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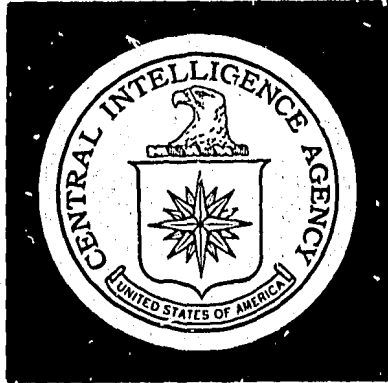
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DIRECTORATE OF
INTELLIGENCE

Intelligence Memorandum

South Vietnam: Some Aspects Of Economic Growth

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July 1971

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CENTRAL INTELLIGENCE AGENCY**Directorate of Intelligence****July 1971****INTELLIGENCE MEMORANDUM****SOUTH VIETNAM: SOME ASPECTS OF ECONOMIC GROWTH****Introduction**

1. Until recently, US economic interests in South Vietnam have focused generally on stabilization of the economy. As Vietnamization gathers momentum and security continues to improve, however, the need for longer term economic planning becomes apparent. This memorandum addresses two basic economic questions which will be of major importance to Vietnam over the next five years. In Section I the overall employment situation in Vietnam is considered, particularly as it develops following US withdrawal. An estimate is made of the total quantity of labor that will enter the job market during 1971-75, and projections are then made of what growth, by sector of the economy, would be necessary to employ this labor with no decrease in production per worker. The second question, the Vietnamese balance of trade by 1975, is discussed in Section II. In this section, high and low projections are made to obtain a probable range of both exports and imports in 1975.

2. Ideally, a quantitative model should be used to relate formally the economic aggregates discussed in Sections I and II. Because of the narrow Vietnamese statistical base, however, the description of interrelationships in this memorandum is more modest. Section III simply points out how particular assumptions about single changes in the values of such aggregates as employment, investment, domestic production, and foreign trade will affect each other.

3. For purposes of analysis, it is assumed that almost all US forces will be out of Vietnam by 1975, that South Vietnamese army force levels will remain constant throughout the period, and that security will continue

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to improve. 1/ Furthermore, it is assumed that, with a continued high level of government activity and a population accustomed to the availability of a wide variety of consumer goods, employment and production should not be limited by the size of aggregate demand but rather by the available supply of capital and other resources to employ labor and produce the desired goods. This memorandum does not attempt to determine specific limitations on the future availability of resources, but simply sets very rough orders of magnitude that could be useful for future planning.

DiscussionI. Employment BalanceIncrease in the Labor Force

4. A major question to be considered in analyzing longer term growth prospects is the overall employment situation, including developments following US withdrawal. An analysis of employment in South Vietnam during 1971-75 indicates that, if government employment (civilian and military) remains at the current 1.3 million level, a minimum of roughly 1.4 million new jobs will have to be created during the five-year period and this number will increase if any South Vietnamese demobilization occurs. The problems of creating such a large number of new jobs contrast markedly with those during the period 1960-66, when the number of people employed in South Vietnam's private sector (including agriculture) actually declined.

5. During 1971-75, roughly 200,000 new entrants will join the labor force annually. The addition of these one million people reflects an annual population growth of 2.6% and a participation rate of 37%. A number of estimates of the labor force and its distribution have been made since 1954 and these have yielded participation rates ranging from 37% to 43%. On the basis of past studies in which the 37% rate has been judged to be most plausible, this rate is adopted for use in this memorandum.

6. At the end of 1969, recorded employment of Vietnamese nationals in the US sector was 148,000. This number, however, greatly understates the actual number of Vietnamese employed as a result of the US presence in Vietnam. Based on estimates of average US sector wage rates and US piaster expenditures on Vietnamese labor, the total number

1. The assumption regarding security conditions is made for analytic purposes and is not meant to be an estimate.

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of Vietnamese whose employment was dependent on the US presence at the end of 1969 would amount to roughly 250,000. ^{2/} Combining these job losses with the natural growth in the labor force, the number seeking new employment during the next five years would be 1,250,000.

7. In addition to this demand for employment, a certain number of refugees also will be seeking employment during the next five years. There were roughly 500,000 refugees on the records of the Ministry of Social Welfare throughout 1970, and a case load of this magnitude will likely continue at least through most of 1971. Based on surveys of average refugee family size and an assumption that only heads of households will seek employment, there will be roughly 100,000 refugees looking for work either on the farms or in the cities sometime during the 1971-75 time frame. The addition of these people to the ranks of the unemployed would raise the minimum figure for required new jobs to at least 1,350,000.

Job Availability -- the Non-Agricultural Sector

8. If the government of South Vietnam (GVN) maintains its troop strength at a constant level, some of the unemployed undoubtedly will be called into service to replace the dead and disabled. Assuming that security conditions improve, the average annual number of dead and disabled could drop somewhat below the 1970 rate, or to perhaps 20,000 men per year. Thus, employment in the armed forces would absorb about 100,000 men (net) during 1971-75, leaving a need for new jobs for 1,250,000.

9. Even under the most optimistic assumptions, the private non-agricultural sectors of the economy could expand employment opportunities by no more than 300,000 jobs during 1971-75. By comparison, it is estimated that total existing employment in manufacturing, construction, and utilities in 1970 amounted to a maximum of 400,000. It is hazardous to project the rate of growth of employment in these branches of industry on past performance because of the heavy dependence of manufacturing on imports and the large impact of US building activities on the construction industry. Nevertheless, it seems possible that under favorable conditions employment in these three branches during the next five years could grow at a rate equal to the 10% average annual rate of increase in employment recorded during the past decade. ^{3/} With no initial drop in construction employment following US withdrawal, such a growth rate would result in the addition of about 240,000 workers to the force during 1971-75.

^{2.} For methodology, see Appendix A.

^{3.} Increases in output and employment greater than the 10% annual rate would imply unexpected increases in foreign investment.

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10. The prospects for net growth in the tertiary sector – commerce, transportation, and services – are generally bleak. It is, of course, this sector that will be hardest hit by Vietnamization. Outside of this, however, some expansion will probably occur because of growth in the Vietnamese secondary sector. Assuming that every four new jobs in the secondary sector creates one new job in the tertiary sector, about 60,000 jobs from this demand will become available in the tertiary sector. 4/

11. A total increase in non-agricultural employment of 300,000 during the next five years would be potentially capable of absorbing the labor, primarily located in the cities, which will be released from the US sector. This is an optimistic estimate, however, and a much smaller growth of non-agricultural private employment – 150,000 – seems equally plausible. These alternative projections are shown in Table 1. The residuals in the table represent the quantity of labor which must depend upon work opportunities in agriculture.

The Role of Agriculture

12. Because agriculture is by far the largest sector in the South Vietnamese economy, it might be expected to absorb the largest share of available manpower in South Vietnam. The question is whether it can absorb a million or more workers – roughly equivalent to the natural growth in the total labor force – in the next five years. Here the assumption that rural security will continue to improve is crucial. With improved security, depressed plantation and forestry activities can be rebuilt or expanded, abandoned agricultural land resettled, and investment in land improvements accelerated.

13. A relatively small amount of labor could be expected to find jobs on plantations and in fishing during 1971-75. Employment on plantations, which at its peak in the early 1960s amounted to roughly 60,000, has declined steadily in recent years because of the war and accompanying insecurity. At the present time, there are only an estimated 15,000 workers on plantations. If security continues to improve, plantation employment might return to its prewar peak by 1975, which would make some 45,000 new jobs available. In addition, Vietnam's bountiful – but largely unexploited – forests could be developed into a major industry. Estimates on the number of workers who could be absorbed in exploitation

4. Tertiary employment would also be stimulated by expansion of agriculture. The ratio of expansion, however, would be considerably less than the one to four estimated for industry, and the magnitude of jobs created would be small enough to be considered included in the quantities of agricultural employment discussed below.

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Table 1

**South Vietnam: Employment Projections
1971-75**

	Thousand Persons	
	<u>A a/</u>	<u>B b/</u>
Number seeking employment		
Growth in labor force	1,000	1,000
Unemployment in the US sector	250	250
Refugees seeking jobs	100	100
Total	<u>1,350</u>	<u>1,350</u>
Non-agricultural job opportunities		
Troop replacements	100	100
Non-agricultural private sector	150	300
Total	<u>250</u>	<u>400</u>
<i>Residual</i>	<i>1,100</i>	<i>950</i>

a. Assuming a 5% annual growth of employment in manufacturing, construction, and utilities.

b. Assuming a 10% growth in the above sectors.

of the forests during the next five years range from 25,000 to 100,000, depending on the level of investment, with 50,000 an attainable figure. The number of fishermen increased at an average annual rate of 5.8% from 1961-70 from 191,000 to 317,000. If this rate were maintained through 1975, the number of fishermen would increase by roughly 100,000 during 1971-75. Thus plantations, forestry, and fishing combined could create up to 200,000 jobs.

14. A major portion of total employment opportunities could develop in the rest of Vietnam's agricultural sector. The land area cultivated in South Vietnam in 1969 (2,415,500 hectares) was 7.6% below the area cultivated

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in 1964 (2,613,530 hectares). 5/ If security continues to improve, the area cultivated in 1975 could equal the area cultivated in 1964. A proportional increase in agricultural employment on cultivated area -- estimated at 3.7 million persons in 1969 -- would mean another 280,000 new jobs. The remaining labor supply needed to be absorbed by agriculture is only 470,000-620,000. This would require about a 13% to 17% increase in employment in this sector over five years, or an average annual increase of 2.4% to 3.1%. For the given area, output per hectare would have to rise at an equivalent rate.

15. The labor-to-land ratio in South Vietnam is roughly 1.5 workers per hectare. 6/ This is a low ratio compared with some intensively developed Asian agricultural sectors such as are found in South Korea (2.0 workers per hectare in 1968) and Taiwan (2.4 workers per hectare in 1968), where output per worker is higher than in Vietnam. Moreover, according to some observers, the movement of rural population to urban areas caused by war, mobilization, and new economic opportunities has resulted in shortages of farm labor in some areas of South Vietnam. It would appear, therefore, that considerable additional labor could potentially be absorbed by Vietnamese agriculture.

16. In general, the experience of Asian agriculture demonstrates that an increase in labor per hectare by itself tends to raise output per hectare, but much less than proportionately. Increases in other inputs (such as water, fertilizer, or farm equipment) are needed to prevent a decline in or to increase output per worker. Technology is improving, however, and improvements in the next few years should provide the basis for a substantial increase in output per hectare, which in turn will permit increased employment without loss of labor productivity.

17. The required growth in output per hectare could be accomplished in part by expanded use of new rice strains, which tend to increase rice yields substantially and at the same time provide opportunities for absorption of additional labor. 7/ An estimated 500,000 hectares (or almost one-fourth of total rice land) was planted with IR-5 and IR-8 seeds in 1970, and the expanded output from this area (where yields run 4-6 tons per hectare compared with about 2.3 tons per hectare for all of Vietnam) is primarily responsible for Vietnam's approaching self-sufficiency

5. *Cultivated area refers to land used for field crops; plantation area is treated separately. Although some hectares in South Vietnam are double cropped, each cultivated hectare is counted only once in this memorandum.*

6. *See Appendix B.*

7. *Although the new technology requires less labor per ton of rice produced, it can absorb more labor per hectare.*

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in rice for the first time since 1964. Even without additional areas being planted with the new seeds, indications are that more intensive and knowledgeable cultivation of the areas already using the new strains can make significant increases in Vietnam's aggregate rice yields. In the face of little future demand for rice in the world market, once Vietnam's production equals domestic consumption needs the major impact of the increased productivity of the new rice will be in permitting rice land to be then converted to the production of other crops. For instance, increasing aggregate yields per planting of rice land from 2.3 to 3.0 tons per hectare would imply freeing some 250,000 hectares for new crops in 1975. Cultivation of more labor intensive and higher yielding products, such as vegetables, undoubtedly could occur. This, however, would involve changes in relative prices and government policies and would entail changes in income distribution within agriculture. Throughout agricultural sectors, there also exist opportunities for improving irrigation and expanding double cropping in order to increase output per hectare. Finally, the land reform program currently under way could result in increased investment in land development and improved production methods because former tenants will have available for investment purposes a portion of their income formerly spent on rent and used outside agriculture by landlords.

18. In view of these factors, which indicate an increase in value of output per hectare, it is likely that under conditions of improved security and increased inputs, output per hectare in South Vietnam could increase during the next five years at least as fast as output per hectare has grown in other Asian countries in the past. Prior to the application of new rice strains, output per hectare of field crops in other Asian countries had been increasing at a rate more than double the rate of growth of yields in South Vietnam prior to 1965. ^{8/} An annual increase in value of output per hectare of 2.4% during the next five years seems well within reach. Such a growth in yields would permit the absorption on presently cultivated area of an

8. In the 1956-68 period, for example, agricultural output per hectare (even prior to the dramatic impact of the new rice strains) increased at average annual rates of 3.4% in Taiwan, 1.5% in South Korea, 1.5% in the Philippines, 2.6% in Thailand, and 2.3% in Japan. The Vietnamese value of output per hectare declined during 1965-69 as a result of the increased level of military activity throughout the country, but the value of output per hectare had been increasing at an average annual rate of 1% during the previous five years. As security improved in 1970, the value of output per hectare apparently regained the 1964 level. The 1969 yields (tons per hectare) of Vietnamese rice lands show virtually no increase over the yields experienced 10 years previously. The increase in the value of output per hectare of all field crops during the first half of the decade was therefore due entirely to improvements in output of products other than rice.

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average of about 100,000 farm laborers annually during 1971-75 without a decline in output per worker. 9/

19. Taken together, these assumptions indicate that field crops, forestry, fishing, and plantations should be fully capable of providing job opportunities for a million new workers during 1971-75. Furthermore, there is a good possibility that agriculture could absorb even higher levels of labor. For instance, if output per hectare of field crops grew at 5% instead of the 2.4% assumed in the analysis above, some 1-1/2 million could potentially be absorbed in the agricultural sector. 10/ And at worst, agriculture could absorb the additional labor supply with some slight decline in output per capita.

The Total Employment Situation

20. South Vietnam's agriculture thus seems capable of absorbing nearly all the increase in the labor supply in 1971-75, without a decline in productivity. If the non-agricultural sector also grows rapidly, South Vietnam should not have an unemployment problem. If non-agricultural growth is slow, however, substantial overall unemployment and underemployment could develop unless the government pursues policies strongly favoring agricultural expansion and diversification. Moreover, even if agricultural yields rise rapidly, slow development of the non-agricultural sector will make the problem of local unemployment difficult to resolve. This problem will be greatest in those areas where the US presence has been pronounced. In Danang, for example, about 40% to 50% of the city's wage earners work either directly for Americans or for Vietnamese firms servicing US activities. It is conceivable that, with no expansion in the industrial sector, even high productivity and large returns in agriculture

9. This rough calculation was based on the assumption that the number of workers employed in the production of field crops in 1969 (3.7 million) would increase at an average annual rate of 2.4% through 1975.

10. Employment of one million additional agricultural workers with no decline in labor productivity requires a 4.6% annual increase in total agricultural output. Assuming rice production is expanded only to the point of self-sufficiency, the remainder of the agricultural sector must consequently grow at about 6% per year. Alternatively, employment of 1.5 million additional workers (and incidentally, production of about \$100 million in agricultural goods potentially available for export in 1975) requires 6.6% growth per year in total output and annual expansion of about 10.6% in non-rice agricultural production. Agricultural experts familiar with Vietnam believe both that rice self-sufficiency can be reached long before 1975 and that non-rice output could be expected to grow at an average annual rate of no less than 6% during 1971-75.

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would not necessarily result in the movement of unemployed labor from the cities back to rural areas. In such areas, employment strategy may have to be aimed at economic growth in both industry and agriculture.

II. Balance of Trade

Imports

21. South Vietnamese imports increased rapidly beginning in 1965 as the United States sought to ease the burden of the war on the economy. The expanded war brought two basic problems. First, the large increase in both GVN and US war-related spending without a corresponding increase in taxation resulted in greatly increased purchasing power. Second, potential domestic production was lost owing to war damage, insecurity, and labor shortages caused by increased government manpower requirements. Therefore, increasing imports was a means both to avoid runaway inflation by satisfying increased demand and to maintain the level of consumption by making up for war-related losses in production.

22. During the next five years, imports will continue to be viewed as an anti-inflationary tool, but the level of imports also will be a crucial factor in determining South Vietnam's rate of economic growth. To a certain extent imports can be reduced by replacing foreign products with domestic products in the Vietnamese market. But at the same time expansion of agricultural and industrial production will require more imports of raw materials, intermediate goods, and fuels. Moreover, imports of finished goods could not be sharply reduced without a reduction in real domestic incomes.

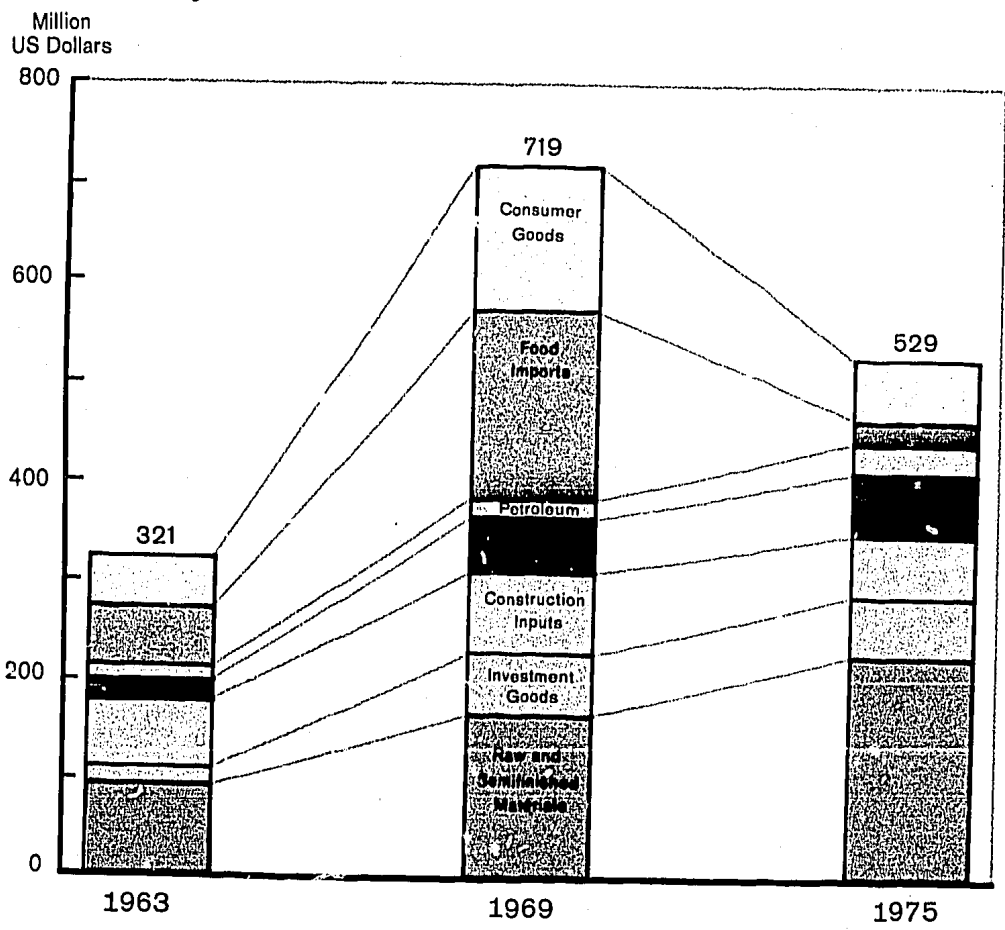
23. Projections of total imports for 1975 were obtained by projecting seven major categories of imported goods. High and low estimates were made for each category and these were summed to give high and low projections for total imports (see Figures 1 and 2). Because the two totals represent the sum of all the high and low component estimates, neither appears a likely outcome. Instead, these are intended more to serve as upper and lower limits on a range of possible import levels that may be consistent with constant per capita real incomes and productivity. The low projection, \$529 million, assumes the greatest degree of import substitution, category by category, that South Vietnam could reasonably expect to achieve by 1975. For instance, this projection assumes, among other things, that a fertilizer plant now under consideration will be operating at 50% of its planned capacity by 1975 and that all cement consumption in Vietnam will be satisfied by domestic production in 1975. The high import projection of \$811 million, on the other hand, is based on less success in substituting domestic production for imports. In this projection, for example, it is

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SOUTH VIETNAM IMPORTS Low Projections for 1975

Figure 1



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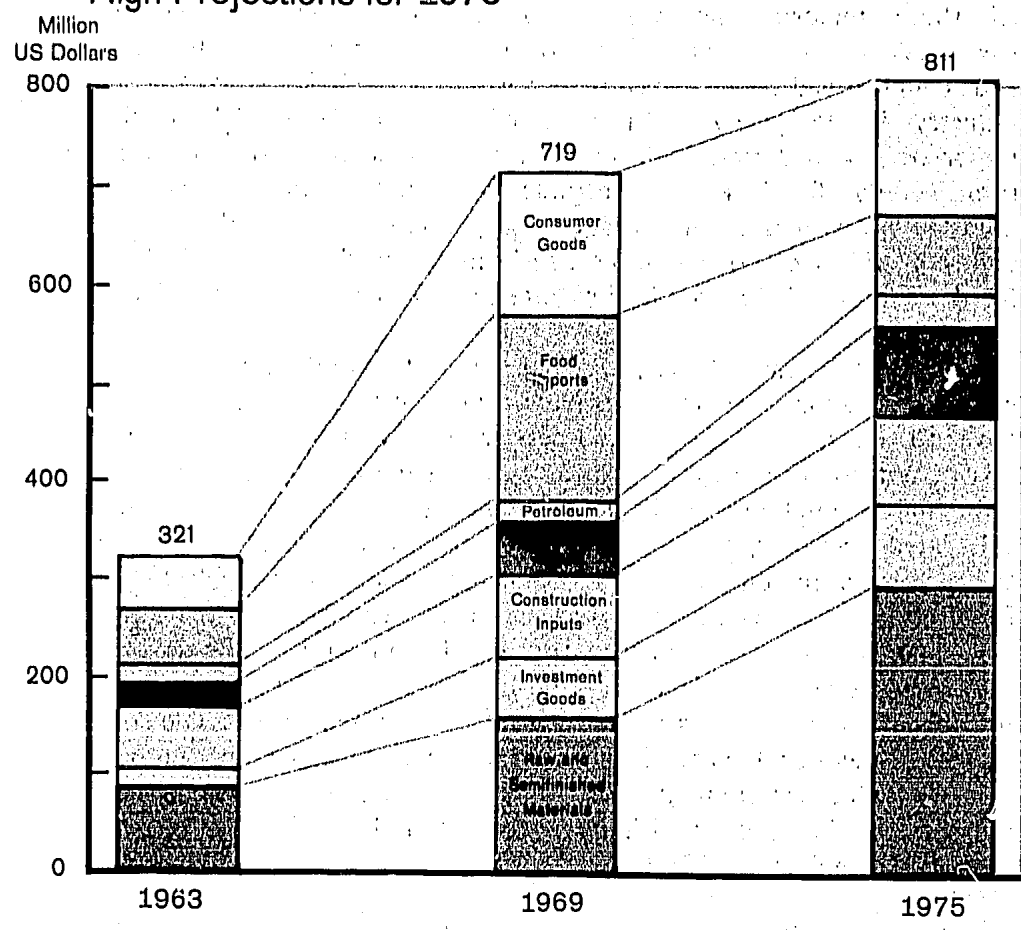
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SOUTH VIETNAM IMPORTS High Projections for 1975

Figure 2



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assumed that there will be no domestic fertilizer production by 1975 and that the country will not be self-sufficient in cement. 11/

24. In both projections the largest single category in 1975 is imports of raw materials and semi-finished goods processed by the industrial sector. An analysis of South Vietnam's imports and industrial production since 1963 shows that industrial output depends heavily on imports and that this dependence has increased surprisingly little over time. Because of the variety of uses of many imported commodities and the fact that some categories of imports are not delineated clearly, it is impossible to isolate all those imports that went into industrial production specifically. Nevertheless two major categories of imports -- raw materials and semi-finished goods -- probably were channeled almost exclusively into industry. In 1963, 28% of the value of industrial output 12/ consisted of imported raw materials and semi-finished goods; by 1969 this share had risen to only 30%. Based on the rough calculated coefficients and assuming industrial growth rates of 5% and 10% per year, imports of raw materials and semi-finished goods -- some \$167 million in 1969 -- would range from \$224 million in 1975 for the low rate to \$296 million for the higher rate.

25. Other imports required for domestic production -- investment goods, agricultural inputs, petroleum, and construction goods -- also will have to increase if the Vietnamese economy is to grow. Imports of investment goods and petroleum are presumed to grow at least as fast as industrial production. 13/ Projections of imports of agricultural inputs are calculated according to a 7.5% yearly increase from the 1969 level less the estimated amount of fertilizer South Vietnam will be able to produce for itself by 1975. These projections are consistent with technical estimates of increases in fertilizer consumption in Vietnam. Imports of construction materials probably could be reduced somewhat assuming that requirements for galvanized steel sheets for roofing, the major item in this category, will be reduced as war damage diminishes and refugee resettlement is completed. The estimated requirements for imports in these four categories in 1975 range from \$215 million (Figure 1) to \$301 million (Figure 2), compared with \$217 million in 1969.

26. Since it appears that imports of almost all categories of goods discussed above will increase by 1975, South Vietnam's ability to reduce

11. For methodology used to estimate imports in 1975 for each of the seven major categories of goods, see Appendix C.

12. For methodology used to calculate the value of industrial production, see Appendix D.

13. Imports of investment goods move erratically from year to year because of the impact of particular investment projects. Over several years, however, they should reflect the trend in industrial production.

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its total import bill will primarily depend on how much it can reduce imports of foodstuffs and consumer goods. The growth of food imports from 1963 to 1969 was greater than that of any other category of goods, increasing from \$61 million in 1963 to \$191 million in 1969. Food imports reached a high of \$265 million in 1968, the year of peak rice imports (in value terms). Imports of consumer goods also grew rapidly, from \$49 million in 1963 to \$145 million in 1969. Together, imports of foodstuffs and consumer goods accounted for 47% of total imports in 1969.

27. By 1975, increased Vietnamese agricultural production probably will permit a reduction in food imports. Rice self-sufficiency should be reached before 1973; and this development, coupled with increased output of other products, should reduce requirements for food imports to between \$25 million and \$75 million by 1975. Increased industrial production in South Vietnam will permit some substitution of domestic items for consumer good imports, but the extent to which these imports are reduced depends greatly on the strength of inflationary pressures, tax and exchange rate policies, and the political situation through 1975. It seems likely that consumer goods imports in 1975 will be no higher than the 1959 level of \$145 million and no lower than the 1960-65 average of \$63 million.

28. The low projection, for total imports, would result in a sharp reduction in imports per capita from \$40 in 1969 to \$25 in 1975, not much above the 1963 level of about \$20. In the high projection, imports increase slightly in the aggregate, but remain substantially constant in per capita terms.

29. The underlying assumptions of the projections in Figures 1 and 2 are that the Vietnamese will about maintain their present per capita real income levels. To suggest some of the effects of greater import restriction, we have allocated imports within an annual ceiling of \$400 million during 1972-75 (see Appendix E) -- slightly less than \$20 per capita.

30. There are, of course, many possible ways a \$400 million import ceiling could affect the economy. We assume priority would be given to agricultural development because of that sector's low import content and high ability to absorb labor. In such a program, the \$400 million import ceiling could permit the expansion of imported agricultural inputs necessary for rapid growth in agriculture. This expansion would probably allow significant reduction in food imports over the period without declines in the per capita food supply. Even so, the remaining foreign exchange would not be adequate to continue the current rates of industrial growth. Rough calculations in this illustrative case show that an annual industrial growth rate of less than 2-1/2% (compared to 7% during 1963-69) would result. Such a growth rate would support some increase in availability of

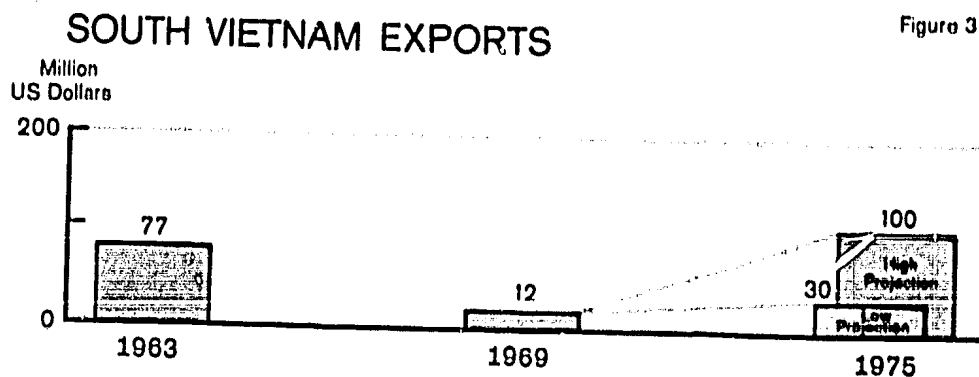
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domestically produced consumer manufactures, but this output would be far more than offset by reductions in consumer imports. Only items considered to be highly necessary, such as kerosene for cooking, could be imported, and the total quantity of industrial consumer goods available on the Vietnamese market could be reduced by up to 20%. Moreover, as indicated earlier, considerable local unemployment could develop.

Exports

31. Even should South Vietnam manage by 1975 to reduce imports to or below our low estimated \$529 million, it still would have an enormous trade deficit. Exports, which amounted to only \$12 million in 1969, ^{14/} probably will not increase to more than about \$100 million by 1975 and could increase to as little as about \$30 million (Figure 3). ^{15/} The world demand for rice and rubber, South Vietnam's major exports in the past, is uncertain, and, in the case of rubber, the production problems may also limit the volume of exports. Fishing and forest products could become



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14. Balance of payments data show total exports in 1969 amounting to \$33 million. Exports of domestically produced items amounted to \$12 million, and the remainder were re-exports, mainly petroleum and scrap iron.

15. For detailed discussion of export prospects, see Appendix F.

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increasingly important exports but will be limited by supply conditions through 1975. In both the high and low projections, exports of all other commodities are estimated to return to the 1963 level of about \$7 million.

32. If South Vietnam is to achieve even a moderate rate of economic growth it clearly will need considerable help. The United States currently is financing almost all of South Vietnam's imports. Under the most optimistic assumptions regarding the level of imports and exports in 1975, South Vietnam still will require over \$400 million in foreign exchange from foreign sources to maintain per capita real incomes at present levels. The deficit could amount to nearly \$800 million if little is done to hold down imports. Private foreign investment is unlikely to be a significant source of funds during the next several years. An end to hostilities and the continuation of a non-Communist government would be sufficient to attract some investors, but large-scale investment almost certainly will not be forthcoming unless the government eliminates many of its bureaucratic and discriminatory practices against foreign businessmen and offers real incentives to invest. Official foreign aid will be needed to fill the foreign exchange gap, and the United States will continue to be the major provider. Japan is the only other large potential source of foreign aid, and there are no indications that the Japanese intend to provide sizable amounts of money to South Vietnam within the next five years.

III. Overall Economic Relationships

33. Employment levels and the foreign trade balance are determined by a great many interacting forces, and particular results can be obtained in different ways. Perhaps the crucial determinant is the security situation. Improvements in GVN control will permit the expansion of cultivated area, construction of major industrial complexes, and a significantly improved capability for internal distribution of goods - all conditions with obvious importance for employment and foreign trade. GVN monetary, fiscal, and exchange rate policies will affect price relationships and thus will influence the demand for imports, the development of domestic export and import substitution industries, and the movement of labor between the cities and the countryside. Finally, the political strength of the GVN will determine how far authorities can go in displacing popular consumer imports with greater imports of investment materials and equipment.

34. The main economic constraint on South Vietnam's development will be the supply of foreign exchange. In the short term, opportunities for substituting domestic production for imports are not large, except in the case of foods. Over several years, however, such possibilities become much greater and the government consequently has much wider policy choices.

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35. Therefore, there are many possible time-paths for achieving specific foreign trade and employment levels five years from now. Domestic growth might be concentrated on specific sectors whose products would constitute significant import substitution. Thus, importing of large quantities of investment goods would take place in the initial period, followed in time by lower levels of imported finished goods and somewhat higher levels of imported raw materials. Alternatively, full-employment strategy might be centered on wide-based export growth with little attempt to reduce high levels of imports, but rather with the aim of financing the foreign goods with exchange earnings from higher export sales.

Conclusions

36. Growth of agriculture will largely determine the employment situation in South Vietnam and the trade balance in the next few years. During 1971-75 an estimated 1.4 million new jobs will be needed to employ new labor-force entrants, as well as refugees and workers whose jobs are dependent on the US presence in Vietnam. Most of this labor could be absorbed in agriculture, plantations, fishing, and forestry without a drop in per capita output. The rapid increase in agricultural yields that will be required seems achievable in view of performance in other Asian countries and recent Vietnamese experience. Rapid expansion of non-agricultural employment is a more uncertain matter because it would require increased imports, which South Vietnam may not be able to obtain. Even with substantial increases in agricultural output, slow growth in the non-agricultural sector could result in substantial local unemployment.

37. During the next five years, the major economic constraint on the growth of industry - which is heavily dependent upon imported inputs - probably will be the supply of foreign exchange. The agricultural sector (including forestry and fishing), although requiring some imported inputs, could provide large savings of foreign exchange - possibly as much as \$250 million in 1975, given optimistic assumptions about imports and exports of foodstuffs and imports of agricultural inputs. Increased industrial production could also replace certain imports of finished and intermediate goods. Nevertheless, if Vietnam is to experience continued economic growth and no significant decline in per capita real income, the most optimistic estimates concerning import substitution and export promotion still leave the GVN with a trade deficit of over \$400 million in 1975, most of which would have to be financed by the United States.

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CONFIDENTIAL**APPENDIX A****Employment Dependent
on the US Presence**

Vietnamese employment resulting from the US presence in South Vietnam consists of direct and derived components. Direct employment includes the Vietnamese performing services or producing goods consumed by the United States. Those directly employed would include, for example, both the Vietnamese paid directly by a US unit or individual as well as the Vietnamese employed in a business under contract to a US organization. Derived employment, on the other hand, consists of those jobs created as a result of the spending by the Vietnamese directly employed by the United States. This would include, for example, those working to provide goods and services to Vietnamese employed in a company contracting to a US organization.

Direct Employment

At the end of 1969, recorded employment of Vietnamese nationals in the US sector was 148,000. This, however, greatly understates the actual number of Vietnamese employed by Americans. Excluded, for example, are laborers hired on a temporary basis and private employees of military and civilian personnel. In order to estimate all direct employment, total US piaster spending on labor services in 1969 was calculated - employing two different methodologies - and divided by a calculated average annual wage figure.

In 1969 the United States spent a total of about 45 billion piasters in South Vietnam. Since most US organizations depend primarily on US supply systems for their material support, it is assumed that the major portion of US piaster expenditures - probably between 75% and 90% - consists of wages. Using this percentage range, total US piaster spending on labor would have amounted to 34-40 billion piasters in 1969.

US piaster spending on labor also was estimated by separating out of total US piaster spending those items most closely identified with labor costs. These are given for 1969 in the accompanying tabulation.

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	<u>Billion Piasters</u>
Special forces	4.5
MACV	23.4
Operations and maintenance and assistance in kind	
Labor	14.8
Contract services	3.9
Construction labor	4.7
<i>Total</i>	<i>27.9</i>

To this total of 27.9 billion piasters was added 75% of personal accommodation spending (5.2 billion piasters) and 75% of Revolutionary Development (RD) cadre spending (3.0 billion piaster), which yields a total of 36.1 billion piasters for US piaster spending on labor. Thus the range for US piaster spending on labor - based on two separate methodologies - is from 34 billion piasters to 40 billion piasters. The midpoint, or 37 billion piasters, which is approximately the figure calculated by the second methodology, was selected for the estimate of US piaster spending on labor.

In order to calculate an average wage rate for the US sector, the total number of Vietnamese employed in the US sector was separated into four groups according to the survey of job skills of Vietnamese employees in the US sector compiled by the Manpower Information Staff of the US Embassy in Saigon. An average 1968 wage, including family benefits, bonuses, and overtime pay, taken from Vietnamese Compensation Structures published by USAID, Saigon, was assigned to each group as shown in the accompanying tabulation.

<u>Skill</u>	<u>Percent of Recorded US Employment</u>	<u>Total Average Monthly Wage in 1968 (Piasters)</u>
Professional and technical	6.4	35,696
Clerical	13.3	18,461
Skilled and semi-skilled	41.1	11,261
Unskilled	39.2	6,218

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It was assumed that these wage rates also applied to the non-recorded workers. The resulting average monthly wage would be 11,806 piasters, or a total of 141,672 piasters for 1968. This figure was inflated by 30% to allow for wage increases during 1969. In 1969, therefore, the average annual wage is estimated as roughly 185,000 piasters.

The total US wage bill of 37 billion piasters calculated above was divided by 185,000 piasters. This calculation results in an estimate of 200,000 direct employees in 1969.

Derived Employment

Data on the number of jobs resulting from spending by those Vietnamese directly employed by the United States are not available. It is possible, however, to make a rough estimate based on consumption data. Increased US spending in South Vietnam has resulted in comparatively little increased domestic production of goods but sizable increases in services performed. Roughly 20% of Vietnamese private consumption is spent for services. Therefore, about one-fifth of increases in income due to new employment in the US sector would translate into demand for services which would be met by increased domestic use of labor. The income derived from this new employment in the services sector also would lead to increased demand for services. After six cycles of income - about one year at the apparent income velocity in South Vietnam - the derived increase in services would be 0.25. Thus total employment dependent on the US sector would be the 200,000 directly employed plus 25% of those directly employed, or a grand total of 250,000 persons.

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CONFIDENTIAL**APPENDIX B****Labor-to-Land Ratio**

According to official GVN estimates, South Vietnam's agricultural labor force (excluding plantations and fishing) numbered 4.0 million in 1960 and 3.8 million in 1966 - the only two years for which official estimates are available. These figures, however, are very rough, as indicated by the fact that the 4.0 million figure for 1960 is a revision of an earlier GVN estimate of 5.5 million. Moreover, the loss of only 200,000 persons from the agricultural labor force between 1960 and 1966 implied by the official estimates seems somewhat small in view of the large number of refugees in South Vietnam as well as the known large-scale movement of rural inhabitants to urban areas in search of greater security or better jobs. Assuming, however, that the 3.8 million figure for 1966 is roughly correct, adjustments must be made for recent years. In view of GVN mobilization and the continued generation of refugees and migration to urban areas, it is likely that at least 100,000 persons left agricultural employment in both 1967 and 1968. A reverse flow began during 1969 as security improved in many areas of the country, and although this flow cannot be quantified accurately, it is possible that roughly 100,000 persons rejoined the agricultural labor force in 1969. Therefore, by very rough measurement, there probably were about 3.7 million in the agricultural labor force by 1970.

According to the Vietnamese Agricultural Economics and Statistics Service, a total of 2,838,200 hectares was cultivated in 1969. Included in this figure, however, are 122,700 hectares of plantation land and an unknown number of hectares that were double counted because they yielded a second crop of rice. In earlier years, about 270,000 hectares were double counted. Because of the introduction of miracle rice, which generally enables the farmer to grow two crops, it is assumed that at least 300,000 hectares were counted twice in the 1969 estimate of cultivated area. A more accurate estimate of the area cultivated in 1969, therefore, would be about 2,415,500 hectares. Using this estimate and the 3.7 million agricultural labor force figure mentioned above, the ratio of labor to land is 1.5.

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CONFIDENTIAL**APPENDIX C**Import ProjectionsRaw and Semi-Finished Materials

This category consists of materials used in the manufacture of consumer goods. Detailed analysis of industrial production indicates that these imported materials consistently totaled about 30% of the value of industrial output in real terms from 1963 to 1969. If the industrial sector grows at an annual rate of 5% and the import ratio remains at about 30%, some \$224 million of imports will be required in 1975. Should industry expand at 10% annually, then imports of about \$296 million will be needed.

Investment Goods

In recent years, about 70% of imported investment goods have been for the industrial sector. ^{16/} Assuming the continuation of this ratio and with the amount of capital goods needed by industry increasing in pace with industrial expansion, an annual 5% growth in the industrial sector would require a total of some \$62 million of imported investment goods in 1975. Projection of a yearly rate of increase of 10% in industrial expansion would yield a high import level of about \$81 million by 1975.

Agricultural Inputs

Projections of imported agricultural inputs are based upon an estimated 7.5% annual increase in requirements, with alternative assumptions about domestic fertilizer production capabilities. To the extent that Vietnam can produce fertilizer, which accounted for more than three-fifths of total imports in this category in 1969, from domestic resources, this major import requirement can be reduced. If by 1975 the fertilizer plant currently being proposed reached 50% of its planned capacity of 500,000 metric tons, import requirements could be cut by some \$25 million. Imported agricultural inputs are thus projected to range from \$65 million to \$90 million in 1975.

Construction Inputs

The projection for imports of construction goods assumes that the imported quantity of iron roofing sheets, which has grown dramatically

^{16/} This excludes the large and unprecedented expenditures on commercial aircraft in 1969.

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in recent years, will be reduced (concomitant with decreased war damage) to the average level of imports during 1962-64. With other construction goods imports increasing at the rate of 10% from the 1969 level, imports in this category in 1975 would total about \$91 million. If Vietnam succeeded in domestically producing its total requirement of cement by 1975, as has been proposed, import requirements for construction goods would be reduced by \$11 million, or the value of cement imported in 1969. A rate of increase of 5% from the 1969 level of construction goods imports, less cement imports, would amount to a low estimate of \$61 million.

Petroleum

Imports of petroleum and related products are estimated to grow at about the projected rates of industrial expansion. An annual growth rate of 5% would result in some \$29 million worth of imports in 1975, while the 10% rate would imply some \$39 million in imports. These rates straddle the actual rate of increase in petroleum imports experienced from 1963 to 1969.

Food Imports

The greatest increase in imports during the 1963-69 period was that of foodstuffs. If Vietnamese agricultural production increases as anticipated, food imports should be considerably less in 1975 than in 1969. At a minimum, domestic production should be able to replace US rice and PL-480, Title II (refugee relief), imports. With all other imports of food remaining at the 1968-69 average, some \$75 million would be imported in 1975. With the reliance upon domestic production for all food except wheat flour and estimated powdered milk requirements, imports in this category could drop to \$25 million in 1975.

Consumer Goods

Vietnamese imports of consumer goods, which were in part used as a means to control inflation, were greatly increased during the period 1966-69. It is improbable that consumer imports in 1975 would be greater than the 1969 level of \$145 million. Increased domestic production of consumer items should tend to reduce the need for imports. Nevertheless, considering population increases and consumer acquaintance with a wide variety of foreign goods, imports of consumer goods will not likely fall below the average 1960-65 level of \$63 million -- especially if inflation remains a major concern by 1975.

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CONFIDENTIAL**APPENDIX D****Value of Industrial Production**

Two sources of data exist for Vietnamese industry: (1) the National Bank of Vietnam national accounts data, and (2) the National Institute of Statistics (NIS) industrial production indexes and physical production data. There are serious discrepancies between the two sets of data. The NIS series is less comprehensive and does not include small firms. It determines production trends for about 120 products through quarterly surveys of about 300 firms. The National Bank series employs a survey of about 400 firms plus the NIS data. It is believed that the National Bank data are more comprehensive and thus the weights of the industrial subsectors in the National Bank's index probably are more accurate. National Bank data, however, are available only for 1963 and 1965, while the NIS data have been published each year since 1962. In order to construct a series on the value of industrial production, therefore, the National Bank data on value of production, by subsector, in 1963 were used as weights and then increased by the appropriate NIS index of output from 1963 to 1969. The 1969 values of production, by subsector, were then summed, resulting in a total value of industrial production in constant 1963 prices. According to this index, the value of industrial output increased 51% from 1963 to 1969, or at an average annual rate of 7.1%.

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APPENDIX E

Import Restriction at \$400 Million

To assess the impact of a radical reduction in foreign exchange availability on the Vietnamese economy, we have arbitrarily chosen to examine a pattern of allocation through 1975 of an amount of imports not to exceed \$400 million per annum. This illustrative allocation (see Table 2) holds imports of consumer goods and foods to essential items and maximizes import substitution. We have assumed that agricultural development will receive substantial policy support from the GVN and that the focus of this policy will be crop diversification. Furthermore, we have assumed that a pressing foreign exchange constraint would tend to focus industrial development on import substitution. Within these broader assumptions we have based our analysis on past import patterns, projections of demand, and specific industry studies.

Although the quantities of foreign exchange allocated to agricultural inputs are probably adequate to permit strong growth in this sector, the low remaining levels of imports for non-agricultural production imply significant constraints on growth of Vietnamese industry. The extent of import substitution assumed for such products as sugar, fertilizer, cement, condensed milk, and glass containers would be difficult to achieve. The figures in Table 2 incorporate, for instance, the assumption that all of Vietnam's sugar, cement, and condensed milk needs -- plus almost half of its fertilizer requirements -- will be met by internal production by 1975. Such expansion in these industries would be consistent with an estimated 14% overall increase (2.2% annual increase) in the total value of Vietnamese industrial output from 1969 to 1975, if the remaining industries maintained the 1969 level. As indicated in Table 2, however, the residual of foreign exchange left for the rest of industry would force structural changes in production. The availability of imports of raw and semi-finished industrial imports would decline from 30% of industrial output to around 25%. If the required structural changes did not occur, industrial growth would be reduced further.

Table 2 assumes that consumer imports would be limited to about \$50 million annually, a cut of almost two-thirds from the 1969 level. With growth of domestic output limited by restrictions on imports of materials, this drop in consumer goods imports implies a reduction of up to 20% in the total quantity of industrial consumer goods available on the Vietnamese market. The resourceful handicraft industry could make up some but not all of this shortfall. Remaining in the market at approximately

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current levels would be such consumer items as medicines and fuel for cooking. Removed from the Vietnamese economy, or only rarely available and then at much higher prices, would be items such as motor vehicles, tires and tubes, books, refrigerators, and radios.

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Table 2

South Vietnam: Illustrative Import Time-Path a/

	Million US \$			
	1972	1973	1974	1975
Investment goods	38.3	42.5	51.7	61.4
Agricultural inputs	70	75	80	64
Petroleum	22	22	22	22
Construction goods	56.3	50.0	45.2	45.2
Food	39.2	28.0	21.0	18.6
Consumer goods	49.1	49.1	49.1	49.1
Raw and semi-finished materials	125.1	133.4	131.0	139.7
Textiles, beverages, and tobacco	55.9	55.9	55.9	55.9
Residual (other industries) <u>b/</u>	69.2	77.5	75.1	83.8
<i>Total</i>	<i>400</i>	<i>400</i>	<i>400</i>	<i>400</i>

a. Foreign exchange for investment goods is allocated only for the expansion of three specific industries and to cover depreciation. The allowance for consumer goods is limited to those items least replaceable which are critical to sustaining minimum acceptable living standards (drugs, kerosene, and medical equipment). Foods such as powdered milk and wheat flour remain but other items will be reduced with domestic agricultural growth.

Imports of petroleum, construction goods, and inputs to the domestic textile, tobacco, and beverage industries would remain unchanged or be reduced when possible to do so without reduction of current levels of output. Provision is made for increases in imported agricultural inputs at a rate of 7.5% per year beginning in 1969, consistent with the assumptions in Section II. An exception is made, however, for fertilizer, where imports are reduced \$25 million in 1975 to reflect domestic production of this commodity.

b. The percentage of raw and semi-finished imports of the value of output for the "other industries" category was 30% in 1969. The percentages implied for constant output at the level by the above residuals are: 1972, 22%; 1973, 25%; 1974, 25%; and 1975, 27%.

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CONFIDENTIAL**APPENDIX F**Export Projections

The most optimistic of the two export projections in this memorandum is largely based on a 1969 study by the Joint Development Group (JDG) titled *Export Prospects of Vietnam* (Volume I). This report estimates that South Vietnam could have a market for 125,000 metric tons of rice within five years of the end of the war. Most observers now agree that this goal could be attained by 1975. Assuming that by 1975 the price per ton falls to about \$100 -- the average world price during the late 1950s and early 1960s -- the Vietnamese could export \$12.5 million worth of rice by 1975. The JDG report also estimates that in the short term South Vietnam could produce 70,000 to 80,000 tons of rubber without extensive replanting and that a foreign market exists for this amount and more. If, as the JDG assumes, the world market price of rubber levels off during the next few years at about \$500 per ton, South Vietnam could expect to export as much as \$40 million worth of rubber. The JDG also projects that exports of forestry and fishery products could amount to at least \$54 million and \$30 million, respectively, by 1980. If exports reach half that level by 1975, they would amount to \$42 million. Assuming that all other exports return to the level of 1963, or about \$7 million, this estimate of exports would total to \$101.5 million in 1975.

A least optimistic set of assumptions in these same categories supports the low end of our 1975 export value range. Thus, it is possible that there will be only a very limited market for Vietnamese rice in 1975 and that rubber production will not recover to earlier levels. Embassy officials in Saigon have estimated that, with sufficient manpower, reexploitation of planted areas could boost rubber production to about 45,000 tons, or about 60% above the 1969 level, but that further increases in output will require substantial capital investment. Assuming some domestic consumption, rubber exports might amount to only about \$20 million. It also is possible that because of increased domestic consumption or other factors, exports of fish and seafood, which amounted to only \$150,000 in 1969, will increase to no more than the peak of \$1 million reached in 1966. According to a recent US Embassy estimate, exports of forestry products, mainly logs and lumber, could in the short term amount to about \$5 million annually if a lumber concentration yard were established. Under these pessimistic assumptions, then, total exports in 1975 would amount to \$33 million, assuming that exports other than rice, rubber, fish, and forest products returned to the 1963 level of \$7 million.

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