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PHILIPPINE TRADE WITH JAPAN AND THE UNITED STATES: EXAMINATION OF RECORDED DATA AND ANALYSIS OF EXPORT PERFORMANCE

by

Romeo M. Bautista and Gwendolyn R. Tecson

CONTENTS

LIST OF TABLES

Appendix Tables

PHILIPPINE TRADE WITH JAPAN AND THE UNITED STATES: EXAMINATION OF RECORDED DATA AND ANALYSIS OF EXPORT PERFORMANCE*

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1. Introduction

This study was originally intended to investigate the immediate impact and possible long-term repercussions on the pattern of Philippine foreign trade of differing changes in the exchange rates of the Japanese yen and the U.S. dollar vis-à-vis the domestic currency. The currencies of the Philippines' two principal trading partners were subject to instability at the time the research study was being considered, such external development fueling speculative discussions locally on appropriate courses of policy action to avert any unfavorable consequences on the balance of payments. The basis for apprehension is the high degree of dominance by the United States and Japan of our foreign trade, about three-quarters of Philippine export and import flows being attributable to these two countries jointly.

Such investigation would require an analysis of past data to discern the sensitivity of the volume of Philippine exports to and imports

from the major trade partners to changes in the relative export and import prices in peso terms. The Philippines being considered a small country in the international setting, it would have been adequate to statistically estimate commodity-specific export supply and import demand functions that provide scope for substitution between sources of import supply and export demand.[1/] This requires in turn the use of disaggregative, commodity-by-country trade data, a consistent time series to the 5-digit SITC level being obtainable beginning 1962 for Philippine trade with Japan and the United States as recorded in the trade statistics of the three countries.

Among available economic statistics in the less developed countries (LDCs), foreign trade data are relatively in plentiful supply and generally considered the most reliable, for which reasons they have been used frequently as proxy for unavailable data on certain domestic economic transactions. The need to look into the accuracy of trade data still exists, however, especially in studies involving quantitative analyses. The conclusion reached by Naya and Morgan (1969) that "errors in trade data [in Southeast Asian countries] ... can be overwhelmingly large" (p. 463) seems pertinent in the present context.

Checking the reliability of data is (or should be) a normal part of any empirical work in economics. In the present instance, it has become a major study in itself. This decision to postpone the very interesting

investigation on the effects of exchange rate changes was premised on the assumption that reasonably sound estimates of such effects may not be forthcoming unless the data situation is improved considerably. Our preliminary examination of the data[2/] and the unsuccessful experiments with the estimation of export supply and import demand functions at a disaggregative level based solely on Philippine trade statistics have supported that assumption. We interpret the bulk of the findings in the present study to provide compelling evidence to that effect.

To a surprising extent studies of Philippine economic development have neglected to inquire on the accuracy of recorded foreign trade data, utilizing on faith the statistics compiled by the Central Bank and the Bureau of the Census and Statistics.[3/] The intimate relationship between trade performance and the pattern of economic development that has emerged from such studies would seem to suggest the need for a more careful scrutiny of the official estimates of trade flows than has actually been done.

In a valuable study by Hicks (1966), comparison is made of annual export and import flows over the period 1950-1965 between the Philippines and the five leading trade partners which together accounted for about 90 per cent of total Philippine exports and imports. Philippine trade data are found to be generally lower than the corresponding trade

partners' statistics, the understatement being relatively more pronounced for exports in the period of controls (before 1963) and for imports in the period 1963-1965. Hicks presents a revised set of estimates based on the assumption that any observed discrepancy between the trade of the Philippines and that of another country represents an error in Philippine data. Considering the possibility of unrecorded trade and undervaluation in the trade partners' statistics, such estimates may be considered "to lie some unknown distance between the official figures and the real ones" (Hicks, 1968; p. 24).

Except for the separate treatment of the ten principal export commodities in the comparison of Philippines - U.S. trade data, Hicks' evaluation of the direction and magnitude of errors in Philippine recorded statistics is conducted in aggregative terms, i.e., the country's total exports (imports) are compared with each principal trade partner's imports (exports). A more recent investigation of the trade statistics in Southeast Asian countries done by Naya and Morgan (1969) includes a comparison at the 1-digit SITC level of Philippine trade data with those of the four leading trade partners individually and as a group. Their finding is that the recordings of commodity-by-country trade data have discrepancies much larger and of wider variation generally than those for total trade. The underlying reason is that the aggregative magnitudes tend to cancel

out discrepancies in opposite directions. Thus relative underrecording of trade partner statistics at the 3-digit level will not contribute to but instead will reduce the discrepancy at the 1-digit level if there is a general understatement of Philippine data within that 1-digit category relative to the trade partner's statistics. The incidence of such cases turns out to be rather significant, as will be shown in the next chapter. The implication would seem to be that one cannot rely always on the assumption that developed country data could proxy for the correct magnitudes of LDC trade flows.

An alternative method of approximating the true values follows from the foregoing discussion. Assuming that differences in definition and misclassification of trade commodity items are not present at the 3-digit SITC level in the recordings of either country, one could simply take the higher of the two corresponding trade values.[4/] What has been done generally, as exemplified by Hicks' study, is to compare <u>total</u> magnitudes of trade flows between the two countries; in the usual case where LDC data are lower than the corresponding DC (trade partner) statistics, choosing the latter means really following the same method except that it is being done at the most aggregative level.

The magnitude of LDC trade flows may then be estimated in three ways, using (i) the country's own trade data, (ii) the DC trade

partners' statistics of corresponding trade flows, and (iii) whichever is higher between (i) and (ii) at a certain level of commodity disaggregation. With regard to (iii), we adopt in the present study the 3-digit level for comparison of Philippine recorded trade data with those of the United States and Japan, in view of the strong likelihood noted earlier that the extremely high incidence of discrepancies at the 4- and 5-digit levels are attributable simply to differences in recording definition and commodity classification.

In Section 2 the examination of Philippine trade data reliability is conducted at the most aggregative level over the period 1962-1969. Discrepancies between bilateral sets of trade recordings are analyzed, indicating the overall magnitudes of understatement and overstatement of Philippine trade statistics relative to partner country data. The divergence of these two data sets from the trade flow estimates based on the higher of corresponding Philippine and trading partner values, i.e. the "maximum" trade values, is discussed in terms of the differing implications of the three alternative sets of estimates on the Philippine trade balance during the period and trends of imports and exports in the aggregate.

"Totals" or "aggregates" have a rare ability to cover discrepancies and cancel out opposing errors at finer levels of disaggregation. Aggregative bilateral trade recordings may thus be similar even when very

wide discrepancies in individual commodities occur in the background. Section 3 of this paper extends the data comparisons to the 1-, 2- and 3-digit SITC levels with a view to identifying commodity groups in both import and export trades that have contributed significantly to the total discrepancies. We also make an attempt at relating the country's tariff structure to the variation in the observed discrepancies across commodity groups.

Informational raw materials are provided by past data as an input in the making of present and future policy decisions. In Section 4 we inquire into the performance of Philippine exports during 1962-1969 suggested by each of the three sets of trade flow estimates. In view of current policy emphasis on export promotion (expansion as well as diversification), it is of some interest to identify what may be called "sources of growth" of Philippine exports to the two principal trading partners. We shall use the familiar constant market share (CMS) model of export growth to examine the performance of total exports, the principal export commodities as a group and individually, and the non-principal exports. In addition, the major contributors to the non-principal export category will be identified and their magnitudes and trends examined, again using the three alternative data sets.

The major findings of the present study are summarized and related comments given in the concluding section.

2. Overall Magnitudes of Trade Flows

2.1 Comparison of bilateral trade recordings

Philippine trade transactions (exports and imports) with the United States and Japan are shown in Table 2.1 in f.o.b. values over the period 1962-1969.[5/] The data presented allow for a comparison of bilateral trade recordings, four figures appearing for each year which represent the following trade flows:

M_{pi} = Philippine imports from country i (where i refers to either the United States or Japan)

X_{ip} = Country i exports to the Philippines

M_{ip} = Country i imports from the Philippines

X_{pi} = Philippine exports to country i.

Needless to say, M_{pi} and X_{ip} refer to the same trade transactions and should be equal conceptually. This would be true also for M_{ip} and X_{pi}. As is evident from the entries in the table, however, significant differences arise in practice. One possible source of data discrepancy, is the time lag in data recording. In Table 2.1 total values of imports and exports for the period are also presented, which would avoid in large part data differences due to timing lags. Also shown in the table are the balance of trade figures (surplus or deficit) of the Philippines vis-a-vis her trading partners, derived by subtracting imports from exports. When using partner country data, exports

TABLE 2.1: Philippine Trade with the United States and Japan, 1962-1969
(f.o.b. value in thousand U.S. dollars)

ry	Year	PHILIPPINE DATA: Exports to country i (X_{pi})	PHILIPPINE DATA: Imports from country i (M_{pi})	PHILIPPINE DATA: Trade Balance ($X_{pi}-M_{pi}$)	PARTNER COUNTRY DATA: Imports of country i (M_{ip})	PARTNER COUNTRY DATA: Exports of country i (X_{ip})	PARTNER COUNTRY DATA: Trade Balance ($M_{ip}-X_{ip}$)
	1962	279,479	252,337	27,142	321,284	266,189	55,095
	1963	327,078	286,650	40,428	344,068	319,748	24,322
	1964	353,314	347,161	6,153	396,493	356,497	39,996
	1965	347,990	307,976	40,014	369,058	332,646	36,412
tes	1966	332,425	316,254	16,171	397,616	338,038	59,578
	1967	351,622	407,756	(56,134)	380,505	417,745	(37,240)
	1968	355,836	415,038	(59,202)	435,147	424,230	10,917
	1969	321,258	359,566	(38,308)	422,552	363,923	58,629
	1962-69	2,669,002	2,692,738	(23,736)	3,066,723	2,819,014	247,709
	1962	136,608	106,354	30,254	183,955	120,010	63,945
	1963	196,614	114,683	81,931	229,893	146,657	83,326
	1964	187,585	172,672	14,913	224,315	190,794	33,521
	1965	216,669	212,913	3,756	253,677	240,265	13,412
	1966	278,568	264,181	14,387	324,975	278,256	46,719
	1967	277,835	333,536	(55,701)	374,441	362,899	11,542
	1968	283,158	351,706	(68,548)	397,940	411,086	(13,146)
	1969	336,932	361,919	(24,987)	468,034	475,603	(7,569)
	1962-69	1,913,969	1,917,964	(3,995)	2,457,230	2,225,480	231,480

(to the Philippines) are subtracted from imports (from the Philippines) to arrive at the Philippine trade balance.

Some striking results appear from a comparison of period totals. When Philippine recorded data are used, the Philippines has an overall trade deficit for the entire period; however, using partner country figures, the reverse seems to be the case, i.e., the Philippines registers a surplus in total trade with either country. Philippine recorded trade figures for each year indicate that while her exports exceed her imports from the United States and Japan for the first five years of the given period, the deficits of the last three years (1967-1969) have been large enough to outweigh the initial surpluses, hence the over-all deficit of $3,995 thousand with Japan, and $23,736 thousand with the United States. In contrast, when Japanese and U.S. recorded data are used, trade deficits appear only in 1968 and 1969 with Japan and in 1967 with the U.S. These deficits are rather insignificant compared to the surpluses of the rest of the period, hence the over-all trade surplus with each country noted earlier.

Comparing further Philippine recorded trade with the United States and Japan, period totals show that our trade with the United States is almost double in magnitude that with Japan on both exports and imports. However, from partner country data, U.S. export trade

with the Philippines exceeds that of Japan by only 26.7 per cent and import trade by only 24.8 per cent. This suggests that the relative share of Japan in our foreign trade in the 1960s might have been larger than is implied from official trade estimates.

Table 2.1 also reveals that Philippine import and export figures have been consistently understated relative to partner country data. To illustrate the degree of discrepancies, import and export ratios are presented in Table 2.2. Theoretically, when data recording is accurate, the ratio of a country's imports (exports) to corresponding partner country exports (imports) must equal one since these figures refer to the same economic transaction viewed from two different vantage points. If the ratio differs from one, relative under-reporting or over-reporting has taken place, except in the case where exports are valued f.o.b. while the import data are expressed in c.i.f. terms. In the latter case the ratio can be higher than one, a 10 per cent margin often accepted as valid. Since the data presented in this study are all expressed in f.o.b. values, the divergence cannot be explained away in terms of freight and other service charges.

One sees readily from the Table 2.2 that the ratios of Philippine recorded trade figures with corresponding partner country data have values less than one, indicating consistent understatement of

TABLE 2.2: Ratios of Philippine Imports and Exports to Corresponding Partner Trade Data

Year	IMPORT RATIOS, M_{pi}/X_{ip}		EXPORT RATIOS, X_{pi}/M_{ip}	
	Japan	United States	Japan	United States
1962	0.886	0.948	0.743	0.870
1963	0.782	0.897	0.855	0.951
1964	0.905	0.974	0.836	0.891
1965	0.886	0.926	0.854	0.943
1966	0.949	0.936	0.857	0.936
1967	0.919	0.976	0.742	0.924
1968	0.856	0.978	0.712	0.818
1969	0.761	0.988	0.720	0.760
1962-69	0.862	0.955	0.779	0.870

Philippine data relative to those of the two trade partners. Moreover, the divergence from one of the import ratios is generally less than that of the export ratios; only in 1963 are the import ratios lower. This would tend to corroborate Naya's finding (1973) that imports of developing countries are better recorded than their exports, assuming that developed country trade data represent the true values.

In his attempt to improve Philippine foreign trade data, Hicks (1966) has theorized that decontrol in the early 1960s removed the incentives to understate exports while presenting an even greater encouragement to under-report imports, compared to the period of controls in the preceding decade. While the pre-decontrol period is not considered in the present study, one is not likely to accept his hypothesis on the basis of the relative values of the import and export ratios for the period 1962-1969 as given in Table 2.2.

2.2 Partner country data: A closer look

That developed country trade flows are in general better recorded is invariably assumed in studies examining the accuracy of trade data in the less developed countries. This would seem a very reasonable assumption. However, DC trade statistics are necessarily subject also to error and there may exist varying degrees of

data reliability among them.

As illustration, Table 2.3 below gives aggregative data on Japan-U.S. trade as recorded in the two countries for the years 1962 to 1969. U.S. import and export statistics are seen to be consistently understated relative to Japan's corresponding trade data, although the degree of understatement is generally very much lower than those for the Philippines. Why there is less underrecording of Japanese trade transactions with the United States is not immediately obvious. One needs to examine the two countries' data recording and estimation procedures, their tariff structures, exchange controls (if any) and other policies conducive to the underreporting of trade flows. It suffices to note here that the foregoing information on the comparative trade statistics of the Philippines' two principal trading partner is not inconsistent with the earlier observation that Philippine export and import figures are closer to the corresponding trade statistics of the United States than Japan's.

Based on the assumption that DC trade data represent the "true" values, Hicks used the trade figures of the Philippines' five leading trading partners to arrive at his revised estimates of Philippine commodity trade statistics. He took the difference between paired recordings (e.g. Philippine exports and partner country imports) and

TABLE 2.3: Comparison of Recorded Data on U.S.-Japan Trade (f.o.b. value in million U.S. dollars)

Year	United States Imports from Japan	Japan Exports to the United States	United States Exports to Japan	Japan Imports from the United States*
1962	1,353	1,411	1,568	1,629
1963	1,494	1,522	1,832	1,870
1964	1,763	1,866	2,009	2,103
1965	2,414	2,510	2,080	2,130
1966	2,963	3,010	2,364	2,392
1967	2,999	3,049	2,695	2,892
1968	4,057	4,133	2,950	3,176
1969	4,093	5,020	3,460	4,400

*f.o.b. value obtained by multiplying available c.i.f. data by 0.90.

SOURCE: U.N., Yearbook of International Trade Statistics.

added (or subtracted) this figure from Philippine recorded data. Thus, where partner country statistics are understated vis-a-vis Philippine data, the revised estimate will be lower than the Philippine figure by this difference. Clearly this implies that understatement of DC trade figures -- highly probable in such a case -- is not considered in the estimation of the magnitude of trade flows.

Even a cursory examination of bilateral trade data at some more disaggregative level would suggest that relative underreporting of trade transactions also characterizes the recorded statistics of Japan and the United States. In Figures 2.1 - 2.4 Philippine recorded imports and exports cumulated over the period 1962-1969 of 4-digit SITC commodities valued in excess of one million U.S. dollars are plotted against corresponding Japan and U.S. trade data. Points lying on the 45° - line indicate exact correspondence, i.e. absence of discrepancy, between the two parties' recordings. Quite conspicuous is the large number of points which deviate significantly from the 45° - line; they can be found below as well as above the line[6/], suggesting understatement in the trade data at the 4-digit SITC level of both the Philippines and the two DC trade partners. The scatter diagrams presented provide grounds for supposing that DC trade statistics are also subject to inaccuracy and can stand some improvement.[7/]

Figure 1: Scatter diagram of Philippine imports from Japan (Mpj) and Japanese exports to the Philippines (Xjp): 4-digit SITC totals for 1962-1969, $1 million and over.

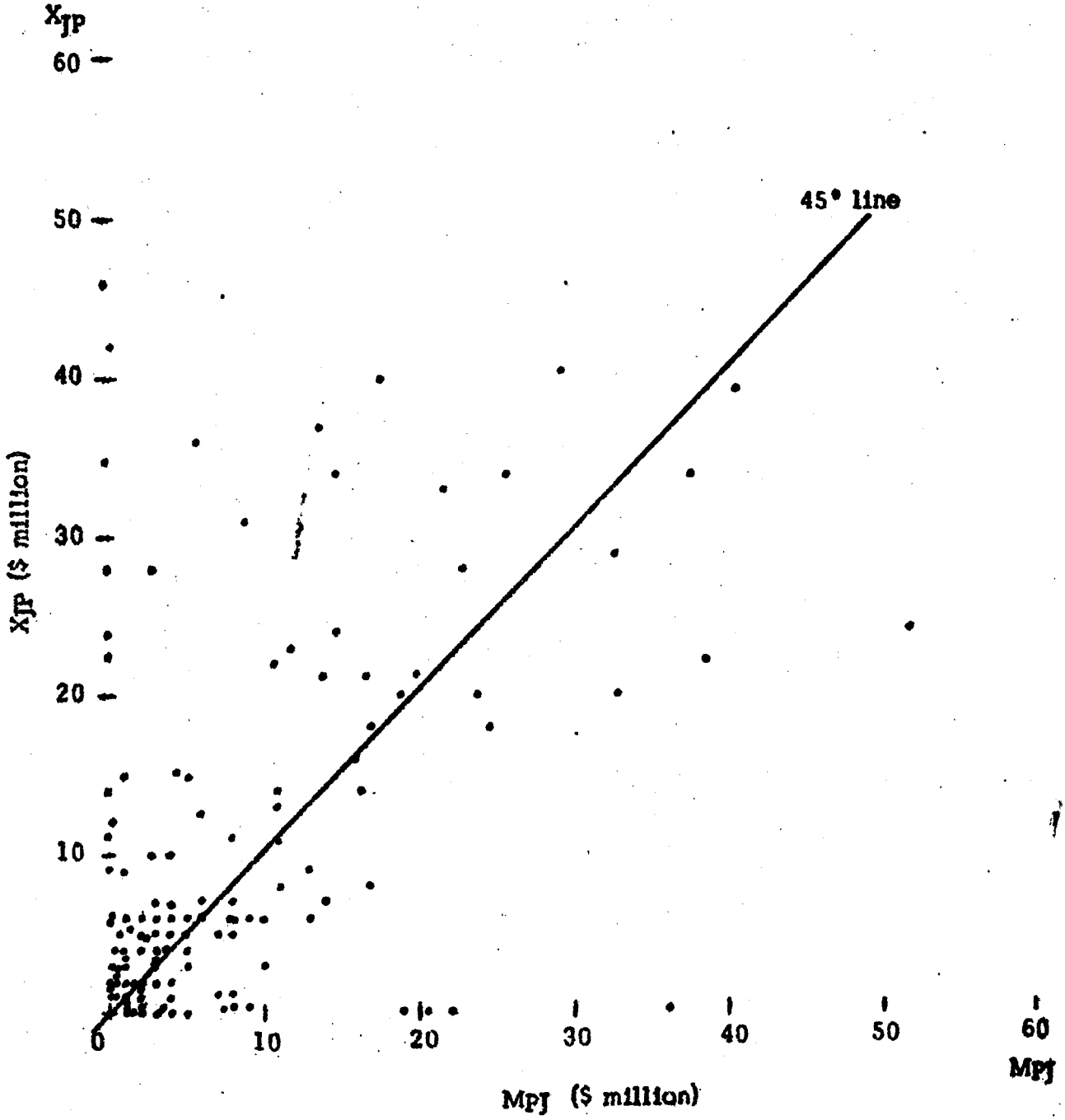
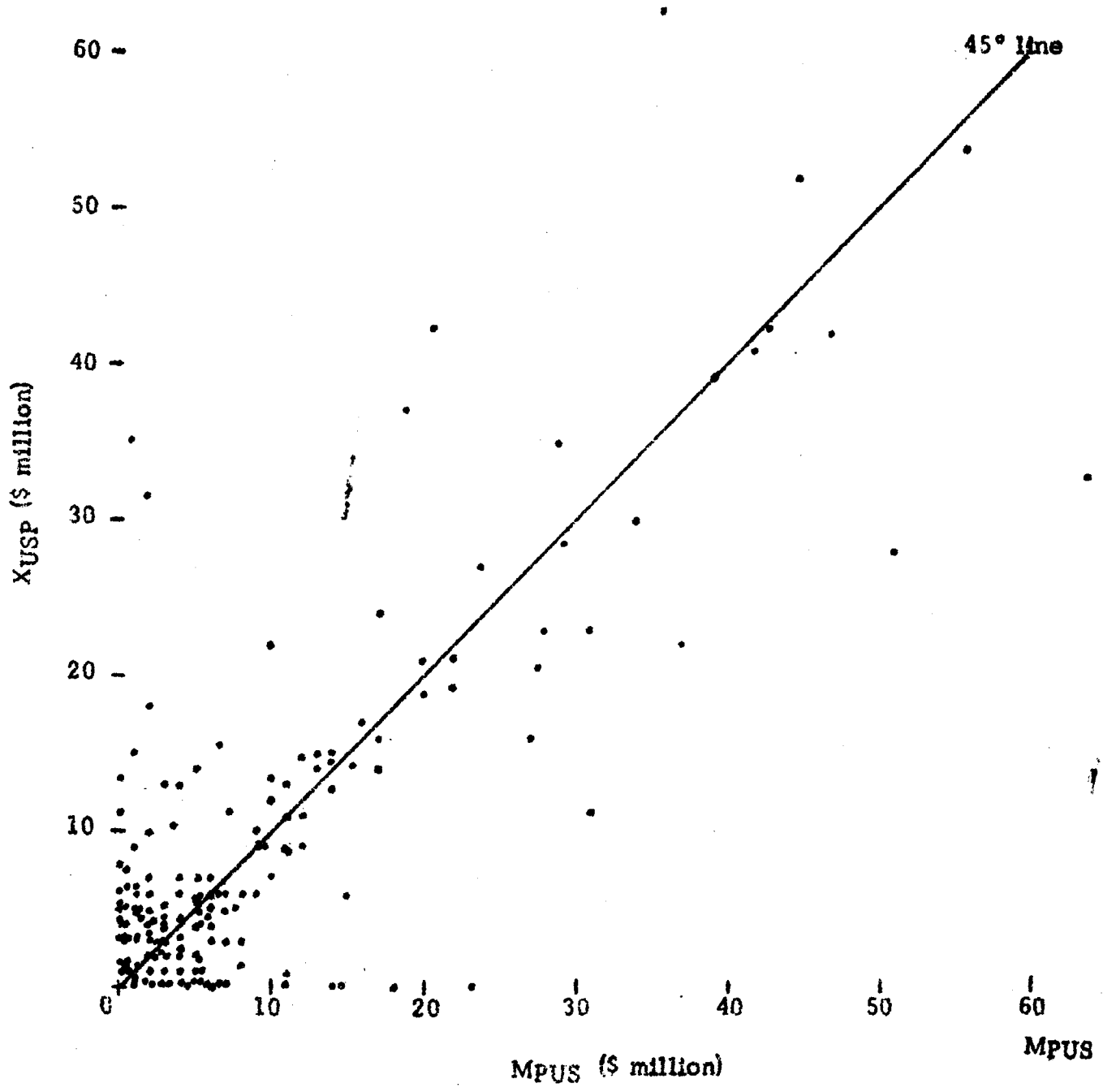


Figure 2: Scatter diagram of Philippine importsfrom the United States (M_{PUS}) and U.S. exports to the Philippines (X_{USP}): 4-digit SITC totals for 1962-1969, $1 million and over.



45° line
Mpls (6 million)
Mpls

Figure 3: Scatter diagram of Philippine exports to Japan (X_{PJ}) and Japanese imports from the Philippines (M_{JP}): 4-digit SITC totals for 1962-69, $ 1 million and over.

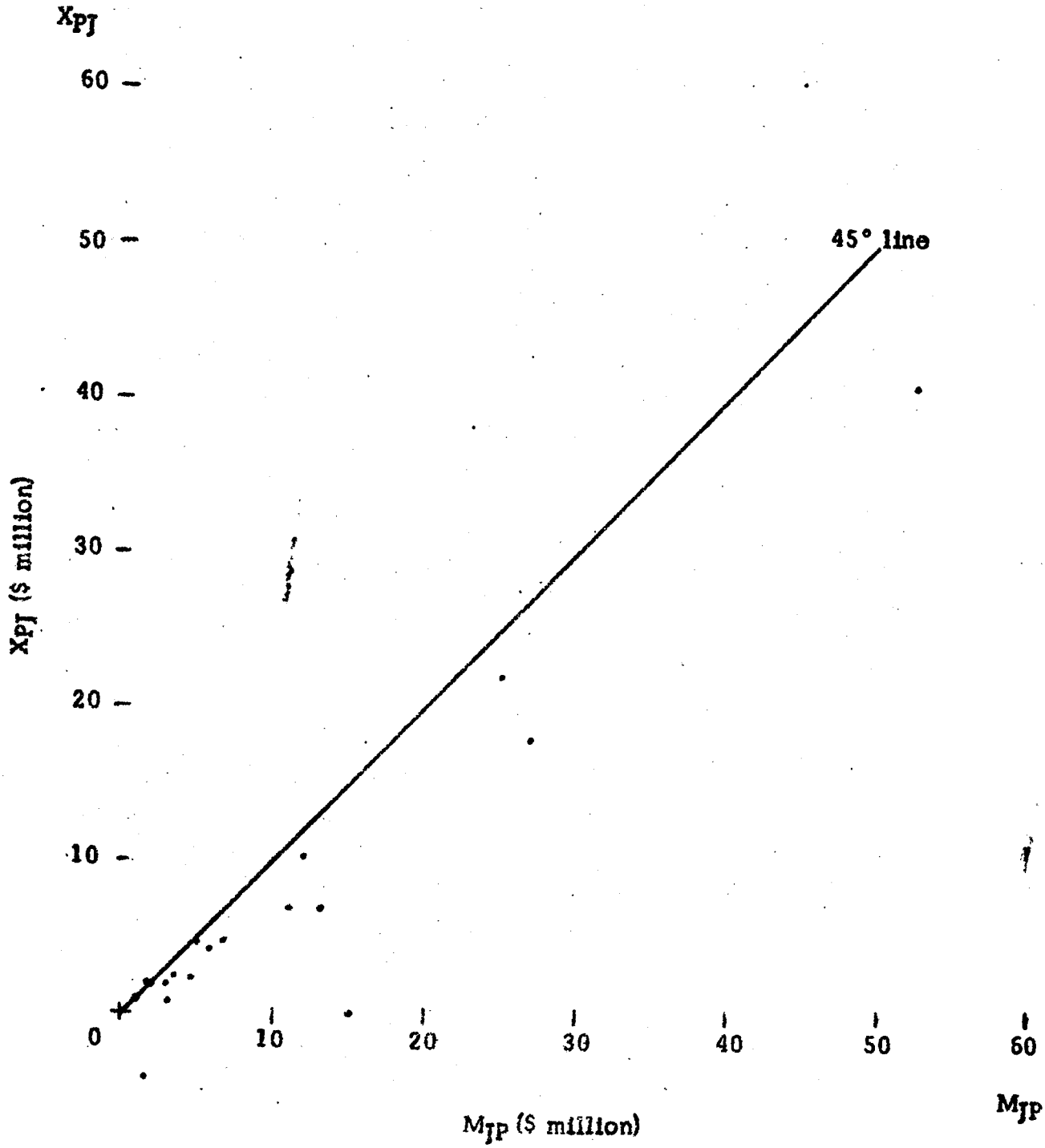
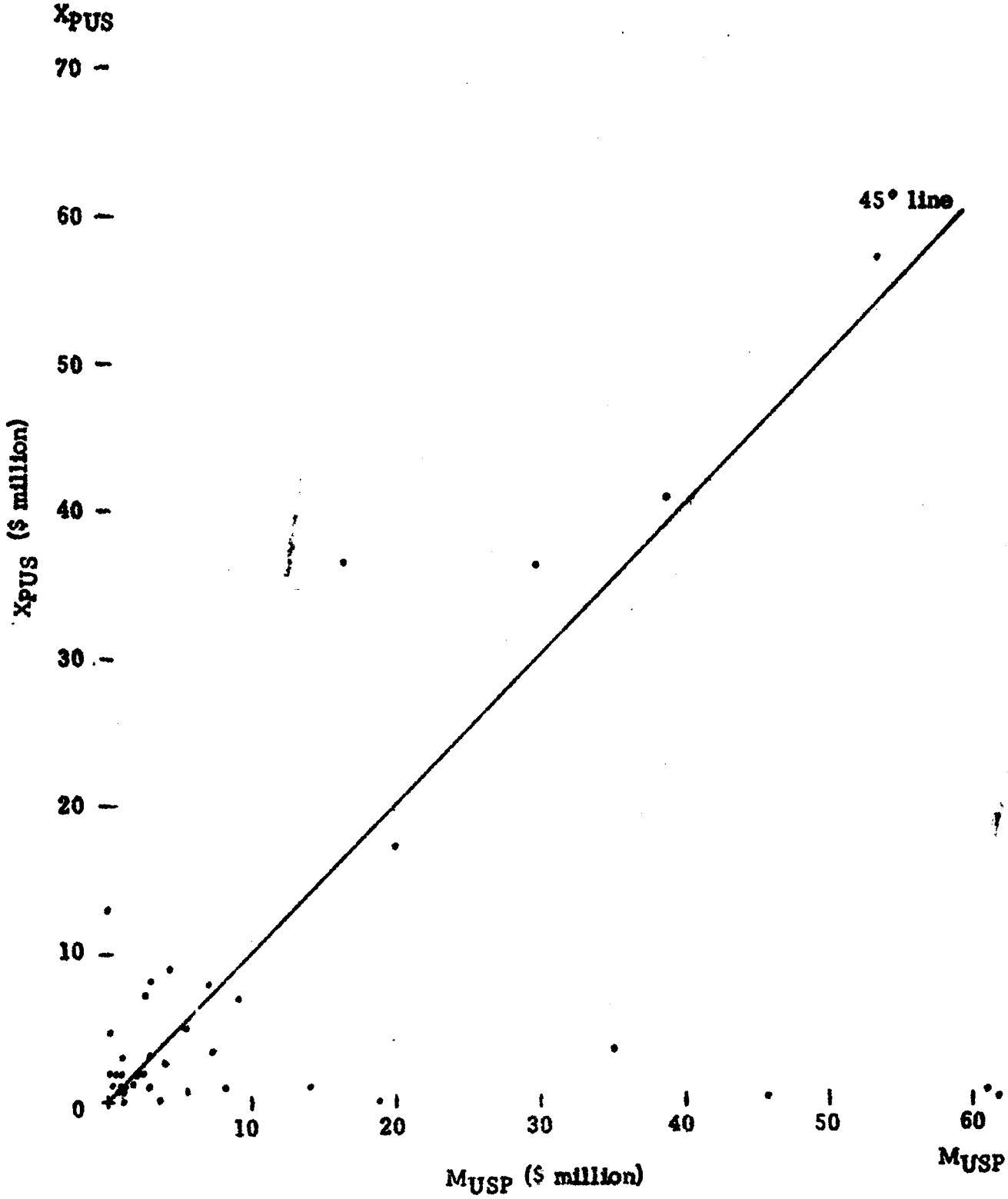


Figure 4: Scatter diagram of Philippine exports to the United States (X_{PUS}) and U.S. imports from the Philippines (M_{USP}): 4-digit SITC totals for 1962-69, $1 million and over.



2.3 "Maximum" trade values

In cases where DC partner data are lower than the corresponding LDC trade statistics, it can be assumed that actual underreporting to at least the extent of the observed discrepancies has taken place in the former, provided that there is no incentive to overvalue trade transactions in the LDC under study. The period 1962-1969 was one of trade liberalization in the Philippines, but only in the sense that controls on imports and foreign exchange instituted in the previous decade were no longer in operation. A highly protective tariff structure came into existence, however, which served to perpetuate the biases of the control system (Power and Sicat, 1971) and provided perhaps as much inducement to undervalue imports and exports as in the 1950s.

As stated earlier, a third method of estimating the magnitude of LDC trade flows where there is understatement also of DC partner data would be to consider as more accurate the higher value from the two sources at some level of commodity disaggregation. In the present study we examine the bilateral recordings at the 3-digit SITC level, compare individual items entered in the trade statistics of the two trading countries and pick the larger figures. In formal terms, using the symbols defined earlier, Philippine imports of any 3-digit

commodity r and exports of any 3-digit commodity s to country i (i = Japan, United States) in each year are estimated max (M^r_{pi}, X^r_{ip}) and max (M^s_{ip}, X^s_{pi}), respectively. The estimates of total imports and total exports in each year are then given by

$$\sum_r \max (M^r_{pi}, X^r_{ip}) \text{ and } \sum_s \max (M^s_{ip}, X^s_{pi}),$$

respectively.

Comparison of bilateral trade recordings at a finer commodity breakdown would be ill-advised as there are numerous cases of data discrepancies at the 4- and 5-digit SITC level attributable simply to commodity misclassification and differences in definition. This is exemplified by the case of sugar exports to the United States: From 1962 to 1966 both Philippine and U.S. data show SITC 0611 (Centrifugal sugar) to have much higher values (about ten times) compared to SITC 0612 (Refined sugar); for the years 1967, 1968 and 1969, however, the relative magnitudes of the two 4-digit commodities get reversed in U.S. recorded statistics, representing a clear case of commodity/classification.

Table 2.4 presents the annual values and period totals of such estimates of Philippine import and export flows with Japan and the United States. To determine the degree of divergence of Philippine,

TABLE 2.4: "Maximum" Trade Values, 1962-1969
(f.o.b. value in thousand U.S. dollars)

Year	Exports of the Philippines to Japan	Imports of the Philippines from Japan	Trade balance with Japan	Exports of the Philippines from the U.S.	Imports of the Philippines from the U.S.	Trade balance with U.S.
1962	184,859	132,099	52,960	332,292	351,536	(19,244)
1963	236,939	161,196	75,743	369,753	354,408	15,345
1964	226,913	210,862	16,051	406,521	410,978	(4,457)
1965	258,962	263,757	(4,795)	391,162	377,873	13,289
1966	334,649	315,425	19,224	412,420	381,903	30,517
1967	375,742	412,898	(37,156)	403,298	471,132	(67,834)
1968	398,874	449,763	(50,889)	442,267	483,158	(40,891)
1969	470,164	517,315	(47,151)	427,051	405,449	21,602
1962-69	2,487,102	2,463,315	23,787	3,184,764	3,236,437	(51,673)

Japanese and U.S. recorded data from these "maximum" trade values, export and import ratios are computed using the entries of Table 2.4 in the denominator; the results are summarized in Table 2.5.

As should be expected from the relative understatement of Philippine trade data, the ratios for the Philippines are less than those for Japan and the United States. Likewise U.S. ratios both for imports and exports are lower than the corresponding Japanese ratios. It is also observed that the deviation from unity of the import ratios of the two countries is invariably smaller than of the export ratios. For the Philippines, however, there is surprisingly a larger number of import ratios which are lower than the corresponding export ratios.[8/] This conflicts with the earlier judgment (cf. p. 4 above), based on a comparison of bilateral trade recordings, that Philippine imports are better recorded than exports. The qualitative inference one can make at this point is that the relative accuracy of import and export recordings in the Philippines is uncertain, depending as it is on whether DC partner data or the "maximum" values are taken to represent the true magnitude of trade flows.

Philippine trade balance figures with Japan and the United States implied by the maximum trade values are also shown in Table 2.4. Looking at the period totals, we find a positive balance of trade with

TABLE 2.5: Ratios of M_{pi}, X_{ip}, M_{ip} and X_{pi} to "Maximum" Trade Values

Year	PHILIPPINE DATA				JAPAN DATA		U. S. DATA	
	Import Ratios		Export Ratios		Import Ratios	Export Ratios	Import Ratios	Export Ratios
	Japan	U.S.	Japan	U.S.				
1962	0.805	0.718	0.739	0.841	0.995	0.908	0.967	0.757
1963	0.711	0.809	0.830	0.885	0.971	0.909	0.931	0.902
1964	0.819	0.845	0.827	0.869	0.989	0.905	0.975	0.867
1965	0.808	0.815	0.837	0.890	0.980	0.911	0.943	0.880
1966	0.838	0.828	0.832	0.806	0.971	0.874	0.964	0.885
1967	0.808	0.865	0.739	0.872	0.997	0.879	0.943	0.887
1968	0.722	0.859	0.710	0.805	1.997	0.914	0.934	0.878
1969	0.700	0.887	0.717	0.752	0.995	0.919	0.989	0.898
1962-69	0.779	0.832	0.769	0.838	0.989	0.903	0.963	0.871

Japan of $23.8 million and a trade deficit of $51.7 million with the United States. These are significantly different from those suggested by Philippine, Japanese and U.S. trade statistics as presented earlier: From Table 2.1, the trade balance figures from Philippine data are negative values of $4.0 million and $23.7 million with Japan and U.S. trades, respectively, while Japanese and U.S. data show positive values of $231.5 million and $247.7 million, respectively. Values of the annual trade balances suggested by the three sets of trade flow estimates similarly indicate large discrepancies, as can be discerned from a visual comparison of corresponding entries in Tables 2.1 and 2.4.

Finally, it is of some interest to compare average annual growth rates during 1962-1969 suggested by the three alternative sets of import and export data. Based on the maximum values, Philippine exports to Japan and the United States have expanded at the rate of 14.80 and 3.84 per cent, respectively; the corresponding figures for imports are 21.77 and 2.80 per cent. Using partner country data, Philippine exports to Japan and the United States show annual growth rates of 14.68 and 4.33 per cent, respectively, and Philippine imports 21.63 and 5.35 per cent. Implied from Philippine trade data are 14.86 and 2.33 per cent annual rates of increase in exports

to Japan and the United States, respectively, and 14.87 and 2.33 per cent in imports from the two countries. It would appear, therefore, that our official estimates of trade flows with the United States significantly understate the growth rate of our exports and overstate the increase in imports during the period under consideration. On the other hand, average annual growth rates of Philippine trade flows with Japan suggested by the three alternative data sets are remarkably very close, differing by less than 2 percentage points in import flows and less than one-fifth of one percentage point in exports.

3. Disaggregative Comparisons of Trade Statistics

3.1 Trade patterns by major commodity group

Annual values and relative shares of each commodity group (1-digit SITC level) to total Philippine imports from the United States and Japan are presented in Appendix Tables 1-2, based on Philippine as well as partner country data. In either case machinery and transport equipment (SITC 7) and manufactured goods classified chiefly by material (SITC 6) are seen to dominate consistently Philippine import trade with the two principal partner countries, contributing jointly more than three-fourths of total trade flows. Between these two major commodity groups, there has been an appreciable decline in the relative share of manufactured goods in the annual import flows in favor of machinery and transport equipment, presumably reflecting the import substitution in industrial consumer goods that was initiated in the previous decade. As indicated in Table 3.1, SITC 7, 6, 0 and 5 have contributed around 80 per cent of total imports from Japan and the United States during the period. Notice the relatively large discrepancies between Philippine and partner country data on the percentage shares of the two principal import commodity groups.

TABLE 3.1: Distribution of Total Philippine Imports by Major Commodity Group, 1962-69
(in per cent)

SITC No.	Name	Phil. imports from the U.S. (M_{pus})	U.S. exports to the Phil. (X_{usp})	Phil. imports from Japan (M_{pj})	Japan exports to the Phil. (X_{jp})
0	Food and live animals	14.11	14.61	6.37	5.07
1	Beverages and tobacco	1.05	0.98	0.00	0.01
2	Crude materials	8.79	7.42	4.79	3.85
3	Mineral fuels	2.61	1.90	0.91	0.59
4	Animal and vegetable oils	0.54	0.54	0.10	0.05
5	Chemicals	9.90	9.04	9.01	8.28
6	Manufactured goods classified chiefly by material	14.99	19.26	36.65	41.55
7	Machinery and transport equipment	42.12	39.98	39.48	36.11
8	Miscellaneous manufactured articles	3.46	5.05	2.44	3.86
9	Commodities and transactions not classified according to kind	2.43	1.22	0.25	0.63
TOTAL		100.00	100.00	100.00	100.00

A somewhat different pattern characterizes Philippine export trade. From Appendix Tables 3-4 and Table 3.2, crude materials (SITC 2) alone account for nearly 95 per cent of average annual exports to Japan during 1962-1969; in export trade to the United States, SITC 0, 2 and 4 are seen to contribute about 80 per cent. These observations are consistent with the greater product concentration of Philippine exports compared to imports. Relatively smaller differences in export shares between Philippine and partner country data at the 1-digit level can also be observed.

3.2 Comparison of data sets at the 1-digit SITC level

Discrepancies of Philippine trade data relative to partner country statistics for each major commodity group are represented in Table 3.3 by the values of import and export "ratios" (cf. p. 3 above), data differences being more serious the greater the divergence of these ratios from unity. A visual survey of the table establishes the initial hypothesis that there is indeed a wide dispersion in commodity group recordings which disappears in the aggregation process. For instance, import figures for at least six major commodity groups are overstated relative to U.S. export data (SITC 1, 2, 3, 5, 7 and 9); for Japan, on the other hand, there are four such groups (SITC 0,

TABLE 3.2: Distribution of Total Philippine Exports by Major Commodity Group, 1962-69
(in per cent)

SITC No.	Name	Philippine exports to U.S. (X_{pus})	U.S. imports from the Phil. (M_{usp})	Philippine exports to Japan (X_{pj})	Japan imports from the Phil. (M_{jp})
0	Food and live animals	47.57	45.63	4.23	5.09
1	Beverages and tobacco	1.77	1.61	0.03	0.02
2	Crude materials	23.74	20.33	94.67	93.37
3	Mineral fuels	0.93	0.00	0.29	0.24
4	Animal and vegetable oils	14.87	13.24	0.04	0.03
5	Chemicals	0.18	0.13	0.44	0.37
6	Manufactured goods classified chiefly by material	10.20	9.72	0.26	0.13
7	Machinery and transport equipment	0.04	0.02	0.00	0.08
8	Miscellaneous manufactured articles	0.64	8.83	0.03	0.04
9	Commodities and transactions not classified according to kind	0.06	0.49	0.01	0.63
TOTAL		100.00	100.00	100.00	100.00

TABLE 3.3: Ratios of Philippine Trade Data to Corresponding Partner Country Statistics, 1962-1969

SITC No.	IMPORT RATIOS $\frac{M_{pus}}{X_{usp}}$	IMPORT RATIOS $\frac{M_{pj}}{X_{jp}}$	EXPORT RATIOS $\frac{X_{pus}}{M_{usp}}$	EXPORT RATIOS $\frac{X_{pj}}{M_{jp}}$
0	0.921	1.082	0.907	0.647
1	1.019	0.352	0.955	1.367
2	1.129	1.070	1.016	0.789
3	1.310	1.320	889.750	0.938
4	0.943	1.977	0.977	0.916
5	1.043	0.938	1.179	0.938
6	0.742	0.760	0.913	1.514
7	1.004	0.842	1.510	0.004
8	0.653	0.543	0.063	0.653
9	1.897	0.338	0.114	0.010

2, 3, and 4). The corresponding number of commodity groups is less in exports: four in U.S. trade (SITC 2, 3, 5 and 7) and two for Japan (SITC 1 and 6). In any event, it seems clear that under-recording of trade transactions takes place only in the Philippines.

Appendix Table 5 gives estimates of annual trade flows to Japan and the United States based on "maximum" values at the 3-digit SITC level cumulated for each major commodity group. To determine the degree of discrepancy of Philippine and partner country trade data from the maximum values, import and export ratios using both types of data are presented in Table 3.4.

The observed values of export and import ratios of the trading partners are seen to be nearer unity generally than those of the Philippines. However, taken individually, there are some commodity groups for which the reverse is true, implying relative understatement of country partner data. For instance, mineral fuels (SITC 3) in both import and export trades would seem better recorded in the Philippines than in the two DC partner countries.

Average annual rates of increase over 1962-1969 in trade flows of the dominant 1-digit SITC groups implied by the three alternative data sets are given in Table 3.5. It would appear that imports

TABLE 3.4: Ratios of M_{pi}, X_{ip}, M_{ip} and X_{pi} to "Maximum" Trade Values by Major Commodity Group, 1962-1969

SITC No.	PHILIPPINE DATA				JAPAN DATA		U.S. DATA	
	Import Ratios		Export Ratios		Import Ratios	Export Ratios	Import Ratios	Export Ratios
	Japan	U.S.	Japan	U.S.				
0	.928	.826	.644	.896	.995	.857	.987	.896
1	.350	.889	.943	.907	.690	1.000	.949	.872
2	.919	.932	.781	.941	.989	.858	.926	.825
3	.982	.999	.895	1.000	.954	.744	.001	.763
4	.952	.776	.737	.947	.805	.481	.969	.823
5	.831	.897	.860	.915	.916	.886	.776	.859
6	.724	.679	.808	.894	.533	.952	.979	.915
7	.673	.902	.004	.671	.997	.876	.444	.897
8	.530	.641	.514	.062	.787	.976	.991	.981
9	.320	.962	.010	.114	.994	.945	.998	.507
TOTAL	.782	.840	.769	.838	.988	.908	.962	.898

TABLE 3.5: Average Annual Growth Rates of Philippine Trade Flows by Major Commodity Group, 1962-1969 (in per cent)

Trade flow	SITC No.	Based on: Philippine data	Trade partner data	Maximum values
Imports from:				
Japan	6	17.23	20.06	20.83
	7	28.69	29.38	26.93
U.S.	6	0.43	-1.54	-1.32
	7	9.50	9.07	9.19
Exports to:				
Japan	0	14.16	20.70	20.38
	2	15.05	14.37	14.51
U.S.	0	0.32	0.84	0.44
	2	2.91	5.00	4.09

of manufactured goods (SITC 6) and machinery and transport equipment (SITC 7) from the United States have grown faster than what Philippine data suggest, while increases in exports of food (SITC 0) and crude materials (SITC 2) have been overestimated; the same pattern of discrepancies has been noted earlier on the overall magnitudes (cf. Section 2). With respect to the observed growth in the volume of trade flows with Japan, the more significant discrepancies among the three sets of estimates are in the imports of manufactured goods and exports of food, both having substantial understatement in Philippine data; this has been offset presumably by a corresponding understatement in the less dominant import commodity classes, recalling the previous observation of comparable growth rates of trade flows with Japan in the aggregate.

Our major concern in this section is to allocate the total discrepancies between Philippine and partner country trade data into the finer commodity categories. As should be evident from the earlier discussions, relative under-recording is a much more extensive phenomenon than over-recording in Philippine trade statistics. However, as shown in Table 3.6, overstatement of Philippine data cannot be summarily dismissed as insignificant, especially in regard to import trade. Clearly, a bilateral comparison of aggregative data that reveals only the overall discrepancies (i.e.,

TABLE 3.6: Total Discrepancies Between Philippine and Trade Partner Data, 1962-1969 (in thousand U.S. dollars)

Trade flow	Relative understatement of Philippine data	Relative overstatement of Philippine data
Phil. imports from:		
Japan	449,858	137,475
United States	408,160	269,475
Phil. exports to:		
Japan	548,415	5,163
United States	442,427	49,131

the difference between the amount of understatement and overstatement for each trade flow) could be misleading and at best is inadequate.

Table 3.7a presents the distribution of data discrepancies at the 1-digit SITC level of Philippine import recordings during 1962-1969 compared to those of the two partner countries. The figures represent amounts and percentage shares of relative understatement and overstatement of Philippine data among 3-digit SITC commodity items cumulated for each major commodity group. The two dominant import commodity groups, SITC 6 and 7, are observed to account for 80.2 per cent of the total understatement and 63.8 per cent of the total overstatement in imports from Japan, while contributing 64.3 and 47.7 per cent to the trade understatement and overstatement, respectively, in imports from the United States. SITC 8 (Miscellaneous manufactures) appears responsible for a large part of the total understatement which is out of proportion to its share of imports from either country. Most of the discrepancies in the bilateral recordings of Philippine imports from Japan of the third leading major commodity group, SITC 0, shows relative overstatement of Philippine data. Relative under-recording of Japanese statistics on export to the Philippines is also apparent in SITC 2,

TABLE 3.7a: Relative Understatement and Overstatement of Philippine Import Data by Major Commodity Group, 1962-1969

SITC No.	Imports from:	Understatement		Overstatement	
		$ thousand	Per cent	$ thousand	Per cent
0	Japan	2,298	0.51	11,629	8.46
	U.S.	60,357	14.79	28,203	10.47
1	Japan	114	0.03	29	0.02
	U.S.	510	0.12	142	0.05
2	Japan	4,873	1.08	10,954	7.97
	U.S.	10,000	2.45	37,015	13.74
3	Japan	0	0.00	4,232	3.09
	U.S.	3,593	0.88	13,095	4.86
4	Japan	10	0.00	996	0.72
	U.S.	3,562	0.87	2,699	1.00
5	Japan	31,875	7.09	20,486	14.90
	U.S.	16,603	4.07	27,085	10.05
6	Japan	259,637	57.72	32,874	23.91
	U.S.	174,323	42.71	34,638	12.85
7	Japan	101,112	22.48	54,765	39.84
	U.S.	88,066	21.58	93,944	34.86
8	Japan	40,628	9.03	1,414	1.03
	U.S.	50,073	12.27	686	0.25
9	Japan	9,311	2.07	96	0.07
	U.S.	1,073	0.26	31,968	11.86
TOTAL	Japan	449,858	100.00	137,475	100.00
	U.S.	408,160	100.00	269,475	100.00

3 and 5. On imports from the United States, the amount of overstatement is quite significant in SITC 7, 2, 6, 9, 0 and 5 -- listed in the order of decreasing percentage shares; on the other hand, underestimation of Philippine data seems concentrated in SITC 6, 7, 0 and 8.

Discrepancies between Philippine export statistics and corresponding import data of Japan and the United States are shown in Table 3.7b for each major commodity group. As noted earlier, overstatement of Philippine export estimates is relatively insignificant compared to the amount of apparent under-recording, the proportion being about 1:11 in exports to the U.S. and less than 1:100 to Japan. The principal contributors to total overstatement are SITC 6 and 2 in exports to Japan and SITC 3 and 2 to the U.S., the two major commodity groups in each case accounting jointly for about 80 per cent of the observed discrepancy. It is notewothy that SITC 6 and 3, to which are attributed the highest share of overstatement in Japan and U.S. exports, respectively, have relatively small contributions to total export trade during the period (cf. Table 3.2 above). Of the total amount of relative understatement of Philippine exports to Japan, the most dominant commodity group, SITC 2, is seen to be responsible already for 88 per cent.

TABLE 3.7b: Relative Understatement and Overstatement of Philippine Export Data by Major Commodity Group, 1962-1969

SITC No.	Exports to :	Understatement		Overstatement	
		$ thousand	Per cent	$ thousand	Per cent
0	Japan	44,350	8.09	319	6.18
	U.S.	135,241	30.57	5,281	10.75
1	Japan	10	0.00	193	3.74
	U.S.	2,200	0.50	18	0.04
2	Japan	483,987	88.25	1,596	30.91
	U.S.	4,616	1.04	14,748	30.02
3	Japan	363	0.07	0	0.00
	U.S.	0	0.00	24,885	50.65
4	Japan	240	0.04	174	3.37
	U.S.	9,064	2.05	5	0.01
5	Japan	734	0.13	194	3.76
	U.S.	18	0.00	747	1.52
6	Japan	777	0.14	2,457	47.59
	U.S.	22,213	5.02	984	2.00
7	Japan	2,000	0.37	0	0.00
	U.S.	436	0.10	797	1.62
8	Japan	554	0.10	230	4.45
	U.S.	255,448	57.74	1,666	3.39
9	Japan	15,400	2.81	0	0.00
	U.S.	13,191	2.98	0	0.00
TOTAL	Japan	548,415	100.00	5,163	100.00
	U.S.	442,427	100.00	49,131	100.00

Similarly, in the case of exports to the United States, a strong correlation exists between the share in trade volume and contribution to the data discrepancy: SITC 8 and 2 account for more than four-fifths both of total export flow (cf. Table 3.2) and, as shown in Table 3.7b, of total understatement of Philippine export data relative to those of the United States.

3.3 Distribution of discrepancies at the 2- and 3-digit SITC levels

The major commodity groups responsible for most of the discrepancies of Philippine trade data relative to corresponding partner country statistics having been identified, examination of bilateral recordings at higher levels of disaggregation can now be undertaken. This is important since there might be only a few commodity items within the broad groupings that account for a large portion of the observed discrepancies. Our findings, as described below, show that it is in fact the case.

The amounts and percentage shares of understatement and overstatement of the ten principal commodity groups (2-digit SITC) contributing most to Philippine import data discrepancies during 1962-1969 are presented in Table 3.8a and 3.8b, respectively. Under-recording of import flows from Japan to the extent of $404.1

TABLE 3.8a: Ten Principal Sources of Relative Understatement of Philippine Import Data at the 2-digit level, 1962-1969

SITC No.	Commodity description	$ thousand	Per cent
I.	Imports from Japan		
51	Chemical elements and compounds	13,041	2.89
58	Plastic materials	14,584	3.24
65	Textile yarns, fabrics	119,553	26.57
66	Non-metallic mineral, manufactured, n.e.s.	22,559	5.01
67	Iron and steel	69,581	15.46
69	Manufactures of metal, n.e.s.	38,497	8.55
71	Machinery, other than electric	21,362	4.74
72	Electrical machinery	58,983	13.11
73	Transport equipment	20,767	4.61
89	Miscellaneous manufactures, n.e.s.	25,186	5.59
	TOTAL	404,113	89,77
II.	Imports from the United States		
04	Cereals and cereal preparations	25,134	6.15
26	Textile fibres	9,321	2.28
61	Leather, leather manufactures	41,699	10.21
65	Textile yarns, fabrics	95,989	23.51
69	Manufactures of metal, n.e.s.	16,216	3.97
71	Machinery other than electric	45,300	11.09
72	Electrical machinery	22,933	5.61
73	Transport equipment	19,833	4.85
84	Clothing	17,683	4.33
89	Miscellaneous manufactures, n.e.s.	19,723	4.83
	TOTAL	313,831	76.83

TABLE 3.8b: Ten Principal Sources of Relative Overstatement of Philippine Import Data at the 2-digit level, 1962-1969

SITC No.	Commodity description	$ thousand	Per cent
I.	Imports from Japan		
03	Fish and fish preparations	7,369	5.36
27	Crude fertilizers and crude minerals	3,521	2.56
33	Petroleum and petroleum products	3,917	2.84
51	Chemical elements and compounds	2,881	2.09
56	Fertilizers, manufactured	2,916	2.12
59	Chemical materials and products, n.e.s.	11,220	8.16
65	Textile yarn, fabrics	2,286	1.66
67	Iron and steel	26,904	19.57
71	Machinery other than electric	45,405	33.02
73	Transport equipment	9,318	6.77
	TOTAL	115,737	84.15
II.	Imports from the United States		
26	Textile fibres	14,385	5.33
27	Crude fertilizers and crude minerals	7,605	2.82
33	Petroleum and petroleum products	12,485	4.63
59	Chemical materials and products, n.e.s.	12,311	4.56
64	Paper, paperboard and manufactures thereof	18,401	6.82
68	Non-ferrous metals	9,385	3.48
71	Machinery, other than electric	12,142	4.50
72	Electrical machinery	11,127	4.12
73	Transport equipment	70,675	26.22
93	Special transactions	30,862	11.45
	TOTAL	199,378	73.93

million (close to 90 per cent of total understatement) is seen to be attributable to the ten commodity groups shown in the first part of Table 3.8a; in the case of imports from the United States, the corresponding amount is $313.8 million during the period, slightly more than three-fourths of the total. Three commodity groups, viz., SITC 65 (Textile yarns, fabrics), 67 (Iron and steel) and 72 (electrical machinery), are responsible for as much as 55 per cent of total understatement of imports from Japan. Similarly, 45 per cent of unrecorded import flows from the United States can be attributed to the following three commodity groups: SITC 61 (Leather manufactures), 65 (Textile yarns, fabric) and 71 (Machinery other than electric). Of particular interest is the finding that about one-fourth of total under-recording of import flows from the two partner countries has been contributed singly by SITC 65. Other commodity groups that appear prominently in both U.S. and Japanese lists are SITC 69, 71, 73 and 89.

Two commodity groups stand out as principal sources of the overstatement of Philippine import data relative to corresponding Japanese export statistics: SITC 71 (Machinery other than electric) and 67 (Iron and steel) jointly account for 52.6 per cent of total unrecorded exports of Japan to the Philippines during 1962-1969

(cf. Table 3.8b). The distribution of corresponding discrepancies in U.S. trade appears more dispersed, although SITC 73 (Transport equipment) and 93 (Special transactions) are seen to contribute 37.7 per cent of the total overstatement of Philippine data. There are five commodity groups included as principal sources of each partner country's under-recording of exports to the Philippines, viz., SITC 27, 33, 59, 71 and 73.

Examination of Tables 3.9a and 3.9b, which list the ten principal 3-digit SITC commodity items in accordance with their share of import data discrepancies, will enable us to identify more specifically the major sources. Thus, on the relative understatement of Philippine import statistics, we find SITC 653 (Textile materials, woven) contributing 23.4 per cent of the total discrepancy with respect to Japanese trade, followed by SITC 674 (Universals, plates and sheets of iron and steel) which makes up 12.2 per cent (cf. Table 3.9a). With respect to imports from the United States, SITC 652 (Cotton fabrics), 719 (Machinery and appliances, n.e.s.) and 611 (Leather) are seen to account for 27.6 per cent of the total amount of under-recording of Philippine data, which is about one-half of the total contribution of the ten principal commodity items listed in the bottom part of Table 3.9a.

TABLE 3.9a: Ten Principal Sources of Relative Understatement of Philippine Import Data at the 3-digit level, 1962-1969

SITC No.	Commodity description	$ thousand	Per cent
I.	Imports from Japan		
512	Organic chemicals	13,035	2.89
581	Plastic materials	14,584	3.24
653	Textile materials, woven	105,378	23.42
666	Pottery	11,603	2.57
674	Universals, plates & sheets of iron and steel	54,924	12.20
711	Power generating machineries	15,222	3.38
722	Electric power machinery	27,712	6.16
729	Other electric machinery and apparatus	16,273	3.61
734	Aircraft	18,943	4.21
891	Musical Instruments	11,421	2.53
	TOTAL	289,095	64.21
II.	Imports from the United States		
041	Wheat	18,219	4.46
611	Leather	35,937	8.80
651	Textile yarn and thread	12,634	3.09
652	Cotton fabrics	45,012	11.02
653	Textile fabrics, woven	22,040	5.39
656	Made up articles	11,077	2.71
719	Machinery and appliances, n.e.s.	35,964	8.81
722	Electric power machinery	11,570	2.83
734	Aircraft	18,812	4.60
841	Clothing of textile fabrics	16,322	3.99
	TOTAL	227,587	55.70

TABLE 3.9b: Ten Principal Sources of Relative Overstatement of Philippine Import Data at the 3-digit level, 1962-1969

SITC No.	Commodity description	$ thousand	Per cent
I.	Imports from Japan		
031	Fish, fresh and simply preserved	7,369	5.36
284	Non-ferrous metal scrap	4,619	3.35
332	Petroleum products	3,890	2.82
599	Chemical materials and products, n.e.s.	11,990	8.72
672	Ingots and other primary forms	25,137	18.28
712	Agricultural machinery and implements	4,364	3.17
715	Metal working machinery	13,580	9.87
717	Textile and leather machinery	4,916	3.57
718	Machines for special industries	22,545	16.39
732	Road motor vehicles	5,197	3.78
	TOTAL	103,607	75.31
II.	Imports from the United States		
072	Cocoa	13,203	4.89
263	Cotton	14,137	5.24
332	Petroleum products	12,485	4.63
514	Other inorganic chemicals	6,620	2.45
599	Chemical materials and products	12,311	4.56
641	Paper and paperboard	10,556	3.91
642	Articles made of paper pulp	7,845	2.91
718	Machines for special industries	6,636	2.46
732	Road motor vehicles	66,763	24.77
931	Special transactions	30,862	11.45
	TOTAL	181,418	67.27

Furthermore, from Table 3.9b, we can pinpoint 3-digit commodity items which contribute significantly to the total overstatement of Philippine import data relative to corresponding partner country trade statistics. SITC 672 (Ingots and other primary forms) and 718 (Machines for special industries) are seen to account already for about 35 per cent of apparent Japanese under-recording of exports to the Philippines; the relatively significant contributions of SITC 715 (Metal working machinery) and 599 (Chemical materials and products, n.e.s.) are also worth noting, since they provide an additional 20 per cent of the total discrepancy. In the case of imports from the United States, relative overstatement of Philippine data appears concentrated in SITC 732 (Road motor vehicles) and 931 (Special transactions), which contribute 24.8 and 11.4 per cent, respectively, to the total amount.

Examining now Philippine export data discrepancies relative to the recordings of the two trade partners, Tables 3.10a and 3.10b indicate that there are even fewer commodity groups responsible for as much as 80 per cent of total understatement in our export trade to both countries during 1962-1969. Notice also that the ten principal commodity groups account for almost the entire under-recording of Philippine exports to either country, which is understandable in

TABLE 3.10a: Ten Principal Sources of Relative Understatement of Philippine Export Data at the 2-digit level, 1962-1969

SITC No.	Commodity description	$ thousand	Per cent
I.	Exports to Japan		
05	Fruit and vegetables	4,847	0.88
06	Sugar, sugar preparations and honey	31,034	5.66
08	Feeding stuff for animals	8,457	1.54
22	Oils seeds, oil nuts	3,738	0.68
24	Wood, lumber, and cork	374,734	68.33
26	Textile fibres and their waste	12,219	2.23
27	Crude fertilizers and crude minerals	9,665	1.76
28	Metalliferous ores	83,268	15.18
73	Transport equipment	1,627	0.30
93	Special transactions	15,344	2.80
	TOTAL	544,933	99.36
II.	Exports to the United States		
05	Fruit and vegetables	20,472	4.63
06	Sugar, sugar preparations and honey	113,683	25.70
12	Tobacco and tobacco manufactures	2,199	0.50
26	Textile fibres and their wastes	2,374	0.54
42	Vegetable oils and fats	9,064	2.05
63	Wood and cork manufactures	15,671	3.54
65	Textile yarns, fabrics and made-up articles	3,376	0.76
68	Non-ferrous metals	2,934	0.66
84	Clothing	251,089	56.75
93	Special transactions	13,020	2.94
	TOTAL	433,882	98.07

TABLE 3.10b: Ten Principal Sources of Relative Overstatement of Philippine Export Data at the 2-digit level, 1962-1969

SITC No.	Commodity description	$ thousand	Per cent
I. Exports to Japan			
03	Fish and fish preparations	147	2.85
11	Beverages	91	1.76
12	Tobacco and tobacco manufactures	102	1.98
24	Wood, lumber, and cork	1,407	27.64
26	Textile fibres and their wastes	73	1.41
42	Vegetable oils and fats	174	3.37
53	Dyeing, tanning and colouring materials	175	3.39
63	Wood and cork manufactures	546	10.58
68	Non-ferrous metals	1,840	35.64
83	Travel goods	172	3.33
	TOTAL	4,747	91.95
II. Exports to the United States			
08	Feeding stuff for animals	4,599	9.36
22	Oil seeds, oil nuts, and oil farnels	2,058	4.19
24	Wood, lumber, and cork	11,236	22.87
28	Metalliferrous ores and metal scrap	1,441	2.93
33	Petroleum and petroleum products	24,885	50.65
51	Chemical elements and compounds	453	0.92
65	Textile yarns, fabrics, made-up articles	696	1.42
73	Transport equipment	635	1.29
83	Travel goods, hand bags & similar articles	509	1.04
89	Miscellaneous manufactures, n.e.s.	1,155	2.35
	TOTAL	47,667	97.02

view of the high degree of product concentration. SITC 24 (Wood, lumber and cork) is seen to contribute 68.3 per cent to the total understatement of export flows to Japan, while SITC 28 (Metalliferrous ores) answers for 15.2 per cent (cf. Table 3.10a). On the other hand, under-recording of Philippine exports to the United States during the period is principally attributable to SITC 84 (Clothing) and 06 (Sugar, sugar preparations and honey), whose percentage shares of the total amount of understatement are 56.8 and 25.7 per cent, respectively. As revealed in Table 3.11a, only one or two commodity items at the 3-digit level are responsible for such domination of each of the commodity groups mentioned above. Except for SITC 841 which has probably entailed a misclassification of entries,[9/] they belong to the category of "principal export" products of the Philippines.

As noted earlier, overstatement of Philippine export data is relatively insubstantial compared to the magnitude of apparent under-reporting. From Table 3.10b and 3.11b, we find the three major contributors to the observed discrepancy in our exports to Japan, viz., copper concentrates (SITC 682), fuel wood and charcoal (SITC 241) and plywood and veneer (SITC 631), accounting for about 70 per cent of the total at both the 2- and 3-digit levels. On

TABLE 3.11a: Ten Principal Sources of Relative Understatement of Philippine Export Data at the 3-digit level, 1962-1969

SITC No.	Commodity description	$ thousand	Per cent
I.	Exports to Japan		
061	Sugar and honey	2,584	0.47
081	Feeding stuff for animals	31,034	5.66
221	Oil seeds, oil nuts and oil farnels	3,738	0.68
242	Wood in the rough or roughly squared	374,460	68.28
265	Jute	12,101	2.21
276	Other crude materials	7,461	1.36
281	Iron ores and cncentrates	50,244	9.16
283	Ores and concentrates of non-ferrous base metals	26,901	4.91
284	Non-ferrous metal scrap	5,983	1.09
931	Special transactions	15,344	2.80
	TOTAL	529,850	96.62
II.	Exports to the United States		
051	Fruit, fresh, and nuts	6,695	1.51
053	Fruit, preserved & fruit preparations	13,645	3.08
061	Sugar and honey	113,683	25.70
121	Tobacco, unmanufactured	2,058	0.47
422	Other fixed vegetable oils	9,064	2.05
631	Veneers, plywood bound, worked	13,866	3.13
656	Made-up articles of textile materials	3,075	0.70
682	Copper	2,817	0.64
841	Clothing	251,019	56.74
931	Special transactions	13,020	2.94
	TOTAL	428,942	96.96

TABLE 3.11b: Ten Principal Sources of Relative Overstatement of Philippine Export Data at the 3-digit level, 1962-1969

SITC No.	Commodity description	$ thousand	Per cent
I.	Exports to Japan		
031	Fish, fresh and preserved	99	1.92
112	Alcoholic beverages	91	1.76
121	Tobacco, unmanufactured	102	1.98
241	Fuel wood and charcoal	1,427	27.64
422	Other fixed vegetable oils	174	3.37
533	Pigments, paints, varnishes	175	3.39
631	Veneer, plywood boards, worked	501	9.70
682	Copper concentrates	1,637	31.71
686	Zinc	199	3.85
831	Travel goods, handbags & similar articles	172	3.33
	TOTAL	4,577	88.65
II.	Exports to the United States		
081	Feeding stuff for animals	4,599	9.36
221	Oil seeds, oil nuts and oil farnels	2,058	4.19
242	Wood in the rough or roughly squared	5,394	10.98
243	Wood shaped or simply worked	5,842	11.89
284	Non-ferrous metal scrap	498	1.01
285	Silver and platinum ores	943	1.92
332	Petroleum products	24,885	50.65
735	Ships and boats	553	1.35
831	Travel goods, handbags and similar articles	509	1.04
896	Works of art, collectors pieces & antiques	1,155	2.35
	TOTAL	46,436	94.52

exports to the United States, relative overstatement of Philippine data appears very pronounced in petroleum products (SITC 332) and wood exports (SITC 242 and 243). Notice that, while there are commodity groups contributing to both understatement and overstatement discrepancies in export recording, viz. SITC 24, 26 and 65, such overlap vanishes when the relevant 3-digit commodity items are considered.

3.4 Under-recording of Philippine import flows and the tariff structure

The tariff structure prevailing in the importing country is frequently cited as one of the major factors behind observed discrepancies in bilateral trade recordings (cf. Naya and Morgan, 1969). The higher the tariff rate on individual commodities or groups of commodities, the greater the incentive to under-report the value of imports. It can be expected therefore that imports which are less heavily taxed will be less seriously under-recorded: they may even be relatively overstated in the importing country's statistics if the incentives to undervalue exports (e.g., due to existing export taxes) in the partner country are stronger.

As mentioned earlier, the tariff system was made redundant in the Philippines in the 1950s by the existence of rigorous

controls on import and foreign exchange. Gradual lifting of controls began in 1960 and was completed in 1962, ushering in a period in which tariff policy became an effective instrument in influencing the direction of Philippine economic development. We examine here the hypothesis given above on the negative relationship between the tariff rate and the degree of under-recording of imports by considering Philippine import flows from Japan and the United States during 1962-1969.

It is interesting to look first at the 3-digit commodity items identified earlier (cf. Table 3.9a) as the principal contributors to the understatement of Philippine import data relative to the corresponding trade statistics of the two partner countries. Using the 1965 Tariff Code, we compute the average tariff rate[10/] applicable to these commodity imports to be 41.1 per cent. Among these commodity items, the following have been singled out above as the most important sources of data discrepancies: SITC 653 (Textile materials, woven), 674 (Iron and steel plates, etc.) and 722 (Electric power machinery) in imports from Japan, and SITC 611 (Leather), 652 (Cotton fabrics) and 719 (Machinery and appliances, n.e.s.) in imports from the United States. Some indication of the validity of the postulated relationship is given by the fact that these commodity

imports were subject to an average tariff rate of 52.2 per cent, which is significantly higher than the corresponding figure for the larger set of commodities.

A more comprehensive test of the hypothesis that the extent of under-reporting of import transactions is influenced by the tariff rate will now be provided by the correlation, using the standard least squares method, of the Philippine import ratios with average tariff rates of the (2-digit SITC) commodity groups. As presented in Appendix Table 6, two sets of import ratios may be used, the denominator being the partner country's recorded exports in one set and the "maximum" values in the other. Considering both sets in the import trade with each of the two trade partners, the regression results are as follows:

Imports from Japan

$$I_j = 1.134 - 1.047\ T;\ R = -.866;\ e = -1.318 \quad (-7.14)$$

$$I_j^m = 1.237 - 1.174\ T;\ R = -.867;\ e = -1.572 \quad (-7.17)$$

Imports from the United States

$$I_{us} = 1.338 - 1.066\ T;\ R = -.581;\ e = -.836 \quad (-3.50)$$

$$I_{us}^m = 1.195 - 1.004\ T;\ R = -.777;\ e = -.916 \quad (-6.05)$$

where

I_j = Philippine import ratio in Japan trade based on Japanese export data (= M_{pj}/X_{jp})

I_j^m = Philippine import ratio in Japan trade based on the "maximum" values

I_{us} = Philippine import ratio in U.S. trade based on U.S. export data (= M_{pus}/X_{usp})

I_{us}^m = Philippine import ratio in U.S. trade based on "maximum" values

T = average tariff rate.

The correlation coefficient is denoted by R and the numbers in parentheses underneath the coefficient estimates are their t-values. Each of the estimated equations suggest a significantly negative correlation between the tariff rate and the import ratio, however expressed. The absolute values of R and the t-statistics are seen to be higher where the import ratio is based on the "maximum" values rather than the corresponding trade partner export data, although in the case of imports from Japan the difference is very slight. More than one-half of the variation in the import ratio across commodity groups is explained by the variation in tariff rates, except in the third equation which has the import ratio based on U.S. export data.

Computed values of the elasticity of the import ratio with respect to the tariff rate (denoted by e) implied by the estimated equations are also given above for the mean values of the variables. They range from -.836 to -1.572, suggesting a rather significant effect on the pattern of understatement of Philippine import data of the variation in tariff rates across commodity groups. Thus, if the "maximum" values are taken to represent the correct magnitudes of trade flows, commodities whose tariff rates are higher by 10 per cent have had their import flows from Japan during 1962-1969 under-recorded in Philippine trade statistics by 15.72 per cent more and in imports from the United States by 9.16 per cent. If valid for interpretation in a temporal context, such percentage increases in the undervaluation of imports to be expected from a 10 per cent rise in the average tariff rate leave very little scope indeed for the generation of additional government revenues.

4. Implications on Philippine Export Performance

4.1 Constant-market-share analysis of export growth

The constant-market-share model, so called because of its underlying assumption, decomposes the total change in a country's exports over a given period into (i) the change that would have occurred had the country maintained a constant market share of destination imports, and (ii) the change due to an increase or decrease in the country's export share. The first source of growth is commonly referred to as the "expansion effect" and the second as the "residual effect" (being the difference between actual exports and the hypothetical export level had a constant market share been maintained).

Let a country's export value of commodity k to a destination market in the base year be denoted by X_{ko}. Defining further S_{ko} as the share of the country's exports of k to total imports M^T_{ko} of the destination market in the base period, we may write

$$X_{ko} = S_{ko} M^T_{ko} \qquad (1)$$

Over a period of n years, the change in the country's exports of k to the partner country is given by

$$(2)\quad \Delta X_k = X_{kn} - X_{ko} = S_{kn}M^T_{kn} - S_{ko}M^T_{ko}$$

$$= S_{ko}(M^T_{kn} - M^T_{ko}) + (S_{kn} - S_{ko})M^T_o + (S_{kn} - S_{ko})(M^T_{kn} - M^T_{ko})$$

$$= S_{ko}\Delta M^T_k + \Delta S_k (M^T_o + \Delta M^T_k)$$

The first term in the R.H.S. represents the change in exports due to the expansion of the destination country's imports, based on a constant-share norm (expansion effect); the other term is attributable to the change in the exporting country's share of the destination market (residual effect). From eq. (2), one can identify two components of the residual effect: (1) the "market share effect", representing the product of the change in share and the base period export value; and (2) the "interaction effect" (also called the "sequence-of-calculation effect") which is attributable to the simultaneous changes in market share and value of destination country imports during the period.

Although no more than accounting relationships are involved in the CMS framework as presented above, constant share growth has been derived elsewhere[11/] as a descriptive model of export performance from assumptions, admittedly rather strong, of product heterogeneity among different export sources, constant relative product prices and unchanging homothetic preferences of the importing country among the alternative product varieties. Thus the decomposition of export

growth into the various "effects" has entailed some subsequent inferences, sometimes unwarranted, relating to the explanation of a country's export performance. For instance, the expansion effect has been attributed largely to exogenous forces outside the control of the exporting country, e.g., growth of income in the destination market, relative price changes involving substitutes and complements, and income and price elasticities of demand. The residual effect, on the other hand, is usually associated with the endogenous or supply forces internal to the focus country, which is perhaps why it has been termed alternatively as the "competitiveness effect". Factors such as the production level, domestic demand, export pricing, etc. are assumed to determine the residual effect. In such categorization the role of economic policy gets confined to the enlargement of the residual effect for export expansion.

We shall not discuss here the merits and deficiencies of such interpretation of the components of the overall change in a particular country's exports to a particular destination market.[12/] It suffices to point out that the arithmetical decomposition does not say anything on how the components should be causally interpreted. But one is of course free to use the CMS framework as a point of departure in the identification of possible influences on a country's

export growth. In what follows we examine the pattern of Philippine export trade with Japan and the United States at both the aggregative and disaggregative levels using the CMS model simply to distinguish rather than explain magnitudes of the expansion, share and interaction effects suggested by Philippine export data, corresponding partner country import statistics and the "maximum" values as discussed earlier.

4.2 Aggregative CMS look at Philippine exports

Assuming constant annual rates of change in export share and destination market imports, the following relationship may be obtained from eqs. (1) and (2):

$$x = m + s(1 + nm) \quad (3)$$

where x, m and s denote the annual growth rates over n years of commodity k exports of the focus country, total k imports of the destination market and the country's export share, respectively. The overall export growth rate (x) is therefore divided into the growth rate of destination market (m), the growth rate of the exporting country's share (s) and a residual term involving interaction between x and s.

Notice that the interaction term becomes smaller as n decreases and will vanish entirely when instantaneous growth rates (involving time derivatives) are used.

In the present study we make use of annual trade data (cf. Appendix Table 7) to obtain average annual growth rates during 1962-1969. This contrasts with the usual practice of looking only at beginning and ending year values (or moving averages over a few years) and computing export changes, in absolute or percentage terms, during the entire period. Apart from being more vulnerable to the possibility of using extreme values that may not be representative of the actual growth of exports during the period, the latter procedure would entail, as should be evident from the foregoing discussion, higher values of the interaction term which is the most difficult to interpret among the three terms in the R.H.S. of eq. (3).

Table 4.1 presents the overall growth rates of Philippine exports decomposed into the expansion, market share and interaction effects. These are given for total exports, principal exports and non-principal exports, utilizing the three alternative sets of data (Philippine, partner country and maximum figures).

We have already noted (cf. Section 2) the apparent understatement of the growth rate of total exports to the United States

TABLE 4.1: Components of Annual Growth Rates of Philippine Exports, 1962-1969 (in per cent)

	Expansion effect	Share effect	Interaction effect	Overall growth
Total exports				
X_{pj}	15.18	-0.04	-0.28	14.86
M_{jp}	15.18	-0.24	-0.26	14.68
Max_{pj}	15.18	-0.11	-0.27	14.80
X_{pus}	12.17	-8.24	-0.60	2.33
M_{usp}	12.17	-6.85	-0.99	4.33
Max_{pus}	12.17	-7.18	-1.15	3.84
Principal exports				
X_{pj}	19.60	-3.60	-0.46	15.54
M_{jp}	19.60	-4.22	-0.84	14.54
Max_{pj}	19.60	-4.16	-0.75	14.69
X_{pus}	6.11	-3.76	-0.11	2.24
M_{jp}	6.11	-2.44	0.12	3.79
Max_{pus}	6.11	-3.42	0.13	2.82
Non-principal exports				
X_{pj}	14.41	-0.22	-0.60	13.59
M_{jp}	14.41	4.70	0.01	19.10
Max_{pj}	14.41	4.88	0.17	19.46
X_{pus}	12.54	-6.00	-1.97	4.57
M_{usp}	12.54	-4.43	-0.90	7.21
Max_{pus}	12.54	-2.00	-1.10	9.44

suggested by Philippine statistics and the very slight difference among the growth rates with respect to Japan trade from the three alternative data sets. These are confirmed in the tables, which shows also that our export trade with Japan has been increasing at an overall rate about three to seven times that with the United States, depending on the data source used. And yet, the Japanese import market is seen to have an edge in the expansion effect of only three percentage points over the U.S. market. Apparently, the significant decline in market share in the United States accounts for the relatively poor performance of Philippine exports to this country in the 1960s. By contrast, the negative share effect in exports to Japan is quite small, the expansion effect dominating the observed overall growth rate of slightly over 14 per cent. The interaction term, negative with respect to either partner country, is observed to be less important than the market share effect on exports to the United States but more significant in the case of Japan.

The "principal exports", consisting here of export commodities which have appeared in the ten principal exports list of the Central Bank in any year from 1962 to 1969, have contributed roughly 80 per cent of total Philippine export earnings from Japan and the United States during the period, the Philippines having supplied

around 20 per cent of total imports of these commodities by the two countries. From Table 4.1 we observed that the Japanese market for these commodities has expanded more than three times the U.S. market. The Philippine share in either market has decreased which, noting the relative insignificance of the interaction effect, made the overall growth rate of principal exports commensurately lower than the CMS growth rate.

A slight overstatement in the overall growth rate of principal exports to Japan and an understatement in the case of exports to the United States are implied from Philippine data in comparison with corresponding partner country and "maximum" values. The latter data sets are also observed to yield comparable growth rate figures in the export trade with Japan but not with the United States.

The expansion effects on Philippine "non-principal exports" induced by the growth of markets in Japan and the United States are seen to be roughly in the same order of magnitude. A marked difference characterizes the market share effect, however. Ignoring for the moment the growth rates suggested by Philippine statistics, we find that our share in the Japanese market for the non-principal exports has increased by close to 5 per cent per annum. Corresponding exports to the United States, on the other hand, are seen

to have suffered a loss in market share. The overall effects have been an average annual rise in Philippine non-principal exports to Japan of slightly less than 20 per cent (based on either Japanese or "maximum" data) and an increase of anywhere between 4.5 and 9.4 per cent annually (depending on which of the three data sets is used) in exports of such commodities to the United States. As far as the discrepancies in growth rates among the three sources are concerned, the wide divergence should be noted of the share effect in Japan trade suggested by Philippine data (-0.22 per cent) from those computed from partner country and the maximum values; this accounts for the substantial understatement of the overall growth rate by about 5.5 per cent. Philippine data likewise appear to underestimate significantly the overall growth of non-principal exports to the United States; they have tended to overstate markedly the decline in market share during the period, to which is attributable the relative understatement of the overall growth rate to about 63 per cent and 48 per cent of those suggested by U.S. statistics and the maximum values, respectively.

As a summary observation from Table 4.1, it can be stated that the sluggish growth of Philippine exports to the United States is partly due to the concentration in the relatively slow-growing

principal commodities, while in the case of Japan a significant portion of the remarkable export performance of the Philippines rides the crest of a rapidly expanding Japanese market for these principal products. Moreover, Philippines exports to the United States has also suffered from the decline in the market share in both principal and non-principal commodities; in the case of exports to Japan, the relatively lower expansion effect of non-principal exports has been compensated for by the apparent gain in market share (which, as pointed out above, is not captured in Philippine statistics).

4.3 Growth components of individual principal exports

Tables 4.2 and 4.3 present the magnitudes of the various sources of export growth during 1962-1969 to Japan and the United States, respectively, in the principal commodities as computed from annual data in the bilateral trade recordings as well as from the "maximum" trade flow estimates (cf. Appendix Table 7). These major exports products are ranked according to their contribution total Philippine exports to each partner country. Also shown in the tables are the percentage shares of Philippine exports to the partner countries to the latter's total imports of the different commodities.

TABLE 4.2: CMS Performance of Principal Exports to Japan, 1962-1969 (in per cent)

SITC No.	Commodity description	Share of total exports to Japan	Share of Japan imports	Expansion effect	Share effect	Interaction effect	Overall growth
242	Logs	59.09	21.73	22.45			
	X_{pj}				-8.78	3.92	17.59
	M_{jp}				-8.18	-1.87	12.40
	Max				-8.18	-1.87	12.40
2831	Copper concentrates	21.19	29.31	17.71			
	X_{pj}				10.17	5.49	33.37
	M_{jp}				6.60	5.50	29.81
	Max				8.02	5.52	31.25
2813	Iron ores	5.34	2.03	15.80			
	X_{pj}				-12.55	1.11	2.14
	M_{jp}				-12.31	-0.78	2.71
	Max				-12.31	-0.78	2.71
2212	Copra	3.10	38.94	7.78			
	X_{pj}				16.54	10.27	34.59
	M_{jp}				28.29	15.50	51.57
	Max				22.38	12.39	42.55
0615	Molasses	2.91	27.78	19.50			
	X_{pj}				5.52	3.29	28.31
	M_{jp}				11.28	-1.29	29.49
	Max				11.28	-3.37	29.49

Table 4.2: CMS Performance of ...

2655	Abaca (unmanufactured)	2.49	75.57	-5.78			
	X_{pj}				0.10	0.79	-4.89
	M_{jp}				0.31	0.49	-4.98
	Max				0.31	0.49	-4.98
243	Lumber	0.22	0.88	25.08			
	X_{pj}				69.03	21.65	115.76
	M_{jp}				248.23	102.92	376.23
	Max				63.27	102.11	190.46
0539	Canned pineapples	0.20	2.70	21.81			
	X_{pj}				-1.81	-1.52	18.48
	M_{jp}				13.21	-2.85	32.17
	Max				10.40	-3.83	28.38
0517	Dessicated coconut	0.12	2.92	21.72			
	X_{pj}				92.61	8.11	132.44
	M_{jp}				135.79	24.25	181.76
	Max				96.91	59.83	178.46

TABLE 4.3: CMS Performance of Principal Exports to the United States, 1962-1969 (in per cent)

SITC No.	Commodity description	Share of total exports to the U.S.	Share of U.S. imports	Expansion effect	Share effect	Interaction effect	Overall growth
061, 2	Sugar (refined & centrifugal)	40.15	24.34	4.46			
	X_{pus}				-2.44	-2.14	-0.12
	M_{usp}				-2.81	-1.83	0.18
	Max				-2.88	-1.58	.00
4223	Coconut oil	14.73	97.79	24.20			
	X_{pus}				-4.10	-11.61	8.49
	M_{usp}				0.01	-8.24	15.97
	Max				-0.45	-12.36	11.39
2212	Copra	14.24	100.00	9.65			
	X_{pus}				4.15	-6.78	7.02
	M_{usp}				0.11	-0.01	9.75
	Max				3.92	-6.64	6.93
6312	Plywood	6.19	13.68	15.11			
	X_{pus}				-1.73	-1.89	11.49
	M_{usp}				-1.32	-1.34	12.45
	Max				-1.48	-1.37	12.26
0517	Dessicated coconut	4.46	18.81	8.19			
	X_{pus}				-6.06	-1.39	3.52
	M_{usp}				-0.35	-0.90	6.94
	Max				-2.84	0.66	6.01

Table 4.3: CMS Performance of ...

2831	Copper concentrates	3.92	5.50	18.59			
	X_{pus}				32.97	10.69	62.25
	M_{usp}				-3.40	1.47	16.66
	Max				-0.62	-4.89	13.08
6311	Veneer	2.77	21.33	6.78			
	X_{pus}				3.14	8.63	18.55
	M_{usp}				8.30	0.01	15.17
	Max				7.71	1.67	16.16
2655	Abaca (unmanufactured)	2.18	89.95	4.12			
	X_{pus}				1.38	6.59	12.09
	M_{usp}				-0.50	-7.98	-4.36
	Max				0.99	8.00	2.89
243	Lumber	1.37	1.08	10.01			
	X_{pus}				-2.02	0.26	8.25
	M_{usp}				-4.81	0.63	5.83
	Max				-2.44	0.21	7.78
0813	Copra meal/cake	0.34	3.12	3.76			
	X_{pus}				5.53	-19.34	-10.05
	M_{usp}				7.41	-20.97	-9.80
	Max				5.53	-19.34	-10.05
242	Logs	0.32	3.52	2.75			
	X_{pus}				15.61	-7.40	10.96
	M_{usp}				1.78	-8.98	-4.45
	Max				15.54	-7.40	10.89

Significant understatement of overall growth rates based on Philippine data relative to those suggested by trade partner and/or "maximum" values are observed for the following commodities: copra, dessicated coconut, lumber and canned pineapples in export trade to Japan, and coconut oil and dessicated coconut in the case of U.S. exports. On the other hand, there is an apparent overestimation in the computed export growth rates for logs, copper concentrates and molasses in Japan trade and for copper concentrates, veneer, abaca and lumber in exports to the United States.

Such discrepancies notwithstanding, it is possible to distinguish the rapidly growing export commodities from those exhibiting sluggish, if not negative, growth. Of the nine principal exports to Japan listed in Table 4.2, only two (Iron ores and Abaca) have average annual growth rates below 10 per cent. The remaining export commodities have benefitted immensely from very large expansion effects and, except for logs, market share effects as well. The extremely high rates of increase in both market shares and overall growth exhibited by dessicated coconut and lumber are worth noting; the latter case may have entailed a substitution from logs which suffered from a decline in share in the 1960s.

Among the principal export commodities to the United States shown in Table 4.3, relatively high overall growth rates are seen for coconut oil, plywood, copper concentrates and veneer. The first two products mentioned account for slightly over 20 per cent of Philippine export earnings from U.S. trade. However, the value of exports of the most dominant commodity (Sugar) contributing 40 per cent, is observed to have virtually stagnated during the period because of a modest expansion of the import market and negative values of the share and interaction effects. Other important products showing declining market shares are plywood and dessicated coconut. Together, these factors account for the relatively poor performance of total exports to the United States noted earlier. Some of the remaining principal commodities listed in Table 4.3, e.g., veneer, copra meal/cake and logs, have increased substantially their market share, but their contribution to total exports to the United States are seen to be too small to affect greatly the overall performance.

4.4 An inventory of selected minor exports

It has been observed above that both U.S. and Japanese markets for commodities other than those of our principal exports have shown large values of the expansion effect and that the overall growth of

the non-principal or minor exports to these two countries have likewise been substantial, especially in the case of Japan. Moreover, the share of Philippine minor exports in the import market of Japan has apparently undergone positive growth, but a decline in share has been observed in the case of the United States. Although still insignificant in magnitude compared with our principal exports (which are mainly primary products), these minor exports appears to be the more promising in terms of the possibilities for export expansion and diversification. A closer examination is therefore warranted.

For this purpose non-principal export commodities at the 2- and 3-digit SITC levels which have earned foreign exchange receipts of at least $ 1 million over the period 1962-1969 have been chosen for analysis. Annual figures on the magnitude of such export flows to Japan and the United States according to the three sets of estimates are presented in Appendix Tables 8 and 9, respectively. The tables also include a classification of the commodities into raw materials, semi-processed and manufactured.[13/] Thirteen out of the 19 commodity items selected for the United States fall under the manufactured category, accounting for around 85 per cent (based on period totals); the raw materials and semi-processed exports, on

the other hand, are responsible for about 13 and 2 per cent, respectively. By contrast, semi-manufactures feature more prominently in Japan trade. It contributed roughly 44 per cent of the group total, representing a close second to manufactured exports which comprise about 51 per cent. Raw materials account for the remaining 5 per cent or so of the total selected minor exports to Japan.

We may again compute for the ratios of Philippine recorded data to the corresponding partner country and maximum values and examine the discrepancies among the three data sets. Such ratios of period totals for the three subcategories are as follows:

	Raw materials	Semi-processed	Manufactured
X_{pj}/M_{jp}	.958	.508	.425
X_{pj}/Max	.885	.450	.412
X_{pus}/M_{usp}	.978	.630	.247
X_{pus}/Max	.904	.622	.228

The relative closeness of the magnitudes of the two ratios for each commodity class suggests that the import recordings of Japan and the United States reflect closely the actual flows of Philippine minor exports. Another inference one can make is that the extent of understatement of Philippine data on minor exports seems to vary directly with the degree of processing undergone. Raw materials

would appear well recorded in both Philippine and partner country data. On the other hand manufactured goods, for which the observed ratios are much lower, seem subject to substantial under-recording in Philippine minor export statistics.

Examining now the growth of minor exports during the period, we find manufactured exports expanding most rapidly in our trade with Japan, followed by raw materials and semi-processed exports. By contrast, raw materials exported to the U.S. market have grown faster than manufactured and semi-processed exports; stable growth is exhibited by raw material exports while the rest of the minor exports, except wood products, n.e.s. (SITC 632) and footwear (SITC 85), appear to have stagnated after 1966.

Data discrepancies on the selected minor exports in the aggregate are revealed in Table 4.4. The twelve commodities in our minor export trade with Japan are shown to have earned during 1962-1969 $60.0 million according to Japanese import data and $64.6 million based on "maximum" values. According to Philippine data, however, it is only $29.4 million, implying a discrepancy of more than 50 per cent. The extent of understatement appears even greater in respect of our trade with the United States: only $139.2 million worth of the 19 selected minor export commodities have been recorded

TABLE 4.4: Total Trade Flows of Selected Minor Exports
(in thousand U.S. dollars, except per cent)

	1962	1963	1964	1965	1966	1967	1968	1969	1962 - 69	Ave. annual growth rates (in per cent)
Exports to Japan										
X_{pj}	1,860	1,636	2,021	2,329	2,927	5,074	5,025	8,481	29,353	27.65
M_{jp}	2,195	2,973	3,681	3,879	9,056	13,233	10,505	14,472	59,994	37.34
Max	2,493	3,135	3,794	4,230	9,386	14,038	11,241	16,252	64,569	36.34
Exports to U.S.										
X_{pus}	11,601	11,071	16,018	19,147	19,653	21,780	20,051	19,896	139,217	9.20
M_{usp}	37,892	39,274	48,963	47,138	50,015	51,452	57,063	62,545	394,342	7.73
Max	40,209	41,363	52,745	51,724	57,003	59,757	60,844	62,981	425,912	6.97

in Philippine statistics while $394.3 and $425.9 million are suggested by U.S. data and the maximum figures, respectively.

Average annual growth rates computed from the three data sets are also given in Table 4.4, indicating a markedly faster expansion of the selected minor exports to Japan than to the United States regardless of data source used. However, the growth rates implied by Philippine data differ significantly from those by the other two sets of estimates (which are very close), showing relative overstatement in U.S. trade and understatement in the case of Japan.

In what follows we examine individually these selected minor exports, noting very briefly their trends over the period, contribution to total and group export earnings (using "maximum" values) and any serious discrepancies in trade recordings.

Raw materials

031 Fish, fresh and simply preserved

The country started exporting this commodity group only in 1963 and grew especially from 1965 to 1967, after which was a levelling-off of trend. It accounted for 2.31 per cent of group receipts from Japan and brought in $1.52

million in foreign exchange. The United States imported an almost equal value of this commodity for the period, $1.51 million, but this figure amounted to only 0.45 per cent of group receipts. Although registering very sharp declines occasionally, the trend is nevertheless rising significantly.

121 Tobacco, unmanufactured

This is the second most important commodity export among the selected minor exports to the United States during the period, being responsible for 10.7 per cent of group total and 1.43 per cent of total Philippine exports to the United States or $45.6 million in foreign exchange receipts. The rising trend until 1965 was reversed in 1966-67, although a recovery to former levels is evident in 1968 and 1969.

285 Silver and platinum ores

Exports to the United States have occurred only in 4 out of the 8 years under study, and in two years no figure is recorded on the U.S. side. Nevertheless, the "broken" trend appears to be on the rise. It earned $1.5 million for the period or 0.35 per cent of total selected group export earnings.

291 Crude animal materials, n.e.s.

Responsible for 3.14 per cent of group total receipts and 57.17 per cent of selected raw material exports to Japan, this commodity has been growing steadily at an average rate of 26 per cent annually with total earnings of $2.03 million during the period. Total exports of this commodity to the United States was $2.6 million, but accounting for only 0.61 per cent of total group earnings. There are only two years (1966 and 1967) when a positive rate of growth was registered.

292 Crude vegetable materials, n.e.s.

This commodity group shows a stable trend but is a rather slow-grower at 0.21 per cent average annual rate of growth. It earned a total of $5.24 million in export receipts during the period, representing 1.22 per cent share of group total.

Semi-processed exports

072 Cocoa

Cocoa exports to the United States grew annually at the rate of about 10 per cent and, except for some relatively

sharp declines, the trend appears to be stable. Total earnings for the period at $6.02 million or about 1.41 per cent of group total receipts.

241 Fuel, wood, and charcoal

One of the commodity groups that have shown remarkable increases after 1965, it earned a total of $3.8 million for the period or 5.91 per cent of the semi-processed export receipts. The trend has been continually on the rise especially after 1965, averaging 42.2 per cent annual growth rate. Japanese recorded statistics understate corresponding Philippine export data by $1.427 million.

274 Surphdr and unroasted iron pyrites

Exports to Japan have been recorded for only four years during the period and consistently no data on the Philippine side have been registered. Partner country statistics indicate that it has brought in $2.16 million in foreign exchange earnings.

276 Other crude minerals

This export group shows a stable trend, and has expanded at an average rate of 21.57 per cent per annum. Total period receipts was at $7.5 million or 11.5 per cent of group

receipts, as indicated in Japanese import statistics. Corresponding Philippine export figures, however, are missing for the entire period.

284 Non-ferrous metal scrap

The biggest among semi-processed exports to Japan, it garnered $13.7 million in export earnings and made for 21 per cent of selected group receipts. The trend has been mostly upward until 1966 when receipts reached a peak of $3.6 million, and thereafter suffered a decline. It has grown annually at the rate of 36 per cent on the average.

682 Copper and alloys, whether or not refined, unwrought

Exports to Japan started only in 1965 and it was in 1966 alone that a Japanese import figure appeared, a minimal $4 thousand, compared with the $261 thousand recorded on the Philippine side for that particular year. For the entire period it earned $1.6 million and accounted for 2.4 per cent of group total. This commodity has likewise been exported to the United States, but only in 1964, and no Philippine recording appears. There is a general increase in trend for Japan.

Manufactured exports

112 Alcoholic beverages

Foreign exchange receipts from the United States worth $3.7 million or .86 per cent of the total, have been recorded by this export group for the period. The trend is one of steady rise at an average annual rate of 19.23 per cent.

122 Tobacco, manufactured

A gradual decline in export trend is discernible for this commodity group, from $496 thousand in 1962 to $253 thousand in 1969, U.S. import demand has decreased at an average annual rate of 7.38 per cent.

332 Petroleum products

Second largest manufactured minor export to Japan ($6 million) and third largest for the United States ($25 million), this commodity group countributed 9.57 per cent of group export receipts from Japan and 5.84 per cent from the United States during 1962-1969. What is striking is the seriousness of understatement not of Philippine data but of U.S. data. In fact it was only in 1962 that any such recording was made. As Sicat (1969) has noted, these were probably military purchases of American bases in the Philippines in connection with U.S. military activities in Vietnam.

512 Organic chemicals; 513 Inorganic chemicals

These two export groups from the chemical industry together account for a little over 13.5 per cent of group exports to Japan (5.70 per cent for organic and 7.95 per cent for inorganic chemicals) earning around $8.8 million for the period. Similar exports to the United States have brought in only about half that amount ($4.7 million)or a little over 1 per cent of selected export receipts. The trends are highly unstable, and even declining for organic chemicals, in either destination market.

632 Wood manufactures, n.e.s.

This commodity group contributed $11.2 million for the period or about 3 per cent of total receipts from minor exports to the United States. The trend shows a continuous climb, the value of exports expanding three-fold over the period. Understatement of Philippine data is not severe, overstatement relative to partner country data occurring at least three years.

65 Textile yarns, fabrics, etc.

Growing at an annual rate of 8.70 per cent, this commodity group has earned $25.8 million for the period or between

5 to 6 per cent of total selected exports to the United States. The only decline occurred in 1967, but only after registering the highest export receipts of $4.1 million in the previous year.

73 Transport equipment

Registering around $1.6 million in export receipts and 2.5 per cent of total earnings of the selected minor exports, this commodity group is notable in that there has been no recording on the Philippine side in the six years that Japanese import figures were available.

82 Furniture; 85 Footwear; 89 Miscellaneous manufactured articles

Commodity groups 82 and 85 are probably the most labor-intensive manufactured goods among the selected non-principal exports to the United States. However, they account jointly for only a little less than 1.5 per cent of the total value. Furniture export earnings was $4.3 million for the period and grew at a steady rate of 22.7 per cent. Footwear exports have not been as successful, the trend having been erratic in the initial years. SITC 89 earned a little over $10 million or 2.4 per cent of total group earnings; a steady

upward trend is observed.

84 Clothing

The biggest foreign exchange earner ($254 million) among the group destined for the U.S. market, clothing exports accounted for 59.68 per cent of group total or 7.98 per cent of total Philippine exports to this country. Growth is steady at an average annual rate of 4.86 per cent. There is an enormous and consistent understatement of Philippine data during the period, as has been noted earlier.

931 Special transactions

This export grouping, consisting largely of finished products from materials imported under consignment (e.g. embroideries and underwear), personal effects and donations for educational purposes, earned the highest foreign exchange receipts among the selected minor exports to Japan and accounted for about one-fourth of total group export receipts and 10 per cent of total minor exports to this country for the 8-year period. It had been relatively insignificant at the start of the decade, but gained prominence during the second half. Highest share was recorded in 1967 at 44 per cent of group export earnings for the year. Included among the more seriously understated

exports in Section 3, this commodity grouping shows an understatement of $15.44 million for the entire period.

It is also among the top dollar-earners of the U.S.-bound selected minor exports, having earned $15.67 million during the period or 3.67 per cent of group total. General trend is on the rise at an average annual rate of 12.52 per cent. The same understatement of Philippine recorded data is evident, the discrepancy running to $14.02 million for the time period under consideration.

To summarize, the overall picture of the selected minor exports to the two principal trading partners during the period is one of growth, being even more impressive in the case of such exports to Japan. There are more high growth commodity exports to Japan (e.g. SITC 332, 241, 513, 291, and 682), especially after 1965 when most of the U.S.-bound exports have lost the initial steam of the early 1960s.

5. Summary and Concluding Remarks

The main objective of the present study has been to inquire into the accuracy of Philippine trade statistics relating to both export and import flows with the two dominant partner countries, Japan and the United States. Previous studies of postwar economic development of the Philippines have established a strong link with the country's trade performance, warranting therefore a closer examination of our trade statistics than has been done before.

In addition to the usual comparison of bilateral trade recordings in which developed country estimates of trade flows are taken to represent the "true" values, we have also examined the divergence of the two data sets from estimates based on the higher of corresponding Philippine and trading partner figures, i.e. the "maximum" trade values, which may well provide a better approximation of the correct magnitude of trade flows in the absence of any incentives to over-record imports and exports in either country. Such data analyses have been undertaken at both the aggregative and disaggregative (up to the 3-digit SITC) levels for the period 1962-1969. Some of the major findings may be summarized as follows:

(1) Extensive understatement in Philippine recorded statistics is seen from a comparison of import and export ratios of bilateral

trade recordings as well as with respect to the "maximum" values. Import ratio divergence from unity is surprisingly less than that of the export ratios in the bilateral recordings, implying relatively greater understatement in Philippine data on exports than on imports if partner country statistics are used as basis. However, based on the "maximum" values, the more plausible finding emerges on the generally greater deviation from unity of the import ratios.

(2) Philippine trade recordings significantly understate the growth of exports to the United States during the period and overstate the increases in imports in comparison with the growth rates suggested by either the U.S. trade data and the "maximum" values. Computed average annual rates of increase of Philippine export and import flows with Japan, on the other hand, are quite comparable using the three alternative data sets.

(3) It is not immediately evident whether the Philippines has a negative or positive balance on merchandise trade account with the two countries for 1962-1969. An overall deficit for the period is implied from Philippine data, the magnitude being larger in the trade transactions with the United States than with Japan. Partner country recordings however show a trade surplus with respect to either trade partner. Finally, based on the "maximum" values, a positive trade

balance is found with Japan and a trade deficit with the United States.

(4) An examination of trade patterns by major commodity groups reveals a high degree of concentration of both imports and exports. Two major groups, SITC 7 (Machinery and transport equipment) and SITC 6 (Manufactured goods) account for more than three-quarters of import trade from the two trade partners. An even greater degree of concentration exists in the export trade with Japan, which is dominated by SITC 2 (Crude materials). Moreover, relatively greater discrepancies between bilateral trade recordings on the percentage shares of commodity groups occur in imports than in exports at the 1-digit level.

(5) A wide dispersion in commodity group recordings that disappears in the aggregation process is evident from the analysis of import and export ratios at the 1-digit SITC level. The use of "maximum" trade values shows relative understatement of partner country data in a number of major commodity groups, i.e. some Philippine ratios are seen to be closer to unity than corresponding partner country ratios. But even so, relative under-recording is admittedly much more extensive than over-recording in Philippine trade statistics.

(6) The distribution of relative discrepancies of Philippine trade data from corresponding partner country recordings by major commodity

group reveals the following principal contributors: SITC 6 and 7 jointly account for 80.2 per cent of the total understatement and 63.8 per cent of the total overstatement in imports from Japan, while contributing 64.3 and 47.7 per cent to the understatement and overstatement, respectively in imports from the United States; SITC 2 is responsible for 88 per cent of the total amount of relative understatement of Philippine exports to Japan; SITC 8 and 2 together contribute slightly more than 80 per cent of total understatement of exports to the United States; finally, SITC 6 and 2 in exports to Japan and SITC 3 and 2 to the United States account in each case for about four-fifths of the relative overstatement of Philippine data. A similar concentration of data discrepancy in but a few commodities emerges when examination of discrepancy distribution is undertaken at the 2- and 3-digit SITC levels of aggregation.

(7) Regression analysis verifies the hypothesis that the country's tariff structure has a significant influence on the observed discrepancies of bilateral trade recordings. A significantly negative correlation is found to exist between the tariff rate and the Philippine import ratio (in reference to either partner country exports or the "maximum" values), more than half of the variation in the import ratio across commodity groups being explained by the variation

in tariff rates. Higher values of the coefficient of determination is obtained using the "maximum" figures in the import ratio rather than the partner country data.

(8) Export performance is subsequently examined, using the CMS (Constant-Market-Share) approach which decomposes overall growth rates of Philippine exports into expansion, market share, and interaction effects, based on the three alternative data sets. The relatively poorer performance of exports to the United States when compared with Japan is apparently attributable to a substantial decline in market share of the United States import market. In contrast, a relatively smaller negative share effect of exports to Japan is seen to reinforce the significant expansion effect of the Japanese market. The interaction effects are found to be negative both ways, and are seen to be less important than the market share effect for the United States, but more significant in the case of Japan. Differences in the growth rate components computed from the three data sources are noted.

(9) Disaggregation of total exports into the principal and non-principal exports reveals that the sluggish growth of U.S.-bound exports is generally due to a concentration in the relatively slow-growing principal exports, as contrasted with the rapidly growing

Japanese market for the Philippine dominant export products. A decline in market shares of both principal and non-principal commodities is also observed for the United States while a positive growth in market shares for both groups is seen for Japan. Growth performance of principal as well as non-principal exports to the United States also tends to be understated in Philippine data, while relative overstatement of principal export growth rates and understatement of the growth of non-principal exports to Japan seems to have taken place.

(10) Lastly, our inventory of the more important non-principal exports to the two trade partners indicate the relative significance of manufactured products in both cases, followed by raw materials in our trade with Japan and semi-processed exports in the U.S. case. Two inferences are made from the examination of Philippine minor export ratios to corresponding partner country data and the "maximum" values: (i) import statistics of Japan and the United States tend to approximate closely actual flows of Philippine minor exports; and (ii) under-recording in Philippine statistics is most severe in manufactured exports and relatively insignificant in the minor exports of raw materials. Computed growth rates of the three categories of minor exports reveal that manufactured products have expanded most rapidly in our trade with Japan while exports of raw materials have

grown fastest in the U.S. markets during the period. Overall, growth of the selected minor exports to the United States appears overstated in Philippine recordings, while that of exports to Japan tends to be understated.

The above findings point to a real need for the qualified use of official estimates of Philippine trade flows, especially those of certain commodity groups which have been identified earlier as particularly subject to inaccuracy in data recording. Moreover, the observed reasonableness of the implications from the trade flow estimates provided by the "maximum" values suggests the possibility that they reflect more closely the actual magnitudes of trade transactions than the commonly used DC partner statistics.

FOOTNOTES

*Financial support for this study by the Rockefeller Foundation is gratefully acknowledged. A large part of the data used were furnished by the Statistics Division of the Institute of Developing Economies (Tokyo), where the first author was Guest Researcher in June-July 1972. L. Mamon and R. Carreon provided additional data gathering and processing.

[1]This would represent an improvement over the approach used in Bautista and Encarnacion (1972), which entails no distinction of the trade flows with the major trading partners and hence does not provide a framework for the analysis of the effects of differing exchange rate changes of their currencies.

[2]Confronting the Philippine data with the corresponding export and import statistics of Japan and the United States revealed substantial discrepancies in a wide range of commodities. At the 5- and 4-digit SITC levels, numerous cases were observed in which the difference is just unbelievably large. This might be attributed in part to different recording definitions used between countries and possible misclassification of specific items either by customs officials or trade statistics compilers. But even at the higher levels of commodity aggregation where such difficulties would not be present, significant differences of corresponding import and export data were noted.

[3]Even these two sources of trade data, show substantial discrepancies, see, e.g. (Dionisio, 1957).

[4]Such figures are assumed to be comparable, i.e., proper adjustment to a common currency and prices (c.i.f. or f.o.b.) has been made already.

[5]Trade data used in this paper are taken, unless specified otherwise, from various issues of U.N., Commodity Trade Statistics and ECAFE, Foreign Trade Statistics of Asia and the Far East, as compiled and adjusted for temporal consistency of commodity classification by the Statistics Division of the Institute of Developing Economies in Tokyo.

[6]There is a remarkable consistency of relative understatement of Philippine statistics on exports to Japan vis-a-vis corresponding Japanese import data, as indicated by nearly all points in Figure 3 being located below the 45°-line.

[7]In his comparison of U.S. commodity trade data with the corresponding statistics as recorded in France, Germany, Great Britain, Canada and Belgium from 1910 to 1960, Morgernstern (1963) finds average discrepancies as high as 60 per cent which "are not solely attributable to an inadequate consideration of tariffs and transportation cost" (p. 178).

[8]The ratios for the period totals show greater divergence from unity of the export ratios, however.

[9]Internationally subcontracted garment exports frequently appear in Philippine trade statistics in the re-export category.

[10]Computed as the simple arithmetic average of tariff rates on commodity imports at the 5-digit SITC level. (Excluded from the computations are duties expressed in pesos per unit of weight or volume.) The simple average is used because weighted average tariff rates (i.e. weighted by the value of imports) tend to be understated since heavily taxed commodities are assigned relatively smaller weights which is due at least in part to the prohibitive nature of the tax.

[11]E.g., Armington (1969) and Leamer and Stern (1970).

[12]The interested reader is referred to Ooms (1967) and Richardson (1971).

[13]Adopted from Baerresen et al. (1965), pp. 70-71.

APPENDIX TABLE 1a: Philippine Imports from the United States, 1962-1969
(f.o.b. value in thousand U.S. dollars)

SITC	1962	1963	1964	1965	1966	1967	1968	1969
0	37,754 (14.96)	30,751 (10.88)	40,420 (11.64)	49,468 (16.06)	49,438 (15.63)	66,519 (16.31)	54,120 (13.04)	50,945 (14.17)
1	918 (.36)	1,301 (.46)	387 (.11)	943 (.31)	2,803 (.89)	4,542 (1.11)	7,272 (1.75)	10,051 (2.79)
2	27,006 (10.70)	27,981 (9.99)	34,056 (9.81)	25,009 (8.12)	31,118 (9.84)	26,670 (6.54)	37,237 (8.97)	27,137 (7.55)
3	6,934 (2.75)	7,685 (2.72)	10,311 (2.97)	8,680 (2.82)	9,728 (3.08)	10,693 (2.62)	7,788 (1.88)	8,459 (2.35)
4	1,999 (.79)	1,919 (.68)	2,594 (.75)	2,065 (.67)	1,295 (.41)	1,687 (.41)	1,374 (.33)	1,476 (.41)
5	23,828 (9.44)	28,634 (10.13)	33,668 (9.70)	28,872 (9.37)	32,023 (10.12)	35,587 (8.73)	42,058 (10.13)	41,462 (11.53)
6	47,378 (18.78)	47,444 (16.78)	54,926 (15.82)	45,262 (14.70)	48,571 (15.36)	57,358 (14.07)	56,592 (13.64)	45,638 (12.69)
7	95,805 (37.97)	121,061 (42.83)	147,814 (42.58)	124,577 (40.45)	121,245 (38.34)	181,278 (44.46)	183,543 (44.22)	157,239 (43.73)
8	8,247 (3.27)	9,835 (3.48)	12,156 (3.50)	10,511 (3.41)	11,552 (3.65)	12,089 (2.97)	15,236 (3.67)	13,399 (3.73)
9	2,468 (.98)	6,039 (2.14)	10,829 (3.12)	12,589 (4.09)	8,482 (2.68)	11,333 (2.78)	9,818 (2.37)	3,760 (1.05)
Total	252,337	282,650	347,161	307,976	316,255	407,756	415,038	359,566

NOTE: Numbers in parentheses are percentage shares of total Philippine imports from the United States.

APPENDIX TABLE 1b: Exports of the United States to the Philippines, 1962-1969
(f.o.b. value in thousand U.S. dollars)

SITC	1962	1963	1964	1965	1966	1967	1968	1969
0	32,220 (12.10)	37,648 (11.77)	41,795 (11.72)	51,698 (15.54)	53,474 (15.82)	71,595 (17.14)	67,304 (15.86)	55,911 (15.36)
1	230 (.09)	217 (.07)	759 (.21)	1,116 (.34)	3,834 (1.14)	4,473 (1.07)	7,704 (1.82)	9,348 (2.57)
2	26,822 (10.08)	27,387 (8.56)	33,321 (9.35)	24,429 (7.34)	26,233 (7.76)	21,096 (5.05)	29,233 (6.89)	20,686 (5.68)
3	6,196 (2.33)	6,615 (2.07)	6,698 (1.88)	7,100 (2.13)	7,046 (2.09)	7,736 (1.85)	6,050 (1.43)	6,205 (1.71)
4	1,595 (.60)	1,553 (.49)	1,739 (.49)	3,228 (.97)	1,620 (.48)	2,858 (.68)	1,454 (.34)	1,224 (.34)
5	24,432 (9.18)	27,858 (8.71)	31,483 (8.83)	30,091 (9.05)	31,045 (9.18)	33,541 (8.03)	38,743 (9.13)	37,729 (10.37)
6	65,838 (24.73)	76,971 (24.07)	78,734 (22.09)	67,780 (20.38)	65,967 (19.51)	67,733 (16.21)	62,602 (14.76)	57,263 (15.73)
7	93,111 (34.98)	122,646 (38.36)	138,565 (38.87)	126,761 (38.11)	126,299 (37.36)	186,883 (44.74)	182,995 (43.14)	149,693 (41.13)
8	11,987 (4.50)	14,133 (4.42)	15,275 (4.28)	17,843 (5.36)	19,845 (5.87)	18,293 (4.38)	23,692 (5.58)	21,310 (5.86)
9	3,758 (1.41)	4,718 (1.48)	8,128 (2.28)	2,600 (.78)	2,675 (.79)	3,537 (.85)	4,453 (1.05)	4,554 (1.25)
Total	266,189	319,746	356,497	332,646	338,038	417,745	424,230	363,923

NOTE: Numbers in parentheses are percentage shares of total U.S. exports to the Philippines.

APPENDIX TABLE 2a: Philippine Imports from Japan, 1962-1969
(f.o.b. value in thousand U.S. dollars)

SITC No.	1962	1963	1964	1965	1966	1967	1968	1969
0	2,564 (2.41)	8,815 (7.69)	12,409 (7.19)	12,302 (5.78)	17,480 (6.62)	22,631 (6.79)	25,915 (7.37)	20,123 (5.56)
1	2 (.00)	6 (.01)	7 (.00)	3 (.00)	6 (.00)	31 (.01)	14 (.00)	8 (.00)
2	4,751 (4.47)	5,268 (4.59)	5,758 (3.33)	7,308 (3.43)	11,629 (4.40)	11,791 (3.54)	21,355 (6.07)	23,957 (6.62)
3	3,093 (2.91)	2,157 (1.88)	718 (.42)	1,354 (.64)	4,013 (1.52)	509 (.15)	2,176 (.62)	3,396 (.94)
4	38 (.04)	153 (.13)	160 (.09)	81 (.04)	194 (.07)	295 (.09)	516 (.15)	558 (.15)
5	12,052 (11.33)	10,642 (9.28)	17,457 (10.11)	19,331 (9.08)	20,220 (7.65)	30,227 (9.06)	28,335 (8.06)	34,488 (9.53)
6	43,988 (41.36)	51,459 (44.87)	68,975 (39.95)	81,562 (38.31)	95,067 (35.99)	106,565 (31.95)	124,070 (35.28)	131,327 (36.29)
7	36,184 (34.02)	32,155 (28.04)	62,556 (36.23)	85,574 (40.19)	110,312 (41.76)	152,901 (45.84)	138,641 (39.42)	138,870 (38.37)
8	3,383 (3.18)	3,620 (3.16)	4,356 (2.52)	5,119 (2.40)	4,921 (1.86)	7,587 (2.27)	8,984 (2.55)	8,762 (2.42)
9	300 (.28)	407 (.35)	275 (.16)	279 (.13)	338 (.13)	998 (.30)	1,698 (0.48)	429 (.12)
Total	106,355	114,682	172,671	21,2913	264,180	333,535	351,704	361,918

NOTE: Numbers in parentheses are percentage shares of total imports of Japan from the Philippines.

APPENDIX TABLE 2b: Exports of Japan to the Philippines, 1962-1969
(f.o.b. value in thousand U.S. dollars)

SITC No.	1962	1963	1964	1965	1966	1967	1968	1969
0	2,810	8,918	12,733	11,311	15,751	21,964	21,940	17,485
	(2.34)	(6.08)	(6.67)	(4.71)	(5.66)	(6.05)	(5.34)	(3.68)
1	9	22	13	8	18	42	48	60
	(.01)	(.02)	(.01)	(.00)	(.01)	(.01)	(.01)	(.01)
2	4,642	5,249	6,323	6,805	11,153	11,849	18,618	21,141
	(3.87)	(3.58)	(3.31)	(2.83)	(4.01)	(3.27)	(4.53)	(4.44)
3	3,312	1,023	475	1,082	2,516	513	1,685	2,578
	(2.76)	(.70)	(.25)	(.45)	(.90)	(.14)	(.41)	(.54)
4	72	139	140	78	120	124	167	169
	(.06)	(.10)	(.07)	(.03)	(.04)	(.04)	(.04)	(.04)
5	13,315	14,269	19,199	20,426	22,060	29,514	30,045	35,319
	(11.10)	(9.74)	(10.06)	(8.50)	(7.93)	(8.13)	(7.31)	(7.43)
6	52,652	75,134	89,700	109,785	111,643	138,018	164,504	183,355
	(43.87)	(51.26)	(47.01)	(45.69)	(40.12)	(38.03)	(40.02)	(38.55)
7	38,911	36,253	53,984	81,659	104,960	146,241	149,395	192,145
	(32.42)	(24.73)	(28.30)	(33.99)	(37.72)	(40.30)	(36.34)	(40.40)
8	4,287	5,555	6,479	7,849	8,851	11,981	20,158	20,788
	(3.57)	(3.79)	(3.40)	(3.27)	(3.18)	(3.30)	(4.90)	(4.37)
9	-	5	1,748	1,262	1,184	2,653	4,526	2,563
	-	(.00)	(.92)	(.53)	(.43)	(.73)	(1.10)	(.54)
Total	120,010	146,567	190,794	240,265	278,256	362,899	411,086	475,603

APPENDIX TABLE 3a: Philippine Exports to the United States, 1962-1969
(f.o.b. value in thousand U.S. dollars)

SITC No.	1962	1963	1964	1965	1966	1967	1968	1969
0	150,975 (54.02)	177,281 (54.20)	187,614 (53.10)	165,071 (47.44)	139,572 (41.99)	165,806 (47.15)	144,612 (40.64)	138,791 (43.20)
1	4,000 (1.43)	4,069 (1.24)	6,949 (1.97)	7,669 (2.20)	3,796 (1.14)	5,046 (1.43)	6,809 (1.92)	8,765 (2.73)
2	70,321 (25.16)	75,995 (23.24)	69,690 (19.72)	80,160 (23.03)	84,557 (25.44)	82,823 (23.55)	85,364 (23.99)	84,596 (26.33)
3	1,245 (.45)	1,770 (.54)	1,430 (.40)	4,008 (1.15)	6,113 (1.84)	7,208 (2.05)	3,139 (.88)	- -
4	30,647 (10.97)	38,187 (11.68)	48,352 (13.69)	54,313 (15.61)	58,777 (17.68)	51,954 (14.78)	68,640 (19.29)	45,960 (14.31)
5	808 (.29)	475 (.15)	1,396 (.40)	251 (.07)	1,001 (.30)	373 (.11)	190 (.05)	266 (.08)
6	19,982 (7.15)	27,667 (8.46)	35,705 (10.11)	33,727 (9.69)	36,034 (10.84)	35,630 (10.13)	44,253 (12.44)	39,229 (12.21)
7	256 (.09)	36 (.01)	46 (.01)	37 (.01)	51 (.01)	595 (.17)	9 (.0030)	38 (.01)
8	983 (.35)	1,321 (.40)	1,984 (.56)	2,526 (.73)	2,279 (.69)	1,987 (.57)	2,673 (.75)	3,419 (1.07)
9	261 (.09)	276 (.08)	150 (.04)	229 (.07)	243 (.07)	202 (.06)	149 (.04)	194 (.06)
Total	279,478	327,077	353,316	347,991	332,423	351,624	355,838	321,258

NOTE: Numbers in parentheses are percentage shares of total Philippine exports to the United States.

APPENDIX TABLE 3b: Imports of the United States from the Philippines, 1962-1969
(f.o.b. value in thousand U.S. dollars)

SITC No.	1962	1963	1964	1965	1966	1967	1968	1969
0	171,194	187,369	191,008	155,767	164,351	175,846	177,257	176,654
	(53.29)	(54.46)	(48.18)	(42.21)	(41.33)	(46.21)	(40.74)	(41.81)
1	3,821	5,037	5,476	8,004	5,456	4,510	7,853	9,130
	(1.19)	(1.46)	(1.38)	(2.17)	(1.37)	(1.19)	(1.80)	(2.16)
2	67,750	55,584	78,195	87,480	83,309	75,245	90,146	85,671
	(21.09)	(16.16)	(19.72)	(23.70)	(20.95)	(19.77)	(20.72)	(20.27)
3	28	-	-	-	-	-	-	-
	(.01)	-	-	-	-	-	-	-
4	25,386	38,926	47,525	51,013	68,234	48,534	70,805	55,466
	(7.90)	(11.31)	(11.99)	(13.82)	(17.16)	(12.76)	(16.27)	(13.13)
5	784	475	1,048	125	847	575	119	63
	(.24)	(.14)	(.26)	(.03)	(.21)	(.15)	(.03)	(.01)
6	22,951	27,123	39,049	33,613	39,201	36,839	47,656	51,670
	(7.14)	(7.88)	(9.85)	(9.11)	(9.86)	(9.68)	(10.95)	(12.23)
7	46	45	52	52	74	50	99	289
	(.01)	(.01)	(.01)	(.02)	(.02)	(.01)	(.02)	(.07)
8	28,042	28,369	33,163	31,228	33,937	36,441	38,450	41,323
	(8.73)	(8.25)	(8.36)	(8.46)	(8.54)	(9.58)	(8.84)	(9.78)
9	1,282	1,140	977	1,776	2,207	2,465	2,762	2,286
	(.40)	(.33)	(.25)	(.48)	(.56)	(.65)	(.63)	(.54)
Total	321,284	344,068	396,493	369,058	397,616	380,505	435,147	422,552

NOTE: Numbers in parentheses are percentage shares of total U.S. imports from the Philippines.

APPENDIX TABLE 4a: Imports of Japan from the Philippines, 1962-1969
(f.o.b. value in thousand U.S. dollars)

SITC No.	1962	1963	1964	1965	1966	1967	1968	1969
0	7,444	9,075	16,253	15,212	13,305	20,410	20,885	22,371
	(4.05)	(3.95)	(7.25)	(6.00)	(4.09)	(5.45)	(5.25)	(4.78)
1	28	10	10	62	78	168	71	65
	(.02)	(.00)	(.00)	(.02)	(.02)	(.05)	(.02)	(.01)
2	175,251	219,447	207,193	236,515	308,626	344,612	368,815	433,919
	(95.27)	(95.46)	(92.37)	(93.23)	(94.97)	(92.03)	(92.68)	(92.71)
3	27	-	1	-	274	863	1,365	3,330
	(.01)	-	(.00)	-	(.09)	(.23)	(.34)	(.71)
4	-	139	97	3	-	123	-	425
	-	(.06)	(.04)	(.00)	-	(.03)	-	(.09)
5	692	758	630	1,549	752	1,452	1,844	1,315
	(.38)	(.33)	(.28)	(.61)	(.23)	(.39)	(.46)	(.28)
6	129	84	50	91	186	662	1,022	1,039
	(.07)	(.04)	(.02)	(.04)	(.06)	(.18)	(.26)	(.22)
7	361	376	6	27	125	191	589	336
	(.19)	(.16)	(.00)	(.01)	(.04)	(.05)	(.15)	(.07)
8	15	4	33	74	64	63	160	508
	(.01)	(.00)	(.02)	(.03)	(.02)	(.02)	(.04)	(.12)
9	8	-	42	144	1,565	5,897	3,189	4,726
	(.00)	-	(.02)	(.06)	(.48)	(1.57)	(.80)	(1.01)
Total	183,955	229,893	224,315	253,677	324,975	374,441	397,940	468,034

NOTE: Numbers in parentheses are percentage shares of total imports of Japan from the Philippines.

APPENDIX TABLE 4b: Philippine Exports to Japan, 1962-1969
(f.o.b. value in thousand U.S. dollars)

SITC No.	1962	1963	1964	1965	1966	1967	1968	1969
0	5,876 (4.30)	7,257 (3.69)	13,371 (7.13)	11,861 (5.47)	8,884 (3.19)	11,725 (4.22)	10,761 (3.80)	11,189 (3.32)
1	9 (.01)	21 (.01)	36 (.02)	97 (.05)	166 (.06)	184 (.07)	65 (.02)	95 (.03)
2	129,786 (95.01)	188,375 (95.81)	173,037 (92.24)	203,021 (93.70)	268,064 (96.23)	262,374 (94.44)	268,524 (94.83)	318,809 (94.62)
3	5 (.003)	49 (.02)	67 (.03)	90 (.04)	292 (.11)	319 (.11)	1,245 (.44)	3,430 (1.02)
4	- -	92 (.05)	92 (.05)	5 (.00)	1 (.00)	120 (.04)	- -	411 (.12)
5	837 (.61)	629 (.32)	637 (.34)	1,319 (.61)	435 (.16)	1,666 (.60)	1,602 (.57)	1,318 (.39)
6	40 (.03)	129 (.07)	316 (.17)	206 (.10)	677 (.24)	1,390 (.50)	840 (.30)	1,344 (.40)
7	4 (.00)	3 (.00)	1 (.00)	- -	- -	1 (.00)	- -	- -
8	9 (.01)	7 (.00)	18 (.01)	60 (.03)	40 (.01)	43 (.02)	109 (.04)	316 (.09)
9	43 (.03)	53 (.03)	11 (.01)	10 (.00)	8 (.00)	13 (.00)	12 (.00)	21 (.01)
Total	136,609	196,615	187,586	216,669	278,567	277,835	283,158	326,933

NOTE: Numbers in parentheses are percentage shares of total Philippine exports to Japan.

APPENDIX TABLE 5: "Maximum" Values of Trade Flows, by Major Commodity Group, 1962-1969 (f.o.b. value in thousand U.S. dollars)

SITC No.	Trade flow		1962	1963	1964	1965	1966	1967	1968	1969
0	Imports from:	Japan	2,842	16,189	12,915	12,882	17,650	22,755	26,097	20,295
		U.S.	41,451	44,468	47,465	58,133	58,679	78,196	71,536	59,023
	Exports to :	Japan	7,572	9,136	16,302	15,265	13,388	20,500	20,920	22,392
		U.S.	174,501	188,348	191,884	165,124	165,484	176,456	178,132	177,106
1	Imports from:	Japan	9	22	13	8	18	42	48	60
		U.S.	1,052	1,442	766	1,218	3,834	4,582	7,738	10,078
	Exports to :	Japan	29	21	38	101	172	186	71	95
		U.S.	4,045	5,037	7,065	8,004	5,528	5,046	7,942	9,242
2	Imports from:	Japan	5,609	6,117	6,951	7,730	12,924	13,764	22,356	24,455
		U.S.	28,870	31,481	39,896	27,967	31,703	27,554	38,448	27,456
	Exports to :	Japan	175,737	225,924	209,241	241,254	317,568	344,812	369,438	434,902
		U.S.	68,183	76,434	81,508	89,749	90,129	85,369	92,673	89,052
3	Imports from:	Japan	3,312	2,157	718	1,356	4,043	571	2,176	3,405
		U.S.	6,934	7,684	10,312	8,685	9,727	10,707	7,794	8,459
	Exports to :	Japan	27	49	67	90	306	863	1,365	3,430
		U.S.	1,245	1,770	1,430	4,008	6,113	7,208	3,139	-

Appendix Table 5: "Maximum" Values of ...

	Imports from:	Japan	85	157	183	85	200	310	517	558
		U.S.	2,012	1,918	2,722	3,665	1,725	3,356	1,574	1,505
4										
	Exports to :	Japan	-	231	189	5	1	126	-	425
		U.S.	30,647	38,926	48,352	54,313	68,237	51,954	70,805	55,466
	Imports from:	Japan	14,667	14,925	21,273	23,010	24,334	33,670	33,541	42,244
		U.S.	28,175	31,710	36,853	34,351	35,948	38,982	44,975	45,603
5										
	Exports to :	Japan	692	851	656	1,715	767	1,703	1,860	1,343
		U.S.	826	591	1,437	270	1,002	605	193	277
	Imports from:	Japan	53,892	76,219	93,133	114,333	120,629	142,094	172,752	197,864
		U.S.	71,433	83,177	86,235	72,668	71,029	74,247	71,594	62,781
6										
	Exports to :	Japan	129	179	329	245	688	1,393	1,261	1,879
		U.S.	23,146	28,886	40,188	36,163	39,249	37,065	47,825	51,709
	Imports from:	Japan	45,411	38,987	66,945	94,833	125,572	**172,215**	**167,552**	205,128
		U.S.	12,225	14,405	16,887	17,843	19,896	18,473	23,903	21,485
7										
	Exports to :	Japan	361	379	6	27	125	191	589	336
		U.S.	270	49	73	55	92	633	101	317
	Imports from:	Japan	4,677	6,011	6,978	8,254	8,861	12,287	**20,168**	10,788
		U.S.	**12,225**	14,405	16,887	17,843	19,896	18,473	23,903	21,485
8										
	Exports to :	Japan	15	11	43	119	69	71	197	636
		U.S.	28,125	28,572	33,607	31,700	34,379	36,497	38,695	41,595

Appendix Table 5: "Maximum" Values of ...

9	Imports from:	Japan	300	412	1,753	1,266	1,214	2,688	4,556	2,563
		U.S.	3,797	6,040	10,828	12,599	8,482	11,334	10,107	4,675
	Exports to :	Japan	46	53	42	146	1,565	5,897	3,189	4,726
		U.S.	1,304	1,140	977	1,776	2,207	2,465	2,762	2,287

APPENDIX TABLE 6: Philippine Import Ratios and Average Tariff Rates by Commodity Groups

SITC No.	Imports from Japan		Imports from the U.S.		Average Tariff rate
	M_{pj}/X_{jp}	M_{pj}/Max	M_{pus}/X_{usp}	M_{pus}/Max	
00	-	-	.401	.400	.600
01	-	-	.485	.449	.610
02	-	-	1.052	.904	.388
03	-	-	1.173	.832	.587
04	-	-	.878	.849	.358
05	-	-	1.035	.875	.723
06	-	-	.156	.082	1.033
07	-	-	1.752	.738	.635
08	-	-	.933	.903	.257
09	-	-	.761	.719	.544
61	.299	.280	.073	.073	.639
62	.870	.859	.785	.729	.459
63	.243	.231	.568	.485	.880
64	1.029	.961	1.194	.998	.442
65	.474	.458	.506	.489	.577
66	.578	.569	.886	.813	.418
67	.890	.840	.910	.795	.360
68	1.070	.968	1.260	.917	.261
69	.663	.659	.810	.780	.460
71	1.062	.883	-	-	.223
72	.595	.576	-	-	.374
73	.957	.862	-	-	.411
81	.662	.597	.714	.708	.388
82	.552	.508	.500	.500	.670
83	.126	.126	.198	.198	1.000
84	.250	.250	.083	.083	.850
85	.236	.236	.414	.409	.740
86	.696	.695	.817	.811	.252
89	.493	.476	.719	.694	.639

APPENDIX TABLE 7a: Philippine Exports to Japan, 1962-1969
(f.o.b. value in thousand U.S. dollars)

SITC	Commodity Description	1962	1963	1964	1965	1966	1967	1968	1969
0517	Dessicated Coconut								
	X_{pj}	8	28	28	49	211	865	733	581
	M_{pj}	7	32	11	50	167	872	985	563
	Max	8	32	28	50	211	872	985	581
	TM_j	4,370	4,950	6,890	8,560	12,670	13,860	19,163	15,250
0539	Canned Pineapple								
	X_{pj}	317	333	462	358	443	592	553	848
	M_{pj}	264	419	563	503	558	1,074	1,370	1,532
	Max	317	419	563	503	558	1,074	1,370	1,532
	TM_j	8,514	11,473	14,609	17,448	21,152	19,921	20,132	31,151
0615	Molasses								
	X_{pj}	3,318	5,727	10,511	9,028	5,262	6,515	6,611	5,720
	M_{pj}	4,677	7,081	13,127	11,284	8,346	12,212	13,678	13,214
	Max	4,677	7,081	13,127	11,284	8,346	12,212	13,678	13,214
	TM_j	14,320	20,050	22,990	20,190	23,120	32,990	31,932	24,020
2212	Copra								
	X_{pj}	2,188	6,359	5,769	9,393	9,650	11,307	9,489	5,883
	M_{pj}	1,914	7,146	5,179	8,400	8,823	13,485	11,141	7,566
	Max	2,188	7,146	5,769	9,393	9,650	13,485	11,141	7,566
	TM_j	13,830	18,750	15,600	18,970	19,390	20,170	27,188	20,280
242	Log								
	X_{pj}	87,501	123,579	109,574	125,633	164,320	169,464	162,692	175,356
	M_{pj}	120,864	153,523	137,557	154,243	200,874	230,340	234,036	261,144
	Max	120,864	153,523	137,557	154,243	200,874	230,340	234,036	261,144
	TM_j	286,580	365,390	394,280	453,200	618,200	837,620	1,035,940	1,153,100

Appendix Table 7a: Philippine Exports to Japan, 1962-1969

243	Lumber								
		X_{pj}	101	153	683	92	337	890	1,054	1,583
		M_{pj}	20	389	80	48	346	1,120	1,308	1,856
		Max	101	389	683	92	346	1,120	1,308	1,856
		TM_j	29,610	40,180	44,340	39,380	58,410	96,810	125,050	121,940
2655	Abaca (unmanufactured)									
		X_{pj}	5,903	8,701	7,854	5,448	4,006	3,272	2,646	3,244
		M_{pj}	7,208	10,285	9,590	7,558	5,594	4,606	3,830	4,092
		Max	7,208	10,285	9,590	7,558	5,594	4,606	3,830	4,092
		TM_j	7,430	10,660	9,860	7,740	5,850	4,810	3,868	4,130
2813	Iron Ore									
		X_{pj}	9,710	12,586	12,547	11,486	12,771	13,390	13,674	10,395
		M_{pj}	17,405	16,444	17,093	17,520	19,380	17,709	20,450	20,576
		Max	17,405	16,444	17,093	17,520	19,380	17,709	20,450	20,576
		TM_j	319,590	355,710	420,320	523,620	606,260	718,080	833,580	969,360
2831	Copper concentrates									
		X_{pj}	18,917	31,564	30,290	43,905	68,798	55,558	72,045	114,364
		M_{pj}	21,447	25,406	29,313	39,675	60,517	65,475	88,302	127,141
		Max	21,447	31,564	30,290	43,905	68,798	65,475	88,302	127,141
		TM_j	90,860	94,080	102,150	128,200	191,160	237,990	286,720	354,120
Total Principal Exports										
		X_{pj}	127,963	189,030	177,718	205,392	265,798	261,853	269,497	317,974
		M_{pj}	173,836	220,725	212,579	239,281	304,605	346,893	375,100	437,684
		Max	174,215	226,883	214,700	244,548	313,757	346,893	375,100	437,684
		TM_j	775,104	921,243	1,031,039	1,217,308	1,556,212	1,982,251	2,383,573	2,693,351

Appendix Table 7a: Philippine Exports to Japan, 1962-1969

Total Non-Principal Exports								
X_{pj}	8,645	7,584	9,867	11,277	12,770	15,982	13,661	18,958
M_{pj}	10,119	9,168	11,736	14,396	20,370	27,548	22,840	30,350
Max	10,644	9,951	12,213	14,414	20,892	28,849	23,790	32,480
TM_j	4,861,866	5,815,637	6,907,141	6,952,362	7,967,248	9,681,769	10,604,707	12,330,649
Total Philippine Exports								
X_{pj}	136,608	196,614	187,585	216,669	278,568	277,835	283,158	336,932
M_{pj}	183,955	229,893	224,315	253,677	324,975	374,441	397,940	468,034
Max	184,859	236,834	226,913	2,589,162	334,649	375,742	398,890	470,164
TM_j	563,690	6,736,880	7,938,180	8,169,670	9,523,460	11,664,020	12,988,280	15,024,000

NOTES: X_{pj}, M_{pj} and Max are based on Philippine data, Japanese data and "maximum" values, respectively.

TM_j = total imports of Japan.

APPENDIX TABLE 7b: Philippine Exports to the United States, 1962-1969
(f.o.b. value in thousand U.S. dollars)

SITC	Commodity Description	1962	1963	1964	1965	1966	1967	1968	1969
0517	Dessicated Coconut								
	X_{pus}	13,161	15,402	16,699	15,800	12,744	12,626	21,288	11,984
	M_{usp}	12,422	15,537	16,404	15,571	14,552	12,628	25,772	13,182
	Max	13,161	15,537	16,699	15,800	14,552	12,628	25,772	13,182
	TM_{us}	59,310	67,190	71,980	74,970	81,540	76,370	109,410	95,330
061 (1-2)	Sugar (refined & centrifugal)								
	X_{pus}	127,162	151,422	158,818	136,720	117,814	144,235	116,136	116,119
	M_{usp}	150,492	163,347	162,417	129,568	141,150	152,412	138,094	146,423
	Max	150,492	163,347	162,417	136,720	141,150	152,412	138,094	146,423
	TM_{us}	509,370	610,660	458,430	442,520	501,199	588,420	640,130	638,230
0615	Molasses								
	X_{pus}	1,725	2,529	1,801	900	474	115	258	1,190
	M_{usp}	1,428	1,327	2,337	687	281	108	-	968
	Max	1,725	2,529	2,337	900	474	115	258	1,190
	TM_{us}	30,210	43,910	35,560	25,730	32,560	42,980	44,090	38,570
0813	Copra meal or cake								
	X_{pus}	1,187	1,407	1,422	1,617	1,485	888	940	365
	M_{usp}	697	524	1,027	957	655	452	238	183
	Max	1,187	1,407	1,422	1,617	1,485	888	940	365
	TM_{us}	3,960	3,170	2,660	2,630	7,010	5,270	3,120	1,940
2212	Copra								
	X_{pus}	39,226	45,173	44,250	51,765	46,789	44,849	61,529	47,019
	M_{usp}	46,074	38,093	43,133	54,987	41,569	45,926	62,314	46,324
	Max	46,074	45,173	44,250	54,987	46,789	45,926	62,314	47,019
	TM_{us}	46,640	38,090	43,130	54,990	41,570	45,930	62,310	46,520

Appendix Table 7b: Philippine Exports to the United States, 1962-1969

242	Log								
	X_{pus}	872	898	783	1,579	1,093	1,321	1,090	1,224
	M_{usp}	876	499	510	598	205	309	191	278
	Max	876	898	783	1,579	1,093	1,321	1,090	1,224
	TM_{us}	37,160	35,040	28,330	28,250	32,490	29,500	31,160	29,500
243	Lumber								
	X_{pus}	3,925	4,328	5,395	4,641	4,744	3,292	4,764	5,742
	M_{usp}	4,046	3,880	3,983	3,616	4,156	2,918	3,544	4,846
	Max	4,046	4,328	5,395	4,641	4,744	3,292	4,764	5,742
	TM_{us}	336,470	362,330	364,430	375,180	399,460	390,030	557,630	623,820
2655	Abaca (unmanufactured)								
	X_{pus}	8,267	8,914	8,547	9,709	7,454	5,316	3,883	5,678
	M_{usp}	8,206	8,111	8,229	10,492	8,308	6,275	4,448	5,163
	Max	8,267	8,914	8,547	10,492	8,308	6,275	4,448	5,678
	TM_{us}	8,662	8,640	9,100	11,140	9,160	6,900	4,950	5,660
2831	Copper concentrates								
	X_{pus}	10,504	10,037	5,326	5,069	17,463	23,888	11,110	20,920
	M_{usp}	-	5	17,205	11,579	21,766	14,434	15,258	23,806
	Max	10,504	10,037	17,205	11,579	21,766	23,888	15,258	23,806
	TM_{us}	12,900	11,600	25,430	24,400	37,200	27,800	26,300	46,080
4223	Coconut oil								
	X_{pus}	30,600	38,187	48,261	54,311	58,773	51,947	68,640	45,960
	M_{usp}	25,342	38,926	47,525	51,013	68,227	48,528	70,805	55,219
	Max	30,600	38,926	48,261	54,311	68,227	51,947	70,805	55,219
	TM_{us}	25,360	38,930	47,530	51,010	68,240	48,530	70,810	55,230
6311	Veneer								
	X_{pus}	5,922	9,030	10,931	11,107	9,484	7,124	10,742	10,062
	M_{usp}	5,680	8,353	10,094	9,982	10,607	7,497	11,013	13,760
	Max	5,922	9,030	10,931	11,107	10,607	7,497	11,013	13,760
	TM_{us}	31,530	37,220	42,430	45,760	49,860	43,070	50,900	47,900

Appendix Table 7b: Philippine Exports to the United States, 1962-1969

6312	Plywood								
		X_{pus}	12,210	16,576	22,127	18,349	22,464	24,051	27,846	23,132
		M_{usp}	14,536	15,423	21,569	18,078	22,343	23,750	29,887	30,394
		Max	14,536	16,576	22,127	18,349	22,464	24,051	29,887	30,394
		TM_{us}	100,640	108,900	123,240	124,910	150,340	142,400	217,960	250,550
	Total Principal Exports									
		X_{pus}	254,761	303,903	324,360	311,567	300,781	319,652	328,226	289,395
		M_{usp}	269,799	294,025	334,433	307,128	333,819	315,237	361,564	340,546
		Max	287,390	316,702	340,374	322,082	341,659	330,240	364,643	344,002
		TM_{us}	1,202,212	1,365,680	1,252,250	1,261,490	1,410,629	1,447,200	1,818,770	1,879,330
	Total Non-Principal Exports									
		X_{pus}	24,718	23,175	28,954	36,423	31,644	31,970	27,610	31,863
		M_{usp}	51,485	50,043	62,060	61,930	63,797	65,268	73,583	82,006
		Max	44,902	53,051	66,147	69,080	70,761	73,058	77,624	83,049
		TM_{us}	15,047,188	15,648,020	17,347,650	20,104,910	24,139,671	25,368,400	31,295,230	33,983,670
	Total Philippine Exports									
		X_{pus}	279,479	327,078	353,314	347,990	332,425	351,622	355,836	321,258
		M_{usp}	321,284	344,068	396,493	369,058	397,616	380,505	435,147	422,552
		Max	332,292	369,753	406,521	391,162	412,420	403,298	442,267	427,051
		TM_{us}	16,249,400	17,013,700	18,599,900	21,366,400	25,550,300	26,815,600	33,114,000	35,863,000

NOTES: X_{pus}, M_{usp}, and Max are based on Philippine data, U.S. data and "maximum" values, respectively.

TM_{us} = Total imports of the United States.

APPENDIX TABLE 8: Selected Minor Exports of the Philippines to Japan, 1962-1969
(in thousand U.S. dollars)

SITC No.	Commodity description	1962	1963	1964	1965	1966	1967	1968	1969	1962-1969
	Raw materials									
	X_{pj}	123	193	286	297	315	523	557	852	3,146
	M_{jp}	143	133	260	258	293	500	728	968	3,283
	Max	143	193	307	297	334	586	728	968	3,556
031	Fish and fish preparations									
	X_{pj}	-	26	146	98	162	363	291	319	1,405
	M_{jp}	-	1	99	80	121	277	371	357	1,306
	Max	-	26	146	98	162	363	371	357	1,523
291	Crude animal materials, n.e.s.									
	X_{pj}	123	167	140	199	153	160	266	533	1,741
	M_{jp}	143	132	161	178	172	223	357	611	1,977
	Max	143	167	161	199	172	223	357	611	2,033
	Semi-processed									
	X_{pj}	900	806	1,051	941	1,942	2,761	1,653	2,885	12,939
	M_{jp}	1,158	1,749	2,757	2,316	6,159	4,570	2,925	3,841	25,475
	Max	1,236	1,749	2,757	2,381	6,416	5,068	3,661	5,509	28,777
241	Fuel, wood and charcoal									
	X_{pj}	269	145	81	83	237	675	956	1,216	3,662
	M_{jp}	283	181	100	110	299	530	430	302	2,235
	Max	283	181	100	110	299	675	956	1,216	3,820

Appendix Table 8: Selected Minor Exports ...

274	Sulphur & unroasted iron pyrite									
	X_{pj}	-	-	-	-	-	-	-	-	-
	M_{jp}	-	-	-	100	1,197	411	-	450	2,158
	Max	-	-	-	100	1,197	411	-	450	2,158
276	Other crude minerals									
	X_{pj}	-	-	-	-	-	-	-	-	-
	M_{jp}	322	675	1,005	948	1,070	1,293	834	1,314	7,461
	Max	322	675	1,005	948	1,070	1,293	834	1,314	7,461
284	Non-ferrous metal scraps									
	X_{pj}	631	661	970	793	1,444	1,733	487	915	7,634
	M_{jp}	553	893	1,652	1,158	3,589	2,336	1,661	1,775	13,617
	Max	631	893	1,652	1,158	3,589	2,336	1,661	1,775	13,695
682	Copper and alloys									
	X_{pj}	-	-	-	65	261	353	210	754	1,643
	M_{jp}	-	-	-	-	4	-	-	-	4
	Max	-	-	-	65	261	353	210	754	1,643
	Manufactured									
	X_{pj}	837	637	684	1,091	670	1,790	2,815	4,744	13,268
	M_{jp}	894	1,091	664	1,305	2,604	8,163	6,852	9,663	31,236
	Max	1,114	1,193	730	1,552	2,636	8,384	6,852	9,775	32,236
332	Petroleum products									
	X_{pj}	5	49	67	90	292	319	1,245	3,430	5,497
	M_{jp}	27	-	1	-	260	863	1,365	3,330	5,846
	Max	27	49	67	90	292	863	1,365	3,430	6,183

Appendix Table 8: Selected Minor Exports ...

512	Organic chemicals									
	X_{pj}	99	476	546	673	272	398	328	202	2,994
	M_{jp}	182	575	553	1,008	366	319	401	190	3,594
	Max	182	575	553	1,008	366	398	401	202	3,685
513	Inorganic chemicals									
	X_{pj}	690	59	60	318	98	1,062	1,230	1,091	4,608
	M_{jp}	508	182	68	161	319	920	1,392	1,104	4,654
	Max	690	182	68	318	319	1,062	1,392	1,104	5,135
931	Special transactions									
	X_{pj}	43	53	11	10	8	11	12	21	169
	M_{jp}	5	-	42	136	1,551	5,887	3,174	4,718	15,513
	Max	43	53	42	136	1,551	5,887	3,174	4,718	15,604
73	Transport equipment									
	X_{pj}	-	-	-	-	-	-	-	-	-
	M_{jp}	172	334	-	-	108	174	520	321	1,629
	Max	172	334	-	-	108	174	520	321	1,629

APPENDIX TABLE 9: Selected Minor Exports of the Philippines to the United States, 1962-1969
(in thousand U.S. dollars)

SITC No.	Commodity description	1962	1963	1964	1965	1966	1967	1968	1969	1962-196
	Raw materials									
	X_{pus}	4,505	3,854	7,042	7,749	4,558	6,133	7,671	9,613	51,42
	M_{usp}	3,943	5,037	5,362	8,078	5,923	5,498	8,532	10,222	52,59
	Max	4,531	5,062	7,098	8,134	6,264	6,444	8,992	10,356	56,88
031	Fish and fish preparations									
	X_{pus}	8	105	56	9	569	201	401	450	1,79
	M_{usp}	34	105	62	20	329	243	346	483	1,62
	Max	34	105	62	20	569	243	401	483	1,91
121	Tobacco, unmanufactured									
	X_{pus}	3,321	3,488	6,208	7,060	3,123	4,288	5,904	7,894	41,286
	M_{usp}	3,151	4,291	4,619	7,310	4,801	3,796	7,037	8,339	43,344
	Max	3,321	4,291	6,208	7,310	4,801	4,288	7,037	8,339	45,595
285	Silver and platinium ores									
	X_{pus}	-	-	-	-	-	454	405	604	1,463
	M_{usp}	-	-	50	-	-	-	-	470	520
	Max	-	-	50	-	-	454	405	604	1,513
291	Crude animal materials, n.e.s.									
	X_{pus}	456	79	145	131	248	583	256	134	2,032
	M_{usp}	183	184	92	75	147	841	418	195	2,135
	Max	456	184	145	131	248	841	418	195	2,618

Appendix Table 9: Selected Minor Exports ...

292	Crude vegetable materials, n.e.s.								
	X_{pus}	720	482	633	549	618	607	705	531	4,845
	M_{usp}	575	457	539	673	646	618	731	735	4,974
	Max	720	482	633	673	646	618	731	735	5,238
	Semi-processed									
	X_{pus}	547	623	859	489	842	966	581	581	5,488
	M_{usp}	563	579	3,778	504	1,007	894	748	640	8,713
	Max	563	623	3,778	504	1,007	966	748	640	8,829
072	Cocoa									
	X_{pus}	547	623	859	489	842	966	581	581	5,488
	M_{usp}	563	579	966	504	1,007	894	748	640	5,901
	Max	563	623	966	504	1,007	966	748	640	6,017
6821	Copper and alloys									
	X_{pus}	-	-	-	-	-	-	-	-	-
	M_{usp}	-	-	2,812	-	-	-	-	-	2,812
	Max	-	-	2,812	-	-	-	-	-	2,812
	Manufactured									
	X_{pus}	6,549	6,294	8,117	10,909	14,253	14,681	11,799	9,702	82,304
	M_{usp}	33,386	33,658	39,823	38,556	43,085	45,060	47,783	51,683	333,034
	Max	35,115	35,678	41,869	43,086	49,732	52,347	51,104	51,985	360,202
112	Alcoholic beverages									
	X_{pus}	183	218	421	381	420	503	625	650	3,401
	M_{usp}	228	358	468	446	348	459	538	538	3,383
	Max	228	358	468	446	420	503	625	650	3,698

Appendix Table 9: Selected Minor Exports ...

122	Tobacco, manufactured								
	X_{pus}	183	218	421	381	254	255	280	222	2,418
	M_{usp}	228	358	468	446	306	255	278	253	2,559
	Max	228	358	468	446	306	255	280	253	2,615
332	Petroleum products									
	X_{pus}	1,245	1,770	1,430	4,008	6,113	7,208	3,139	-	24,913
	M_{usp}	28	-	-	-	-	-	-	-	28
	Max	1,245	1,770	1,430	4,008	6,113	7,208	3,139	-	24,913
512	Organic chemicals									
	X_{pus}	764	100	969	82	426	223	125	91	2,780
	M_{usp}	782	217	665	95	320	311	91	-	2,481
	Max	782	217	969	95	426	311	125	91	3,016
513	Inorganic chemicals									
	X_{pus}	-	336	343	120	545	95	-	99	1,538
	M_{usp}	-	258	383	-	519	238	-	-	1,398
	Max	-	336	383	120	545	238	-	99	1,721
632	Wood, manufactures, n.e.s.									
	X_{pus}	912	552	541	548	1,179	1,761	2,587	2,634	10,714
	M_{usp}	454	673	920	1,218	1,489	1,731	2,528	2,706	11,719
	Max	912	673	920	1,218	1,489	1,761	2,587	2,706	12,266
65	Textile yarns, fabrics, etc.									
	X_{pus}	1,732	1,392	1,962	2,801	2,794	2,540	2,509	2,774	18,504
	M_{usp}	2,254	2,412	2,991	3,712	4,135	3,276	3,279	3,776	25,835
	Max	2,254	2,412	2,991	3,712	4,135	3,276	3,279	3,776	25,835

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