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Chapter 1. FOREIGN TRADE AND THE ECONOMY: IMPORT PATTERNS AND POLICIES

INTRODUCTION

One major characteristic of the Philippine economy is that it is to a large extent an open economy. It earns its international livelihood with a few primary exports. The average ratio of imports to GNP during the postwar period has been estimated at different values -- 17 or 23 per cent; the corresponding ratio for exports is 15 or 20 per cent.[1]

During the first decade and a half since independence in 1946, the balance of payments position had been in precarious shape. Coupled with the desire to stem the tide of apparent high demand for foreign goods, a conscious effort at promoting domestic import substitution in manufacturing was attempted. Through the instruments of import controls and, later, foreign exchange controls and a variety of devices aimed at reducing foreign demand, the pattern of imports became changed to suit the industrialization program. In addition, the domestic import substitution effort was aided by blanket tax exemptions from all taxes.

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[1] See D.S. Paauw, The Philippines: Estimates of Flows in the Open, Dualistic Economy Framework, 1949-1965 (Center for Development Planning, National Planning Association, 1968), especially Tables III-5 and 6. Paauw made the higher estimates of the average import and export ratios. The lower ones were implied from national income estimates of the National Economic Council, as derived by Paauw.

This is a study of import demand in the Philippines for various goods from 1953 to 1963. This period is certainly a most interesting one. It covers the years when foreign exchange controls were the principal instruments of economic policy with respect to development. It also reaches into the transition years away from these controls, beginning in 1960, to the removal of these controls in 1962. At the time when the study was conceived, the period happened to be the longest that would permit the construction of time series of import data having as basis a uniform classification.

THE PHILIPPINE ECONOMY, 1953-1963

The Philippine economy during the period under study experienced what might be called impressive growth. Yet, this growth may be reassessed from the viewpoint of whether or not the policies adopted by the economy were clearly those that were leading to sustained longer run development. On the whole, the set of policies which led to industrial import substitution began quite earnestly and impressively in terms of rates of growth. But its peculiar emphasis soon to be the major limiting factor to further growth. Having been based on final demand import substitution, it was to go out of steam as soon as the domestic market ceiling was reached. When judged in this context, it may seem that the economy could have performed certainly much better during the period under consideration.[2]

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[2]Recent research has assessed this development from these standpoints. See J.H. Power, "Import Substitution as an Industrialization Strategy," Philippine Economic Journal, vol. V, no. 2 (Second Semester 1966); J.G. Williamson, "Eco-

Table 1-1 shows some economic indicators which demonstrate some salient points about the performance of the economy. GNP has risen at about 7 per cent in constant 1955 price. The population during this time, on the basis of intercensal rates of growth, grew at the rate of 3.2 per cent. This meant an average rate of growth of GNP per head of 4 per cent per year. This growth was achieved under a regime of stable prices. The increase in the consumer price index was only about 2.1 per cent per year.

One reason for this observed low price inflation was that from the early prewar period to 1955, Philippine price policy was deflationary in character. The decision to retain the old prewar exchange rate for the peso, which was apparently dependent only on running down the windfall levels of foreign exchange reserves at the end of the war, led to a deflationary policy. While most countries at the end of the war adjusted their exchange rates to conform with the realities of the occasion, the Philippines bravely took a different approach. In the deflationary policy which followed, the foreign exchange reserves were sacrificed. From a high of almost $700 million of foreign exchange reserves, by 1953 these reserves had fallen to about $300 million through this de-

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nomic Growth in the Philippines: 1947-1965: The Role of Traditional Inputs, Education and Technical Change," DP 67-8 (September 20, 1967); J.G. Williamson and G.P. Sicat, "Technical Change and Resource Allocation in Philippine Manufacturing: 1957-1965," DP 68-21 (June 15, 1968); G.P. Sicat, "A Design for Export-Oriented Industrial Development," DP 67-5 (June 20, 1967) and "The Manufacturing Sector After Decontrol," DP 67-9 (August 20, 1967). [DP references are Discussion Papers at the Institute of Economic Development and Research, University of the Philippines.]

Table 1-1. ECONOMIC INDICATORS FOR THE PHILIPPINE ECONOMY, 1953-1963

Economic Indicator	Levels		Rates of Change	
	1953	1963	Eleven Years 1953-63	Average Per Year
1) GNP at 1955 prices (₱ Million)	7,621.0	13,631.0	0.789	0.072
2) Consumer Price Index (1955=100)	102.5	126.5	0.234	0.021
3) Physical Vol. of Mfg. (1955=100)	79.0	180.5	1.285	0.117
4) Physical Vol. of Ag. (1955=100)	85.2	134.8	0.582	0.053
5) Money supply (₱ Million)	1,224.6	2,954.3	1.412	0.128
6) Tax Revenue[a] (₱ Million)	562.8	1,461.3	1.596	0.145
7) Foreign Exchange Reserves ($ Million) end of year	296.0[b]	147.5[c]	-0.502	-0.046
8) Imports ($ Million)	452.4	618.2	0.366	0.033
from: U.S.	347.0	253.7	-0.269	-0.024
Japan	20.1	104.9	4.219	0.384
9) Exports ($ Million)	398.3	727.1	0.826	0.075
to: U.S.	271.2	330.6	0.219	0.020
Japan	48.3	198.3	3.106	0.282
10) Population (Million)	19.2[d]	27.1[d]		0.032[d]

[a]Combined collection of Bureau of Customs and Internal Revenue.

[b]Highest reserves in 1945 = 669.1.

[c]Lowest reserves in 1957 = 140.0.

[d]These population figures are for 1948 (instead of 1953) and 1960 (instead of 1963); the rate of growth cited is slightly different from the 1948-1960 intercensal rate of 3.1 per cent. See F.W. Lorimer, "Analysis and Projections of the Population of the Philippines," First Conference on Population (University of the Philippines Press, 1965), especially p. 215.

flationary policy. Thus, the import demand generated by the economy in order to promote internal price stability was made at the expense of the foreign exchange reserves of the economy. The next section will be devoted to the discussion of import and exchange controls.

In spite of the high level of imports and of the low level of exports, the rate of growth of exports and all other forms of foreign exchange inflows of 7.5 per cent per year was unable to absorb all the import demand, which grew at an aggregate yearly rate of only 3.3 per cent.[3] This development, of course, came at the expense of the foreign exchange reserves. By 1955 the deflationary trend came to a halt. The price level since then had gone up, although the period from 1955 to the late 50's was one of price stability compared to the period after 1963.

In Table 1-2 the relative composition of GNP and the sectoral changes in contribution to GNP are shown. We note the high rate of growth of manufacturing and construction relative to most other sectors. The nonagricultural and nonservice sectors have grown much faster than agriculture taken as a whole. The share of agriculture to total GNP changed from 35.3 per cent in 1953 to 31.2 per cent by 1963; manufacturing moved from 14 per cent to 18 per cent.[4]

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[3]These rates of growth of exports and imports are characterized by lack of irregularity in the levels of imports and exports. The time profile of these two trade magnitudes will be shown later. See Figure 1-1, below, p. 11

[4]There is a seething controversy surrounding the estimates of the relative sectoral contributions to national income

Table 1-2. COMPONENTS OF GNP AT CONSTANT 1955 PRICES, 1953 AND 1963

A. Components of GNP	1953	1963	Eleven Year Growth (Per Cent)	Average Per Year Growth
Agriculture, Fishery & Forestry	2,394	3,703	0.55	0.05
Mining & Quarrying	108	172	0.59	0.05
Manufacturing	978	2,122	1.17	0.11
Construction	371	421	0.14	0.01
Transportation, Communication, Storage & Utilities	319	553	0.73	0.07
Commerce	965	1,757	0.82	0.08
Services	1,646	3,124	0.90	0.08

B. Per Cent Share of Sector	Per Cent Distribution		Relative Change in Per Cent Distribution
	1953	1963	
Non-Agriculture			
Manufacturing	0.14	0.18	0.04
Mining & Quarrying	0.02	0.01	-0.01
Construction	0.06	0.04	-0.02
Transportation, Communication, Storage & Utilities	0.05	0.05	-0.00
Commerce	0.14	0.15	0.01
Services	0.24	0.26	0.02
Agriculture	0.35	0.31	-0.04

Source: Revised NEC accounts (1968). Current value deflated by NEC constant price deflators, per sector.

The above represents some general background to the Philippine economy of 1953 to 1963. In the succeeding section, we discuss the institutions which affected the foreign trade sector.

The operation of import and exchange controls began in 1949, and became more institutionalized by 1951.[5] These policies were supplemented by promoting new and necessary manufacturing industries, which took the form of a law exempting from taxes those firms which engaged in production activities covered by the definition "new and necessary". In addition to preferential treatment that resulted from foreign exchange allocations, these policies also led to preferential credit treatments from the governmental financing institutions, notably the Development Bank of the Philippines. In 1957, the tariff code was revised and made into a more active device for protection of domestic industry.

During this period, the economy operated on the basis of a multiple exchange rate system. This was the natural result of

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between the Bureau of the Census and Statistics (BCS) and the National Economic Council. The different sectoral contributions derived in the 1961 BCS input-output study of the Philippine Economy, which was prepared by Census Director Tito A. Mijares with the cooperation of the U.P. School of Economics, has come to the conclusion that agriculture contributes only 13 per cent and manufacturing 28 per cent of GNP, the rest is the contribution of services. This large discrepancy is in part due to (1) a difference in valuation methodology, (2) to sectoral classifications, and (3) to more refined conceptual problems of measurement. The Mijares-BCS findings question the sectoral estimates of the NEC. This is an important question, which in my view is still hardly settled.

[5] It is always rewarding to read Golay's book when turning to the economic issues of Philippine development from independence up to 1960. See F.H. Golay, The Philippines: Public and National Economic Development (Ithaca, New York, Cornell University Press, 1961).

foreign exchange taxes, import taxes, and other fees on the sale of foreign exchange (being applied as they did at different periods). In general, the exchange control policy were supposed to maintain a rate of two pesos to the dollar. The new and necessary industries were freed from the payment of taxes, which included those that governed imports and foreign exchange transactions. Thus, there were two rates of foreign exchange from 1951 to 1959 -- one for favored imports and another for ordinary imports. These at once established a profit differential for the importing tax-exempt industries.

From 1954 to 1959 there was a special incentive that was given to the export sector in the form of a privilege to purchase with a portion of their earnings for direct importation into the Philippines. Known as the "barter" or "no-dollar import" law, it allowed the export sector to import at the same time without essentially passing through the foreign exchange control mechanism. At some point, the scheme allowed exporters to utilize 15 per cent of their exports to any country in exchange for goods specified by the exchange control authorities, as follows: 25 per cent "essential producer imports", 25 per cent "non-essential producer imports", and 50 per cent "essential consumer goods." Philippine exporters reacted favorably to these incentives.

The experience with the foreign exchange control system was one with mixed results. On the one hand, it allowed an enormous redirection of import demand to suit with the type of import substitution promoted. But the system proved to be accompanied by undesirable practices especially when the foreign exchange

supplies became much more scarce. A fundamental balance of payments disequilibrium appeared to present itself more clearly by the close of the fifties.

By 1960 some measures were already adopted to relax the foreign exchange controls. There was a gradual "decontrol" of foreign exchange transactions. With the assumption of the newly elected president from the opposition party in 1962, the decontrol program reached its climax. All forms of controls were abolished, with the exception of the 20 per cent retention of export earnings by the Central Bank. Roughly, these changes meant that the Philippine experiment in the dismantling of exchange controls began in 1960. The year 1960 is marked off in this study as the beginning of decontrol.

IMPORT PATTERNS: BROAD SKETCH

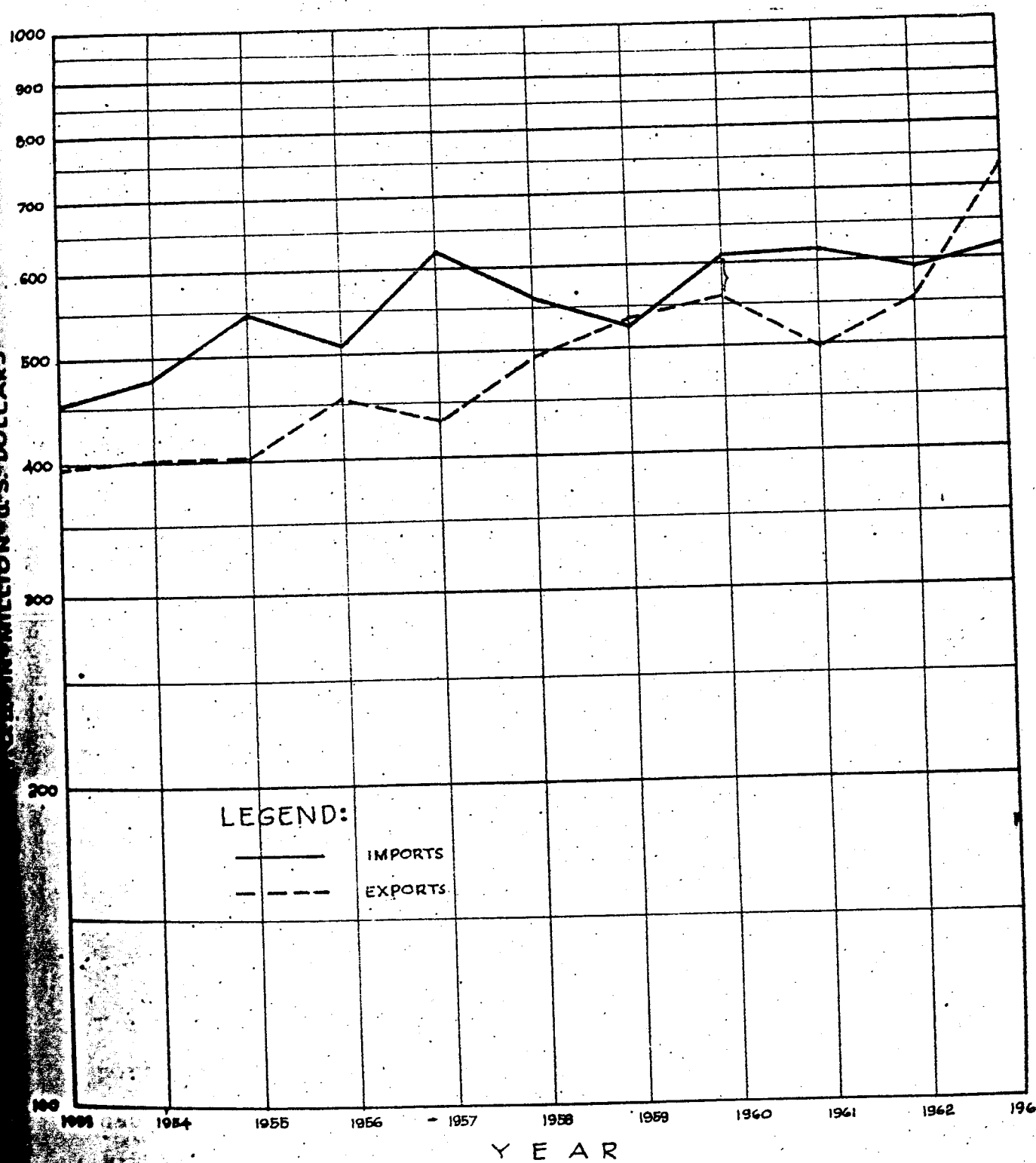
There are two ways of looking at the import patterns. First is to value imports in peso terms; the alternative is in US dollars. If the foreign exchange rate of the peso had remained essentially the same during the period, the matter would be exceedingly simple for the two values would only be different by the factor of the exchange rate. Since economic magnitudes would be more meaningful only in relation to others, an ideal way of examining imports would be to convert the figures into pesos, which leads to a conversion problem. We choose to report the import figures in US dollars in the following discussion. In the final section, when we relate imports to Philippine growth in GNP, we shall have to rely on imports converted into pesos.

Aggregate Time Profile of Imports. The time profile of imports in dollar values does not have a clear upward trend, as Figure 1-1 shows. For comparison, we also show the time profile of total exports, which as we have stated earlier began at a much lower level but had a higher rate of growth. The highest value of imports in the 1950's was in 1957. This was not surpassed until 1963, the terminal year of this study.[6] The changes in imports have only been gentle if we take 1953 and 1963 levels as the frame of reference. But looking at the total time profile, it is seen that this moved in different directions, somewhat belying the gentle per year growth of imports that may be implied. During the early postwar years, there was a tremendous surge of spending. This was largely the result of United States government spending in the Philippines which led to initially high levels of foreign exchange supplies. Imports, which were mostly from the United States at the beginning, were quite high, too, 77 per cent of all imports in 1953; but these were down to 43 per cent by 1963.[7] High import demand and the relatively low levels of export earnings (despite early recovery due to favorable conditions, such as those following from the Korean War) were the cause of the first import controls. By 1953, the beginning of the period under study, the control of foreign exchange transactions had been passed on to the Central Bank of the Philippines, which would play a key role in the allocations

[6]Imports had gone to much higher levels ever since, for instance, in 1966, imports were 138 per cent of the 1963 levels.

[7]See Table 1-1, above.

Figure 1-1. TIME PROFILE OF IMPORTS COMPARED TO EXPORTS, 1953-1963



Source: Central Bank Statistical Bulletin vol. XVII, September 1965.

of the import budget for the rest of the 1950's.

Time Profile of Imports by Broad Categories. There are several interesting ways of looking at the import patterns of the period by reference simply to the different classifications in use by the Central Bank and the United Nations at the ECAFE (Economic Commission for Asia and the Far East). The Central Bank classifications which began in 1954 are: by "end-use" and by categories determined for import and exchange control purposes. The last will be referred to as imports by "official" categories.

(1) Under the classification by end-use, imports were as follows:

(a) machinery and equipment
(b) unprocessed raw materials
(c) semi-processed materials
(d) supplies
(e) durable goods
(f) nondurable goods.

(2) The classification by "official" categories were:

(a) essential producer
(b) semi-essential producer
(c) non-essential producer
(d) essential consumer
(e) semi-essential consumer
(f) non-essential consumer
(g) unclassified
(h) decontrolled.

(3) The third classification, which is used by ECAFE, separates imports into two principal categories -- consumption goods or capital goods. We shall use this classification scheme in the study of the detailed commodity imports in the next chapters.

These classifications help to give a picture of the broad commodity import patterns of the Philippines. They also shed much light on the industrialization process.

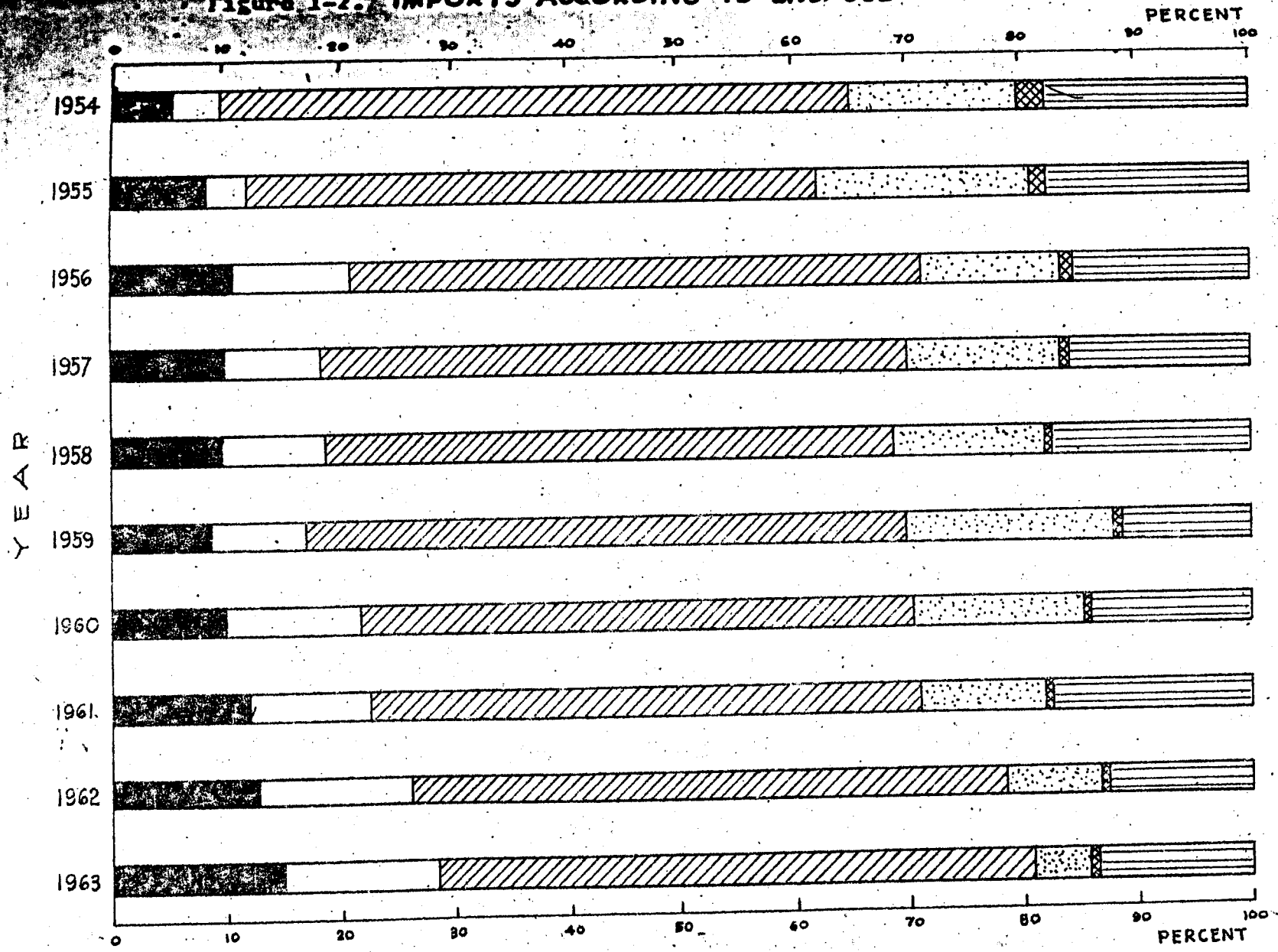
Figure 1-2 shows the distribution of imports by "end-use". The bulk of imports consisted of machinery & equipment and raw materials. These categories accounted for 64.6 per cent of total imports in 1954, 70.2 per cent in 1960, and 80.6 per cent in 1963. Machinery & equipment was only 6.1 per cent of total imports in 1954, 10 per cent in 1960, and 14.9 per cent in 1963. Thus, roughly a little over 10 per cent of importations from 1954 to 1963 were in the form of capital goods. If the raw material components are carefully analyzed, "semi-processed" raw material imports were very dominant compared to "unprocessed". Since many of the industries established during the 1950's were of the "import-dependent" variety, being industries usually at the final processing end, such a bias in import demand was just what was to be expected. Table 1-3 shows the proportions of unprocessed and semi-processed raw materials to total raw material imports.

Table 1-3.

	Raw Material Imports		
	Unprocessed	Semi-Processed	Total (Per Cent)
1954	15	85	100
1957	26	74	100
1960	31	69	100
1962	33	67	100
1963	35	65	100

Source: Central Bank, Statistical Bulletin, vol. 16 (March 1964).

Figure 1-2. IMPORTS ACCORDING TO END-USE



SOURCE: Central Bank Statistical Bulletin, vol. 16, March, 1964.

Figure 1-2

The pattern of distribution between processed and semi-processed raw material imports suggest that some shift in demand for raw material imports was occurring during the period under study.

The other components of imports by "end-use" supplies, durable and nondurable goods -- were largely of the consumer goods variety. Their relative proportion to total imports fell from around 35 per cent in 1954 to 19 per cent in 1963.

Figure 1-3 shows the proportions of imports classified by "official" categories. For purposes of the exchange control authorities, classification in accordance with "essentiality" and with "producer-consumer" dichotomies were used. The pattern of imports, according to this classification, shows that the proportion of producer goods to total imports rose. About 65 per cent of imports were "producer" goods in 1954, 71 per cent in 1957, and 76 per cent in 1960. It is interesting to note that the Central Bank continued to classify imports in accordance with these categories even after the foreign exchange controls with respect to imports were completely abolished in 1962. In that year, "producer" goods were 83 per cent of total imports and in 1963, 78 per cent.[8]

When producer goods are examined more closely, the pattern as between "essential", and "semi-essential", and "non-essential" is revealing and interesting. In general, "essential"

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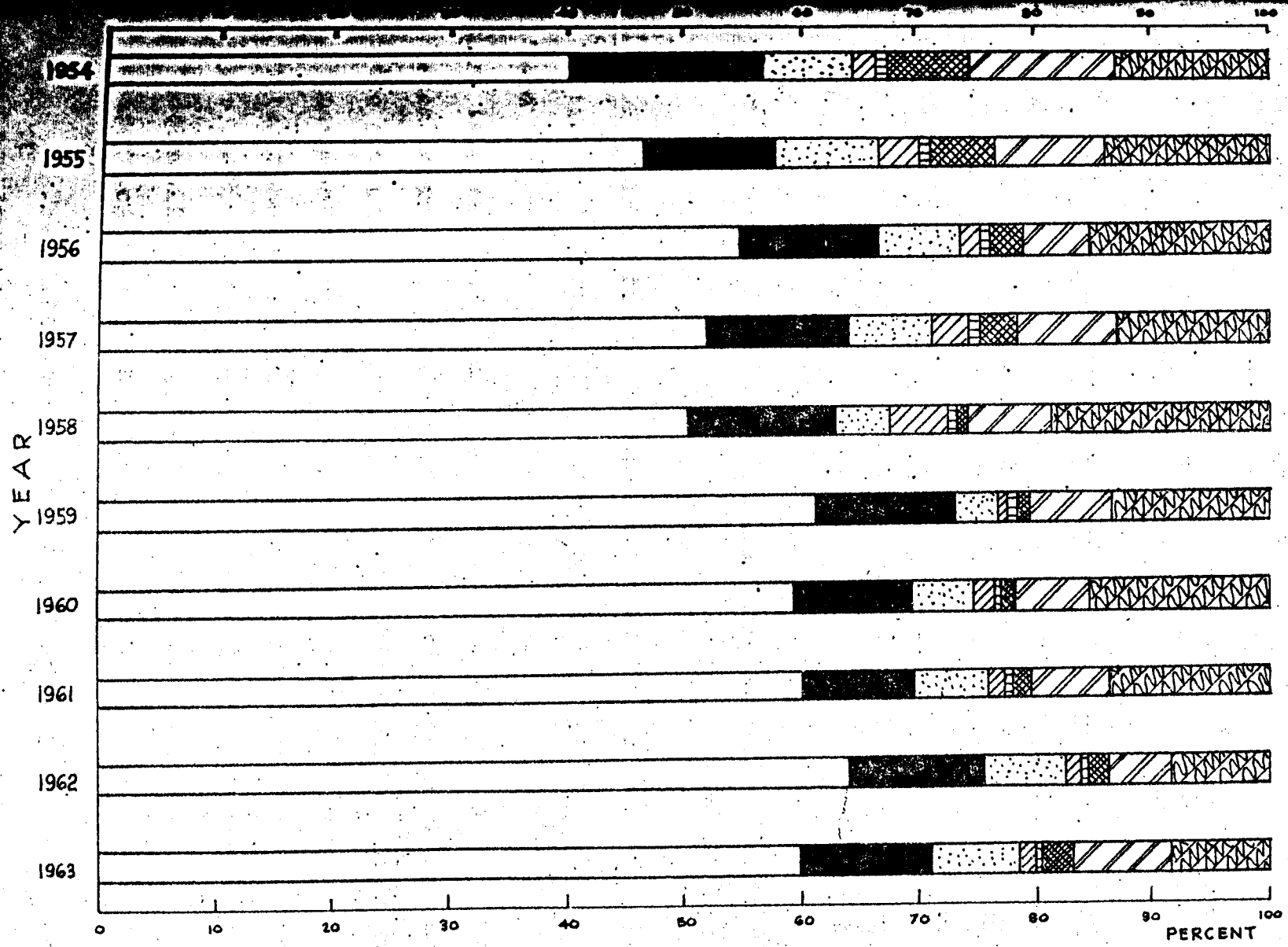
[8]These classifications are no longer reported in the more recent Central Bank Statistical Bulletin issues.



SOURCE: Central Bank Statistical Bulletin, vol. 16, March 1964.

Figure 1-3

producer goods increased in relative proportion to total producer goods, as shown by the summary given in Table 1-4.

Table 1-4. "PRODUCER GOODS" ACCORDING TO THE CENTRAL BANK, Selected Years (Per Cent of Total Producer Goods)

	Essential	Semi-essential	Non-essential	Total
1954	62	26	12	100 per cent
1957	73	17	10	100 per cent
1960	80	14	6	100 per cent
1962	77	15	8	100 per cent
1963	76	14	10	100 per cent

Source: Central Bank, Statistical Bulletin, vol. 16, March 1964 (Table 66).

It is further of interest that this "official" classification of imports had two other categories called "unclassified" and "decontrolled". These two items accounted for 25 per cent of imports in 1954 and 17 per cent in 1963. Since they occupied such large proportions of the total, after taking into account the producer goods, very little was left indeed to fall under "consumer" goods. In 1954, consumer goods were 10 per cent of total imports, in 1957 only 8 per cent, and in 1963, only 5 per cent. It is more instructive to classify goods which were "unclassified" or "decontrolled" as consumer goods. The ECAFE classification does this.

The ECAFE classification is based on a more general and, perhaps from an analytical standpoint, on a more desirable scheme.

It divides imports into either consumer goods or capital goods. This classification has great similarity with the end-use classification of the Central Bank. Figure 1-4 shows the proportion of imports by the ECAFE categories. The patterns of imports according to the ECAFE scheme are already implied from the previous classifications. The share of consumption goods to total imports in accordance with the ECAFE classification, however, appeared more substantial than what the two Central Bank classifications would inform us. Consumption goods imports accounted for 67 per cent of total imports in 1953, 56 per cent in 1957, and 52 per cent in 1963. While this would imply that the share of capital goods imports to the total import pattern was increasing, the shifts of import patterns appeared somewhat more modest.

In summary, the differences between the ECAFE proportions for capital goods and the two Central Bank measures of "producer" goods are presented in Table 1-5. The resulting overstatements

Table 1-5. PER CENT TO TOTAL IMPORTS OF CENTRAL BANK PRODUCER GOODS AND DIFFERENCE WITH ECAFE CLASSIFICATIONS

	(2)		(3)	(4)	(5)
	CB Machinery & Equipment Plus Materials	CB "Official" Producer Goods	ECAFE Capital Goods	CB Overstatement (1)-(3)	"Official" Producer Goods Overstatement (2)-(3)
1954	65	65	35	30	30
1957	70	71	44	26	27
1960	70	74	54	16	18
1963	81	78	48	33	30

Source: Central Bank, Statistical Bulletin, vol.
United Nations, ECAFE Survey, 1964.

Figure 1-4

Figure 1-3. ECAFE CLASSIFICATION OF PHILIPPINE IMPORTS
PERCENT
0
10
20
30
40
50
60
70
80
90
100
1952
1953
1954
1955
1956
1957
1958
1959
1960
1961
1962
YEAR

of the proportions of producer goods classified by Central Bank criteria are quite substantial relative to total imports.

Evidently these observed differences are due to classification guidelines. This is all the more reason why an a more detailed appraisal is necessary, as this study proposes to do.

We conclude by stating that in general there was a shift in the pattern of imports during the period of 1953 to 1963. This shift reflected the growth of the import substituting industries. Yet, the implications that can be drawn from Central Bank data which emphasized raw material imports or producer goods imports suggest that the domestic import substitution process was related to rather high import requirements. The ECAFE data, on the other hand, suggest that the directions of these importations were largely towards consumption goods industries. The import substitution process of the 1950's about which much more will be said in this study was primarily directed against final consumption goods imports.

It is also worth pointing out that a detailed study of the imports of the new and necessary industries during the transition years to decontrol (1959 to 1961) concludes, among others, that the imports of these favored industries became concentrated more and more on raw materials and consumption goods. They departed drastically from the national pattern of imports as shown above in terms of consumption goods vs. capital goods

classification. This observation shows that the favored industries tended to be more import dependent than the rest of the production sector.[9]

AGGREGATIVE IMPORT FUNCTIONS FOR THE PHILIPPINES

It is essential to view all the above discussion in more concrete quantitative terms. To do this, aggregative import functions were estimated. Two simple regression equations, referred to as (I) and (II), were fitted to data covering the period 1953 to 1963:

$$(I) \quad M_t = a + bY_t + u_t$$

$$(II) \quad M_t = a + bY_t + cT_t + u_t$$

where

M_t = estimates of imports in million pesos

Y_t = GNP in million pesos constant 1955 prices

T_t = time in years, 1953 = 1, 1954 = 2, etc.

u_t = a random error term.

Some words on the data used in these regressions are in order. The import statistics were taken from the more recent estimates of imports made by Douglas Paauw[10] of the National Planning Association (NPA). These statistics differed from the estimates of imports derived from the national income accounts.

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[9] See G.P. Sicat, A.A. Arcelo and H.C. Reantaso, "Transition to Decontrol and the Imports of the New and Necessary Industries, 1959-1961," forthcoming in The Philippine Review of Business & Economics.

[10] See D.S. Paauw, op.cit.

It is wellknown that estimates of imports in the national income accounts do not agree generally with those published from Central Bank and other estimates. The NPA data were the result of an attempt to consolidate all trade data to fit a national income framework in the manner advanced by Paauw and J.C.H. Fei.[11] Estimates of total services imported by the Philippines were also from NPA. By utilizing the yearly proportions of the different import categories against the total merchandise import estimates of the NPA, the different import data were calculated.

The data on GNP represent the more recent estimates (1968) made by the National Economic Council (NEC). This is the agency which estimates Philippine national income accounts. These estimates are not much different from earlier NEC estimates of GNP. It is to be noted that NPA also made independent estimates of GNP, using the Pauuw-Fei framework, and perhaps the import data should be related to the NPA rather than the NEC estimates. However, there is little difference between the two, as the following regression of GNP-NEC data on GNP-NPA data shows:

$$Y_{NECt} = -1481.414 + 1.176 + u_t \qquad R = 0.997$$

Moreover, the import regressions reported can easily be adjusted, if it was so desired that the NPA estimates of GNP be used. Thus, consider the estimate for total merchandise imports:

$$M_t = 774.448 + 0.083\ Y_{NECt}.$$

By inserting the estimated relation between Y_{NECt} and Y_{NPAt}, we get the new relation:

$$M_t = 651.491 + 0.098\ Y_{NPAt} + u'_t$$

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[11] Ibid.

It will also be interesting to point out that the average ratio of GNP-NEC to GNP-NPA during the whole period studied is 1.03.

The import function regressions are shown in Table 1-6. We may regard the coefficients of GNP as marginal propensities to import. The correlation coefficients are not very high, but they are significantly different from zero. We also note that the time-trend variable did not improve the estimates of imports, so we did not report them.

The estimate of the marginal propensity to import merchandise goods during 1953 to 1963 is only 0.083. The estimate for non-merchandise goods (or services) is not significant. We thus see that taken as a whole, it would seem that the Philippines had a low marginal propensity to import during the period under study. This would not be surprising under conditions of exchange controls.

We note, first, the differences in the definitions of the Central Bank, ECAFE, and the NPA. The Paauw-NPA framework distinguishes between imports of (a) agricultural goods for consumption, (b) finished industrial goods, and (c) intermediate goods. This classification is more close to the ECAFE classification that that of the Central Bank.[12]

Disaggregated import functions were also derived for consumer, intermediate, and capital goods imports. The import

[12]See D.S. Paauw, op.cit.; for some comparison of the three classifications or see Paauw's Table III-10.

Table 1-6.- REGRESSIONS OF IMPORTS ON INCOME AND TIME, 1953-1963

Type of Imports (M_t)	Model	Constant (Million Pesos)	GNP (Y_t)	Time (T_t)	R and DW	Ave. M_t/Y_t (in per cent)
1. Total Merchandise	I	774.448	0.083		R=0.722	15.68
			(0.026)		DW=1.821	
2. Total Services	I	415.636	0.007[a]		R=0.183	4.64
			(0.012)		DW=1.751	
3. Central Bank						
a. Consumer goods	I	310.839	-0.004[a]		R=0.164	15.69 / 2.60
			(0.008)		DW=1.924	
b. Intermediate goods	I	639.844	0.047		R=0.616	10.83
			(0.020)		DW=1.722	
	II	-1,098.214	0.294	-141.228	R=0.690	
			(0.205)	(116.467)	DW=1.738	
c. Capital goods	I	-176.383	0.039		R=0.758	2.26
			(0.011)		DW=1.645	
	II	1,656.275	-0.221	148.914	R=0.898	
			(0.084)	(48.222)	DW=2.269	
4. ECAFE						
a. Consumer goods	I	1,039.991	-0.045		R=0.722	15.69 / 5.47
			(0.014)		DW=1.517	
	II	-328.507	0.150	-111.198	R=0.782	
			(0.143)	(81.449)	DW=1.985	
b. Intermediate goods	I	185.350	0.028		R=0.845	4.58
			(0.006)		DW=1.927	
	II	-322.874	0.100	-41.296	R=0.870	
			(0.061)	(34.482)	DW=1.694	
c. Capital goods	I	-451.463	0.100		R=0.918	5.64
			(0.014)		DW=1.847	
5. NPA						
a. Consumer goods	I	868.339	-0.024		R=0.501	15.69 / 5.87
			(0.014)		DW=1.783	
b. Intermediate goods	I	54.008	0.061		R=0.866	6.62
			(0.012)		DW=2.182	
c. c. Capital goods	I	-147.858	0.046		R=0.854	3.20
			(0.009)		DW=1.851	

[a]Statistically not significant.

D.W. refers to the Durbin-Watson statistic. Some remarks on this statistic are contained in Chapter 5, p. 18 et seq.

functions for consumer goods shows negative coefficients, meaning that imports of this had gone down as GNP had risen. After correcting for a negative trend factor, the slope coefficient for GNP went up, but the error of the coefficient also increased substantially. The slope coefficient for consumer goods by Central Bank definition was not significantly different from zero.

Intermediate goods had slope coefficients which were higher than for capital goods. In the ECAFE classification, the slope coefficient of GNP for intermediate goods was only 0.028, but when a negative time trend was taken into account, the slope coefficient became 0.10, which was the same estimate found for ECAFE-classified capital goods. Using Central Bank or NPA classifications, capital goods had lower slope coefficients.

The above finding suggests that import substitution policies had been directed largely at consumer goods imports (as judged by their negative GNP slope coefficients). The imports of capital goods were rising with GNP, but intermediate goods imports rose faster. These results suggest the import dependent import substitution thesis on the aggregative level.

If we took into account the proportions of these imports to GNP, these findings are more suggestive. The last column of Table 1-6 shows these results. The proportion of imports to total GNP is on the high side and suggests the relatively large extent of the "openness" of the Philippine economy. Total merchandise im-

ports accounted for 15.7 per cent of GNP.[13] When imports of services were taken into account, this ratio reached 20 per cent. This might be considered on the high side of things. However, it should be remembered that imports were quite high during the early postwar period. Thus, while the marginal propensity to to import coefficients appeared very low, the constants of the import equations were high. The relative disparities of the merchandise goods breakdown by Central Bank, ECAFE, and NPA are quite obvious from the percentages shown.

The import functions discussed above yield conclusions, which confirm the impressions we stated earlier in this chapter. But they are only a preliminary to the import demand by commodity groups, which will occupy the rest of this study. While there was a considerable shift in import patterns between 1953 to 1963, among specific subgroups of imports, there were important shifts in composition. This study will aim to dissect these commodity by commodity import demand.

CONCLUSION

In this chapter, the Philippine economy was briefly surveyed in perspective, between 1953 to 1963. The Philippine economy is characterized by a high degree of openness to international trade. This is shown by estimates of ratio of either exports or imports to GNP.

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[13]There will be varying estimates, depending on the import data used and on the income magnitudes utilized. See the first footnote of this chapter again.

Economic policy during the period under study was characterized by a preoccupation with import substitution. This took the form of import replacement of consumer goods. Such a strategy was also followed by a dependence on raw material importation. We have described this pattern as an "import dependent import substitution". Import functions were estimated, which confirm this description of the industrial process.

All the above serve as a prelude to the detailed study of import demand for seventy-seven groups of commodity imports.

Chapter 2. IMPORT DEMAND MODELS

VARIABLES OF IMPORT DEMAND

Estimating import demand would require the use of explicit models of demand behavior.

A behavior equation determining the demand for imports should contain the effects of prices, of the level of income, and of the stocks of foreign exchange. There are two prices relevant for any commodity imported, internal prices for the home produced goods and external prices for these goods. Some measures of these two prices should *a priori* be important determinants of the importation of any commodity. The country's income level is a determinant of imports -- the higher the income, the higher the imports, unless the commodity is in the process of substitution by domestic import replacing industries. Foreign exchange stocks may also enter the import demand picture in an obvious way. The larger the stock the more easy it would be to import a commodity. In a sense, however, the foreign exchange stock may reflect the severity or laxity of measures which are associated directly to foreign exchange policy.

In Chapter 1, the relevant policies during the period under study were reviewed. In order to differentiate between the effects on import demand of the period of controls and of decontrol, a dummy variable[1] was used. An institutional situa-

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[1] See, among others, J, Johnston, Econometric Methods (New York, McGraw-Hill, 1963), p. 221-8, for a discussion of the uses of dummy variables.

tion is hard to quantify, but a dummy variable helps only to separate rough quantitative effects of one situation as against another. In a study in which the period covered allows only for a few degrees of freedom, it will not be possible to differentiate between the effects on import demand of two institutional settings by dividing up the data into two samples and then comparing the resulting estimates of the parameters of import demand. The use of the dummy variable allows us some degrees of freedom for a regression which would otherwise be impossible to achieve since the periods under consideration are too short.

IMPORT DEMAND FUNCTIONS AND ESTIMATING MODELS

For any commodity of import i, the general behavior equation used in describing import demand in this study is given briefly as follows:

$$(1) \quad M_{it} = f(P_{hit}, P_{mit}, F_t, Y_t \text{ or } X_t, Z_{Dumt}, u_{it})$$

where

M_{it} = index of imports of commodity i at c.i.f.

P_{hit} = domestic price index of commodity i

P_{mit} = general wholesale price index of imported commodity i; this is not a direct measure of foreign prices for the imports since these are price indexes obtained within the country

F_t = an index of the level of foreign exchange reserves

Y_t = an index of the income (GNP) level in the economy

X_t = an index of the level of export earnings (The last two variables are tried out alternatively as import determinants)

Z_{Dumt} = a dummy variable separating the period of (1953 to 1959) from the period when they began to get relaxed (1960 to 1963). For purposes of separation

$$Z_{Dumt} \begin{cases} = 0 & \text{if the year is from 1953 to 1959} \\ = 1 & \text{if the year is from 1960 to 1963} \end{cases}$$

u_{it} = stochastic random variable for i

t = time in years.

An alternative model is one in which all the major variables are deflated by home prices. Removing all i subscripts from here on, this is given by

$$(2) \quad M_t/P_{ht} = G(1, P_{mt}/P_{ht}, F_t/P_{ht}, Y_t/P_{ht} \text{ or } X_t/P_{ht}, Z_{Dumt}, v_t).$$

For simplicity, the deflated model can be written as:

$$(2a) \quad M_t^* = (P_{mt}^*, Z_{Ft}^*, Y_t^*, X_t^*, Z_{Dumt}, v_t),$$

where the (*) means the deflated ratio.

The two alternative specifications above are estimated with usual linear regression techniques. The estimating equation for the undeflated model is given by

$$(3) \quad M_t = \alpha_0 + \alpha_1 P_{ht} + \alpha_2 P_{mt} + \alpha_3 F_t + \alpha_4 Y_t + \alpha_5 Z_{Dumt} + u_t$$

where α_i ($i = 0, 1, \ldots, 5$) are the parameters to be estimated. Equation (3) is a simple linear (SL) regression. The logarithmic (Ln) form of the equation above is also interesting and

will be estimated as follows:

$$(4)\quad \ln M_t = \alpha_0' + \alpha_1' \ln P_{Ht} + \alpha_2' \ln P_{mt} + \alpha_3' F_t + \alpha_4' \ln Y_t + \alpha_5' Z_{Dumt} + u_t'$$

where α_i' ($i = 0, 1, \ldots, 5$) are the parameters to be estimated.

The deflated model likewise is estimated by the following simple linear (SL) regression:

$$(5)\quad M_t^* = \beta_0 + \beta_1 P_{mt}^* + \beta_2' F_t^* + \beta_3 Y_t^* + \beta_4 Z_{Dumt} + v_t$$

for the untransformed data and

$$(6)\quad \ln M_t^* = \beta_0' + \beta_1' \ln P_{mt}^* + \beta_2' \ln F_t^* + \beta_3' \ln Y_t^* + \beta_4' Z_{Dumt} + v_t'$$

for the transformed logarithmic data. In equations (3) to (6), regression involving measures of exports (X_t or X_t^*) has been used to substitute for (Y_t or Y_t^*).

It is essential to work out the implications and *a priori* expectations that should be made for the values of these parameters. Given the model stressed in equation (2) and the corresponding estimating equation (3), it is possible to make theoretical restrictions on the values to be assumed by the estimated parameters. Firstly, it is plausible that an increase in the home prices of the commodity *i* leads to a higher demand

for imports of i, or from equation (2) $\partial M_t / \partial P_{ht} > 0$. In other words, home prices and imports move in the same direction.

Secondly, an increase in import prices leads to less imports or $\partial M_t / \partial P_{mt} < 0$. This could lead to substitution of imports for home produced goods, if substitution possibilities exist, or simply to a reduction of quantity demanded due to a high price.

There are strong reasons why it may not be possible to expect these two results altogether. Since the import prices in this study are proxies, as we shall find in the next chapter, they may not reflect in general the true movements in the domestic and foreign prices for these goods. They may only reflect a domestic scarcity situation for a given commodity group, especially with the presence of import and exchange controls with its implied existence of unsatisfied demand. In this situation, the estimated parameters may have the opposite signs.

What is the direction of change that may be expected given a change in the level of foreign exchange reserves? In some situations, it will be hard to tell. It would depend on the nature of trade and of fiscal-monetary policy, to say the least. In a situation when the foreign exchange reserves are allowed to run down, a fall in reserves may be accompanied by an increase in imports or $\partial M_t / \partial Z_{Ft} < 0$. On the other hand, there may be simple foreign exchange reserve-adjustments (or

sympathy movements) of import levels. A fall in reserves may lead to a reduction of imports, or $\partial M_t/\partial Z_{Ft} > 0$. In situations involving the level of foreign exchange resources, the specific imported commodity in question would determine what happens to the amount of imports. In a development effort, in which saving and accumulation of capital are stressed, consumer goods may be expected to display the sympathy movements described above. But as we shall see in this study, it is quite hard to make this prediction at all.

An increase in income increases imports. This is true unless a vigorous import substitution of the import commodity under consideration has absorbed also a portion of the new imports caused by rising income. In other regressions, the income variable (Y_t) was replaced by an index of export activity (X_t). If the index of exports is a proxy for income, then we have the same conclusions regarding the expected sign of the parameter. Thus, we may state:

$$\partial M_t/\partial Y_t > 0 \text{ and}$$

$$\partial M_t/\partial X_t > 0.$$

Summarizing, normally we would expect the following to hold:

$$\partial M_t/\partial P_{ht} > 0,$$

$$\partial M_t/\partial P_{mt} < 0,$$

$$\partial M_t/\partial F_t \lesseqgtr 0,$$

$$\partial M_t / \partial Y_t > 0 \text{ and}$$

$$\partial M_t / \partial X_t > 0.$$

The expected signs for the deflated model are similar to those that may be expected from the undeflated demand models. The reasoning derives simply from the fact that, as a rule, the relative movements of all the deflated variables are in the same direction as the undeflated variables, with the exception that the deflated variables are corrected for domestic price movements. Thus, normally, the following may be expected:

$$\partial M_t^* / \partial P_{mt}^* < 0$$

$$\partial M_t^* / \partial F_t^* \lesseqgtr 0$$

$$\partial M_t^* / \partial Y_t^* > 0 \text{ and}$$

$$\partial M_t^* / \partial X_t^* > 0.$$

Elasticity Estimates? We note that the variables in all the import demand regressions which are simple linear models, with the exception of the dummy variable, are indexes of values or quantities using 1955 as the base. One interpretation that may be given to the parameter estimates of the regressions is to say that since they are all related to a common base of comparison, the estimates are analogous to "elasticity" estimates. This is one way of interpreting the data, although as the successive chapters will show, we find

that it will not be entirely correct to assign elasticity associations with some regression estimates, because essentially, elasticities are "response" coefficients to changes in some variables (say, response to income change, in the case of a change in Y_t), and in some cases obviously, "response" coefficients are not what are observed.

Now we go to the logarithmic versions of the import demand models, those given by equations (4) and (6). It is well known that parameters of logarithmic equations are elasticity estimates.[2] But as we have pointed out in the previous paragraph, the special nature of the data in the SL regressions, the parameter estimates may already be likened to elasticity measures. The logarithmic regressions may correct for excessive leaps of specific variable values from year to year by introducing a proportionality factor which is independent of the common base period of the indexes used in the SL regressions. Thus, in general, logarithmic parameter estimates would tend to be less than the estimates from SL regressions.

We rely on the logarithmic equation estimates as alternative estimates of the parameters of import demand for specific imports. This gives more basis for judging the reliabil-

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[2]For instance, given the equation

$$\ln y = \ln A + \alpha \ln x_1 + \beta \ln x_2,$$

it can be shown that α and β corresponds to elasticity concepts in economics.

-ity of the import demand equations. It is to be noted that the logarithmic transformation of the data do not do anything drastic to the expected signs of the import demand parameters estimated here. The logarithmic estimates of regression differ only from the SL estimates in the sense that the major (untransformed) variables are all non-negative and non-zero. Thus, the expected parameter signs for the logarithmic regressions are, normally, the same as those estimated from SL regressions.

FOREIGN EXCHANGE CONTROLS AND IMPORT DEMAND: A JUSTIFICATION OF IMPORT DEMAND ESTIMATION

To what extent did the presence of foreign exchange and import controls vitiate any attempt to estimate import demand? This is an important question.

As already pointed out, if there were no exchange and import restrictions, certain import demand patterns that were observed ex post would not have happened. Under a system of foreign exchange controls, unsatisfied import demand is an inevitable result. The licensing of foreign exchange transactions creates special distortions especially in respect to the relative prices of imports vis à vis home-produced goods and to the relative prices of different imported goods. An extreme viewpoint would dismiss the results of importations under this system simply as having been derived from a position based on economic "disequilibrium". Therefore, since the results are certainly not "equilibrium solutions" to the import demand struc-

ture, there would be little need to make any measures of import demand parameters.

However, exchange controls constituted but one additional restriction on the functioning of the economy. Like all constraints, the exchange controls in the Philippines served as one of the basic institutional mechanism around which the satisfaction of any existing import demand had to be met. The exchange controls predetermined the broad directions of foreign exchange allocations. But they did not in general specify exactly what imports should be made. This was the choice of "society", or of the policy-makers who helped to promote industrialization, or of the entrepreneurs who simply appropriated the rewards offered by the structure of incentives in industrial and import policy. The import substituting industries put up by entrepreneurs in response to government policies in turn had their own import demand, deriving from the basic input structure of their manufacturing operations.

In any case, estimates of import demand functions are offered in this study as an attempt to quantify the role of known economic determinants of import demand for specific commodities. While it is stressed that there are qualifications, such as those we have mentioned on the distortions brought about by exchange controls, it is believed that the quantifications attempted here help to answer important economic questions. Moreover, they yield a record of the economy's import demand for the period studied, which is different from usual discussion of Philippine import demand.

BRIEF NOTE ON THE LITERATURE ON INTERNATIONAL TRADE RESEARCH

There is an important methodological discussion concerning econometric studies of demand for internationally traded goods.

The literature on quantitative estimates of import demand was already voluminous by 1950. These studies, which yielded very inelastic demand elasticities, were solely confined to the more industrially advanced countries. Orcutt,[3] writing in 1950, evaluated these studies and pointed out five sources of errors which, in his view, cast serious value on these estimates. One strong conclusion emerging from his work is that simple least squares methods of estimating international trade elasticities do not yield meaningful results.

After reviewing the literature on econometric research in international trade, Prais[4] came to the conclusion that Orcutt's argument appeared overstated. There are cases, as Liu[5] and Klein[6] have pointed out, when simple least squares

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[3]G.H. Orcutt, "Measurement of Price Elasticities in International Trade," Review of Economics and Statistics (vol. XXXII, No. 2, May 1950), pp. 117-132.

[4]S.J. Prais, "Econometric Research in International Trade: A Review," Kyklos (vol. XV, No. 3, 1962), pp. 560-78.

[5]T.C. Liu, "The Elasticity of U.S. Import Demand: A Theoretical and Empirical Reappraisal," IMF Staff Papers (vol. III, No. 3, February 1954), pp. 416-41.

[6]L.R. Klein, "Single Equation vs. Equation System Methods of Estimation in Econometrics," Econometrica (vol. XXVIII, No. 4, October 1960), esp. pp. 870-1.