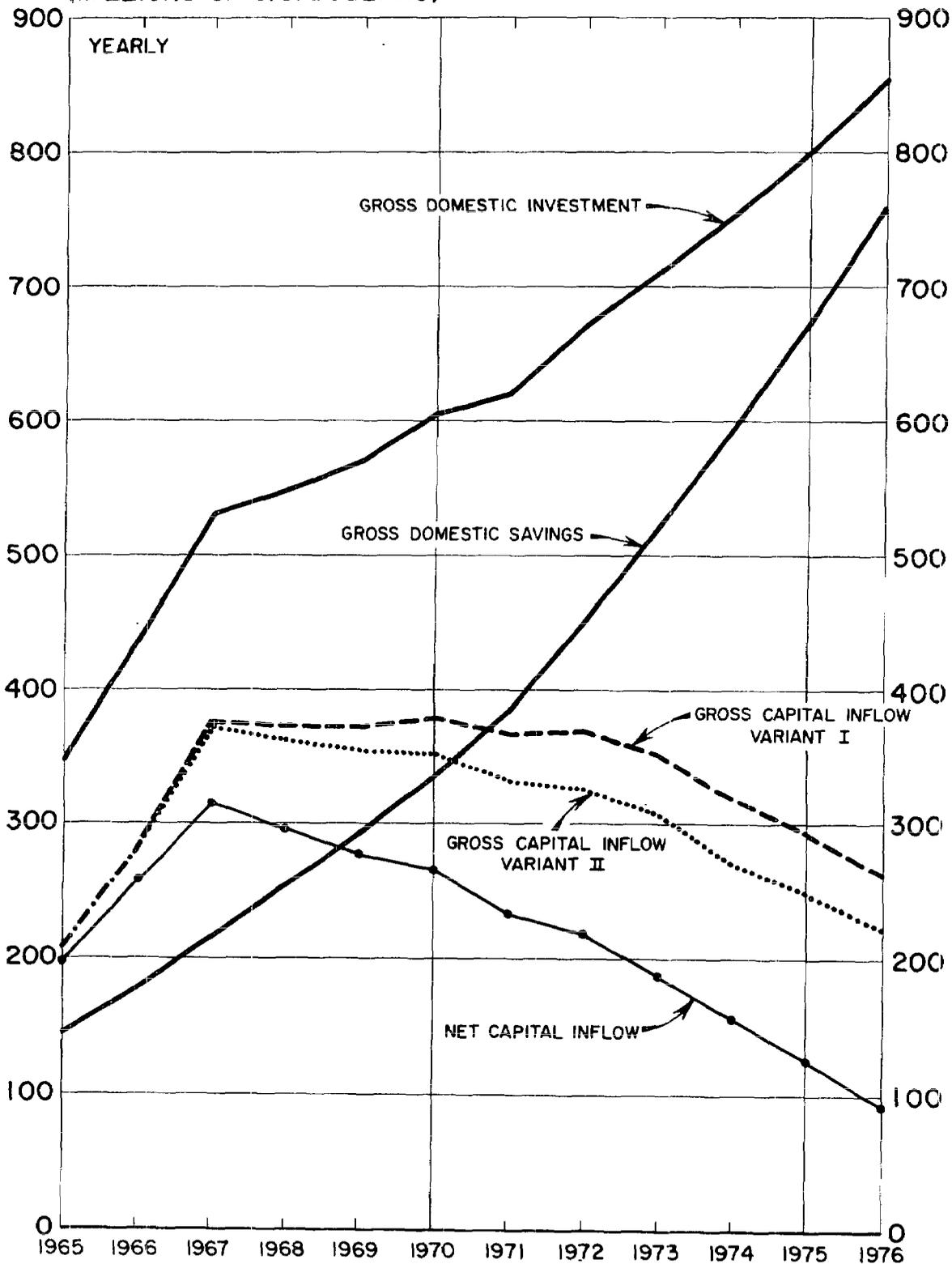
242. On their side, suppliers of official foreign aid should view the needs of the Korean economy in the proper perspective. The Mission's assessment is that the country requires sizeable external assistance for some considerable time, even under optimistic assumptions regarding economic policies. This conclusion is based on the inescapable fact that the present savings rate is extremely low (5-6 percent). Assuming that the marginal savings rate during the Third Plan (1972-76) is raised to 27.5 percent compared to 20 percent during the Second Plan and that there is no change in the growth rate of GDP or the incremental capital-output ratio, Korea will still require net foreign capital of more than \$90 million in 1976 (See Chart IV). Undoubtedly, Korea's relative dependence on external resources should decline sharply and there should be an appreciable reduction in the absolute amount of the net inflow, but it is premature to conclude that Korea is about to enter the stage of self-sustained growth.

D. Terms of Foreign Assistance

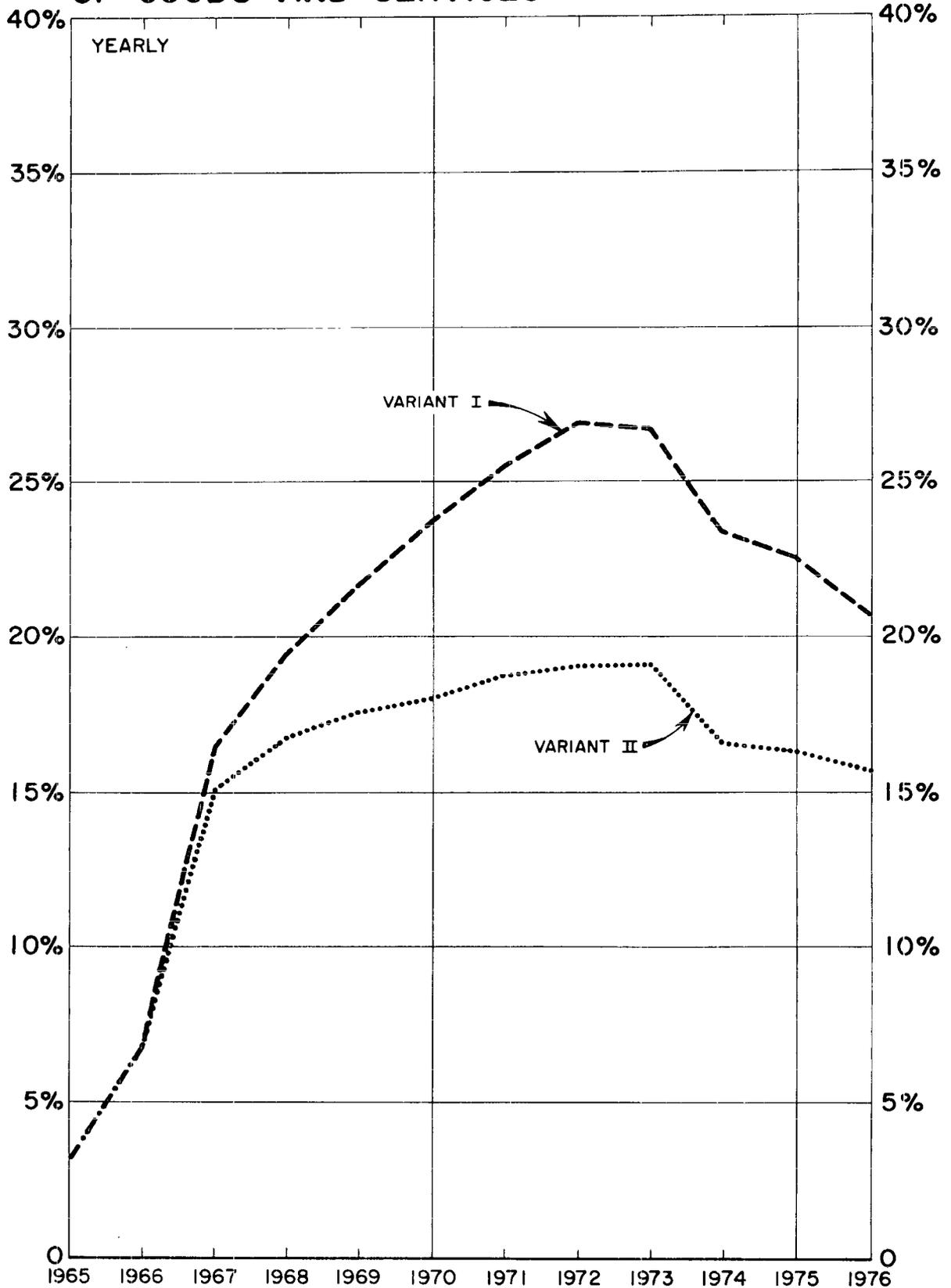
243. Since foreign resources will be needed to supplement domestic savings in financing investment for the next decade or more, Korea will have to roll over her debt servicing obligations in this period. Consequently, gross foreign capital requirements will depend on the schedule of obligations arising from the present external debt as well as the distribution of the future inflow among grants, soft loans, conventional loans, suppliers' credits and private direct investment. The future composition cannot be determined with any precision but recent events foreshadow a shift from grants to soft loans and suppliers' credits. The Korean economy can easily tolerate some hardening of the terms of

KOREA: REQUIRED LEVEL OF CAPITAL INFLOW IN RELATION TO DOMESTIC SAVINGS AND INVESTMENT

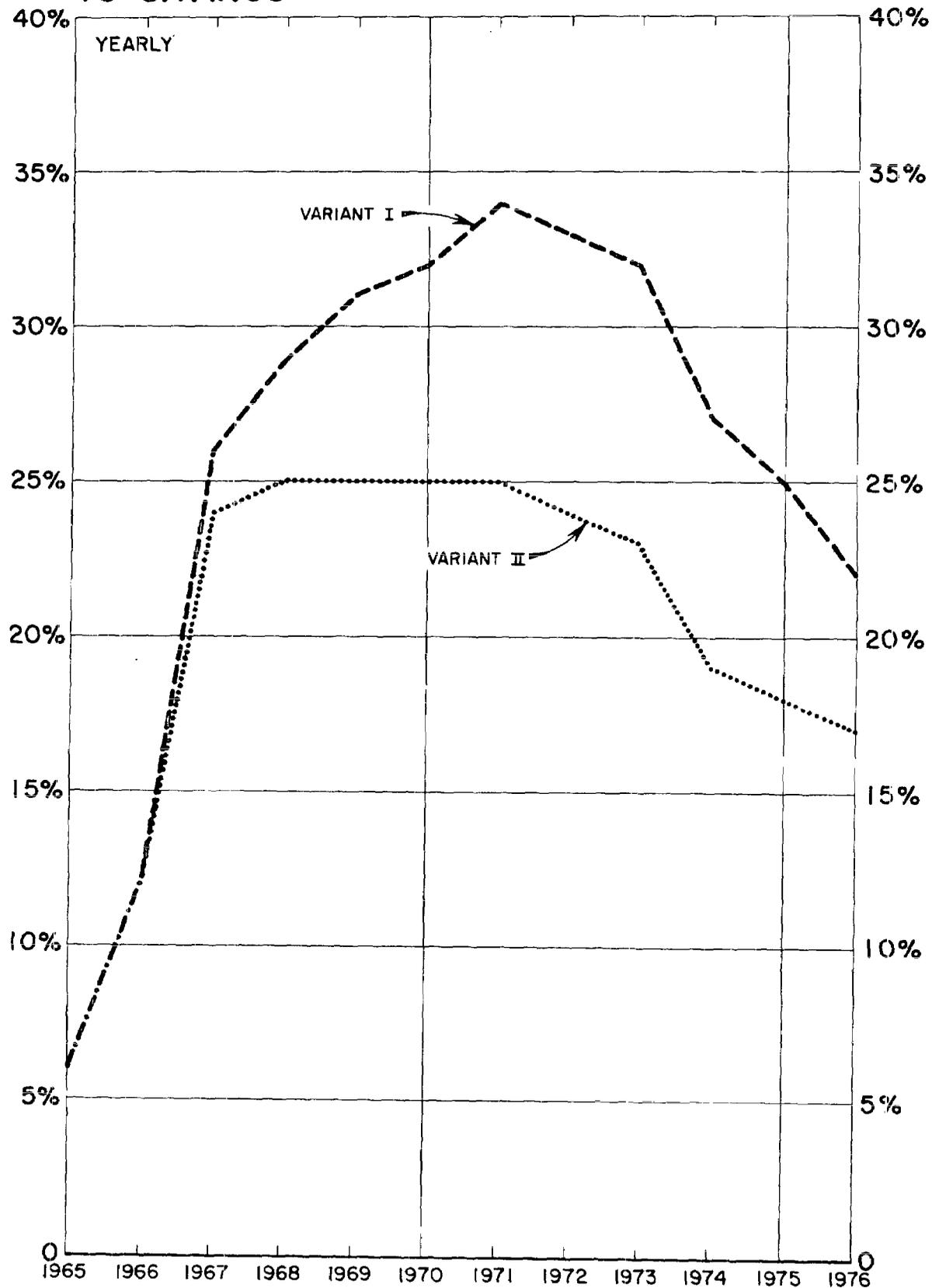
(MILLIONS OF U.S. DOLLARS)



KOREA: RATIO OF DEBT SERVICE TO EXPORTS OF GOODS AND SERVICES



KOREA: RATIO OF DEBT SERVICE TO SAVINGS



foreign assistance; for example a substitution of grants by soft loans at low interest rates and long maturity periods. However, a sharp increase in the role of suppliers' credits can create serious difficulties. If there is a rigid ceiling on the amount of soft loans which can be extended to Korea, owing to a global scarcity of such funds, then the Mission would recommend the use of official loans on conventional terms.

244. This conclusion is based on an analysis of the debt servicing problem confronting Korea during the next decade. The implications of two hypothetical patterns (variants I and II) of external financing for the behavior of debt service payments and related magnitudes are traced out till 1976. (See Table 21 and Charts IV-VI). Both variants assume a substantial decline in the percentage share of grants in future foreign capital inflow, compared to more than 80 percent in the past. Both variants envisage a marked rise in the role of official loans on concessional terms, compared to 5 percent - 12 percent in the past. Also, in both cases, we assume a moderate increase in foreign private direct investment. ^{1/}Variant I postulates that Korea will rely on suppliers' credits to fill the gap between requirements for external funds on the one hand and the flow of grants, official aid and equity investment, on the other. Variant II assumes that Korea will be eligible for conventional loans as well as soft assistance and therefore she can diminish her dependence on suppliers' credits.

245. Under both variants, debt servicing obligations will rise much more rapidly than savings during the Second Plan. (See Chart VI) However, the present level of the debt service ratio is quite low and an upward movement in this ratio does not necessarily mean an exhaustion of debt servicing capacity. The ratio of debt service to savings touches a peak of 34 percent under Variant I and 25 percent under Variant II, before beginning a downward course in the early 1970's. Provided the resource mobilization effort is on an adequate scale and provided it is sustained during the next decade, Korean savings will grow faster than debt service payments during the Third Plan.

246. The debt servicing problem, from a short-term standpoint, is essentially a question of managing the balance of payments. In this context, the ratio of debt service to exports as well as certain other characteristics are relevant. The commodity structure of exports is relatively diversified and Korea is less vulnerable than most developing countries to violent fluctuations in export prices. Also, progress in Korean agriculture has reduced the danger of large-scale harvest failures necessitating sudden increases in food imports. In any case, access to PL 480 shipments of grains acts as a cushion which reduces the impact of disturbances, caused by weather conditions, on the foreign exchange situation. Moreover, Korea's foreign exchange reserves constitute one-third of 1965 imports, which is a comfortable margin for offsetting moderate short-term fluctuations in the balance of payments. Although Korea's liquidity position is adequate and she can tolerate a rise in the rigidity introduced in the balance of payments by debt

^{1/} The increase may be larger if agreement is reached on the legal status of Japanese private investors in Korea.

Table 21: GROSS FOREIGN CAPITAL REQUIREMENTS AND DEBT SERVICE

A. <u>Composition of Gross Inflow and Typical Terms</u>					
	<u>Variant I</u>	<u>Variant II</u>	<u>Interest</u>	<u>Grace</u>	<u>Repayment</u>
	<u>(% of total)</u>		<u>Rate %</u>	<u>Period</u>	<u>Period</u>
				<u>(years)</u>	
Grants	35	35	0	(infinity)	
Soft loans	40	40	2.5	8	22
Conventional Loans	-	15	6.0	4	21
Direct investment	2	2	10.0	^{/1}	^{/1}
Supplier's Credits	23	8	6.5	1	6 ^{/1}

B. <u>Amount of Gross Inflow</u>				
		<u>1965</u>	<u>1971</u>	<u>1976</u>
		^{/2}	<u>(million dollars)</u>	
Resource Gap ^{/3}		198	233	93
<u>Current Account Deficit</u> ^{/4}		<u>194</u>	<u>227</u>	<u>86</u>
Increase in Foreign Reserves		5	7	8
Subscription; Asian Development Bank		-	3	-
Debt Service on Present Debt		9	39	16
Debt Service on New Inflow (Variant I)		-	91	154
(Variant II)		-	56	113
Gross Inflow Required	(Variant I)	208	367	264
	(Variant II)	208	332	223

^{/1} Dividend remittances; no repatriation of equity.

^{/2} Preliminary estimates by I.M.F.

^{/3} Gross investment less domestic savings

^{/4} Resource gap less investment income receipts.

servicing obligations, the ratio of debt service to exports reaches dangerous levels under Variant I. ^{1/} (See Chart V) The proportion of export earnings absorbed by debt service rises quickly, touches a peak of 27 percent and remains above 20 percent till 1976. By contrast, the debt service ratio under Variant II rises to a peak of 19 percent in the early years of the third plan and then begins a decline. There is no precise way of judging what is the critical level of the debt service ratio in the context of Korea, but Variant II obviously imposes less pressure on the economy and implies less risks for suppliers of foreign resources. Provided there are no erratic fluctuations in the gross inflow of foreign resources, Korea should be able to manage her debt commitments under Variant II.

247. The required volume of gross foreign resources are plotted in Chart IV. They rise sharply to a peak of \$373 million in 1967, under Variant II, and then begin a slow decline. In that year, the ratio of gross external resource inflow to total capital-formation touches a peak of 70 percent and then falls to 54 percent by 1971. Does Korea have the capacity to absorb such a high volume of foreign funds? A considerable part of this total will finance imports of grains, industrial raw materials and semi-processed commodities. Existing arrangements with the USA and Japan permit such non-project use of external funds. As Korea's export earnings increase and finance a growing part of total import needs, external aid agencies will be able, if they wish, to earmark funds for specific projects. However, a sudden change in the policy of foreign aid givers in this respect may delay loan commitments, owing to lags in project identification and preparation, or it may disrupt the flow of disbursements because of special circumstances affecting particular projects. Therefore, it will be necessary to coordinate the use of aid instruments (project vs. non-project aid) with the overall financial position of Korea and with progress in project formulation as well as execution.

248. The reader should be warned not to interpret literally Charts IV-VI or the underlying calculations. They illustrate the quantitative implications of certain assumptions for Korea's economic development and her external financial situation. It is possible to vary these assumptions regarding GDP, savings, investment, exports, composition in terms of foreign capital inflow etc., and trace out different growth paths for the Korean economy. The object of this analysis is not to predict the most likely course of events but rather to draw attention to certain policy issues which will greatly influence the future of the Korean economy.

^{1/} Exports of goods and services are assumed to increase at a rate of 10.2 percent per annum during 1965-1971 (See Table 20) and 10.0 percent per annum during 1971-76.

249. Perhaps most important is the behavior of savings. When Korean decision-makers demonstrate their capacity and willingness to raise sharply the economy-wide marginal rate of savings, then the future outlook will become hopeful and it will be possible to visualize a gradual narrowing of the resource gap. If a high savings rate is sustained, the Korean economy will generate savings in excess of investment requirements at some point in the distant future. Meanwhile, Korea requires substantial sums of foreign aid for a considerable time. Ideally, the bulk of these funds should be extended on soft terms. However, if the global scarcity of foreign aid on soft terms makes it impossible to finance fully Korean development on this basis, then soft aid should be supplemented with loans on conventional terms. Korea can tolerate a limited increase in her debt burden, provided the domestic savings effort is adequate and the gross foreign capital inflow is not erratic. The question of Korea's capability for servicing conventional loans is difficult to answer at this time pending completion of the Second Plan and associated policies - especially policies designed to raise domestic saving to a satisfactory level. If the Plan and policy developments provide the basis for a favorable savings outlook and a margin of creditworthiness, the conclusion would then follow that financing foreign capital requirements with a blend of soft aid and conventional loans is a better solution in the Korean context than reducing investment outlays and slowing down the pace of growth. The alternative of filling any substantial part of the external gap with short and medium term suppliers' credits would be unwise in any circumstances.