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Philippine Trade in Manufactures Structural Change and Adjustment

by

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ABSTRACT

This paper looks into the recent experience in manufactured exports, especially non-traditional manufactures; identifies elements that indicate structural change in industry and trade behavior; and analyzes adjustment patterns arising from or in response to trade performance. Put briefly, the paper explores the question why, despite the exhuberant growth of non-traditional manufactured exports in the seventies, did we not achieve a dramatic structural change in industry?

The paper argues that the adjustment processes the country took in the light of this export expansion were not conducive to a more dynamic growth in the manufacturing sector as a whole and hence an appreciable structural change.

Philippine Trade in Manufactures
Structural Change and Adjustment

Florian A. Alburo*

I. Background and Purpose

It is often asserted in policy circles and by some students of the Philippine economy that the decade of the seventies marks the period when the country finally joined the ranks of newly industrializing countries (NICs). An important context of this assertion is the active participation of the Philippines in the trade of manufactured products, a distinctive index of the NICs. The more concrete argument is that in the seventies significant structural changes occurred, especially in trade and industry, signalling an economic transformation from what it was in the previous two decades.

Because of the well-documented economic benefits that accrue to countries with an export-led growth or an outward looking development strategy, it has been taken as a matter of course that the structural change in the seventies would have a positive impact. The recent analysis of Jurado Ferrer and Esguerra (1983) however has found little of this evidence in the sense of employment, income and income distribution[1]. It may be appropriate to ask whether some lags are expected in the benefits from this type of economic growth. But the prior question is first to determine structural shifts in the nature and process of Philippine economic development.

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This paper aims to (1) look into the recent experience in manufactured exports, specifically the non-traditional manufactures, (2) identify elements that would indicate structural changes in industry and trade behavior, (3) analyze adjustment patterns arising from or in response to trade performance and (4) spell out broad policy implications from the analytical results. While these points have in part been treated in the analysis cited previously, our purpose is more focused on non-traditional manufactures and structural changes within this new "sector" as well as the aggregative parameters of trade and industry. Furthermore our interest here is to address quite comprehensively the question of structure leaving aside the issue of whether the noticeable changes have brought about concomitant positive consequences to the rest of the economy.

In the next section several structural characteristics of recent trade and industry performance are examined in some detail. A contextual and aggregative review is presented to provide an environmental perspective to the economic conditions in the seventies.

The third section explores the question of change and adjustment that can be discerned from the data.

A final section begins with a short summary then concludes and lays out broad implications for policy changes as well as probable impacts on the economy in general.

2. Manufacturing Industry and Exports: Structural Characteristics

2.1. Perspective

There is an inherent ambiguity to our interest in structural change and at the same time a focus on manufactured exports in the seventies. The traditional understanding of structural change is the long-term trends in the basic and underlying mechanisms of an economic system which in turn set the pace for the shorter-term movements. Given the current attention on these exports and past knowledge of structural conditions, it seems appropriate to bear upon the contemporary period and how this may modify our view of structural change.

Numerous studies of Philippine trade and industrial development abound in the literature (Baldwin, 1975; Bautista, Power and Associates, 1979). What one discerns from these is that growth has been essentially inward looking and constrained by the domestic market. Thus the immediate post-war record was respectable while reconstruction was pursued and import-substitution in its early stage. In the sixties however growth decelerated as the early limits to import-substitution was reached and trade liberalization became more nominal than real with tariffs simply replacing the quantitative restrictions of the preceding decade. The failure therefore of the country to capitalize on world markets for sustainable growth can be attributed to such factors as the negative effective protection accorded export industries, the relative profitability of import-substituting industries, the over-valuation of the domestic currency and other policies. In short the regime was essentially protectionist.

Towards the end of the sixties and in the early seventies it appeared that the country consciously pursued a more open and trade-oriented direction if not policy. First, investment and export incentives were drawn up to stimulate more exports. The least that these incentives may have done was to compensate the distortions of a protectionist regime. Second, the country adopted a floating exchange rate policy after a currency realignment in 1971. This partly reduced nominal export losses from currency overvaluation. Finally a number of associated factors (e.g. creation of export processing zones) played a role in the "re-orientation".

Philippine exports in the seventies started to include a significant amount of non-traditional manufactures. The proportion was only 8.5 percent of all exports in 1970 but this gradually rose to 12.6 percent in 1973. An acceleration was evident in 1978 when the ratio hit 31.4 percent. In 1982 this stood at 49 percent of all exports. Table 1 presents the data on non-traditional manufactured exports from 1970 to 1982.

The performance of this "sector" in the decade of the seventies is evidently phenomenal. In the first half of the decade alone (1970-75) these exports had an average yearly growth rate of 31.7 percent compared with the growth rate of 15 percent for all exports. In the second half non-traditional manufactured exports grew even higher at an annual rate of 41.3 percent until 1980 (in comparison with the growth rate for all exports at 20 percent) though if we include 1982 a slight fall is noticeable (at 30.5 percent compared to the sharp decline for the growth of all exports at 11.8 percent).

Table 1

PHILIPPINE EXPORTS OF NON-TRADITIONAL MANUFACTURES, 1970-1982
(in million U.S. dollars)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Electrical and electronic equipment & components	-	0.3	0.4	11.3	27.1	47.3	85.0	124.3	253.4	412.5	671.0	857.7	1000.1
Garments	36.2	35.7	38.8	56.0	94.0	107.0	184.7	249.7	326.3	404.2	500.0	616.5	539.3
Handicrafts	6.5	9.2	12.9	27.4	46.0	78.2	94.9	84.1	100.1	133.6	154.3	133.7	121.6
Chemicals	5.4	7.0	6.3	10.6	15.9	22.1	27.0	54.1	59.9	112.8	94.9	106.7	96.8
Food Products & Beverages	8.2	9.0	11.2	15.0	17.5	14.7	28.7	43.7	46.8	57.0	170.4	309.9	214.5
Furniture & parts	1.1	1.2	1.5	3.3	6.1	5.2	9.8	21.7	26.6	54.9	77.2	87.4	71.6
Footwear	1.1	0.9	1.2	2.1	3.7	3.0	5.0	10.2	32.2	50.3	67.1	73.1	62.0
Machinery & Transport equipment	1.1	2.1	2.1	3.4	5.5	9.5	16.1	26.1	36.9	47.3	46.5	51.3	50.6
Textile yarn, fabrics & related products	2.8	5.3	3.5	17.3	7.2	8.7	15.1	12.4	23.6	31.4	49.3	45.3	38.9
Builders' woodwork and other wood manufactures excluding plywood, veneer and lumber	4.0	5.7	7.7	17.2	24.8	16.9	15.5	13.8	20.7	31.4	23.8	38.8	30.9
Non-metallic mineral manufactures, particularly cement	3.0	11.0	10.0	25.2	36.4	32.2	28.1	38.6	42.2	30.3	58.9	47.3	39.5
Cordage, cable, ropes and twines	1.9	2.1	3.1	4.6	9.7	7.6	10.3	12.4	12.5	16.8	18.5	20.5	55.8
Others	24.4	20.2	19.9	36.8	43.3	30.1	53.5	78.2	95.0	137.1	175.00	205.5	139.1
Total Exports of Non-traditional Manufactures	96.7	109.7	118.6	232.2	337.2	382.5	573.7	769.3	1076.2	1519.6	2106.9	2571.7	2460.7
TOTAL EXPORTS	1142	1136	1106	1837	2752	2294	2574	3151	3425	4601	5788	5722	5020

SOURCE: 1983 Philippine Statistical Yearbook (1983)

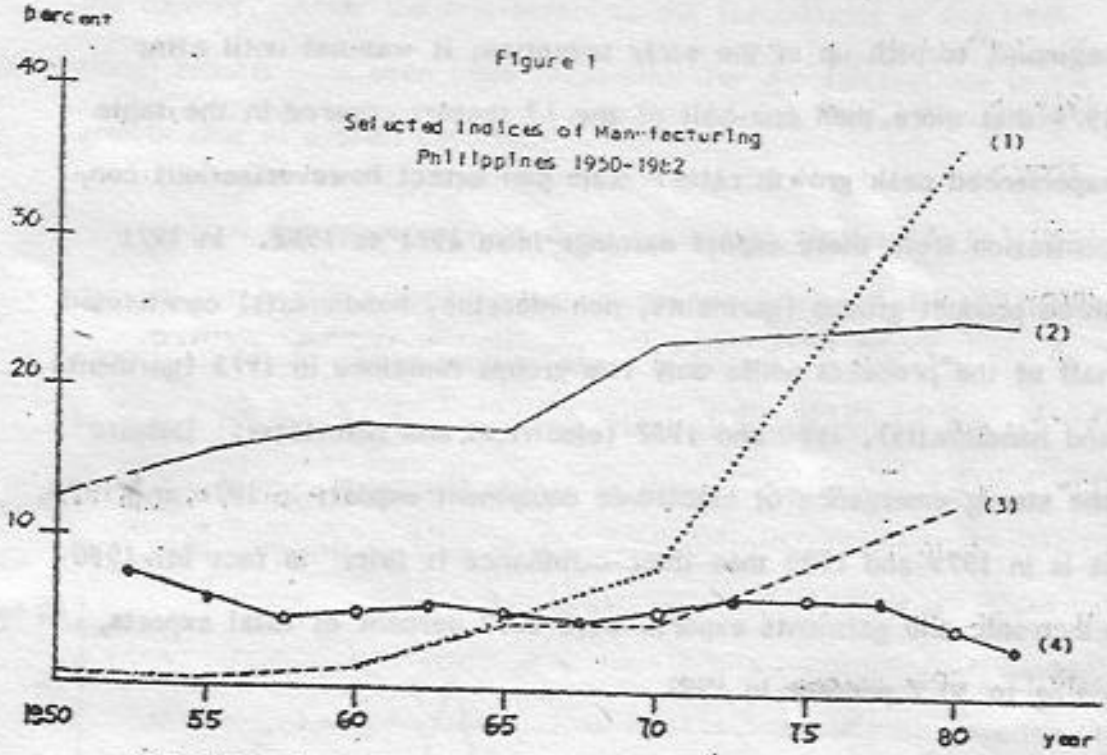
On the face of it, Table 1 would seem to suggest that the structure of Philippine exports has indeed changed between the sixties and the seventies. However the relevant point to consider is whether associated structural changes are likewise visible in the manufacturing industry itself to which manufactured exports are embedded.

It is useful to reiterate this point. One common yardstick used to measure development and structural change is the extent of manufacturing output relative to gross domestic product. Moreover the fraction of industrial output exported is similarly given credence as indicating the strength of industrialization. Figure 1 traces the movements of manufacturing output as a fraction of domestic product, the ratio of manufactured exports to manufacturing output and the average annual real growth rates of manufacturing value added, from 1950 to 1982. Although there are important differences in the way the ratios have been calculated over the three decades, the trends are more than apparent and would not be perceptibly affected by various changes in definitions or composition of the variables[2]. As one way of depicting long-term structures, Figure 1 seems to be sufficient.

Again the seventies look to be the threshold period for significant changes. Notice that the ratio of manufacturing gross value added to gross domestic product exceeded the 20 percent mark in 1970 in contrast to the previous decade although in the later years the proportion seemed to be asymptotic at 25 percent. Similarly the amount of manufacturing output exported rose sharply beginning in 1970. The impression portrayed here is one of dynamic changes taking place in this decade.

Figure 1

Selected Indices of Manufacturing
Philippines 1950-1982



(1) Ratio of non-traditional manufactured exports to total exports.

(2) Ratio of manufacturing real value added to real domestic product.

(3) Ratio of manufactured exports to manufacturing value added.

(4) Real growth of manufacturing (mid-period).

2.2. Structure of Manufactured Exports

The importance of manufactured exports is well-known. Its demand is generally income and price elastic, its production is less subject to the vagaries of nature that normally confronts primary commodities, and international trade in them reflects a country's comparative advantage. The Philippines is no exception to these potential benefits that come with increased exports of manufactures.

Annex Table 1 puts the data in Table 1 in terms of constant 1972 U.S. dollars. Although non-traditional manufactured exports were

beginning to pick up in the early seventies, it was not until after 1974 that more than one-half of the 13 sectors covered in the table experienced peak growth rates. One can detect however serious concentration from these export earnings from 1971 to 1982. In 1971 three product groups (garments, non-metallic, handicrafts) constituted half of the proceeds while only two groups remained in 1975 (garments and handicrafts), 1980 and 1982 (electrical and garments). Despite the strong emergence of electronic equipment exports in 1974 and 1975, it is in 1979 and 1980 that their dominance is felt. In fact for 1980 electronic and garments exports were 20.2 percent of total exports, rising to 30.7 percent in 1982.

A notable fact from the data is that many of these products had very little exports to begin with. Aside from garments and perhaps food products and beverages the exports of non-traditional manufactures practically began with zero base. In particular, exports of electrical and electronic equipment and components were only 0.3 million U.S. dollars in 1971 yet recorded a value of 1 billion U.S. dollars in 1982. In the same manner handicrafts, furniture and footwear registered growth rates above the average for all manufactured exports during the period.

One appreciates the rising importance of non-traditional manufactured exports in terms of the reduced fluctuations in their movements compared to the overall exports. For instance there is less variations in the yearly growth rates of these exports as shown in Figure 2 even when the deflator used is average export price index for

the country. After the mid-seventies the fluctuations in the traditional exports have been more responsible for the fluctuations in the growth rate of overall exports.

Thus the appearance of these exports to total trade in a sense relieves the burden placed on the country's traditional and principal exports. Yet on closer scrutiny there is invariably a similar excessive reliance on two to three principal manufactured exports. If there has been a structural change in exports the change has been more in product composition than of concentration.

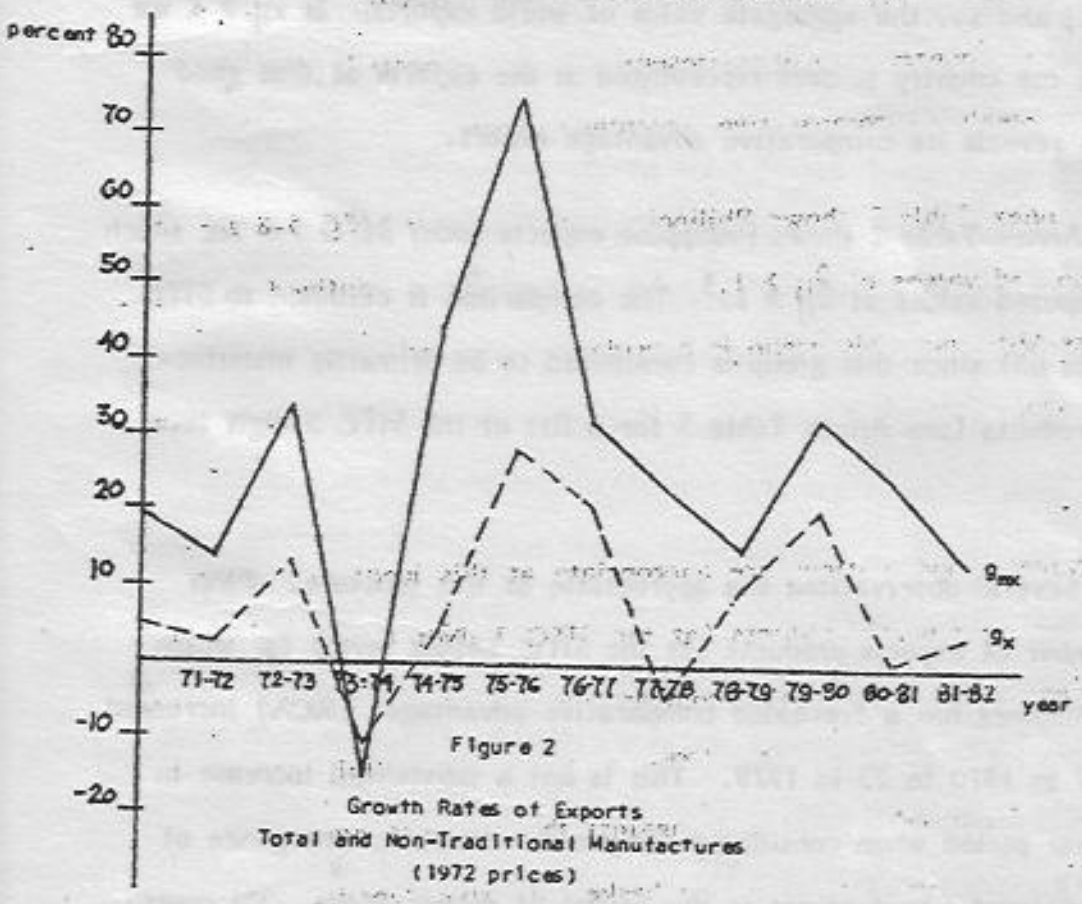


Figure 2

Growth Rates of Exports
Total and Non-Traditional Manufactures
(1972 prices)

Another way to assess the structure of the non traditional manufactured exports is to undertake an international comparison of

export shares. Suppose that the Philippines' export of commodity x as a share of the commodity's world exports is 10 percent and the share of Philippine exports to world exports is 5 percent. Then we say that the Philippines is over-represented in the export of good x. More formally define

$$\hat{x}_{ij} = \frac{x_{ij}}{x_{i.}} \Big/ \frac{x_{.j}}{x_{..}}$$

where x_{ij} is the value of the export good i of country j, $x_{i.}$ is the value of world exports of good i, $x_{.j}$ is the value of all exports of country j and x.. the aggregate value of world exports. If $\hat{x}_{ij} > 1$ we say that the country is over represented in the exports of that good and this reveals its comparative advantage export.

Annex Table 2 shows Philippine exports under SITC 5-8 for which the computed values of $\hat{x}_{ij} > 1$.[3] The comparison is confined to SITC 5-8 (less 68) since this group is considered to be primarily manufactured products (see Annex Table 3 for a list of the SITC 3-digit level codes).

Several observations are appropriate at this juncture. First the number of exports products (at the SITC 3-digit level) for which the Philippines has a "revealed comparative advantage" (RCA) increased from 17 in 1970 to 23 in 1979. This is not a substantial increase in a 10-year period when considered against the dramatic emergence of non-traditional manufactures in the basket of export goods. Of course we are ignoring the possible changes in the array of products throughout the year. However the yearly number is fairly stable during the period with only a slight variance.

Second, the number of products for which the Philippines has consistently managed to be over-represented in is smaller than the actual numerical count per year depending on the number of years a product has appeared. Only 5 products have $\hat{x}_{ij} > 1$ for all the ten years 1970-1979. These are veneers, plywood etc. (SITC 631), wood manufactures (SITC 632), special textile etc. products (SITC 655), cement and other building products (SITC 661) and clay, refractory building products (SITC 662). With the exception of SITC 631, all these roughly belong to the non-traditional manufactured exports. The number of products where $\hat{x}_{ij} > 1$ for 6 years or more is 18. Of these 10 are part of the non-traditional manufactures.

Third, conspiciously absent from Annex Table 2 are SITC 7 products i.e. machinery and electrical equipment. It is rather odd that from the results the Philippines finds no advantage in the manufacture of electrical and electronic equipment and components which earns 41 percent (1982) of these exports. The reason for this is that most exports of electrical equipment/components are recorded separately under SITC 931 or "special transactions exports". These are export products manufactured from imported materials on consignment basis. And since SITC 931 records transactions on the basis of trade <u>manner</u> rather than a specific product category, comparisons across countries become impossible if one wants to have a sense of <u>product</u> representation. Values for $\hat{x}_{ij} > 1$ for SITC 729 appeared in 1978 ($\hat{x}_{ij} = 1.27$).

Finally, of the 18 product groups where $\hat{x}_{ij} > 1$ consistently for 6 years or more most belong to SITC 6 (10 items) and SITC 8 (7 items). Only 1 belonged to SITC 5 while no products under SITC 7

have $\hat{x}_{ij} > 1$ for more than one year. In other words abstracting from the problem of determining the RCA for Philippine exports of electrical equipment/components there seem to be no revealed comparative advantage in machinery and equipment.

Structural change may also be examined using an approach taken by Larry (1968). Here industrial exports are classified according to their factor content and then traced in terms of changes over time. Products have either high or low capital intensities and high or low skill intensities as measures of labor content.

Table 2

Classification of Manufactured Exports by Factor Intensity

Capital Intensity	Skill Intensity	
	Low Skill	High Skill
LOW	Garments Handicrafts Furniture Footwear Textile Yarn Builder's Woodwork Cordage	Electrical Machinery/Transport
HIGH	Non-metallic Food Products	Chemicals

Source: Lary (1968)

Table 2 lists industries according to a four way classification which has been intuitively drawn up rather than rigorously arrived at. Garments, furniture and footwear products for example require low capital and low labor skills whereas electronics while of low capital intensity need high skilled labor. Non-metallic products use high capital inputs but not high skilled labor when compared with chemicals.

In calculations using this reference table, values for electronics exports have been omitted because these have not been classified in accordance with the previous discussion using SITC codes, are mostly special transactions trade, and would unduly swamp quantitative magnitudes because of their weight in the total of non-traditional manufactured exports.

Table 3

Value and Distribution
Non-Traditional Manufactured Exports
1971-1982
(In million 1972 U.S. dollars and per cent)[a]

Factor Content	1971	1975	1980	1982
Low Capital-Low Skill	56.8 (67.4)	117.6 (74.3)	361.8 (70.6)	455.4 (78.1)
Low Capital-High Skill	2.0 (2.4)	4.9 (3.1)	18.9 (3.7)	25.0 (4.3)
High Capital-Low Skill	18.9 (22.4)	24.3 (15.3)	93.2 (18.2)	54.9 (9.4)
High Capital-High Skill	6.6 (7.8)	11.5 (7.3)	38.6 (7.5)	47.9 (8.2)

[a] Does not include other non-traditional manufactured exports.

Source: Table 2 and Annex Table 1.

The record of these exports for the seventies is shown in

Table 3 where they are separated in terms of factor content and value of exports (at constant 1972 prices).

At the start of the decade products with low capital and labor intensities composed more than half of new exports with the other significant share absorbed by those with high capital but low skill intensities.

During the decade the striking feature of the process is that the share of products requiring high capital fell substantially from 30.2 percent of these exports in 1971 to 22.6 percent in 1975 and 17.6 percent in 1982 (with a slight rise in 1980). Conversely low capital using products increased in the fraction of exports from 68.9 percent in 1971 to 74.3 percent at the end of the decade (or 82.4 percent in 1982).

The table suggests that for most of the decade non-traditional exports were low capital and low skill labor using. The reduction in the export of products using high capital had been compensated by increases in the trade of low capital and low skill using products.

From this discussion of the structure of manufactured exports, a number of conclusions can be drawn in regard to changes taking place in the decade of the seventies. We have seen that while the coming of non-traditional manufactures in the export structure has been significant, the problem of concentration and dependence on a few principal products remains. What was previously a dependence on a few traditional (primary) exports can similarly be said of two principal manufactured exports accounting for more than a half of earnings. The

difference is perhaps in the less volatile nature of manufactures in terms of prices and growth rates.

The exports of electrical and electronic equipment and components are categorized as special transactions exports. This fact naturally elicits concern about the net effective contribution of these to exchange earnings, their potential for instability depending more on external policies, and overall impact on industrial development. Given that they contribute 40 percent to non-traditional manufactured exports, it is difficult to visualize a real and sustainable structural change in the long haul.

Philippine exports of manufactures continue to be heavily labor-intensive even during their surge in the decade. There has been a significant decline in the exports of goods intensive of capital use but there was no perceptible rise in the exports of skill intensive goods which is a mark of developing countries in the upstream of comparative advantage. At least dynamic trade improved the consistency between factor endownments and exports.

The final result from all these is that structural change in exports must be viewed in an international setting and not narrowly considered within the country's tradable basket. Rough analysis using revealed comparative advantage indices showed that only about half of those products in the non-traditional manufactures maintained strong performance in the seventies. Those products which were seen as spectacular (e.g. chemicals and machinery) in terms of phenomenal growth did not really fare as well as those which were firmly established

(garments) or rooted in the country's comparative advantage (footwear, textile fabrics, wood manufactures, handicrafts).

If structural change took place in the seventies it did not occur with such strength apparent in the aggregate -- depicted for example in Table 1 and Figure 1. The beginnings of a longer term change to manufactured exports is evident and may indeed, with appropriate international conditions and policies, signal a more sustainable structural change. How much of it is discernible in the manufacturing industry needs to be investigated as well.

2.3. Structure of Manufacturing Industry

Recall from Figure 1 that the proportion of manufactured exports to the gross value added of manufacturing was practically constant before the mid-sixties after which the ratio started to rise reaching close to 15 percent in 1980. The ratio of manufactured exports to total exports was 36.4 percent in 1980. The question we want to address here is to what extent have these ratios been associated with changes in the structure of Philippine manufacturing?

One way is to look at the gross value added of different manufacturing industries, especially those which form part of non-traditional manufactured exports. The long-term trends in the shares of different industries to manufacturing value added have remained more less constant with only minor fluctuations in some industries in some years.

Table 4 and Figure 3 show the distribution of value added by industry and a visual picture of trends, respectively. Figure 3 is

Table 4
Distribution of Value Added by Industry
Philippine Manufacturing
1948-1982
(in per cent)

Industry	1948	1956	1960	1965	1970	1975	1980	1982
Food, Beverage and Tobacco	60.6	43.8	41.2	40.1	41.8	40.0	43.9	44.6
Textile	2.6	3.7	4.6	4.7	5.9	5.6	4.5	4.3
Footwear and Wearing Apparel	6.6	5.1	3.0	7.0	3.8	3.6	4.4	5.0
Wood and Cork Products	9.7	5.0	4.0	4.6	4.2	2.8	2.9	2.9
Furniture and Fixtures	1.8	1.3	0.9	1.4	0.7	0.4	0.6	0.6
Paper and Paper Products	0.0	1.7	2.3	2.1	2.9	2.9	0.8	0.7
Publishing and Printing	3.7	3.1	3.2	4.1	2.2	2.7	1.4	1.5
Leather and Leather Products	0.0	0.2	0.3	0.3	0.2	0.2	0.3	0.3
Rubber Products	0.6	0.9	3.2	2.9	1.4	1.6	1.3	1.3
Chemicals and Chemical Products	2.9	9.9	10.0	9.1	7.9	13.1	10.1	14.4
Non-metallic mineral products	2.1	4.7	3.7	4.4	4.2	3.6	2.5	2.3
Basic Metal and Metal Products	1.9	4.7	8.0	8.5	7.4	6.0	8.2	8.0
Machinery	0.5	2.1	4.2	4.8	4.5	3.8	8.1	9.2
Transport	1.0	2.2	2.2	2.8	4.2	5.1	3.8	3.6
Miscellaneous Manufactures	5.7	11.2	8.2	5.2	8.7	8.7	1.1	1.3
TOTAL	100	100	100	100	100	100	100	100

Source: Bautista and Associates (1979) for 1948-1965
1983 Philippine Statistical Yearbook (1983)

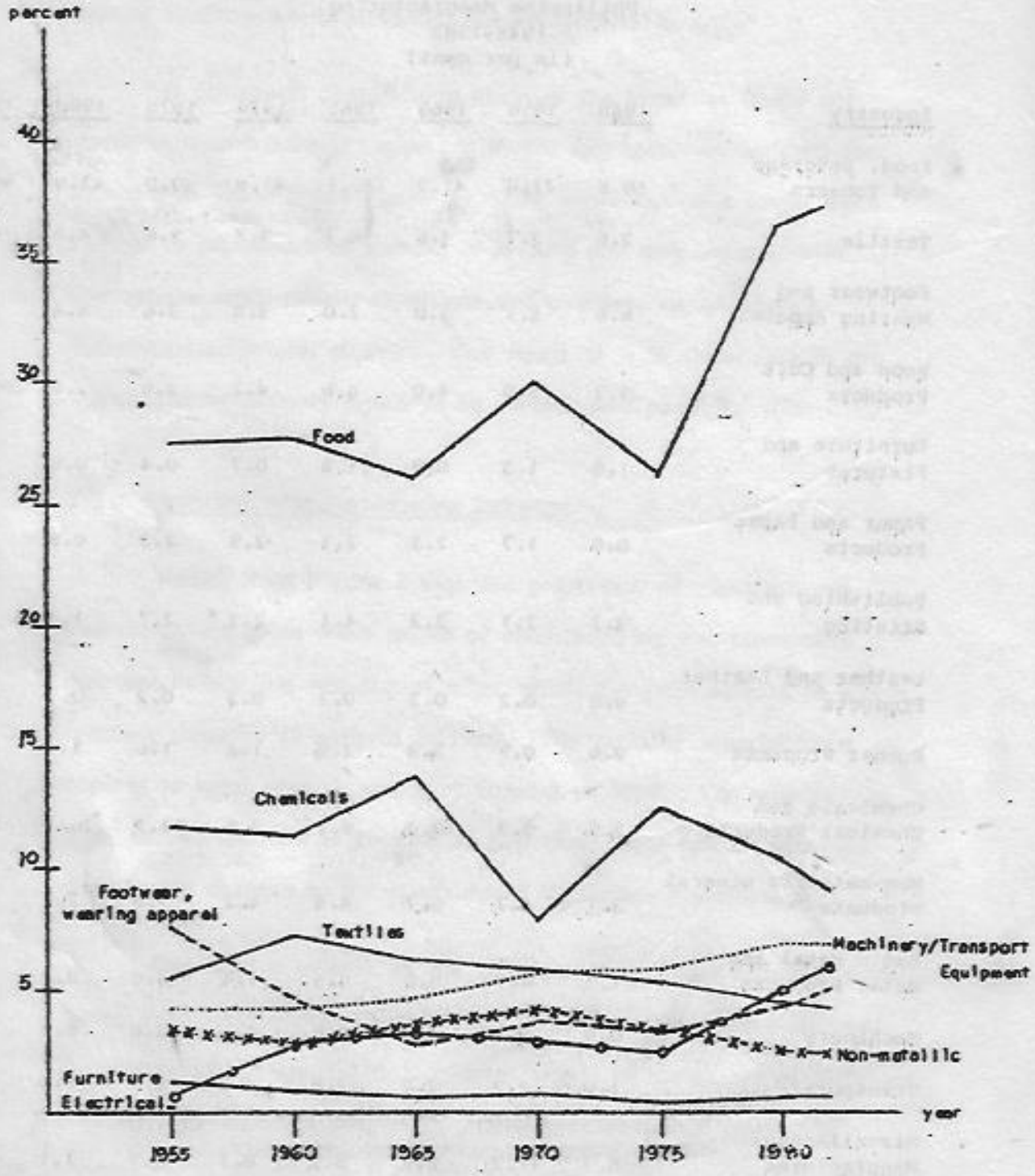


Figure 3

Shares of Industries to Total Manufacturing Value-Added
(percent)

confined to industries that are expected to produce non-traditional manufactures separating out food from the lumped values (in Table 4) of food, beverage and tobacco. The same is true for machinery where in Figure 3 electrical machinery is plotted.

Despite some differences in the way by which calculations for Figure 3 have been derived vis-a-vis Table 3 the message conveyed is the same. The different industries have been fairly constant in their contribution to manufacturing value added with notable exception to food and chemicals (and slightly, electrical machinery). Given an annual real growth rate of 7 percent for the aggregate manufacturing sector in 1970-1980, this means that the various industries did not deviate much from this average growth to keep roughly similar shares. The growth of manufactured exports in the seventies therefore had little dent on this structural form of the manufacturing industry. In terms of output, the industry as a whole was not structurally jolted by the dramatic emergence of manufactured exports.

There is another way to view industrial structure in the Philippines. Manufacturing is often characterized as dualistic. Large factories -- fairly productive, capital-intensive and possessing up-to-date technologies -- co-exist with small household type and unorganized units. To the extent that the data reveal, each sub-sector provides critical components of the aggregate manufacturing picture. The World Bank (1980), for example, roughly puts it that the small- and medium-sized industries employ almost 80 percent of labor but only 25 percent of value added. For a time, large scale establishments were depended upon to create additional output and the

unorganized sector to absorb additional employment.

It seems however that a reverse pattern emerged in the seventies. Large establishments (with more than 20 workers) employed 24.5 percent of labor in manufacturing in 1971. The proportion increased to 32 percent in 1976, the latest year for which data are consistent. In terms of value added, the same establishment group accounted for 94.5 percent in 1971, reduced to around 56 percent in 1976.

More interesting than these static figures are the rates of growth of employment and value added in the sector during the decade. They reveal a latent picture of change and underlie specific reasons for the overall performance of manufacturing. Table 5 shows the rates of growth for both employment and value added for all of manufacturing, establishments with 20 or more workers, and those with less. The latter has been calculated as a residual and must be viewed with the usual caution of indirect figures.[4]

The annual average growth rate of manufacturing employment was 3.9 percent in 1968-1976 falling to 3.1 percent during 1971-1976 after peaking to 5.2 percent in the 1968-1971 period. When broken down into the two sub-sectors what is clear is that large establishments experienced a high employment growth rate compared to a relatively stagnant growth in the unorganized sector (8.7 percent versus 1.0 percent in 1971-1976). Due to the absolute weight of the latter sector however the average growth rate was in fact lower.

In terms of value added, establishments with less than 20 workers had a slightly higher growth rate than large scale firms.

Table 5

Manufacturing Value Added and Employment
Annual Average Growth Rates

Employment	1968-76	1968-71	1971-76
Total	3.9	5.2	3.1
Establishments with 20+ workers	6.2	2.1	8.7
Establishments with less than 20 workers	3.0	6.3	1.0
Value Added (Current Prices)			
Total	n.a.	n.a.	24.0
Establishments with 20+ workers	n.a.	n.a.	12.0
Establishments with less than 20 workers	n.a.	n.a.	17.5[a]

[a] 1971-74
n.a. - not available

Source: Annual Survey of Manufactures
1983 Philippine Statistical Yearbook

Notes : Labor force data are based on October 1968, November 1971 and August 1976 Surveys.

The aggregate behavior of manufacturing in the seventies earlier described masks changes reflected by these illustrations. The reduction in labor absorption between the late sixties and the middle seventies hides the vigor of employment growth among large establishments and the stagnation of the small firms.

The reverse pattern of employment and value added between the late sixties and the seventies implies an essential decline in labor productivities during the period at least for the organized factory level sector. The data come from the surveys covering large

establishments i.e. employing 20 or more workers.

Between 1960 and 1970, value added per employee grew at an annual average rate of 3.4 percent in real terms[5]. From 1970 to 1976 the rate declined to 1.1 percent per year. And if the 1977 figure is included, labor productivity fell in absolute terms compared with the 1976 levels.

Falling value added per worker is in part associated with a falling capital-worker ratio and both may be reflecting a transitional change in technology or simply adjustment to greater trade exposure of industry and thus more consistency in factor proportions. The amount of new real investment per worker has been falling between 1970 and 1979, a mirror of the general reduction in capital of newly registered business organizations in 1970-1980 and an even sustained reduction in paid-in capital per organization -- despite a near 3-fold increase in the growth of new organizations between the decade of the sixties (an increase of 4.9 percent per year) and the seventies (an increase of 14.1 percent per year)[6].

In stricter terms some structural change must have taken place in Philippine manufacturing industry, only that it was not visually obvious. What is desirable is to measure it with more precision and see it in comparison with other developing countries in similar stages of development or with the more developed ones during this period of rapid rise in manufactured exports.

To do this a crude index of structural change (ISC) was computed for the manufacturing sector for the period 1967-1980[7]. The

general notion embodied in these measures is a hypothesis that an increase in ISC is associated with an increase in the real growth rate of manufacturing industry. Calculations made by the United Nations (UNCTAD 1982) for example show that positive growth rates of ISC are strongly correlated with positive growth rates of the manufacturing sector. Conversely declines in real growth experienced especially by the developed countries in the late seventies arising from world recession were associated with negative growth rates of structural change.

Table 5 presents computed indices of structural change in the manufacturing sector together with the real growth rates of the sector for the sub-periods specified.

Table 5

Index of Structural Change and Real Growth Rate
Philippine Manufacturing Industry
1967-1980

Period	Index of Structural Change	Annual Real Growth Rate (percent)
1967-1970	0.044	6.22
1970-1975	0.077	6.94
1975-1980	0.188	6.98

Source of Basic Data: 1983 Philippine Statistical Yearbook (1983)

The ISC stood at 0.044 between 1967 and 1970, almost unchanged from the same index for 1960-1965 (not shown in the table). What is more noticeable is the sharp increase in the index between the first half and the second half of the seventies. The

real growth rate of manufacturing was 6.22 percent annually before 1970 and close to 7 percent per year in the seventies. Yet the ISC rose by only .033 points between 1967-1970 and 1970-1975 and by 0.111 between the first and second half of the decade. It is clear by this measure that the manufacturing industry did experience structural change especially in the latter part of the seventies which was also the time manufactured exports were peaking in growth rates.

When compared however with structural change in other countries (both developed and developing) these indices pale considerably. The low absolute values explain why no structural change is apparent in the aggregate figures. For example, the index for all developing countries was 1.71 in 1970-1973 at the height of world trade growth rates. This fell to 0.66 in 1973-1980. On the other hand Japan had an ISC of 1.77 in the sixties dropping to 0.95 in the seventies (1970-1978). Philippine indices amount to less than a third of the average for the developing countries[8].

What is more interesting from these findings is the comparison that can be made between structural change in the sixties in an era of import substitution and the seventies in an era of break-out into export promotion. Figure 4 traces the path of structural change in the manufacturing industry implied in Table 5 with the ISC for 1960-1965 added (though it is not directly comparable to the other indices). The path shows that a higher degree of structural change came in the seventies. It must be remembered that the paths are sensitive to the choice of time periods[9]. But the directions are indicative.

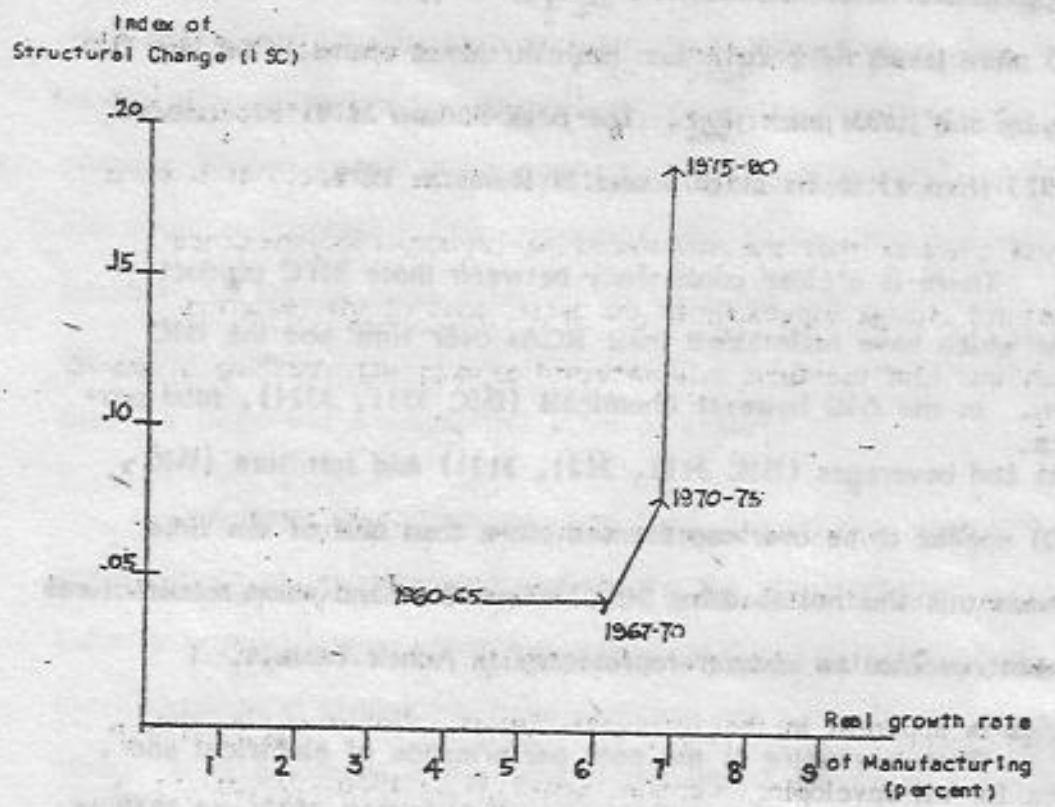


Figure 4

Path of Structural Change

It is possible to complement the analysis of revealed comparative advantage pursued earlier but relying on direct manufacturing data i.e. using the International Standard Industrial Classification (ISIC). In this manner we can compare the results with the SITC data and test the competitiveness of the top non-traditional manufactured exports, electrical and electronic equipment and components.

Annex Table 4 shows the ISIC products for which $\hat{x}_{ij} > 1$ for the period 1970-1979[10]. There are differences between these results and those found in Annex Table 2. Because of the more

disaggregative nature of the ISIC (4-digit) data vis-a-vis 3-digit SITC more items have $\hat{x}_{ij} > 1$. However there seems to be less stability to the items each year. The peak number is 41 experienced in 1973 from 25 items in 1970 and 27 items in 1979.

There is a close consistency between those SITC product items which have maintained their RCAs over time and the ISIC items. In the ISIC however chemicals (ISIC 3511, 3521), food products and beverages (ISIC 3111, 3121, 3131) and furniture (ISIC 3240) appear to be over-represented more than half of the time whereas this was not so using SITC. Garments and wood manufactures are not revealed to be over-represented in Annex Table 4.

What is striking is the poor performance of electrical and electronic equipment and components. Taking ISIC 3832 and 3839 as encompassing these, only in a few years have their values $\hat{x}_{ij} > 1$. This means that the Philippines in an international comparison does not have a revealed comparative advantage in these products.

In summary the Philippine manufacturing industry in the seventies did undergo some (perhaps slight) structural change. But when compared with the structure in the sixties it would seem that the industry had a marked change. In general however and from the output side the changes were not readily apparent. There is evidence that points to the growing importance of the formal sector in terms of employment generation, and of the informal or household sector in terms, though less pronounced, of value added. In short, industrial dualism declined during the period. Moreover capital-labor ratios, both average and incremental, decreased across the

entire manufacturing sector. Testing for the international competitiveness of Philippine manufactures the findings showed that many of the non-traditional manufactured exports had a revealed comparative advantage with the important exception of electrical and electronic components. This is probably due to the fact that in an international setting these commodities were not over-represented in our menu of industrial exports even though from the country viewpoint they are large and a substantial share of exports.

One major conclusion we draw from this detailed look into the structure of manufactured exports and the manufacturing industry is that despite important underlying changes taking place, overall structural change has been slow and not generally discernible. More pointedly in the face of phenomenal jumps in non-traditional manufactured exports, how did the economy in general and industry in particular adjust and accommodate so that the appearance of significant structural change was not there?

3. Change and Adjustment

High growth of manufactured exports are normally expected to stimulate growth of the industry and with it a conspicuous structural change. Instead what we find for the Philippines in the seventies is the former and a "token" semblance of the latter. What adjustment process took place that resulted in a weak industrial performance?

Any of at least three factors, or a combination of them, serves to explain the adjustments that may have taken place in the

seventies in the light of gains in manufactured exports. The first is the magnitude of the exports -- whether they were sufficient to push the manufacturing sector into a multiplier process and consequently significant structural change. Some critical mass of or a big push from these kinds of exports is probably necessary to achieve substantial changes in the structure of manufacturing industry. The average annual growth rate of non-traditional manufactured exports of 26 percent (in real terms) in the seventies was just about the average for manufactured exports growth from developing countries[11].

Second, the value added created from these exports could have been only of a small size such that in an aggregate sense they did not matter too much structurally. Two elements lend credence to this explanation in the context of the Philippine experience. One is the existence and promotion of export processing zones to produce manufactured exports. Although the share of exports from these zones has remained at less than 10 percent for the seventies their participation shields and inhibits broader structural change[12]. In fact labor becomes the only effective link between the production process and the rest of the economy. The bias against domestic input suppliers in this set-up likewise prevents backward and vertical linkages. The other is the broader promotion of exports by permitting consignment manufacturing. As already noted in the previous section most of electronic equipment/component and garments are produced on a consignment basis and separately classified under "special transactions" (SITC 931). This is probably where the strength of non-traditional manufactured exports is artificially bloated and thus misleading. If

we were to subtract SITC 931 imports from SITC 931 exports to arrive at a rough approximation of the net exports from these two manufactured goods the adjusted figure becomes insignificant[13]. The net exchange inflow for 1980 was less than one percent of export values and negative in some years (UN 1982). Consignment exports and imports of course are not the only items under SITC 931. But these transactions remain the bulk of them. What is probably useful is to undertake a comparative analysis of these transactions and determine in more precise terms the net exports. If this rough approximation is accepted non-traditional manufactured exports have only been less than one-half of what are reported. The implication of this for structural change is therefore important.

The third and final factor has to do with possible compensating effects of increases in exports and reductions in relative home consumption of the manufactured exports. Increments in exports can possibly be generated by decreases in their home consumption component not because of short supply but for more structural reasons (e.g. falling real incomes, a dimension explored further in the next section). Thus while there has been a real growth in manufacturing value added during the decade this is less than what would have been without the relative decline in consumption, and therefore in a more dramatic structural change.

In all probability a combination of all these three factors operated in constraining structural change in Philippine manufacturing. It is not possible to investigate the relative influence of each in this paper. However the adjustments in the manufacturing sector in terms of production and consumption performance can be sketched out in the remainder of this section.

From the previous section revealed comparative advantage (RCA) is measured as

$$(1) \qquad \hat{x}_{ij} = \frac{x_{ij}}{x_{i.}} \Big/ \frac{x_{.j}}{x_{..}}$$

Define the following additional measures using ISIC. From (value of) production data

$$(2) \qquad \hat{p}_{ij} = \frac{p_{ij}}{p_{i.}} \Big/ \frac{p_{.j}}{p_{..}}$$

measures a country's international production performance index.

$$(3) \qquad \hat{c}_{ij} = \frac{c_{ij}}{c_{i.}} \Big/ \frac{c_{.j}}{c_{..}}$$

measures a country's international consumption performance index. p_{ij} is output value of industry i in country j, $p_{.j}$ is total industry output of j i.e. $\sum_i p_{ij} = p_{.j}$. $p_{i.}$ is the total world output of industry i i.e. $\sum_j p_{ij} = p_{i.}$. Finally $p_{..}$ is the value of industry output of all countries[14]. Similar definitions apply to consumption values (c replacing p in the notation).

Under conditions of autarky (2) and (3) would be equal.

With free trade $\hat{p}_{ij} > 1$ in a commodity i would mean that country j is over-represented in the production of i and can imply other things being equal that the country has a comparative advantage in i. On the otherhand $\hat{x}_{ij}$ indicates RCA for traded goods.

Given an array of goods for which the country has been revealed to have a comparative advantage over some period, an increase in the goods' relative production performance compared with a reduction in its relative consumption peformance may suggest that expanded export has been associated with reduced consumption. This is what we are interested in finding out.

Table 6 lays out production and consumption performance data as well as other parameters. Column (1) identifies 10 ISIC products for which $\hat{x}_{ij} > 1$ for 6 or more years during the decade of the seventies and at the same time part of non-traditional manufactured exports. Column (2) shows the percentage share of these products to total manufacturing output in 1979. Column (3) indicates the change in the percentage share between 1978-79 and 1970-7115. In column (4) are the median values of $\hat{p}_{ij}$ for 1970-79 while column (5) shows the changes in $\hat{p}_{ij}$ between 1970 and 1979. Columns (6) and (7) report $\hat{c}_{ij}$'s and their changes for 1970-79, respectively. Finally column (8) measures the change in the median values of the ratio $\hat{p}_{ij}/\hat{c}ij$ between 1977-79 and 1970-72. See Annex Table 6 for the more complete listing of products.

First, notice that the total shares of the 10 industries amount to 14.59 percent of manufacturing output in 1979. The more

TABLE 6

International Production and Consumption Performance Indices
Philippine Non-Traditional Manufactured Exports

ISIC Code	Description	(1) $\hat{x}_{1j}$ [a]	(2) Share, 1979 [b]	(3) Change in Share [c] (1970-79)	(4) $\hat{p}_{1j}$	(5) $\Delta\hat{p}_{1j}$ (1970-79)	(6) $\hat{c}_{1j}$	(7) $\Delta\hat{c}_{1j}$ (1970-79)	(8) $\Delta\lvert\hat{p}_{1j}/\hat{c}_{1j}\rvert$ [d]
3511	Industrial Chemicals	1.10	2.56	2.70	0.79	0.10	1.08	0.13	0.00
3121	Food Products (Misc)	1.29	2.35	-4.89	0.36	-0.17	0.86	0.76	-0.95
3699	Non-metallic Mineral Products	1.36	2.32	-3.10	1.17	1.07	0.90	0.54	-2.40
3240	Footwear	3.31	2.23	-1.42	1.17	-0.96	1.02	-0.74	-5.32
3320	Furniture and Fixtures	1.19	2.17	0.56	0.99	-0.03	1.76	-1.64	7.17
3211	Textiles	1.39	2.15	-0.92	1.23	-0.03	1.19	3.42	-0.35
3111	Meats, Lards, Hides and Skins	1.24	0.29	0.01	1.49	0.49	1.21	-0.59	1.57
3610	Pottery China and Earthware	1.31	0.23	0.24	1.00	14.47	1.23	-1.13	1.05
3215	Cordage, Rope and Twine	1.50	0.19	-0.20	2.01	5.35	0.65	-0.65	12.89
3823	Metal/Woodworking Machinery	1.30	0.10	0.06	1.02	-1.07	0.66	-2.67	2.07
			14.59						

[a] Median values between 1970 and 1979.
[b] Based on 1979 estimated aggregate output of manufacturing industry, in percent.
[c] in percentage points.
[d] Does not equal to (5)/(7)

Source: Annex Table 6.

significant industries appeared to be chemicals (3511), other non-metallic minerals such as asbestos cement (3699), manufacture of other food products (3121), footwear (3240), textiles and fabrics (3211), and manufacture of furniture and fixtures (3320). For most of these the median values for the RCA's occurred in the latter half of the decade.

From column (3) it is shown that these industries experienced a reduction in most of their shares to total industry between 1970 and 1979 even though the amounts were insignificant. This fact needs to be seen in the context of the surge of manufactured exports at the same time.

Columns (4) and (6) indicate the median values for $\hat{p}_{ij}$ and $\hat{c}_{ij}$ over the period. A comparison of the two provides a rough direction of home market demand bias of the industry. An examination of the two columns shows that in about half of the cases $\hat{p}_{ij} > \hat{c}_{ij}$ so that this test can not determine one way or the other any revealed bias.

The changes in these international performance indices are found in columns (5) and (7) which measure the change of $\hat{p}_{ij}$ and $\hat{c}_{ij}$ respectively from 1970 to 1979. What is manifested by comparing these two values is a rough picture of how international production performance indices have changed in comparison with changes in consumption performance. The results imply that over the period 1970-79, either production performance indices increased and their associated consumption indices decreased or vice versa. Where both indices increased or decreased, in most cases production indices increased more than or

decreased less than the relevant consumption index. The data in column (8) capture these two relative movements by normalizing the p_{ij} with the c_{ij} index to arrive at the ratio. A similar pattern is observable using this single indicator.

The data in Table 6 and what they suggest do not seem to contradict the hypothesis advanced as a third factor explaining the lack of dramatic changes in the structure of Philippine manufacturing at a time when manufacturing exports were gaining strong grounds. The adjustment process of improving production performance and at the same time deteriorating consumption performance appears consistent with a lack of domestic support for increased manufacturing activities simultaneous with the rise in exports. This procedure is of course less rigorous than using direct data. However in the context of the earlier use of RCA's this would seem to be a natural extension.

The accounts given by the adjustment factors imply the processes spelled out above, as contributing to a less-than-satisfactory structural change in manufacturing. In particular the enthusiasm reflected in the growth of manufactured exports (which need significant adjustment as noted earlier) was dampened by a slow domestic push. As a result, the aggregate picture in manufacturing is one of apparent stagnancy and not of accelerated change.

Corollary evidence from a special tabulation of the 1978 Census of Establishments on a sample of firms belonging to non-traditional manufactured exports and a small survey of export producers tend to support the findings here[16]. The ease of input adjustments (declining

industrial dualism, decreases in capital labor ratios) can be seen from the measures of factor substitution elasticities of industries showing most to have high elasticity values (between 0.66-0.86) with the exception of chemicals (0.61), machinery (0.59), and non-metallic manufacturing (0.44).

On the other hand the results from the survey of export producers support the extent of special transactions relations. For example for many producers (e.g. those in garments and electronics) marketing decisions are not handled internally but already pre-arranged. Both production techniques and input supplies come from imports of foreign capital. What is more decisions to export appear to be exogenously determined. Consequently multiple regressions of export sales ratios have very little to do with traditionally strong economic variables such as factor proportions or even incentives provided.

All in all, the adjustment associated with growth in non-traditional manufactured exports has been quite sluggish and therefore the impact on structural change much smaller than what it would have been when combined with a strong domestic front. While the country in part may have been able to capture some of the structural gains from increased trade in manufactures the transmission towards a more dynamic change was dampened by a combination of the three factors explored in this section.

Considering the amount of faith and trust given to trade in manufactures as an overall engine of growth and structural change it

might be useful to understand some of the underpinnings for the strong manifestations of these adjustment factors in the Philippines. It is only from these that a detailed mapping or corrective action can be undertaken to propel a more vigorous structural change.

4. Conclusions

Despite the exhuberant aggregate growth of non-traditional manufactured exports in the seventies structural change in the Philippine manufacturing industry has been quite insignificant especially when compared with other developing countries or the NIC's, to which the country's export performance is likened. One strong conclusion that derives from the analysis in this paper is that the adjustment processes that the country took in the light of this export expansion were not conducive to a more dynamic growth in the manufacturing sector as a whole and hence an appreciable structural change. In fact the processes may have hindered the coming of sustainable benefits from the rise in the growth of manufactured exports.

There is of course the argument that increasing protectionism in developed countries and the general slowdown of world trade that came with a recession period (especially in the late seventies) was behind the weak performance of Philippine industry. On the surface of it this appears to be a convincing argument. After all many trading countries indeed suffered from protection and recession. Yet for a number of reasons some reservation can be expressed on the argument. For one the Philippines did not fare poorly in terms of real growth in

manufactured exports in the late seventies and in fact rebounded in 1979-1981 (see Figure 2 above). For another, exports of manufactures were comparatively marginal in an environment where erected trade barriers were country-specific (and this allowed the country access to product markets for which other countries had reached quota limits). And where Philippine products mattered these were not the ones for which strong protectionism was demanded (Alburo 1984). In cases of quota restrictions the record especially in the new markets is that these were seldom filled (Langhammer 1982, 1983). These points are not meant to deny any role of declining generalized trade on the Philippines but to highlight the relatively low weight of the country in aggregate world trade in manufactures to have significantly and specifically suffered a setback. While it is true that world markets may have shrunk during the period it is difficult to accept that these were primarily responsible for the lack of industrial dynamism.

The export structure did indeed change from its pattern moulded in the fifties and the sixties. But on closer scrutiny and with particular reference to the range of non-traditional manufactures, the magnitude of the structural change is less than what it is depicted to be. Of the twelve "industries" comprising these new exports only half managed to maintain their revealed comparative advantages for most of the period. An analogous analysis at the industry level data (rather than SITC which was used in the export data) showed a similar pattern in revealed comparative advantage. In the case of exports of electrical and electronic equipment/components, widely believed to be where the Philippines has a comparative advantage, calculations of RCA's

indicate this is not so. Besides, this item and many of garments trade fall under "special transactions exports", meaning production on consignment basis. Rough calculations of the net exports from these transactions suggest that these have been very small over the period (less than one percent of the value of these exports) and negative in some years.

In more precise ways there was some measurable structural change in manufacturing -- small yet important enough to analyze and compared with the degree of change experienced in the earlier decades when trading orientations were supposed to be different. The more prominent indicator of structural change however is in input combinations (as well as output). Industrial dualism, often used to describe Philippine manufacturing and one cause of its slow growth, narrowed significantly in terms of value added and employment generation, although in the aggregate these were not manifest. Factor proportions also became more labor intensive during the seventies.

A combination of average real growth of manufactured exports (vis-a-vis the global records for the period under study), the enormous weight of special transactions exports (but its minimal net effect) and the compensating dampening of domestic push to the sector had much to contribute to the lack of vibrant change in manufacturing. It is therefore clear that if there was a potential for greater structural change principally arising from manufactured exports, it never materialized to a perceptible scale in the seventies.

It is not too difficult to understand some of the general and

external dimensions behind the adjustments that occurred in Philippine manufacturing. What requires more elaboration is perhaps aspects surrounding internal supply responses and commercial policies.

The spurt of manufactured exports in the seventies came during a short-lived commodity boom (the early years) after which came two oil shocks and a world recession. While the country continued to maintain a respectable manufactured exports growth even during these disturbances it was obviously lower than under more conducive world conditions. Thus these external constraints effectively defeated what would have been a necessary momentum for a stronger trade performance and transformation in the rest of the economy. Nevertheless the initial base created reduced the impact of overall export growth deceleration arising from trade in primary products. In the same vein the formal entry (in the sense of magnitude) of the Philippines in world trade in manufactures came when countries which were fast growing exporters of manufactures were neatly entrenched or were just beginning to adjust to allow accommodation of a second tier group of developing country exporters of manufactures. All these external dimensions diminished the potential dynamism of trade in manufactures to propel a significant change in the manufacturing sector. Conversely these world factors will continue to play a constraining role to further expansion.

But the external shocks also had, in some sense, positive effects. For example, increased energy costs induced factor substitution in industry towards greater labor intensities. Indeed the consequent decline in labor's real wages (a structural trend which began

in early seventies) contributed to this, although one may argue that it could have happened even if wages were protected from real deterioration.

The production of (and concentration on) low value added manufactures probably had little effect on restructuring the manufacturing industry during the decade for a number of reasons. One is that where production takes place in a processing zone (their creation being part and parcel of the exports promotion drive) linkages with the rest of the economy are inhibited. Even where production takes place elsewhere but inputs are allowed duty-free inter-industry transactions are reduced. This too inhibits the emergence of more viable intermediate and capital goods markets[17]. In fact such export promotion policies create inherent biases against domestic input suppliers[18]. Another is that where the manner of trading (for these low value added manufactures) is somehow pre-arranged, their activities do not provide adequate test for Philippine marketing capacities, put the assurance of export flows on one side and (unduly) expose production decisions to more external and global factors. And then there is the implication from the simple packaging operations of these special transactions i.e. they appear no different from the packaging processes that the previous era of import substitution protected and encouraged[19].

The lack of mass and widespread support to the manufacturing industry was also a factor that denied a striking structural change. The drastic deterioration of real wages and income in the seventies meant that the potential industrial market was not active. Coupled

with slow growth in agriculture these supportive demands effectively slackened and therefore prevented a more dynamic change in manufacturing. On hindsight, at least for the manufacturing sector, the policy of wage restraint probably cut well into this potential when adjustment (in factor proportions and exports sales) would have happened anyhow because of two overriding elements -- one being the sharp rise in capital-related costs leading to factor substitution and the consequent floating exchange rate policy which adjusted the competitive edge in output. Instead the associated policies of wage supplements did not really compensate for the drowning of a mass base support[20].

The results from the analysis in this paper have shown that there was little by way of generalized structural change in Philippine manufacturing. Notwithstanding this it is important to emphasize that the amount of structural change that occurred was more than what took place in the earlier decade of import substitution. It would be appropriate in this context to outline the salient points that are borne out of the results. First, the outward orientation of the economy increased the country's trade in manufactures. The resulting structural change in manufacturing was rather small but positive. It is now a mater of creating conditions to gain a momentum in industrial restructuring or transformation in order to accelerate a vigorous overall growth. Assuming that world trade manages to pick up force and protectionist tendencies wane exports of non-traditional manufactures may rebound. Our analysis indicated that those industries which are rooted deeply in terms of factor endownments are the ones which

have maintained strong revealed comparative advantages such as handicrafts, footwear, textile fabrics, wood manufactures and non-metallic mineral manufactures. To the extent that these products are accorded less trade barriers or protectionist policies in partner countries, these would seem to be where growth lies. This is also the area where promotive (but not distortionary) policies would be most useful in the area of marketing, product design and technology.

Second, a re-assessment needs to be given to export promotions schemes which encourage low value added processing and discourage backward or vertical linkages. The policy of creating processing zones or bonded warehouses has to be carefully considered in view of costs and benefits and more importantly in terms of real comparative advantage. With eventual reductions in effective protection and realignment of tariff rates (toward some low average level) the exercise may become academic. Yet if found to have negligible impacts policies may have to be redirected. Removal of the protectionist regime will likewise put domestic input suppliers on an international footing increasing their competitiveness and quality in indirect exports.

Third, the process of industrial adjustment and restructuring these imply requires explicit support to allow optimal use of labor and capital resources. These could be in terms of modernization programs, skills training and financial resources for actual production activities. The finding for example that the Philippines has a strong RCA in textile manufacturing despite the vintage of the industry's technology augur well for smoother adjustment.

Fourth, a thrust is needed in the domestic mass base to reinforce the impetus from trade in manufactures. Here because the larger segment of employment remains in agriculture, a broad based agricultural modernization is necessary. Translated in operational terms this simply means improvement in productivity, not massive rural industrialization. With this base beefed up, wage adjustments and better income distribution can lead to dynamic industry linkages especially in simple capital goods industries (e.g. farm implements and tools in agriculture, simple industrial machineries).

Finally, all these entail financial and exchange resources in the interim that restructuring is taking place. With a more open and outward looking regime in a more liberalized world trading environment output and input movements are bound to be where comparative advantages lie. In a medium term perspective, these resources will likely pay themselves.

The trade in manufactures of the seventies may not have led to a dramatic structural change but the seeds of it appear to be there, capable of momentum and sustainability.

Footnotes

[1] The authors examine the thrust of export-led growth of the seventies and whether it led to generalized improvements in employment, income and income distribution for the entire economy, not just the manufacturing sector.

[2] For example, before 1970 the denominator for the plot of the ratio of manufacturing output to domestic product was net domestic product while beginning with 1970, gross domestic product is used. Similarly for X/VA(Mfg).

[3] The data used here cover the aggregate of eleven industrialized countries (Australia, Belgium, Canada, France, Germany, Italy, Japan, Netherlands, Sweden, UK, USA) and the five ASEAN countries (excluding Brunei) as encompasing the "world". See Balassa (1965) for the seminal work on revealed comparative advantage.

[4] From manufacturing employment reported in labor force surveys we deducted the number of employees in firms with 20 or more workers to arrive at employment in small firms.

[5] Calculations of census value added divided by total employees were made from the Annual Survey of Manufactures from 1956 to 1977 adjusted for prices.

[6] This is based on the number of newly registered business organizations (corporations plus partnerships plus single proprietorships) and the total initial paid-in capital (converted into real terms through the GNP deflator).

[7] The Index of Structural Change (ISC), a pure number, is

$$ISC = \sum [s_{t+k} - s_t] \quad \text{for} \quad s_{t+k} > s_t$$

where s is the industry share of value added to total manufacturing value added t is the time period considered and t+k is the comparison period. Another index which is roughly equivalent to the procedure used here is suggested by Schiavo-Campo (1978). To allow comparability with other known measures of structural change the procedure used is the above formula.

[8] See UNCTAD (1982). One must be aware that the value of the indices is sensitive to the degree of aggregation used in the measurement, the greater the disaggregation the more sensitive the index. The indices from which the comparisons in the text are made follow similar groupings in the manufacturing sector.

[9] For example the indices change in value (and in fact reverses in one case) when the period chosen is 1970-73 and 1973-78, and 1971-73 and 1973-80. By the nature of the period of analysis the early and later years of the seventies are used in the text.

[10] See footnote 3.

[11] See UNCTAD (1982) Table A.13. This value of course includes OPEC countries. If excluded the rate would fall drastically to 9 percent although for particular economies the rates remain high (e.g. Brazil, 19.8 percent; Korea, 18.1 percent; Singapore, 17.3 percent) for the period 1973-1980. The comparison made in the text is probably not exagerrated if we include the earlier 1970-73 in the growth of the above illustrative countries.

[12] The proportion cited above is the share of the Bataan Export Processing Zone (BEPZ) and does not include exports from new processing zones (of insignificant amount as yet). In the same context, 57 percent of BEPZ exports in 1980 were in electronics and garments (BEPZA 1980; NEDA 1980; Alburo 1983).

[13] This aggregate procedure probably understates the extent of net exports because some 7-digit SITC items would have high import values but marginal equivalence in exports (e.g. SITC 931.02-04, gifts or donations or articles for relief or charity). On the other hand tourist purchases ought also to be subtracted from exports (SITC 931.97-00).

[14] See footnote 3. It might be well to point out the consequences of the exclusion of many developing countries which are exporters of manufactures. What this exclusion would do to the estimates is at least (a) an over-estimation of Philippine RCA's considering such countries as South Korea, Brazil, Hongkong, Taiwan in the set and (b) a less likelihood of under-estimation arising from other countries which have small exports of manufactures to begin with and a small manufacturing sector.

[15] The production data used for the Philippines is actual for 1970-75, 1977 and estimates for the rest of the series. The change in percentage share is the difference between the average share in 1978-79 and average share in 1970-71.

[16] The results of the technical analysis are reported fully elsewhere.

[17] This is one reason why the structure also remains the same i.e. there is little by way of backward purchases of raw materials or inputs which can prop up related industries.

[18] It is to be noted that domestic input suppliers would be selling at higher price vis-a-vis duty-free input importation, by definition, because of the high protection given local industries.

[19] One may of course argue that the labor intensiveness (and thus ability to mop up surplus labor) of low-value added manufactures makes a difference. But the broader question is firstly whether this alternative is an optimal one and secondly whether within the trade and industrial system ramifications can be made to improve interactions with the rest of the economy. One hears of reports for example

that some export producers (handicraft, woodworks) can not meet volume requirements from abroad.

20 The promulgated wage supplements are not enforceable (legally) across all industries and actual application vary by size of establishment. The point to make here is that even if real reduction to wage rates were allowed, it should have been protected from the sharp declines actually experienced.

Annex Table 1

PHILIPPINE EXPORTS OF NON-TRADITIONAL MANUFACTURES, 1970-1982
(In million 1972 U.S. dollars)

	1970	1971	1972	1973	1974	1975	1976	1977	1978	1979	1980	1981	1982
Electrical and electronic equipment & components	-	0.3	0.4	7.7	11.2	24.5	50.4	72.6	130.8	174.6	272.8	346.2	495.1
Garments	32.6	33.8	38.8	39.7	38.8	55.5	109.4	145.8	168.5	171.1	203.2	256.2	267.0
Handicrafts	5.9	8.7	12.9	18.8	19.0	40.6	56.2	49.1	51.7	56.6	62.7	55.6	60.2
Chemicals	4.9	6.6	6.3	7.3	6.6	11.5	16.0	31.6	30.9	47.8	38.6	44.3	47.9
Food Products & Beverages	7.4	8.5	11.2	10.3	7.2	7.6	17.0	25.5	24.2	24.1	69.3	128.8	106.2
Furniture & parts	1.0	1.1	1.5	2.3	2.5	2.7	5.8	12.7	13.7	23.2	31.4	36.3	35.4
Footwear	1.0	0.8	1.2	1.4	1.5	1.6	3.0	5.9	16.6	21.3	27.3	30.4	30.7
Machinery & Transport equipment	0.9	2.0	2.1	2.3	2.3	4.9	9.5	15.2	19.0	20.0	18.9	21.3	25.0
Textile yarn, fabrics & related products	2.5	5.0	3.5	11.9	3.0	4.5	9.0	7.2	12.2	13.3	20.0	18.0	19.2
Builders' woodwork and other wood manufactures excluding plywood, veneer and lumber	3.6	5.4	7.7	11.8	10.2	8.8	9.2	8.1	10.7	13.3	9.7	16.1	15.3
Non-metallic mineral manufactures, particularly cement	2.7	10.4	10.0	17.3	15.0	16.7	16.6	22.5	21.8	12.8	23.9	19.6	19.5
Cordage, cable, ropes and twines	1.7	2.0	3.1	3.1	4.0	3.9	6.2	7.2	6.4	7.1	7.5	8.5	27.6
Others	22.8	19.1	19.9	25.2	17.9	15.6	31.7	45.7	49.0	58.0	71.1	85.4	68.9
Total Exports of Non-traditional Manufactures	85.1	101.8	115.9	155.4	135.2	194.1	340.0	449.1	555.5	643.2	856.4	1068.9	1218.2
TOTAL EXPORTS	1028.0	1075.8	1106.0	1259.0	1135.8	1189.8	1524.9	1839.5	1768.2	1948.0	2353.0	2378.0	2485.0

Source of Basic Data: 1983 Philippine Statistical Yearbook (1983)

ANNEX TABLE 2

Philippine 3-digit SITC Exports where $\hat{x}_{ij} > 1$

(1970-1979)

1970	1971	1972	1973	1974	1975	1976	1977	1978	1979
								512	
513	513								
						514	514	514	514
	521		521						
							532	532	
	533	533							
541	541								
							551		
	554	554	554	554	554	554		554	554
			571	571	571	571	571	571	571
	599	599			599				
					612	612		612	
	621								
631	631	631	631	631	631	631	631	631	631
632	632	632	632	632	632	632	632	632	632
			641						
		642		642					
			651		651	651		651	
			652	652	652	652			
								653	
	654	654	654	654	654	654	654	654	654
655	655	655	655	655	655	655	655	655	655
656	656	656						656	
657	657			657			657	657	657
661	661	661	661	661	661	661	661	661	661
662	662	662	662	662	662	662	662	662	662
		663							
	664	664	664	664	664	664	664	664	
665	665		665	665	665		665	665	
				666		666	666	666	666
					671	671	671	671	671
672	672								
674	674							674	674
								679	679
	691	691							
							693	693	693
							729	729	
812				812	812	812			
821	821	821	821	821	821	821	821		821
831	831	831	831	831	831	831	831		831
		841	841	841	841	841	841		841
851	851	851	851	851	851	851	851		851
				863	863				
									864
		893	893	893	893	893			893
	894		894	894	894	894	894		894
					897	897	897		897
899	899	899	899	899	899	899	899		899

ANNEX TABLE 3

UN Standard International Trade Classification

3-DIGIT LEVEL

SITC CODE	DESCRIPTION
000	UN SPECIAL CODE
001	LIVE ANIMALS
010	UN SPECIAL CODE
011	MEAT FRESH, CHILLED, FROZEN
012	MEAT DRIED, SALTED, SMOKED
013	MEAT TINNED NES OR PREPARED
020	UN SPECIAL CODE
022	MILK AND CREAM
023	BUTTER
024	CHEESE AND CURD
025	EGGS
030	UN SPECIAL CODE
031	FISH FRESH, SIMPLY PRESERVED
032	FISH ETC. TINNED, PREPARED
040	UN SPECIAL CODE
041	WHEAT ETC. UNMILLED
042	RICE
043	BARLEY UNMILLED
044	MAIZE UNMILLED
045	CEREALS NES UNMILLED
046	WHEAT ETC. MEAL OR FLOUR
047	MEAL AND FLOUR NON-WHEAT
048	CEREAL ETC PREPARATIONS
050	UN SPECIAL CODE
051	FRUIT FRSH, NUTS FDZN DRY
052	DRIED FRUIT
053	FRUIT PRESERVED, PREPARED
054	VEG ETC FDZN, SIMPLY PRSVD
055	VEGETABLES ETC PRSVD, PREPD
060	UN SPECIAL CODE
061	SUGAR AND HONEY
062	SUGAR PREPS NON-CHOCOLATE
070	UN SPECIAL CODE
071	COFFEE
072	COCOA
073	CHOCOLATE AND PRODUCTS
074	TEA AND MATE
076	SPICES
080	UN SPECIAL CODE
081	ANIMAL FEEDING STUFF
090	UN SPECIAL CODE
091	MARGARINE, SHORTENING
099	FOOD PREPARATIONS NES
110	UN SPECIAL CODE
111	NON-ALC BEVERAGES NES
112	ALCOHOLIC BEVERAGES
120	UN SPECIAL CODE
121	TOBACCO UNMFD
122	TOBACCO MFRS
210	UN SPECIAL CODE
211	HIDES, SKINS, UNDRESSED
212	FUR SKINS UNDRESSED
220	UN SPECIAL CODE
221	OIL SEEDS, NUTS, KERNELS
230	UN SPECIAL CODE
231	RUBBER CRUDE, SYNTHETIC
240	UN SPECIAL CODE
241	FUEL WOOD AND CHARCOAL
242	WOOD ROUGH
243	WOOD SHAPED
244	CORK RAW AND WASTE
250	UN SPECIAL CODE
251	PULP AND WASTE PAPER
260	UN SPECIAL CODE
261	SILK
262	WOOL AND ANIMAL HAIR
263	COTTON
264	JUTE
265	VEG FIBRE, EXCL COTN JUTE
266	SYNTHETIC? REGENTD FIBRE
267	WASTE OF TEXTILE FABRICS
270	UN SPECIAL CODE
271	FERTILIZERS, CRUDE
272	OTHER CRUDE MINERALS
273	STONE, SAND AND GRAVEL
274	SULPHUR ETC

SITC CODE	DESCRIPTION
275	NATURAL ABRASIVES
276	OTHER CRUDE MINERALS
280	UN SPECIAL CODE
281	IRON ORE, CONCENTRATES
282	IRON AND STEEL SCRAP
283	NONFER BASE MTL ORE, CONC
284	NON-FERROUS METAL SCRAP
285	SILVER AND PLATINUM ORES
286	URANIUM, THORIUM ORE, CONC
290	UN SPECIAL CODE
291	CRUDE ANIMAL MATTER NES
292	CRUDE VEG MATERIALS NES
320	UN SPECIAL CODE
321	COAL, COKE, BRIQUETTES
330	UN SPECIAL CODE
331	CRUDE PETROLEUM, ETC
332	PETROLEUM PRODUCTS
340	UN SPECIAL CODE
341	GAS NATURAL AND MANUFCTD
350	UN SPECIAL CODE
351	ELECTRIC ENERGY
410	UN SPECIAL CODE
411	ANIMAL OILS AND FATS
412	VEGETABLE OILS
420	UN SPECIAL CODE
421	FIXED VEG OILS, SOFT
422	FIXED VEG OIL NONSOFT
430	UN SPECIAL CODE
431	PROCESD ANML VEG OIL, ETC
510	UN SPECIAL CODE
511	INORGANIC CHEMICALS
512	ORGANIC CHEMICALS
513	INORG ELEMNTS, OXIDES, ETC
514	OTHR INORGANIC CHEMICALS
515	RADIOACTIVE ETC MATERIAL
520	UN SPECIAL CODE
521	COAL, PETROLEUM ETC CHEMS
530	UN SPECIAL CODE
531	SYNT DYE, NAT INDGO, LAKES
532	DYES NES, TANNING PRODS
533	PIGMENTS, PAINTS, ETC
540	UN SPECIAL CODE
541	MEDICINAL ETC PRODUCTS
550	UN SPECIAL CODE
551	ESSENTL OIL, PERFUME, ETC
552	SOAPS, COSMETICS, ETC
553	PERFUME, COSMETICS, ETC
554	SOAPS, CLEANING ETC PREPS
560	UN SPECIAL CODE
561	FERTILIZERS MANUFACTURED
570	UN SPECIAL CODE
571	EXPLOSIVES, PYROTECH PROD
580	UN SPECIAL CODE
581	PLASTIC MATERIALS ETC
590	UN SPECIAL CODE
598	CHEMICALS NES
610	UN SPECIAL CODE
611	LEATHER
612	LEATHER ETC MANUFACTURES
613	FUR, SKINS, TANNED, DRESSED
620	UN SPECIAL CODE
621	MATERIALS OF RUBBER
622	RUBBER ARTICLES NES
630	UN SPECIAL CODE
631	VENEERS, PLYWOOD, ETC
632	WOOD MANUFACTURES NES
633	CORK MANUFACTURES
640	UN SPECIAL CODE
641	PAPER AND PAPERBOARD
642	ARTICLES OF PAPER ETC
650	UN SPECIAL CODE
651	TEXTILE YARN AND THREAD
652	COTTON FABRICS, WOVEN
653	WOVEN TEXTILES NONCOTTON
654	LACE, RIBBONS, TULLE, ETC
655	SPECIAL TEXTILE ETC PROD
656	TEXTILE ETC PRODUCTS NES
657	FLOOR COVR, TAPESTRY ETC
660	UN SPECIAL CODE
661	CEMENT ETC BUILDING PROD
662	CLAY, REFRACTORY BLDG PRD
663	OTH NONMETAL MINERAL MFS
664	GLASS
665	GLASSWARE
666	POTTERY
667	PEARL, PREC SEMI-P STONE

SITC CODE	DESCRIPTION
670	IRON AND STEEL
671	PIG IRON ETC
672	IRON, STL PRIMARY FORMS
673	IRON AND STEEL SHAPES
674	IRN, STL UNIV, PLATE, SHEET
675	IRON, STEEL H[illegible], STRIP
676	RAILWY RAILS ETC IRN, STL
677	IRN, STL WIRE EXCL W ROD
678	IRON, STL TUBES, PIPES, ETC
679	IRN, STL CASTINGS UNWORKD
680	UN SPECIAL CODE
681	SILVER, PLATINUM, ETC
682	COPPER
683	NICKEL
684	ALUMINIUM
685	LEAD
686	ZINC
687	TIN
688	URANIUM, THORIUM, ALLOYS
689	NON-FER BASE METALS NES
690	UN SPECIAL CODE
691	STRUCTURES AND PARTS NES
692	METAL TANKS, BOXES, ETC
693	WIRE PRODUCTS NON ELECTR
694	STL, COPPER NAILS, NUTS, ETC
695	TOOLS
696	CUTLERY
697	MISE MTL HOUSEHOLD EQUIP
698	METAL MANUFACTURES NES
699	MFTURES OF METALS NES
710	UN SPECIAL CODE
711	POWER MACHINERY NON-ELEC
712	AGRICULTURAL MACHINERY
714	OFFICE MACHINES
715	METALWORKING MACHINERY
716	MISC MACHINERY
717	TEXTILE, LEATHER MACHNRY
718	MACHS FOR SPCL INDUSTRYS
719	MACHINES NES NONELECTRIC
720	UN SPECIAL CODE
721	ELECT MACH EQUIP
722	ELEC PWR MACH, SWITCHGEAR
723	ELECTR DISTRIBUTING MACH
724	TELECOMMUNICATIONS EQUIP
725	DOMESTIC ELECTRIC EQUIP
726	ELECTRO-MEDCL, XRAY EQUIP
728	ELECTRICAL MACHINERY NES
730	UN SPECIAL CODE
731	RAILWAY VEHICLES
732	ROAD MOTOR VEHICLES
733	ROAD VEHICLES NON-MOTOR
734	AIRCRAFT
738	SHIPS AND BOATS
810	UN SPECIAL CODE
812	PLUMNG, HEATNG, LIGHTING EQU
820	UN SPECIAL CODE
821	FURNITURE
830	UN SPECIAL CODE
831	TRAVEL GOODS, HANDBAGS
840	UN SPECIAL CODE
841	CLOTHING NOT OF FUR
842	FUR ETC CLOTHES, [illegible]
850	UN SPECIAL CODE
851	FOOTWEAR
860	UN SPECIAL CODE
861	INSTRUMENTS, APPARATUS
862	PHOTO, CINEMA SUPPLIES
863	DEVELOPED CINEMA FILM
864	WATCHES AND CLOCKS
890	UN SPECIAL CODE
891	SOUND RECORDERS, PRODUCRS
892	PRINTED MATTER
893	ARTICLES OF PLASTIC NES
894	TOYS, SPORTING GOODS, ETC
895	OFFICE SUPPLIES NES
896	WORKS OF ART ETC
897	GOLD, SILVER WARE, JEWELRY
899	OTHER MANUFACTURED GOODS
910	UN SPECIAL CODE
911	MAIL NOT CLASSED BY KIND
930	UN SPECIAL CODE
931	SPECIAL TRANSACTIONS
940	UN SPECIAL CODE
941	ZOO ANIMALS, PETS
951	WAR FIREARMS, AMMUNITION
961	COIN [illegible], NONCURRENT

ANNEX TABLE 4

Philippine 4-digit ISIC Exports where $\hat{x}_{ij} > 1$

(1970-1979)

1970	1971	1972	1973	1974	1975	1976[a]	1977	1978[a]	1979[a]
3111	3111	3111	3111	3111					3111
		3112	3112	3112	3112		3112		
3113		3113	3113		3113				
	3114				3114	3114	3114		3114
	3115				3115				
			3116		3116	3116	3116	3116	
	3117	3117				3117	3117	3117	3117
				3118					
3119	3119				3119	3119	3119	3119	3119
3121	3121		3121	3121	3121			3121	3121
3122		3122							3122
					3131		3131		3131
			3133	3133					
	3134							3134	
3140		3140	3140		3140	3140		3140	
	3211	3211	3211	3211			3211	3211	
		3212						3212	
			3213						3213
3214	3214		3214			3214		3214	
			3215	3215		3215	3215	3215	3215
				3219		3219	3219		3219
	3220	3220							3220
			3231	3231		3231		3231	
			3233	3233					
		3240	3240	3240	3240	3240		3240	
	3311	3311					3311		3311
			3312						
		3319		3319					
3320		3320	3320			3320	3320		3320
3411			3411		3411		3411	3411	
	3412								
3419	3419		3419	3419	3419		3419	3419	
3420		3420		3420					3420
3511	3511		3511		3511		3511	3511	
3512	3512	3512						3512	
		3513	3513	3513			3513	3513	3513
			3521	3521		3521			3521
3522	3522		3522	3522		3522		3522	
	3523	3523					3523		
	3529	3529		3529					
					3530		3530		
	3540		3540	3540			3540	3540	
3551			3551		3551	3551	3551	3551	
		3559			3559	3559	3559		

ANNEX TABLE 5

ISIC COMMODITIES - SUMMARY 4 digit list

ISIC Code	Commodity name
3111	Meats, Lard, Hides and Skins
3112	Dairy Products
3113	Fruit and Vegetables
3114	Fish
3115	Margarine, Oils
3116	Flour, Cereals
3117	Macaroni, Noodles, Bakers' Wares, Farinaceous Preps
3118	Sugar
3119	Glace Fruit, Sugar Confectionery Cocoa, Chocolate
3121	Coffee, Vinegar
3122	Prepared Animal Feeds
3131	Distilled Alcoholic Beverages
3132	Wine
3133	Malt, Beer
3134	Mineral Waters, Soft Drinks
3140	Tobacco
3211	Cotton, Wool Yarn, Fabrics - Woven and Unwoven
3212	Blankets, Linen, Towelling
3213	Knitted Fabrics, Knitted Garments
3214	Carpets
3215	Cordage, Rope and Twine
3219	Floor Covering
3220	Clothing
3231	Leather
3240	Footwear
3311	Wood
3320	Mattresses
3411	Wood Pulp, Papers, Fibreboard
3412	Packing Containers of Paper Paperboard
3511	Chemicals
3512	Fertilizers
3513	Synthetics, Plastics
3521	Paints
3523	Soap, Washing Powder, Detergents
3529	Ink, Explosives, Photographic Film etc.
3530	Fuels - Liquid
3540	Fuels - Solid
3551	Tyres, Inner Tubes
3559	Rubber
3610	Household Wares - Ceramic
3620	Glass
3691	Building Bricks, Tiles
3692	Cement
3699	Asbestos cement, Abrasives, Concrete Products
3710	Pig-iron etc, Crude Steel, Steel Products
3720	Copper, Aluminium, Lead, Zinc, Tin, Magnesium Products
3811	Razor Blades, Locks, Hardware
3813	Tanks, Vats, Boilers
3819	Metal Cans, Cylinders, Nails, Screws etc.
3821	Steam Turbines, Engines, Turbines
3822	Farm machinery
3823	Heavy machinery
3824	Other machinery (Industrial)
3825	Office machinery
3829	Household machinery, Cranes, Elevators, Forklifts
3831	Generators, Motors, Transformers etc.
3832	Radio, TV etc.
3833	Vacuum Cleaners, Shavers, Heaters etc.
3839	Electrical Goods
3841	Ships
3842	Locomotives
3843	Engines, Motor Vehicles
3844	Motorcycles, Bicycles
3845	Commercial Passenger and Cargo Planes
3849	Perambulators and Push Chairs for Babies
3852	Binoculars, Cameras
3853	Watches, Clocks
3902	Musical Instruments
3909	Dolls, Pens, Pencils etc.

ANNEX TABLE 4
- Continue -

1970	1971	1972	1973	1974	1975	1976[a]	1977	1978[a]	1979[a]
3560		3560	3560	3560		3560			
			3610	3610		3610	3610	3610	3610
3620	3620	3620		3620	3620	3620			
3691	3691	3691	3691		3691			3691	
3692		3692					3692	3692	
3699		3699		3699	3699	3699	3699	3699	
3710		3710	3710			3710	3710	3710	3710
	3720	3720	3720	3720	3720				
		3811	3811	3811			3811	3811	3811
3812		3812	3812	3812	3812				
3813			3813		3813		3813		
			3819				3819	3819	3819
					3822	3822		3822	
			3823	3823		3823	3823	3823	3823
		3824	3824	3824					
		3829			3829			3829	
		3831	3831				3831	3831	
	3832		3832				3832		
					3833				
3839				3839		3839		3839	
3841		3841	3841		3841		3841		
	3843		3843		3843	3843			3843
				3849	3849				3849
					3851	3851	3851		
			3852		3852	3852		3852	
								3853	3853
			3902	3902	3902			3902	
		3903							
		3909		3909			3909	3909	3909

[a] Production Estimates only.

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ANNEX TABLE 6

International Production and Consumption Performance Indices
Manufactured Exports

ISIC Code	Description	(1) $\hat{x}_{1j}$[a]	(2) Share,[b] 1979	(3) Change in Share[c] (1970-79)	(4) $\hat{p}_{1j}$	(5) $\Delta \hat{p}_{1j}$ (1970-79)	(6) $\hat{c}_{1j}$	(7) $\Delta \hat{c}_{1j}$ (1970-79)	(8) $\Delta(\hat{p}_{1j}/\hat{c}_{1j})$[d]
3111	Meats, Lards, Hides and Skins	1.24	0.29	0.01	1.49	0.49	1.21	-0.59	1.57
3117	Bakery Products Manufacture	1.08	0.36	-0.75	0.96	1.47	0.86	-0.35	1.32
3119	Confectionery	1.59	0.44	-0.11	3.36	2.23	1.31	1.07	-2.03
3121	Food Products (Misc.)	1.29	2.35	-4.89	0.36	-0.17	0.86	0.76	-0.95
3140	Tobacco Manufactures	1.07	4.89	-1.00	0.64	0.49	0.55	0.23	1.07
3211	Textiles	1.39	2.15	-0.92	1.23	-0.03	1.19	3.42	-0.35
3215	Cordage, Rope and Twine	1.50	0.19	-0.20	2.01	5.35	0.63	-0.65	12.89
3240	Footwear	3.31	2.23	-1.42	1.17	-0.96	1.02	-0.74	-5.32
3320	Furniture and Fixtures	1.19	2.17	0.56	0.99	-0.03	1.76	-1.64	7.17
3419	Pulp, paper, paperboard products	2.20	0.76	0.56	0.95	-2.07	0.72	0.14	-0.97
3511	Industrial Chemicals	1.10	2.56	2.70	0.79	1.00	1.08	0.13	0.00
3513	Synthetic resins, plastic materials	1.33	3.29	-9.97	0.71	-1.54	1.39	0.09	-5.61
3522	Drugs and Medicines	1.25	1.14	-1.40	1.20	-0.26	0.98	0.37	-10.09
3551	Tire and Tube Industries	1.02	0.80	-0.48	0.71	1.44	0.69	0.17	0.84
3610	Pottery China and Earthware	1.31	0.23	0.24	1.00	14.47	1.23	-1.13	1.05
3620	Glass and glass products	1.23	1.73	-0.15	0.90	0.58	1.05	0.60	-1.35
3691	Structural Clay products	1.13	0.15	-0.42	0.85	0.67	0.96	-0.70	5.31
3699	Non-metallic minerals	1.36	2.32	-3.10	1.17	1.07	0.90	0.54	-2.40
3710	Iron and Steel Basic Industries	1.37	2.42	-4.51	1.21	-4.06	0.97	-0.05	-5.31
3811	Cutlery, Hand tools and Hardware	1.08	0.05	-0.32	0.79	-0.65	0.63	-0.16	-0.71
3823	Metal and Woodworking Machinery	1.30	0.10	0.06	1.02	-1.07	0.66	-2.67	2.07
			30.62						

[a] Median values between 1970 and 1979.
[b] Based on 1979 estimated output of manufacturing industry, in percent.
[c] In percentage points.
[d] Does not equal (5)/(7).

Source of Basic Data: UN/World Bank Trade and Production Data (Australia National University).

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