

**PHILIPPINES**  
**Industrial Development Strategy and Policies**

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# PHILIPPINES

## Industrial Development Strategy and Policies

This report is based on the findings of a mission that visited the Philippines in February 1979. The mission was composed of:

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The mission report was discussed with the Government in August 1979 by a World Bank team composed of Messrs. Stanley Please, Barend A. de Vries, Hedayat Amin-Arsala, Lawrence E. Hinkle and Khalid Siraj.

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INDUSTRIAL STRATEGY AND POLICY IN THE PHILIPPINES

SUMMARY REPORT

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Note on Table of Contents

The Table of Contents of the Main Report follows page 35 of the Summary Report. The Statistical and other Annexes are given, following page 137 of the Main Report.



CURRENCY EQUIVALENTS

US\$1.0	=	₱ 7.40
₱ 1.00	=	US\$0.135
₱ 1 million	=	US\$135,135
₱ 1 billion	=	US\$135 million

ABBREVIATIONS

ADB	-	Asian Development Bank
AIIA	-	Agricultural Investment Incentives Act (R.A.)
ASE	-	Annual Survey of Establishments
BFAR	-	Bureau of Fisheries and Aquatic Resources
BOI	-	Board of Investment
CB	-	Central Bank of the Philippines
COE	-	Census of Establishments
CSMI	-	Commission on Small and Medium Industries
DAP	-	Development Academy of the Philippines
DBP	-	Development Bank of the Philippines
DCP	-	Design Center of the Philippines
DLC	-	Department of Loans and Credit (of CB)
ECA	-	Economic Cooperation Administration (of the US)
EPZA	-	Export Processing Zone Authority
FCDU	-	Foreign Currency Deposit Units
FDA	-	Food and Drug Administration, Ministry of Health
FNRI	-	Food and Nutrition Research Institute
FORPRODICOM	-	Forest Products Research and Industry Development Commission
FRR	-	Financial Rate of Return
FTI	-	Food Terminal Incorporated
IDRC	-	International Development Research Center
IED	-	Institute of Export Development (of BOI)
IGF	-	Invention Guarantee Fund
IGLF	-	Industrial Guarantee and Loan Fund
IPP	-	Investment Priorities Plan
IPPP	-	Industrial Promotion Policy Project at the University of the Philippines
IRRI	-	International Rice Research Institute
ISEC	-	International Services Executive Corporation
MASICAP	-	Medium and Small Industry Coordinated Action Program
MOA	-	Ministry of Agriculture
MIA	-	Maritime Industry Authority
MIRDC	-	Metals Industry Research and Development Center
MOI	-	Ministry of Industry
MSI	-	Medium-Scale Industries
NACIDA	-	National Cottage Industry Development Authority
NBFI	-	Non-Bank Financial Intermediaries
NCSO	-	National Census and Statistics Office
NEDA	-	National Economic and Development Authority
NFFA	-	National Federation of Fishing Association
NIST	-	National Institution of Science and Technology
NPCC	-	National Pollution Control Commission
NSC	-	National Steel Corporation
NSDB	-	National Science Development Board
OBU	-	Offshore Banking Unit

- OIA - Office of the Internal Audit (of CB)
- PCMP - Progressive Car Manufacturing Program
- PD - Presidential Decree
- PDB - Private Development Banks
- PDCP - Private Development Corporation of the Philippines
- PCFM - Philippine Chamber of Food Manufacturers, Inc.
- PCHI - Philippine Chamber of Handicraft Industries
- PEC - Philippine Export Council
- PFPI - Philippine Federation of Food Processing Industries
- FFCA - Philippine Fish Farmers Association
- PFPA - Philippine Fruit Processors Association
- PISO - Philippine Investments Systems Organization
- PNB - Philippine National Bank
- PSTC - Philippine Shoe Trading Corporation
- PSC - Price Stabilization Council
- PTMP - Progressive Truck Manufacturing Program
- PTPEA - Philippine Tuna Producers and Exporters Association
- PTRI - Philippine Textile Research Institute
- RA 5186 - Republic Act 5186: Investment Incentives Act
- RA 6135 - Republic Act 6135: Export Incentives Act
- RC - Review Committee (of IGLF)
- SBAC - Small Business Advisory Centers
- SMI - Small and Medium Industries
- STD - Special Time Deposits
- TAC - Trade Advisory Councils
- TCNAP - Tin Can Manufacturers Association of the Philippines, Inc.
- TDC - Technology Development Center
- TRC - Technology Resources Center
- UNIDO - United Nations Industrial Development Organization
- UP - University of the Philippines
- UPISSI - University of the Philippines Institute for  
Small-Scale Industries
- USAID - United States Agency for International Development

FISCAL YEARS

- July 1-June 30 (up to June 30, 1975)
- July 1-December 31, 1975 (interim)
- January 1-December 31 (from January 1, 1976)



MANUFACTURING: BASIC DATA

	<u>1970</u>	<u>1977</u>	<u>Annual Rate of Growth (%)</u> 1970-76	
<u>GDP</u> (billion pesos, 1972 prices)	<u>51.0</u>	<u>78.0</u>	<u>6.2</u>	
<u>Manufacturing Gross Value Added</u> (billion pesos, 1972 prices)	<u>11.8</u>	<u>18.6</u>	<u>6.7</u>	
Foodstuffs, beverages, tobacco	4.9	7.4	6.1	
Textiles, clothing and footwear	1.1	1.8	7.3	
Wood and furniture	0.5	0.8	7.0	
Chemicals, rubber, oil & coal products	2.0	4.1	10.8	
Nonmetallic mineral products	0.5	0.6	2.6	
Basic and metal products, mechanical & electrical machinery, transport equipment	1.9	2.8	5.7	
Other	0.9	1.1	2.9	
		(1975)	<u>Investment as % of GDP</u> 1970    1975	
<u>Manufacturing Investment</u> (billion pesos, 1972 prices)	<u>2.4</u>	<u>2.1</u>	<u>4.71</u>	<u>2.86</u>
<u>Labor Force</u>				
Total (in thousands)	10,729	14,663	5.3	
Manufacturing (in thousands)	1,323	1,680	3.1	
% of labor force	12.3%	11.0%		
Factory (in thousands)	404	630	7.6	
% of manufacturing	30.5%	37.5%		
		(1974)		
<u>Shares in Factory</u>				
<u>Labor Force</u>				
Foodstuffs, beverages, tobacco	13.2	17.0		
Textiles, clothing and footwear	55.0	38.4		
Wood and furniture	9.8	8.7		
Chemicals, rubber, oil & coal products	2.2	5.2		
Nonmetallic mineral products	1.8	2.7		
Basic and metal products, mechanical & electrical machinery, transport equipment	13.8	16.8		
Other	4.2	11.2		

<u>Exports</u> (Million US\$, current prices)	<u>1973</u>	<u>1975</u>	<u>1977</u>	<u>Annual Rate of Growth (%) (Current prices) 1973-77</u>
<u>Total Exports</u>	<u>1,886.3</u>	<u>2,294.5</u>	<u>3,150.9</u>	<u>13.7</u>
<u>Traditional Exports</u>	<u>1,543.9</u>	<u>1,769.4</u>	<u>2,085.1</u>	<u>7.8</u>
Sugar	293.6	614.6	532.2	16.0
Coconut	373.6	466.4	761.0	19.4
Minerals	334.3	255.8	302.3	-2.5
Forest products	416.5	225.2	261.5	-11.0
Fruits & vegetables	25.1	45.2	74.8	31.6
Other	100.8	162.2	153.3	10.9
<u>Nontraditional Manu- factured Exports</u>	<u>226.8</u>	<u>374.3</u>	<u>717.0</u>	<u>33.3</u>
Garments	58.0	107.0	250.2	44.3
Handicrafts	27.4	78.2	84.1	32.6
Electrical & electronic equipment & components	11.3	47.3	124.3	82.0
Non-metallic mineral manufactures, particu- larly cement	25.2	32.2	38.7	11.4
Chemicals	10.6	22.1	54.6	50.9
Wood manufactures, excl. plywood, veneer & lumber	17.2	16.9	35.6	20.0
Food products & beverages	15.0	14.7	30.7	19.5
Machinery & transport equipment	3.4	9.5	27.3	68.2
Textile yarn, fabrics & other related products	17.3	8.7	12.5	-22.1
Cordage, cable, ropes & twines	4.6	7.6	12.5	28.4
Other	36.8	30.1	46.5	6.1
<u>Nontraditional Products (Unmanufactured)</u>	<u>55.4</u>	<u>135.5</u>	<u>323.7</u>	<u>55.5</u>
<u>Special Transactions &amp; Re-Exports</u>	<u>60.2</u>	<u>15.3</u>	<u>25.1</u>	<u>-19.6</u>

<u>Direction of Exports</u>	1977	
	<u>US\$ million</u>	<u>% of total</u>
World	<u>3,150.9</u>	<u>100.0</u>
United States	1,102.6	35.0
Japan	726.9	23.1
Netherlands	281.8	8.9
Germany	137.6	4.4
Union of Soviet Socialist Republics	130.1	4.1
People's Republic of China	108.0	3.4
United Kingdom	70.7	2.3
Singapore	64.5	2.1
Australia	60.4	1.9
Other	468.3	14.8

PREFACE

This Report presents the findings of an Industrial Sector Mission which visited the Philippines in February 1979 to review industrial strategy and policies, including rehabilitation and other programs toward further development and greater efficiency in a number of specific industries. The scope of the Mission has been sketched in Chapter 1.

From the very start the work of the Mission was conceived as a joint Philippine-World Bank effort. Without the close cooperation and assistance of Philippine officials, the Mission could not have undertaken its task. After a preparatory visit by the Mission Chief in November 1978, the Minister of Industry arranged for several industry studies which were made available to the Mission on its arrival. The Minister also appointed a Coordinating Committee chaired by Rafael A. Sison, Deputy Minister and Conrado Sanchez, Jr., Supervising Governor, Board of Investments. The Mission members conducted all their field work with the help of Philippine counterparts. Further, in areas outside the purview of the Ministry of Industry and the Board of Investment, the Mission was guided by an inter-agency committee composed of representatives of NEDA and the Tariff Commission, the Ministry of Finance, the Ministry of Natural Resources, the Central Bank, the Development Bank of the Philippines and the Metals Industry Research and Development Center. The Philippine counterpart committees and working groups are listed in Annex I-1.

The Mission has benefitted from several earlier studies of Philippine trade, industry and employment problems, notably Vicente B. Valdepenas, Jr., "The Protection and Development of Philippine Manufacturing" (1970); John H. Power and Gerardo P. Sicat, "The Philippines: Industrialization and Trade Policies" (1971); "Sharing in Development, a Program of Employment, Equity and Growth for the Philippines" (ILO, 1974); Robert E. Baldwin, "Foreign Trade Regimes and Economic Development in the Philippines" (1975); and Russell J. Cheetham and Edward K. Hawkins, "The Philippines: Priorities and Prospects for Development. A World Bank Economic Report", Washington, D. C. 1976. The Mission has also drawn frequently on the Working Papers of the Industrial Promotion Policies Project conducted in 1978 at the University of the Philippines under the direction of Romeo M. Bautista and John H. Power. These working papers along with a policy analysis were subsequently published in "Industrial Promotion Policies in the Philippines", by Romeo M. Bautista and John H. Power and Associates (Manila, 1979) after the Mission had completed its work.

The Mission was composed as follows:

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Yung Whee Rhee	- Economist (Mechanical Engineering Industry)
Harry Y.H. Choi (Consultant)	- Industry Expert (Mechanical Engineering Industry)
Harold Catling (Consultant)	- Industry Expert (Textile Industry)
John P. Allchin (Consultant)	- Industry Expert (Food Processing Industry)
Kerry B. Busted (Consultant)	- Statistician
Carlos F. Singer	- Research Assistant

The Mission Report was discussed with the Government in August 1979 by a World Bank team composed of Messrs. Stanley Please, Barend A. de Vries, Hedayat Amin-Arsala, Lawrence E. Hinkle and Khalid Siraj. In these discussions the Government clarified its industrial policies on a number of points raised in the Report. The Government indicated that it intends to take a number of measures for restructuring industry in order to accelerate its growth, increase non-traditional exports and manufacturing employment, and improve capital efficiency. The policy measures contemplated fall under three major headings: Protection, Investment Incentives, and Export Promotion.

The objective of the Government's protection policy is to promote industries in which the Philippines has a comparative advantage and to foster greater competitiveness, capital efficiency, and labor use. With this objective, the Government seeks to achieve a phased general lowering and evening out of tariff rates at a level of 20-30%. This restructuring of the tariff is to be accompanied by elimination of import licensing. It will have two aspects: first, certain across the board adjustments will be made in stages; second, tariff changes for major industries requiring rehabilitation or rationalization programs would be implemented simultaneously with the execution of those programs.

The reform of the tariff code will be a key element in the Government's industrial restructuring program. As an initial step in this direction, many tariff rates will be lowered including bringing down peak rates to 50% or less, removing tariff redundancy, and absorbing high tariffs

on luxury goods, not domestically produced, into the sales tax. In certain under-protected industries tariffs may be increased. A study of how further phases of the tariff reduction program can be accomplished will be initiated. In connection with the tariff reduction, the Government may initiate a general adjustment assistance program for severely affected industries.

The general tariff adjustment will initially not affect selected industries where the Government plans specific actions to improve competitiveness and efficiency. As part of the tariff reform, the Government will announce the nature of these industry action programs and indicate a time period for their completion. Its programs for the specified industries will involve lowering their tariffs and domestic prices and/or increasing their exports. Special rehabilitation/rationalization programs are planned for textiles; steel rolling; mechanical engineering; and automotive, truck and motor cycle industries. A few additional industries may be added.

Whilst investment incentives will be continued, the Government considers it important to simplify the present range of incentives, by seeking to make certain incentives generally available to all industry, and to continue to reduce the current bias in favor of capital intensity. A study of ways of achieving this will be made, and reforms implemented gradually at appropriate times. In administering the current and revised investment incentive policies, the Board of Investment will give special attention to capital efficiency, return on investment, employment creation, foreign exchange earnings, and regional dispersal of industry. A greater proportion of projects approved for investment incentives are expected to be labor intensive.

The Board of Investment intends to narrow the range of industries to which preferred attention will be given. Matured industries will no longer receive new incentives. Selected priority industries will be singled out for special focus. For some of these industries such as food processing and mechanical engineering, formulation of special sub-sector development strategies will be initiated.

In administering the investment incentive system, the Board of Investment will give primary attention to the selected industries subject to special promotional programs and to a few carefully selected critical projects. In approving investment incentives, the BOI will analyze the economic rate of return, labor and foreign exchange effects.

The Government intends to avoid excess capacity conditions by lowering protection and by more judicious extension of investment credits for expansion. The Government intends to revise its policy on overcrowded industries in order to increase competition and efficiency in these industries.

Special attention will be given to the location of new industrial projects in the outer regions. With this purpose, the BOI may, at times,

permit somewhat lower rates of return in the outer regions, and may also enter into direct negotiation to encourage location outside Metro Manila.

The Government's policy is that non-traditional export manufacturing should be free of taxation on imports of raw materials and components and that this principle should also be extended to indirect exports (i.e., to sales of domestically produced inputs to export industries). It also regards maintenance of an appropriate exchange rate policy as crucial to stimulating the necessary rapid expansion of exports, in addition to its role in complementing the revised tariff policy in providing reasonable protection to domestic industry. The free trade export regime, already established under the Export Incentives Law and operating under Bonded Warehouse arrangements, will be progressively extended to all export manufacturing. The Government has already taken several measures to expand its export promotion program and expects to make rapid progress in this area. The Government also contemplates several measures to improve availability of credit for working capital to export manufactures, including small and medium sized firms.





# INDUSTRIAL DEVELOPMENT STRATEGY AND POLICIES IN THE PHILIPPINES

## SUMMARY REPORT

### PART I: ISSUES, RECOMMENDATIONS AND PRIORITIES

1. The Industrial Sector Mission which visited the Philippines in February 1979 dealt primarily with industrial policies and incentives, with a view to exploring ways in which the country can better achieve its objectives of broader and more rapid industrial growth, employment creation, export development, regional dispersion and stronger technological capacity. The Mission reviewed the various elements of the incentives system and has sought to determine how they might be adapted to facilitate achieving the Government's objectives. In undertaking this task, the Mission studied in detail several industries where rehabilitation, new investment and technical assistance are needed to broaden and deepen industrial growth, increase the linkage with other sectors and are required to complement the necessary changes in the incentive system. It also reviewed policies for the development of small and labor-intensive industries. Specific industries reviewed included steel, mechanical engineering, textile and food processing, and in less detail, cement, garments, footwear and furniture.

2. Part I of this Summary briefly sets forth the principal issues in Philippine industrial development (Section A), discusses the manner in which major objectives might be realized and the policies which might be adopted to that end (Section B). Section C deals with industrial investment priorities. Part II summarizes the findings on individual industries.

#### A. Issues and Objectives

##### Current Situation

3. The manufacturing sector has grown to the point that it has become a major factor in the development of the Philippines. It now makes up one-fourth of GDP and compares well in relative size with other countries in a similar stage of development. Besides achieving import substitution of a wide range of consumer products, policies have also stressed primary processing of domestic raw materials for export. Government policies have worked hand-in-hand with private initiative. Several industries are already relatively well established (e.g., food processing, chemical, garments and some consumer durables). More recently, there has been rapid growth of manufactured exports and increasing attention has been given to small industries.

4. Since 1970, policies affecting Philippine industry have undergone several significant changes - including a steep devaluation, measures to help small labor-intensive industries, and the introduction of various export incentives. As a result of these new measures, industry may well have reached a turning point in the second half of this decade in that, for an increasing part of the sector, both growth and employment creation improved significantly. However, little change has occurred in the composition of investment, which continued to stress capital-intensive industries; and the export

industries enjoying special incentives were in many ways an enclave in an otherwise overprotected domestic economy.

5. The principal issues confronting the Government in shaping industrial policy stem from the poor performance of the sector in terms of capital efficiency and cost competitiveness, as a leader in growth, provider of new employment and as a factor in regional diversification. Overall, manufacturing employment has fallen behind the growth of the work force, especially because of the slack in the informal sector. Industrial growth has generally bypassed the small firm, and the very large and important cottage sector - much less concentrated in Metro Manila than organized industry - was virtually stagnant. Further, industrialization has tended to favor production for the home market, and incentives - including the allocation of credit, import protection and investment incentives - favored relatively capital-intensive import substitution industries. The industrialization pattern may have reinforced regional and income disparities as its effect in raising employment and income of the poorest strata was small. In some industries (e.g., food processing), growth was accompanied by increased concentration.

6. Looking ahead, what is needed in Philippine industrial policy is a two-pronged approach. On the one hand, the nontraditional manufactured export drive should continue with increased participation by industries, firms and regions. On the other hand, policies for the home industries should be reoriented toward better utilization of capital and domestic resources and more employment creation. By becoming more competitive and concentrating on branches where the Philippines has comparative advantage, home industries should also be able to export an increasing share of their output, either directly or indirectly.

### Prospects and Strategy

7. The Philippines is in a strong position to continue expanding its nontraditional exports. They exceeded \$1 billion in 1978, and mainly consisted of labor-intensive items. Philippine wages have declined significantly relative to those in competing and customer countries; at present, wages are one-half to one-third of those in Korea and Hong Kong, while productivity in many export firms compares favorably with that in these countries. Based on a product-by-product review, and taking into account market access and prospects, the Mission finds that, assuming continued export policy improvements and no major setbacks in major markets, nontraditional exports can continue to grow by some 18% per year, reaching \$3 billion (in 1977 prices) by the mid-eighties. The projection of 18% compares with a Bank projection of 12% for manufactured export growth for all LDCs. In order to realize or exceed this potential, the Government will have to broaden export incentives - as recommended in paras. 24-26 - by putting all export industries, both direct and indirect, on a free-trade basis and increasing availability of credits, especially for raw material procurement and for new investment by smaller firms. As part of its export policy, the Government will have to continue simplifying administrative procedures and provide infrastructure facilities

where needed. Private industry, in turn, must respond by developing new products and higher quality markets.

8. The measures recommended below in Section B would make possible a broader participation in export growth in several respects: more and smaller firms, greater regional dispersal of export production, new product and market development, increased skill component, and a greater share of inputs to be procured at home. They should also help in increasing the proportion of value added in nontraditional manufactured exports and the net foreign exchange earnings from them.

9. The 18% export growth projection is illustrative and, in fact, could well be exceeded. On the other hand, if export incentives are not improved as recommended, the growth rate could easily fall below the illustrations given, coming closer to the average 12% foreseen for all LDCs, and the export growth would have a narrower base and benefit fewer workers, regions and industries. The cost of not broadening and simplifying the export incentives could be heavy in terms of scarce foreign exchange earnings (close to \$1 billion per year by 1985) and employment creation foregone (some 160,000 jobs by 1985 if the growth rate were 12% instead of 18%).

10. The Home industries make up 85% of manufacturing output and employment. If manufacturing as a whole is to make a sufficiently dynamic contribution to Philippine development, improvements in capital efficiency, labor intensity, and cost levels must be achieved by home industries in order to accelerate the growth in their employment and output and to enable them to make an indirect contribution to export expansion. A number of policy innovations are needed, as discussed below, to accelerate growth of production for the home market in line with the Government's development plan and to increase its contribution to employment and equity among population groups and regions. There are at present several subsectors which can greatly improve their capital utilization and efficiency. Well focussed rehabilitation would produce high investment returns and make possible cost reduction and more rapid output growth; industries in this category dealt with by the Mission include textiles, cement and steel rolling. Investment decisions (and incentives) should give greater weight to employment creation and be more cautious on the expansion or initiation of large-scale capital-intensive projects. A shift toward more labor-intensive investment would be in line with Philippine comparative advantage and the overriding need for providing productive jobs. This will involve, inter alia, greater stress on promising small and labor-intensive industries and the development of the mechanical engineering industry. Greater competitiveness of the industrial economy would also enable a larger part of the industry sector to participate in export growth, either directly or through domestic production of inputs for the export industries (e.g., textiles and steel products). Greater participation of domestic industries in supplying the export industries will tend to raise the capital labor ratios of the export sector as a whole, but direct export production will continue to be a labor-intensive operation.

11. In the absence of policy reform along the lines discussed in Section B and greater emphasis on rehabilitation and capital efficiency, new investment in home industries would be more capital-intensive than projected, new outlays would have lower economic returns, and output growth would not accelerate over past levels. Home industry would not be able to lower costs and prices, with resulting adverse effects on prices of consumer goods and on indirect participation in export expansion. Under these circumstances, employment growth in home industries would be less than 2% (compared with more than 4% under the more favorable policies). The cost of not undertaking needed policy reforms would thus be that home industry would generate 300,000 fewer jobs by 1985 and that its output growth might be closer to 6% than 8%.

12. Achievement of the projected growth in nontraditional manufactured exports and of greater capital efficiency and labor intensity in home industries could accelerate the overall growth of manufacturing value added from the 6% annual rate of 1970-77 to 8% in 1978-1985, while simultaneously doubling the growth rate of employment from 3% to 6%. The projected increase in manufacturing employment implies a considerable increase in the employment elasticity of manufacturing output. This would be achieved through a combination of continued rapid expansion of labor-intensive exports and, in the home industries, the restructuring of tariff and investment incentives leading to more efficient use of capital and reducing the capital intensity of new investment somewhat. Because of its much higher labor intensity than in the home industry, employment in nontraditional manufactured exports would rise by 17% per year and provide 40% of new employment opportunity in manufacturing. Even assuming slightly higher capital intensity than in the recent past, nontraditional export industries would account for only 10% of total investment. Home industry which is much larger than the export sector, would still provide 54% of the new jobs created in the manufacturing sector, with the remaining 6% being accounted for by the traditional export industries. Home industry would also absorb the major share of investment (81%), and hence it is on home industry that efforts to improve capital efficiency must focus.

13. The above growth pattern would bring about a dynamic change in the composition of manufacturing output and employment. Overall manufacturing employment would rise by an average of 120,000 jobs per year in 1977-85, accounting for about one-fifth of the new jobs required in the economy as a whole. However, within this total, factory employment, the growth rate of which would accelerate from 7% to 10% annually, would double, while employment in the cottage sector would grow relatively slowly (1.5%). Hence, by the mid-eighties the factory sector would replace the cottage industry as the principal source of employment in manufacturing as its share of the total would rise from 40% to 55%. Although it is vital for long-term development that this transformation take place, Government programs would need to pay special attention to the productivity of cottage workers lest their incomes fall too far behind those in the organized sector.

B. Policies

Effects of the Present Incentive System

14. The major elements of the incentive system are the customs tariff, import licensing, credit arrangements, investment and export incentives, and technical and technological assistance for specific industrial branches or small industry. The combined effect of the present incentive measures and import restrictions is to build a bias in favor of production for the home market and impose a penalty on the export industries, except for those with access to duty-free imports. Philippine incentives also have had the effect of lowering the price of capital goods relative to consumer goods. Customs tariffs have favored relatively more capital-intensive import substitution, while the tariff on capital goods has itself been low. In addition, investment incentives have the effect of reducing the cost of capital equipment. It is the larger, usually more capital-intensive, firms which have benefitted most from these incentives.

15. Import protection is relatively high and uneven. Based on 1974 estimates, the average effective tariff is about 36% for the economy as a whole. For manufacturing, the effective protection was even higher - 44% - while certain industries (notably intermediate and capital goods) received relatively less protection (18-23%). In the period 1965-74, effective protection rates for manufacturing declined from 51% to 44%; however, protection on consumption goods increased from 70% to 77%. Since 1974, a number of individual tariffs have been reduced on a case-by-case basis, and the importance of export production under free-trade arrangements has increased.

16. Import protection has had an adverse impact on manufacturing in several aspects:

- (a) It has tended to channel resources into industries, usually capital-intensive, where the Philippines has relatively less comparative advantage, and has penalized relatively labor-intensive products (e.g., simple producer goods in the mechanical engineering industry).
- (b) It has encouraged high costs, inefficient use of capital and excess capacity. Examples treated by the Mission in detail are the textile and steel rolling industries.
- (c) It has penalized exports by taxing imported inputs or permitting domestic inputs to be produced at high costs and low quality. The penalty imposed on those export industries subject to tariffs on their inputs averaged 16% in 1974. Examples covered by the Mission are: textiles, steel products and cans (for the food processing industry).

17. The tariff and tax disincentives for export industries have, since the early seventies, been partly offset by putting approved export producers on a free-trade basis. Bonded (manufacturing) warehouses and other arrangements free exporters from paying duty on imported inputs, which would otherwise represent a sizable penalty on export production (e.g., equivalent to 150% of value added in the garment industry). As is evident from the dynamic growth of nontraditional manufactured exports, industries under this selective free-trade regime have benefitted greatly, and the profit opportunities provided by free-trade arrangements for serving large export markets have been sufficient to draw some resources away from the relatively more profitable but limited domestic market. However, as a group, potential direct and indirect export industries that are subject to tariffs still pay a significant penalty on export sales. Achievement of projected export growth - which would rely in part on achieving both a more diversified product mix and higher net foreign exchange earnings through indirect export of domestically-produced inputs will require elimination of this penalty.

#### Improvements in the Incentive System

18. The measures recommended by the Mission fall into three major categories. First, a lowering of protection and simplification of investment incentives are needed to improve the performance of the home industries by increasing their competitiveness, capital efficiency and employment effects. Secondly, improvements in the various elements of the export incentive system are needed to solidify and broaden the manufactured export drive. Thirdly, the improvements in the various incentive measures need to be supported by credit policy, subsector planning, vocational training, technological assistance and special measures in the regional dispersal and small industry programs.

#### Reduction in Protection

19. Import protection should generally be lowered - to an average nominal level of 20-30% - and the structure of protection be made more even. Two major courses of action are envisaged: one consists of certain across-the-board measures which can be taken rather quickly. The other remaining tariff changes are those for selected branches where the Government plans specific industry programs linked to changes in protection; these may require 2-3 years to be fully implemented.

20. Across-the-board tariff action would include:

- (a) The lowering of peak rates (those between 70-100%, e.g., shoes and cotton fabrics);
- (b) Lowering tariffs with the aim of removing redundancy (e.g., the tariffs on clothes, pineapple, furniture); and
- (c) Substituting sales taxes for high tariffs on luxury items.

21. In some selected industries, changes in import protection will have to go hand-in-hand with programs to improve the efficiency and competitiveness of the industry. The textile and steel industries are examples discussed by the Mission, but there may be other industries where the Government needs to link tariff reform with new investment and rehabilitation. The rehabilitation and/or investment programs for the textile and steel rolling industries, summarized in Section C and Part II, would enable these industries to lower their costs and expand output. Reduction in tariffs in these industries would induce them to become more competitive and in fact assure that the new investments would result in improved capital efficiency and utilization. On the other hand, in selected simple producer goods, where the Philippines' dynamic comparative advantage is currently underutilized, protection should be increased selectively as new projects are identified and executed; thus, the present low tariff in these industries would be brought closer in line with the revised levels for the rest of the manufacturing sector. In other cases, higher levels of effective protection might be permitted to continue on certain conditions worked out as part of an industry-wide program. For example, selected industries might continue receiving high effective protection on condition that they export part of their output (e.g., refrigerators).

22. The reduction in tariff protection should be accompanied by the immediate removal of licensing by the Central Bank, lest the benefits of lower tariffs will be offset by continued licensing. The Mission found that Central Bank licensing for a number of industries is an obstacle toward product improvement, greater competition, and the provision of supplies to export industries. The restriction of competition from imports has enabled a number of firms (e.g., in the textile and steel rolling industries) to operate at uneconomic levels of capacity utilization and costs.

#### Investment Incentives

23. Investment incentives are currently administered by the Board of Investment. The present system is complex and difficult to administer. As the manufacturing sector grows, it will be important that the Board have a manageable task and be able to deal with the many dynamic issues of industrial growth. Simplification would lessen administrative discretion and help small industry and regional dispersion. In order to implement the strategy recommended above, in revising and administering the incentive system, careful attention needs to be given to comparative advantage, efficient use of capital, employment creation and regional dispersal, in particular:

- (a) Certain general investment incentives could be applied to all industry through the fiscal system. The Mission has not made a study of particular measures, but extra tax credits for labor and local raw material costs would be worth consideration. A move in this direction, moreover, would make possible a simplification in the present range of discretionary incentives and the remaining special incentives would become easier to administer. Certain industries currently receiving incentives no longer need special encouragement in other than exceptional circumstances, since they are already relatively well established (e.g., food processing and garments).

- (b) The Board of Investment might best identify selected industries worthy of special incentives. For this purpose, it would have to draw on strategy plans to be prepared for selected industries. Within the industries to be selected all registered firms should be eligible to receive incentives. The nature and level of the incentives should, to the extent possible, be set by prior guidelines for each industry. Contrary to the present practice (which tends to penalize relatively more efficient firms) of considering each proposal in detail, firms should be eligible regardless of how profitable they are and, at a later stage, should also be permitted to proceed with expansion, as long as the industry has priority status. In selected cases, incentives may be provided on certain performance conditions, e.g., that a portion of new output be exported.
- (c) For carrying out (b) above, detailed economic appraisal will need to be applied in granting selected incentives for particular industries, including determination of the likely economic rate of return and the level of protection required. Such appraisal should be applied to large projects as well as in the (prior) determination of the eligibility of an industry for special incentives.
- (d) The Board should encourage projects with economic justification in the outer regions, by direct negotiation and/or tolerance of slightly lower rates of return (to make up for the initial diseconomies of location outside the central regions).

24. The work of the BOI in administering investment incentives should be supported by the preparation of strategy plans for selected industries. The Mission has identified the need for such plans in the mechanical engineering and food processing industries. These plans should help determine promising new projects and give guidance to the BOI decision making process. Decisions in other selected industries eligible for investment incentives should likewise be guided by strategy plans.

#### Export Incentives and Promotion Measures

25. Some serious deficiencies still exist in the special arrangements under which manufactured export industries operate. First, the various methods through which duty-free importation currently takes place (drawback, bonded warehouses, marginal deposit requirements) tend to be either time consuming, burdensome and thus tying up working capital, or too restrictive in terms of eligibility requirements (bonded manufacturing warehouse system). Costly paperwork and procedures required by various Government agencies create overhead expenses and delays, acting as a disincentive for exporters. Furthermore, the cost of the short-term export financing facilities of the Central Bank are high compared with the rates charged for export financing in countries with which the Philippines competes. Many of the smaller or newly



established exporters are not aware of the existence of this export credit facility or are discouraged by its procedural requirements. Their access is also limited because of the bias of the commercial banking system against high risk export financing for industries without an established track record.

26. All manufactured export industries should be placed on a free-trade regime to the maximum extent feasible. This involves: (a) duty-free importation of raw material and components; and (b) providing additional assistance where necessary. The present system is restricted to selected firms in direct export manufacturing. It tends to place the smaller firms at a disadvantage, as well as "indirect exporters," i.e., domestic suppliers to export firms. A broader approach would permit all procurement for export production to be free of duty and would need to be accompanied by improved financing facilities for raw material and semi-finished inputs.

#### Credit Policy and Other Supporting Measures

27. The recommended improvements in the incentive system discussed so far should be supported by the necessary adaptations in credit policy, technical assistance, training, subsector planning and the small industry and regional development programs.

28. Credit measures will have to go hand in hand with the application of other incentive measures. The full impact of changes in industrial policies in favor of technological development, labor-intensive production, small industry and regional dispersion will only be realized as they are matched by corresponding expansion by private commercial credit and the allocation of investment credit. The provision of long-term credit should be more cautious in avoiding excess capacity in major industry branches (such as has arisen in the past 10 years in the steel rolling and cement industries). The Mission has given special attention to the provision of short- and long-term credit to small industry (para. 31c), regional dispersion (para. 32), and export industries. The credit measures envisaged would, of course, have to be part of the country's general financial policies which have been analyzed by the Bank's Financial Sector Mission.

29. In support of export promotion policies, a special credit facility for financing raw material procurement by export firms is especially worthy of consideration. Further, the commercial banks could very significantly increase their support for regional dispersion and export expansion by expanding their operations (now overwhelmingly concentrated in the Center) to the outer regions and by giving greater assistance to export firms (particularly small and growing firms). Both exporters and their bankers would benefit from a simplification of export documentation. Action should also be taken to establish an export credit guarantee and insurance scheme.

30. Technical and technological assistance should be supplied more effectively in a way that individual firms or plants can benefit. The Main Report discusses several of the specialized institutes, e.g., those operating

in mechanical engineering, forest products, textiles and food and nutrition. Most of these should maintain closer contacts with plant operations and focus more sharply on actual industrial practices. Their operations should also feed into the assistance rendered under the small industry program.

31. In addition, the technical institutes may be instrumental in improving vocational training in selected industries. The Mission is keenly aware of a shortage of skilled technical workers in several industries, caused in part by poor training and inadequate pay scales. It would seem best that the Ministry of Industry take the lead in a strengthened vocational training program.

#### Small Industry Program

32. Government policy might best aim at an increased integration of the cottage and small-scale sectors with more organized larger-scale manufacturing. The process of integration should be enhanced and supported by more effective technical assistance and enlarged credit facilities. MASICAP and SBACs can effectively use larger Government support for improved and more permanent staffing.

33. It would be most effective to concentrate on those industry branches which have the best potential for productive job creation and more efficient capital utilization. MOI staff analysis should continuously seek to identify the more promising branches and firm sizes which deserve priority support under SMI programs. In this manner, the small enterprise policy would concentrate on selected industry branches (e.g., shoes, furniture, and mechanical engineering, handicrafts and garments). For these selected industries, special support would take the form of:

- (a) A more comprehensive field service and direct assistance program of the specialized institutes (e.g., those operating in mechanical engineering, forest products, textiles and food and nutrition). In the industrializing outer regions the work of the institutes and that of MASICAP and the SBACs could be coordinated by Regional Directors of the MOI.
- (b) Increased Government support for subcontracting by large firms of products for small firms.
- (c) Expanded access to and increased allocation of credit to SMI by development and commercial banks, with emphasis on credit to the more rapidly growing firms in the industry; and, more efforts to provide support for SMI through the provision of equity capital and leasing facilities. The activities of financing institutions should be closely linked with the extension of technical assistance.
- (d) Special trading companies for export development. SMIs are often unable themselves to establish links with overseas buyers, nor to process the documentation presently necessary for exporting. If the

smaller industries are to participate more effectively in export growth, there is a need for grouping potential small industry exporters together. Trading companies could help in handling product promotion, marketing, packaging, shipping, short-term financing, documentation, etc., for potential SMI exporters.

### Regional Development

34. Steps to make the small industry program more effective will also be instrumental in furthering regional dispersal since these are relatively more dispersed than the manufacturing sector as a whole. Except for the processing of traditional commodity exports and production of selected handicrafts, the outlying regions have not yet benefited directly from either the general industrialization process nor from the expansion of manufactured exports. The recommended changes in export and investment incentives would place firms in the outlying regions on a more equal footing with those in the Center. The BOI should encourage location in the outer regions of economically-justified projects. Additional steps to further dispersal of industrialization are:

- (a) Emphasis on infrastructure improvement, and industrial estates in selected areas of the country with high potential for industrial growth; (i.e., Central and Western Visayas and Northern and Southern Mindanao);
- (b) Improved planning of industrial location and infrastructure in Metro Manila and the satellite cities of Southern Tagalog and Central Luzon;
- (c) Increased commercial bank financing of industry in the outer regions;
- (d) Increased investment finance through existing institutions, and expansion of the private development banks in the outer regions; and
- (e) Strengthening of industrial support services in the outer regions and decentralization of administration as this is done.

### Need for Concerted Action

35. The adaptations and reforms in the incentive system discussed above will require concerted actions by the agencies directly concerned, in particular, the Ministry of Industry, the Board of Investment, NEDA, the Tariff Commission, and the Central Bank. Where tariff changes are geared to specific industry conditions, they must be contingent on the preparation and execution of programs for the industries to be guided by the MOI and BOI. These programs must, in turn, be given priority in the allocation of investment finance. Central Bank licensing will need to be relaxed for those items which will receive lower duties lest continued licensing make the

tariff reduction ineffective. Export promotion efforts will need to be backed up by credit policies. The Board of Investment would usually not grant benefits for new investments if they were in need of effective protection above the 30% level achieved as a general objective and would, in selected cases, also encourage exportation of part of the output from these new investments.

### C. Industrial Investment Priorities

36. In assessing industrial priorities, the Mission was necessarily selective in its more detailed review of specific industries. These industries were selected with these criteria in mind: (a) their importance in the drive to make industry more export-oriented and labor-intensive; (b) their potential greater importance in the small industry program and regional dispersal; (c) their need for rehabilitation and renewal, in recognition of the fact that significant pockets of industry are wasteful users of capital and high cost suppliers of inputs which require corrective action if they are not to be a drag on the economy; (d) their potential for making a greater contribution to growth, the country's comparative advantage and technological development; (e) their potential of increasing utilization of domestic resources; and (f) the country is facing major decisions on very substantial investment outlays which require careful technical and operational attention and assistance. Among the more important industries not reviewed in detail are several capital-intensive industries such as chemicals and petrochemicals and raw material processing for exports (metals, minerals, coconut and sugar products).

37. The following paragraphs summarize the major groups of industries reviewed by the Mission in a roughly declining order of priority (details are given in Part II and the Industry Chapters of Volume II):

- (a) Nontraditional manufactured export industries (e.g., garments, electronics);
- (b) Selected labor-intensive industries which could be assisted as part of the small industry and regional dispersion programs (furniture, footwear and small-scale power loom weaving);
- (c) Selected branches of the food processing industry which could make greater utilization of domestic raw materials and provide low-cost foods;
- (d) Industries requiring new investment and rehabilitation with the aim of improving capital efficiency, labor utilization and production costs (mechanical engineering, steel rolling, textiles cement rehabilitation);
- (e) A program of phased expansion of the cement industry; and
- (f) Integrated steel production.

38. Top priority should be assigned to continued expansion of labor-intensive manufactured export industries. The very large potentials in terms of export earnings and employment creation and the policy requirements have already been discussed. Action should be taken to make possible a broader participation in the export drive. At present, with the notable exception of cottage industry handicrafts, export industries are heavily concentrated in the Center. Further, at present, value added in manufactured export industries is a mere 25%.

39. The greater part of raw material inputs of most export industries is imported. Net foreign earnings from manufactured exports are at best only 40% of gross. Only the wood, handicraft and food processing industries rely on domestic raw materials, and these industries should be put in a position to expand relatively more rapidly than others. Domestic industries should increasingly be put in a position to supply a larger share of the requirements of export industries. If backward linkages are to be successfully developed, the capital efficiency and cost levels of input-producing home industries will have to be improved through measures discussed previously. This is true particularly for the textile and the steel rolling industries, but it would be wrong to limit the strategy to these two industries. In addition, export expansion has thus far relied heavily on a narrow range of products (garments, electronics, and handicrafts). If exports are to continue to expand rapidly from a now much larger base, new product lines will have to be introduced as the growth of older ones slows. Technological deepening of manufactured exports with the help of the specialized institutes and foreign investors (joint ventures) and greatly improved vocational training will, over the medium- and longer-term, be instrumental in both increasing the proportion of value added and the skill component and diversifying the product mix.

40. Of equal priority as the present major export industries are special industry programs for the footwear and furniture industries envisaged as a component of the small industry program and small-scale weaving. The footwear and furniture industries are labor-intensive and potentially export-oriented, and the furniture industry utilizes domestic raw materials. The smaller enterprises in both industries require more technical and marketing assistance, moderate improvement in equipment, help in improving domestic raw material supplies, and are suitable for more extensive regional dispersal.

41. Small-Scale Power Loom Weaving. While the textile industry is relatively capital-intensive, with modern spinning or weaving mills requiring \$30-50,000 investment per job created, there is some scope for additional job creation in weaving. Using smaller looms, the cost per job can be reduced to \$1,500. A system of units, organized as a cooperative with from 10-40 looms, could employ from 15-60 people and could produce reasonable quality cloth. Such a system might be suited to regions outside Manila and could be tested on a pilot basis to ascertain whether possible organizational or supply problems could be overcome.

42. Next in priority, the food processing industry - the largest single industry in terms of output and employment - has a significant role to play in improving utilization of rich domestic resources for home consumption, greater production of nutritious low-cost foods, exports and regional (resource-oriented) development. Industrial investments identified by the Mission are moderate - some \$30 million in the next few years - but substantial additional effort is needed to improve raw material supplies. The employment generating effect of increased supplies of agricultural materials is several times larger than that of the processing industry itself. Export potential assuming adequate resource development (fruits and fisheries) is large: rising from \$100 million at present to \$500 million in the mid-eighties. Since it is already well established, the industry needs no longer special tax incentives except to encourage new processes or location in the outer regions. Caution is needed to avoid excessive concentration in the industry and permit a satisfactory role to small growers and processors. A subsector strategy plan, identifying suitable investment opportunities, should be drawn up. The Government should designate the appropriate agency which will take the lead in sector planning and the coordination between raw material supply and processing. The most appropriate agencies would be the Ministry of Agriculture for raw material coordination and the MOI for investment planning. The DBP could play an essential role in project identification and promotion.

43. Next in priority is a group of industries where the necessary new investment or rehabilitation deserves high priority because of their impact on output, capital efficiency and/or employment creation. From the view point of a unified and sensible strategy, they have several characteristics in common:

- (a) First, while not all are as labor-intensive as the nontraditional manufactured export industries discussed before, they are mostly in the middle ranges of capital intensity (with the exception of the cement industry). Thus, while their employment effect is smaller than the export industries, it is larger than what it would be for the steel and chemical industries.
- (b) Second, individually and as a group, they require fairly large investment outlays. Given the competing claims from other sectors as well as the even more capital-intensive industries, a degree of rationing and allocation will be called forth which will make it essential that the Government make at least a notional allocation of investment over a period of 3-4 years as justifiable programs are carried out. The combined investments which the Mission has tentatively identified are on the order of magnitude of more than \$500 million as against a total investment projection of about \$150 million annually in the nontraditional manufactured export industries, at least \$1.3 billion in an integrated steel project and over \$1 billion in new cement plants.
- (c) Thirdly, there is strong evidence that investment in these industries will have high economic returns because they will make possible considerably lower costs and increased capital efficiency,

and enable the industries to supply at least part of their output to export industries (textiles and steel rolling), or enable the Philippines to exploit a comparative advantage (e.g., selected projects in the mechanical engineering industry including the foundry industry).

- (d) Fourthly, the investments and rehabilitation of the industries are designed to correct conditions which at least in part have been caused by excessive (or unduly prolonged) protection and/or excessive finance (textiles and steel rolling, suffering from high cost, and poor facility planning) or relative neglect by the incentive system (i.e., comparatively low protection, financing and technical help: the producer goods industry).

44. Some of the points of particular interests in the industry programs in this category of priority may be mentioned briefly here:

- (a) The textile industry rehabilitation program (approximately \$250 million, the precise amount to be determined after more detailed review of the studies now being completed). About half of the industry is efficient, but the rest suffers from obsolescent machinery and can at present only survive as a result of high protection (50-70% nominal, over 100% effective protection). Rehabilitation would be combined with increased product specialization and would result in cost reduction and improved utilization of capacity. Some of the new output could be exported - in fact some export could be a condition of the receipt of investment incentives and finance. The program would go hand in hand with (and in fact be conditional upon) a lowering of protection (to uniform levels of 20-30% to be determined as the program is prepared). Implementation must be based on criteria for selecting eligible private firms, depending on inter alia quality of management, ability to grow and export, and rate of return. The amount of capacity to be rehabilitated would depend on the prospects for direct and/or indirect exports and domestic sales at the lower level of prices foreseen. Applying these criteria would imply phasing out some plants which even after additional capital expenditures could not become competitive at the proposed lower protection levels.
- (b) The steel rolling industry. A number of rolling mills, particularly the larger and newer ones, can be operated economically. Some mills require modernization and rounding out. National Steel's cold rolling mill, for example, has an ultimate potential to produce about 700,000 to 800,000 tons/year (tpy) but at present has a capacity of only 300,000 tons. Expansion at a cost of about \$70 to \$100 million should enable its capacity to be increased to about 700,000 to 800,000 tpy. This investment would permit the company to increase productivity, lower costs of production, and ultimately to lower prices - hence, make possible lower protection - and still obtain an economic return, possibly in the range of 12-15%, on the new investment.

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- (c) The mechanical engineering industry. In the interest of efficient longer-run development, producer goods should receive greater incentives from the Government, including more technical assistance and long-term investment finance. New investments or expansion in the producer goods subsector could amount to \$100 million in the next few years. Areas of immediate opportunities could be mining and material handling equipment. Foundries, fabrication shops and machine shops require new tooling. One large or two complementary smaller projects might be considered possibly as joint ventures with established foreign makers. These actions should be guided by specific product planning within a comprehensive strategy for the subsector. Active support is warranted for MIRDC's effort to initiate such a planning exercise.
- (d) A rehabilitation program for the cement industry is needed to restore run-down facilities. It would also include improvements in pollution control and have a coal conversion component. The program could require an outlay of some \$130 million, of which \$60 million is for plant rehabilitation, \$30 million for anti-pollution equipment and \$30-50 million for coal conversion (depending on whether or not old plants are converted).

45. At the lower end of the priority scale are the programs for the relatively capital-intensive industries of which cement expansion and the proposed integrated steel project are taken up in the Mission Report. The proposed steel project would ensure a more reliable supply of steel to Philippine industry over a period when steel using branches will gain importance. Both of these programs are important for longer-run development, but in view of their high capital cost and low employment effects the Government should proceed cautiously on the basis of sector-wide planning and utilizing appropriate technical assistance. In the case of the cement program, it may be possible to proceed step-wise in stages within an overall industry program, so that it may be possible to proceed more easily within the confines of overall financial constraint. However, it may be economically and technically justifiable to postpone the steel project until a larger project would be called for.

46. A program to build new cement plants would follow an initial rehabilitation project. See para. 41 (d). Over the next ten years, investment in new plants might total \$1,000 million (at 1979 prices). Such expenditures require careful consideration, and an official joint body should be set up to administer the program with qualified, full-time staff and technical advisors. The returns on such an effort could be high through increased efficiency and lower costs of a material basic to the construction industry.

47. The Mission has made only a very preliminary review of the proposed integrated steel project in Northern Mindanao. The market would justify a project of 1.5 million tons per year, at a cost of at least \$1.3 billion, by



the mid-eighties. The proposed plant could produce steel at competitive prices, but show only a moderate return on investment and moderate foreign exchange savings.

48. The large investment in steel should be compared with other high priority claims in infrastructure, agriculture and other branches of manufacturing. Investment in these other areas would not necessarily come at the expense of steel, and vice versa, but a balance must be struck among competing priority claims lest the efforts of continued manufactured export growth and necessary industrial rehabilitation fail. The steel investment would require over a period of years an outlay about equal to the total annual capital expenditure of the Government (P 10 billion in FY78). Within the industrial sector, the steel investment can be compared with the total investment in nontraditional manufactured exports of some P 9 billion in the eight years (1977-85) which are projected to create new employment for 360,000 workers and net additional foreign exchange earnings of at least \$1 billion per year by 1985. The steel investment is more than three times as large as the combined outlays required for the rehabilitation of the textile and cement industries.

49. The Government should consider the trade-off between proceeding with the present proposal and a somewhat larger project in 5-7 years. As against the present proposal, it may be appropriate to consider a larger steel plant which would start operations after 1990. A moderately higher return would be obtained on a larger integrated plant project - of say about 2.5-3.0 million tons - particularly since it could be combined with a more economically-sized hot strip mill (e.g., 1.5-2.0 million tpy). Postponement would, however, entail risks and may create difficulties should shortages recur on world steel markets. On the other hand, a delay in incurring substantial new debts could be beneficial in view of the current tight balance of payments and fiscal situation.

50. In any case, further work on an integrated steel project should include additional effective technical assistance to assure improvement in National Steel's operating practices, especially maintenance planning and practices, in order to achieve better overall utilization of plant capacity.

51. The time requirements for these various components of the industry programs run roughly parallel with their relative priority. The more urgent projects and proposals can also be carried out within a relatively short period, while those with lower priority can be planned and executed over a longer period of years. Thus, the measures to improve export incentives, the small industry programs and subsector planning in the mechanical engineering and food processing industries can be initiated immediately. The priority textile and cement rehabilitation and steel rolling projects will require 2-3 years. Improvements in producer goods industries and the cement and steel programs fall in a longer time span. Several of the institutional improvements also require a longer and persistent effort, in particular vocational training and the improved effectiveness of the specialized technical institutes (and setting up new ones), both under the aegis of the Ministry of Industry.

PART II: REVIEW OF INDUSTRIES

52. This part summarizes the Mission's findings on the industries which were reviewed in detail. It starts with a review of small industry and regional dispersion of industry and then proceeds to the individual industries covered.

A. Small and Medium Industries

53. Small- and medium-sized industries (SMIs) employ, together with the cottage sector, close to 80% of the work force in manufacturing and produce only 25% of value added. While these data are highly tentative, they do illustrate the low output per worker, particularly in the smaller-sized firms. The low labor productivity is in part caused by limited use of capital equipment - in many cases perhaps even more limited than is justified by the low level of wages.

54. Small-scale enterprises are concentrated in those industries which have been reviewed in Chapters VI and IX of the Main Report: mechanical engineering, garments, footwear and furniture. SSI account for more than half of value added or employment in these industries. The role of SSI in food processing is also large, but it has been declining (see Chapter VIII). Like large-scale manufacturing (enterprises with 200 workers or more), SMIs are heavily concentrated in Metro Manila and the surrounding central regions. However, the cottage industries, which often require less infrastructure, are less concentrated.

55. Since the early 1970s the Government has been giving increasing attention to the role of SMIs in Philippine development. As part of this effort, the sector has been receiving larger amounts of technical assistance and finance. NEDA correctly identifies the SMI sector as of strategic importance in employment creation and regional dispersion.

56. The Philippines has proportionally one of the largest cottage industry sectors in the world. It consists mainly of very small labor-intensive establishments producing low quality, cheap consumer items and making handicrafts and souvenir items for export and sale to tourists. The organized sector - usually designated as enterprises with more than 20 workers but which includes many in the 5-9 category - has been growing rapidly over the past 10 years, and the Mission projects this trend to continue. Despite several measures in the form of special credit lines and technical assistance programs in support of cottage and SSEs, they still receive relatively less favorable treatment in comparison with large-scale enterprises. The small size of enterprises and their dispersion puts them at a disadvantage vis-a-vis the large-scale enterprises. With the exception of programs specially designed to deal with SMIs, the Government's general programs for

industrial development, e.g., those embodied in the incentives administered by the BOI, are mostly geared to the larger enterprises. Total budget outlays of MOI for SSE technical assistance, project preparation, and business improvement were only P 7.9 million in 1977.<sup>/1</sup>

57. One reason why the cottage sector has remained large, while growing only slowly, is that workers have not had sufficient opportunity to move to the organized sector. While the latter has grown much more rapidly, it has still been unable to provide sufficient numbers of new jobs, and it has paid relatively low wages (usually the minimum wage). Agriculture has been able to absorb few additional workers. As labor-intensive, manufactured exports continue to expand, remuneration and working conditions in the organized sector may also improve, hence these industries may start drawing larger numbers from the cottage sector. This process should also help some cottage industries to mechanize and be transformed into more modern small industries.

58. It is difficult to generalize about the capital intensity of Philippine manufacturing. The Mission has not made a comprehensive review of factor intensity in manufacturing. However, in its plant visits, it encountered few, if any, cases of excessively capital-intensive technology. In fact, the Mission recommends capital improvements in several branches (e.g., food processing, mechanical engineering, textiles, and selected branches of other small industries). Available statistics, while often incomplete, also suggest that a large part of manufacturing is relatively labor-intensive and this is particularly true for SMI. The capital labor ratio for all manufacturing was P 80,000 (1974) or US\$11,000, about P 13,400 (or less than US\$2,000) for SSI (1974) and less than US\$125 per worker in the cottage sector.

59. It is even more difficult to arrive at a general conclusion about capital efficiency in small industry. It seems clear that in the interest of a sound manufacturing structure, more should be done to improve labor and capital efficiency in selected branches (e.g., wood, furniture and leather) where small industry is markedly less efficient than large industry. Increased mechanization and training could redress the balance. In several branches, small-scale industry is more efficient than large industry (e.g., rubber shoes, foundries, fabricated metal products) and these would be a sound bet for increasing their contribution to the development of the sector.

#### B. Regional Dispersal

60. Manufacturing industry in the Philippines historically has been concentrated in Manila. In 1975, some 73% of manufacturing value added and

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<sup>/1</sup> This includes all budgets for MASICAP, SBACs, studies and UNDP-supported programs.

65% of employment was located in Manila and the surrounding provinces. If the resource-based food and wood industries are excluded, the share of manufacturing value added in Manila and environs rises to 87%. This means that until recently virtually all manufacturing industry is based in Manila, except for some resource-based raw material processing and some small industry serving local markets. The industry outside Manila is, in turn, located mainly in the industrializing regions of the Western Visayas, Central Visayas and Northern and Southern Mindanao.

61. The heavy concentration of industry in Manila has come about for a number of reasons: political, social and economic. The major consumer market and center of Government has always been in Manila. The policies followed during the import substitution drive of the 1950s and 1960s depended on the availability of imported materials and intermediate goods, and thus the natural location of industry was near the major port of Manila. These pressures were reinforced by the lack of infrastructure in the regions. Without adequate telephones, power, roads and water supply, modern industry will not develop. Further constraints to the development of industry in the regions have arisen through the concentration of Government decision-making in Manila.

62. Government Strategies and Policies. The Government is keenly aware of the regional disparities in industrial growth and investment and has sought to divert industry to the regions. The main concern has been the desire to ease the overcrowding in Manila with its consequent economic and social costs and to alleviate the problems of unemployment and outmigration in the regions. The Government has devoted much effort to regional planning and has drawn up a separate development plan for each region for 1978-82. A detailed program of project packages to translate into action the objectives and strategies of the regional five-year plans is under preparation.

63. The BOI incentive system has indirectly discouraged regional dispersal through favoring capital-intensive industries which, by and large, are located near Manila. Those industries outside Manila that have been assisted are mainly larger resource-based capital-intensive industries, such as sugar or coconut oil mills, or cement plants. Small industries, which are the ones most likely to grow in the regions, often fall outside the reach of BOI incentives.

64. The explicit location policy with the most impact on industrial location is the ban on new nonexport projects within a 50 km radius of Manila. This ban, however, has meant simply that industry has grouped just outside this limit. While this has eased the congestion in the heart of Manila, it has not helped the more remote regions. The 50 km ban has recently been relaxed following complaints about the difficulties it caused. The BOI, when considering project applications, has followed the practice of encouraging location in the provinces.

65. Future Steps: Infrastructure. A crucial bottleneck inhibiting industrial growth outside Manila is lack of infrastructure. To develop their individual potential the major regional cities need primary infrastructure such as water, power, telephones and efficient road and water transport. The Government's plans for providing such infrastructure should continue to have high priority. An efficient way to package infrastructure for industry at reasonable costs is through industrial estates to deliver all the necessary infrastructure to industry at one site. The Government's plans should concentrate on estates in the major growth areas, such as Cebu, Davao, Cagayan de Oro and perhaps Iloilo or Bacolod. While NEDA has drawn up the plans for the industrial estate program, the responsibility for its coordination should be with the MOI. At the same time, actual project implementation should be carried out at the regional level, either by public or private groups. The estates should help smaller exporters by providing bonded warehouses to serve groups of smaller entrepreneurs. Export processing zones in selected areas may also help to increase export activity in the regions.

66. In addition, Central Luzon and Southern Tagalog must necessarily be developed as major industrial centers and as such, action should be taken to locate suitable industries in designated parts of these regions. Such action would help provide an alternative pattern of industrial location, supplementing any restrictions on industrial development in Metro Manila as discussed below. A satellite city strategy would cover infrastructure, industry and planning for other sectors as well.

67. Incentives. The present incentives system is not designed to enhance industrial dispersal. It is clear that it could play a greater role in assisting regional decentralization. A positive incentives policy would encourage regional dispersal by: (a) discouraging industry in Metro Manila; (b) giving neutral treatment to investment in the growth regions surrounding Manila; and (c) encouraging the outlying regions by giving them some preference in the administration of a simplified incentives system. If, as recommended in para. 34, all export industries were put on a free-trade basis, and investment incentives were simplified, firms in the outer regions would obtain more equal treatment than at present.

68. Regional Industrial Promotion. While there is some decentralization in Government services to industry, for example, the MASICAP and SBAC programs, key policy decisions are made in Manila. Businessmen in the regions are handicapped by having to deal all the time with Manila in the complex process of obtaining BOI registration and incentives. A simplification of the incentives system would be of great help to provincial entrepreneurs.

69. An appropriate incentives policy, allied with infrastructure development, is vital to increasing industrial growth outside Manila. A more efficient way than the 50 km ban to discourage industry in Manila would be to impose an increased industrial property tax in Metro Manila. In addition, the BOI, as a matter of policy, should not extend investment incentives in Manila,

except in cases that did not add to congestion or that fitted in with an overall zoning plan for Manila. These steps would ensure accelerated growth outside Manila, particularly in the central region surrounding the Capital. To encourage industry to go away from the central region, incentives favoring labor, such as tax credits or subsidies for labor training, extra deductions of labor costs from taxable income, and tax credits for necessary infrastructure development, will be important. Furthermore, the BOI could permit a lower rate of return on projects in the outer regions.

70. Regional industrial development would also be helped substantially through a strengthening of existing regional administration, in the cities and provinces and in the main line agencies. Proposals to strengthen regional administration should receive the wholehearted support of the Government.

71. The MASICAP and SBAC programs and continued efforts on labor training and industrial extension services are also essential to dispersal. Project promotion should be assisted through the current phase of the Regional Planning Project. Projects covered by the Mission with regional impact include the furniture and leather industries, food processing near the source of raw materials, and the suggested small power loom weaving project.

72. Finance and Credit Policy. The outer regions are currently served by branches of most major Philippine banks; development finance for industry is provided mainly through branches of DBP and through private development banks; IGLF funds are available for SMI in the regions. Long-term finance is available in the regions through DBP and IGLF, with 30% of IGLF and 49% of DBP industrial loans over the past three years going outside Manila and the surrounding provinces. However, loan processing is perceived by businessmen as taking excessive time, and corrective steps would seem to be justified particularly for investment financing in the outer regions. Further, over the longer term the private development banks could become an expanded and more efficient channel for industrial finance in the regions.

73. Working capital outside Manila is scarce. The commercial banks, the prime suppliers of working capital, direct most of their operations to Metro Manila, and on March 31, 1978, 92% of total private commercial bank credits outstanding in manufacturing were in Metro Manila. The commercial banks should make a much greater effort to diversify their portfolios regionally. Clearly, Government action in infrastructure and industrial incentives should be supplemented by greater private financial support. Without more financial cooperation, regional industrial development will continue to suffer.

#### C. Steel

74. The Philippines now has a substantial steel industry, consisting of about 50 individual firms. The industry is characterized by a rather large indicated capacity for rolling and finishing (well over 2 million tons/yr) and relatively small indicated capacity for steelmaking (about

400,000 tons/yr). These figures are in relation to a present market for finished steel products, which is slightly in excess of one million tons/yr. The country is dependent on imports of slabs and billets for most of its steel industry. Hence, a proposal to evaluate an integrated steel operation to supply these basic products has been under consideration by the Government. Further, the Philippines imports many finished products (e.g., plates, hot and cold rolled sheets, tinsplate, etc.) due, in part, to underutilization of existing capacity.

75. Steel rolling is an "overcrowded" industry. There are 39 rolling mills, and 11 plants for coated products. Utilization of installed capacity is frequently 50% or less, and overall was only 37% in 1977-1978. There are many reasons for this performance beyond the control of individual plants, but poor maintenance and operating practices, limited availability of spare parts, and management problems are also responsible. Excess capacity makes for low profits, especially in the steel industry where utilization rates of 60-65% or higher are usually required to break even. Many of these plants operate with periodic losses, but they seldom go out of business.

76. Protection in the steel industry has a strong "cascading" effect. Effective protection in steel bars and galvanized sheets is over 100%. The high effective protection levels result from a 10% tariff on major inputs and 50% nominal protection on finished outputs (rods, bars, tinsplate and galvanized iron sheets). In practice, the price effect of protection is moderated by price control on finished products, which, however, may introduce supply shortages. High levels of protection have provided financial incentives conducive to premature investment in facilities (mostly in rolling mills). They have also relieved necessary pressure on many important parts of the industry to improve its basic performance, reduce excess capacity, and achieve reasonable levels of cost. Lower levels of protection would have been conducive to more rational facility planning (new plants/expansion) in tune with realistic market estimates and to higher standards of operating performance than have actually been achieved.

77. A realignment of tariffs on various steel products would help the industry in improving its performance, while increasing competitive pressure for modernization and better planning of facilities. Protection levels for individual branches (and products) must be determined after detailed review. The present protection structure will need to be made more even, with fully finished products (tinsplates, galvanized sheets) receiving protection below the present 50% (probably closer to 30%). Reduction in actual tariff rates would have to be accompanied by relaxation of restrictions (import licensing) if it is to have a full effect on industry operations and prices.

78. Some of the rolling mills and steelmaking facilities are small and outdated and may not be economical to operate except in special circumstances, such as small/specialized local markets, economical scrap supply, etc. A lowering of the cost of steel to consumers associated with some reduction in the tariff on finished products - say to a 30% maximum - would

have several beneficial effects: (a) it could make price control unnecessary for some selective items and hence improve supply conditions, (b) more generally - for a wider range of products - it could increase competition and reduce the number of inefficient firms; and (c) it should, in the end, reduce the cost of steel products. Lower steel prices would help in reducing construction costs and costs of fabricated metal products; it would also improve the possibilities for export of metal products.

79. The Philippines has for some years been considering the establishment of an integrated steel plant in Northern Mindanao. The proposal being prepared now envisages an investment of at least \$1.3 billion in a plant of about 1.5 million ton capacity, which could be operative in the mid-1980s./<sup>1</sup> Prefeasibility studies of the plant are still under way. They deserve very careful analysis because of the large amount of financing required, the possibilities of alternative timing, product mix, and facilities for an integrated operation, and the benefits and costs to the economy. The Mission has made only a tentative and preliminary analysis of available information and, at the present, can only present some general considerations to be taken into account in the broader context of Philippine industrial development.

80. The \$1.3 billion (or higher) investment in an integrated steel operation may make possible production of slabs, billets (and possibly hot rolled sheets) at competitive price levels in the mid-eighties, assuming effective steps are taken to improve operating practices and efficiency in the industry. The market in the mid-eighties would probably justify a plant with about 1.5 million tpy raw steel capacity. It would most likely produce a low economic return - say in the range of 7 to 9% - and moderate savings of foreign exchange (around \$100 million per year), and the creation of only 4,100 new jobs. The benefit to the economy would be a more secure supply of steel at reasonable and stable prices. Security of supply would be especially important in times of scarcity on world markets, when imported steel prices might become more volatile than prices of main inputs (iron ore and coal). Development of the industry would also contribute to the growth and diversification of the Northern Mindanao economy, including related industries such as refractories, rolls, castings, transport, other supplies and services; and provide other indirect benefits, such as technology transfer, improved management techniques and practices, advanced training in fields of mechanical/electrical/hydraulic equipment operation and maintenance. All of the above could contribute significantly to indirect employment in the long-term future.

81. The indicated foreign exchange savings would increase rapidly with increases in steel product selling prices, which could occur during periods of world steel shortages - as in 1974. During such shortages, selling prices could increase the equivalent of 20% or more over the full year. Annual

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<sup>1</sup> This supersedes a proposal for a 1.0 million ton plant, which had been considered up to the time of the Mission.



foreign exchange savings associated with the operation of the integrated steel plant could then easily reach about \$140 million per year.

82. In view of the substantial investment involved, a decision on an integrated steel project should be considered in the broader framework of industrial priorities (see para. 48). It may be appropriate to consider a plant which would start operations after 1990. The Philippine domestic steel market is projected to grow at 7-8% p.a., from the present 1.3 million tons to around 2.1 million tons in 1985, of which 1.5-1.6 million tons could logically be provided by an integrated plant. A moderately higher return would, however, be obtained on a larger integrated plant project - say about 2.5-3.0 million tons - particularly since it could be combined with a more economically-sized hot strip mill (e.g., 1.5-2.0 million tpy). The Philippines already has a hot strip mill (National Steel) of about 0.5 million ton capacity (a steckel mill, with some marginal technical characteristics). Unless the existing mill were to be closed, additional hot strip capacity of only about 0.5 million tons would be required by the mid-1980s if included on the same schedule as the integrated steel operations. The larger, better balanced capacities (2.5-3.0 million ton raw steel capacity and 1.5-2.0 million ton hot strip mill) could be accommodated by the home market by about 1991 and should produce a somewhat higher rate of return on total investment required.

83. Such a postponement would, however, pose certain risks for the Philippine economy if serious world steel shortages were to develop by the mid-eighties, and such shortages would raise steel prices even above the cost level at which a 1.5 million ton plant can operate. In such a shortage situation, the price of semi-finished products (on which the Philippines would be dependent) could be particularly volatile, and supply conditions for those products could be tight.

#### D. Mechanical Engineering

84. The ME industry is heavily concentrated on consumer products and has at present little capacity in capital goods production. About half of the output of ME industries consists of motor vehicles, home appliances, mining and construction machinery spares. Another 40% constitutes manufacture of various small metal products. The growth of this industry has fallen behind that of manufacturing generally and, as a result, the country has become relatively more dependent on imports and has had less opportunity to build technological capacity in metal working. Philippine comparative advantage lies more in simple producer goods than in production of more sophisticated consumer durables -- this is evident from the Mission's plant observations, differences in labor-intensity and from computation of domestic resource costs. While consumer goods industries are relatively less efficient, they have received higher levels of protection than producer goods industries.

85. Strengthening of the ME sector will require new investment and improved tooling, design and production technology. It will be necessary to determine more carefully in which product lines, especially producer goods, the Philippines has a comparative advantage and what type of assistance is most called for to help them get established. The most urgent problem areas in the industry are: (a) raw material supply (e.g., scrap, tinplate and steel sheets); (b) many obsolete plants; (c) a shortage of experienced shop supervisory personnel and skilled workers; and (d) technology. Deficiencies in product design and enforcement of standards limit production largely to low-value items, and technical services by organizations such as MIRDC are severely constrained by lack of funds.

86. Emphasis will initially have to be on economic import substitution particularly in simple producer goods. In exports, electronic products and auto parts have been the most important items. Main opportunities to develop new exports should lie in: (a) relatively simple and labor-intensive items such as hand tools, cutlery, foundry products, auto parts and machinery replacement parts (for mining machinery); and (b) metal products that are linked to other export sectors such as overseas construction and food processing. Further, it may be possible that, under present levels of protection, the producers of consumer durables and participants in the PCMP can be encouraged to increase their exports of finished products and/or parts. The foundry industry also merits priority attention. A basic need is selective modernization and upgrading of foundries to achieve production specialization by type and weight of castings.

87. The Progressive Car Manufacturing Program (PCMP) was a key initiative avoiding the establishment of many additional automotive producers and encouraging both domestic production and exports of key components. The program has received protection of close to 100% on final products (through tariffs and tax exemption), resulting in effective protection of over 300%. The incentive scheme has encouraged in-house production of components by PCMP participants rather than subcontracting. Increased production of automotive components might involve larger sales abroad and/or more procurement from domestic ancillary firms for consumption at home. Either form may require changes in the incentive system. For the further development of the ancillary industries, they should receive the same incentive treatment as the PCMP participants. Further study is required to identify the products which could be manufactured at reasonable cost. Increases in the domestic content requirement could easily lead to an excessive rise in automotive production cost. With rules for incentives for ancillary production established, the specification of domestic procurement content would need no longer play the same regulatory role as at present. Instead, it would be better to consider the domestic resource cost of net foreign exchange savings or earnings under the PCMP program and consider appropriate incentives to achieve them.

88. At present producer goods industries tend to receive less incentives than other industries. It is desirable that the Government establish a more

even level of incentives: narrowing the present disparity between effective incentives in the ME sector and manufacturing in general, and, within the ME sector itself, between underprotected producer goods and overprotected consumer items. Increases in tariffs may best be put into effect as groups of new projects are approved. For this purpose, the development banks should allocate larger amounts of long-term finance for projects in the ME sector. Further, the development of machinery production will require loans on terms competitive with those available on imported machinery.

89. In the administration of incentives, improved capability of small- and medium-sized producers deserves primary emphasis. They need assistance in raw material supply, layout and tooling, production problems, product testing and training of shop personnel. Organizations like MIRDC will require substantially increased resources to render broader and more effective service to the industry.

#### E. Textiles

90. The textile industry has grown from a negligible size in the mid-1950s to an industry employing around 64,000 with a value added of 980 million pesos in 1974. The industry does not meet domestic demand and some 25% of local consumption of yarn is imported. It is organized mainly on a vertical pattern, with little specialization in the major subprocesses of yarn manufacture, cloth production and finishing. On the scale practiced in the Philippines, this form of organization is generally uneconomic and can thrive only in a protected home market. Greater efficiency from specialization could be expected to result in higher profits for specialist production.

91. The quality and performance of general management in the industry is good, given the conditions prevailing in the Philippines. The quality of technical management, on the other hand, is variable. At its best, it is good by world standards, with efficiently run mills showing a commendable record of innovation in regard to equipment, operating procedures and production control techniques. Regrettably, other companies operate old, worn out machinery in a desultory fashion under deplorable working conditions, with little effort put into maintenance and renewals. This is generally a reflection of the quality of technical management in those companies arising from a serious shortage of adequately trained Philippine technologists. The number of technologists needed is very small and suitable training may best be obtained by awarding fellowships each year to enable four of five qualified Filipinos to study abroad for up to three years. This would fairly quickly reduce the current dependence on expatriate technologists. The Textile Research Institute should also play a greater role than at present in keeping the industry up-to-date with technical developments.

92. While the general quality of operator labor is adequate (at least around Manila), comparisons with other countries show that productivity could still be improved. The main labor problems lie in the shortage of skilled technicians. Modern textile machinery can only work well when in first-class condition, and technicians are vital to adequate maintenance. This appears to be a part of a general problem of insufficient attention being paid to training of technicians for industry.

93. Availability of Raw Materials. The Philippines has set up synthetic fiber plants with Japanese participation to supply the domestic textile industry. The present capacity of these plants is less than the requirements of the textile industry, and the balance, particularly polyester fiber, is imported. Further investment is being considered in synthetic fiber production to replace these imports. Unfortunately, there is a world-wide oversupply of all synthetic fibers. Currently, it is cheaper to shop around, buying fibers exported at marginal cost rather than setting up new plants. It is, of course, difficult to say how long this situation will last, but it is clear that now is not the right time to invest further in so capital-intensive an industry.

94. Natural fiber prices, on the other hand, are high and will probably remain so. The Philippines has potential for expanding domestic production of ramie, which has many of the attributes in its finished form of linen.

95. Rehabilitation. Only about one-quarter of the existing equipment in the main line industry is less than ten years old, and much of the remainder is about twenty years old. This old machinery is in need of substantial renovation and, in many cases, renewal. The benefits would be a substantial reduction in operating costs and an increase in productive capacity by some 25%. There would also be some quality improvement. A strategy needs to be evolved to incorporate funds spent on rehabilitation with greater specialization. The Government's Textile Industry Inter-Agency Committee is currently studying the industry to decide on an approach to future rehabilitation.

96. Protection. The textile industry receives substantial protection against imports, with tariff rates varying from 10% on cotton up to 70% on woven fabrics. These tariffs have the effect of raising domestic prices with domestically-produced synthetic yarn priced about 50% higher than import prices, and fabrics some 40-80% more expensive than equivalent imports. This protection gives scope for very high profits for efficient firms, and permits inefficient firms to survive. While the present tariff levels may have been justified in the past to protect the infant textile industry, there is little case now for such high levels. The Mission recommends a phased reduction to levels that would give approximately equal effective protection to each stage in the production process. Indicative levels might be 10% for fiber, 20% for yarn, 25% for fabric and 30% for clothing. This would result in effective protection of 30-40% on staple fiber, yarn and fabric. Such tariff reduction should be tied to a rehabilitation program for the industry.

With appropriate rehabilitation and specialization most firms could cope successfully with such tariff changes. Any decisions to expand industry capacity for domestic or export production should be based on such reduced tariffs and not on the current levels.

F. Food Processing

97. The food processing industry produces about one-fourth of all manufactured value added and employs one-fifth of the manufacturing work force. The Mission focussed on processing of fruits, vegetables, fish and meat products. In this subsector, some 50 large firms account for 80% of output and virtually all of the exports. The industry has shown rapid growth in the last ten years, particularly in fruits and fish products.

98. The major companies operating in this sector are well established and have significantly consolidated their position in the home market. The trend toward concentration has been reinforced by backward integration into raw material production. If left unchecked, this trend could endanger the position of the smaller growers and independent processors and would make new entry into the industry more difficult.

99. The processing industry is relatively well established. In food processing, the Philippines compares well with other countries in a similar stage of development. The Mission, moreover, found no evidence that the industry used excessively sophisticated equipment. In fact, as the larger firms expand and diversify their output, there is a case for increasing investment in machinery. Most of the larger companies have expansion plans, perhaps adding up to some \$30 million, to be put into effect over the next three years or so. With the larger companies operating satisfactorily and with reasonable profits, investments in increasing output of existing products can be carried out without use of incentives currently provided by the Board of Investment.

100. Major bottlenecks for expanding output for domestic production and exports are the supply of raw materials (including fish) and other inputs (especially packaging material and cans) Improvement in raw material supplies will require a concerted effort by several agencies.

101. The Philippines' apparently rich marine resources and the avid export demand for the frozen and canned products are making for rapid expansion of the seafood processing industry. In the home market, a good prospect is identified for substituting the sizeable imports of canned sardines and mackerel with domestically-processed counterparts. Supportive measures for the industry's growth include: improved fishing facilities, both commercial and municipal operations; development of new fishing ports, collection centers, ice plants, etc.; training peasant fishermen and inculcating quality aspects; suitably priced cans of appropriate standard; and domestic production of tomato paste competitive with imports.

102. The fruit and vegetable industry's output ranks foremost in the subsector. Several well-established firms operate efficiently, many having close connections with overseas sources of expertise. Pineapple products occupy the pre-eminent place in exports. Each of the two principal firms in pineapple processing, plus a third firm shortly to start operations, has its own plantation. In the domestic market, juices and nectars, from indigenous raw materials and imported concentrates, and low-priced items like beans in tomato sauce, enjoy increasing sales. Requirements for the industry's development are: consistent domestic raw material inputs and competitively priced packaging, especially as to cans and their quality. Product diversification could provide increased throughput and hence lower unit cost. The Ministry of Agriculture's collaboration with the industry and its extension services to producers could lessen the trend to backward integration being evidenced.

103. Given the favorable position of the export processing industry, present levels of protection appear unduly high. Board of Investment incentives would give special encouragement to raw material production, new products and processes and "newcomers" to the industry.

104. Recommendations: Raw Materials. Consideration should be given to adopt a policy whereby, within a determined period of, say, five to ten years, all large processors procure not less than 30% by value of their domestic raw material inputs from independent suppliers with preference being given to small growers and fishermen, formed into associations or cooperatives with which the large processors would contract.

105. Cans. Steps should be taken to improve the domestic can supply. Domestic can fabricators should be helped to operate their facilities more economically by providing more adequate supplies of black plate. The Government would be well-advised to permit freer imports at low duties of black plate and tin plate until domestic production of these imports can be increased to meet domestic requirements. Export industries should be able to obtain their can requirements at international prices and quality.

106. Tariff System. Given the present performance of the industry, protection is generally only warranted where it is needed to compensate for input prices over international levels. Hence, a phased reduction of tariffs could be effected. Concomitantly, a mechanism might be considered for imposing a sales tax on those products destined for the luxury (high-income group) market.

107. Incentives. (i) It is proposed that a shift in emphasis be made so as to accord yet further importance to raw materials production and their effective marketing. (ii) To facilitate small producers' access to incentives, BOI and the Ministries and agencies directly concerned should set up arrangements so that intending applicants are assisted in formulating both their projects and applications. (iii) Since incentives are no longer a

determinant factor for existing large firms in expanding their present facilities to augment current output, it is proposed that incentives should be preferentially available to encourage existing large firms to diversify into new products and to adopt innovative process technologies. Newly established firms should, however, be entitled to incentives.

108. Accredited Trade Entity. Many important issues - finance, tariffs, incentives, inputs, effects of FDA regulations, etc. - are of general concern to the food processing industry as a whole. With this in mind, the Ministry of Industry, in concert with the existing trade associations for food processors, might give the de facto recognition of one overall entity (perhaps PFFPI) accredited for dialogue and negotiation with the Government agencies concerned.

109. Although the Mission has focussed on the large firms, the identification, work-up, promotion and realization of opportunities for smaller-scale processing projects deserve attention. Potential exists both to improve existing small-scale operations and to establish new processing activities (especially of the "primary" type) adjacent to areas of production, such as might be developed through growers' associations and cooperatives.

#### G. Cement

110. The cement industry in the Philippines currently consists of 18 plants, operated by 16 companies. Production is 4.2 million tons per annum, of which 800,000 mt were exported in 1978. The industry is located near markets and/or raw material sources throughout the country with 11 plants in Luzon, 2 in the Visayas and 5 in Mindanao.

111. A combination of overexpansion, a depressed market, increasing costs, large debt burden, and severe underutilization of capacity has led to large losses by most firms in the industry. Debts could not be repaid, even after they were refinanced by lending institutions, and most of the industry remains heavily in arrears.

112. As a result of operating losses, working capital for plant maintenance was insufficient, and plant facilities were run down. Further technical problems have resulted from poor management and lack of spare parts; production is often interrupted by erratic electricity supply and extreme weather conditions; ancillary machines and instrumentation are inadequate or in poor condition; and operating staff are inexperienced and supervision is lacking. These difficulties have led to serious deterioration in the capabilities of many plants. The industry, as a whole, is producing as much as current facilities will permit, even though this is only 63% of rated capacity. Many cement plants are in urgent need of rehabilitation, while others have deteriorated to such an extent that they should be scrapped.

113. Further action is also needed for pollution control and conversion of cement plants from oil to coal firing. The National Pollution Control Commission (NPCC) has set standards for dust emission, which the industry must meet. This will entail additional cost and add to the industry's current burdens. While coal conversion in selected plants is likely to prove economical, such conversion should take place only in efficient firms after careful technical study. Both the coal conversion and the installation of more anti-pollution equipment should be tied in with an overall plan for industry rationalization.

114. Under such a rationalization plan some obsolete plants will have to be phased out over the next few years. At the same time, new plants must be constructed to meet increasing demand projected at over 4 million tons over the next decade. A package program should be worked out for the industry to include finance, technical and management assistance, labor training, and other back-up facilities. Finance for rehabilitation, expansion or new plants should be provided only to firms with sound technical proposals, sufficient managerial expertise, and enough equity to put a project on sound footing.

#### H. Garments

115. The clothing industry is the most dynamic industry in the Philippines. It has evolved since the 1950s from small tailoring and dress shops making clothing-to-order to a multimillion dollar business with exports of over US\$300 million in 1978. In 1975, the industry employed some 106,000 people in 28,000 establishments in the organized sector, with many others undertaking part-time commission work in homes and small shops. Garment exports covered most types of clothing, with a heavy emphasis on embroidery and high volume lines, such as standard suits and trousers. Some 60% of the value of garment exports lies in imported fabric, but the export industry has generated an estimated 70,000 jobs, with associated spin-offs such as labor and management training.

116. The traditional export market has been the US, but the industry has been diversifying its markets over the past three years, and 24% of garment exports went to Europe in 1977. The quotas imposed on imports of Philippine garments by the US, Australia, the EEC and Canada will effect industry exports. In past years, such quotas have not been a severely limiting factor, but, as the exports expand, their pressure will become more severe. To minimize the effects of the quotas, the industry must be able to diversify and upgrade its product lines, so as to have the flexibility to shift production to lines unaffected by quotas. The industry needs to know the fashion and market situation in other countries, and facilities should be provided to help Filipino entrepreneurs to travel overseas on business and/or to retain agents in other countries to provide feedback on the latest trends in clothing markets and fashions.



117. The garment industry relies almost entirely on imported raw materials, mostly fabric. In most cases, domestically-produced fabrics are considerably more expensive than imported fabrics, and in many cases their quality is inferior. The materials are imported for re-export duty-free through BOI-approved bonded warehouses or the Export Processing Zone at Bataan. This policy of free import has minimized the problems the garment industry would face if it had to rely on domestic fabrics under the present tariff system, and exporters have been able to take advantage of cheap labor costs to expand overseas markets. But, at the same time, a large potential market for domestic textile producers has not been exploited.

118. Steps toward greater efficiency in the textile industry are discussed in Section F-3. A reduction in tariffs on textiles would give greater incentive for exports. The Government could also help by applying the drawback to inputs of textile firms producing for garment exports. Such indirect drawback should be available to all firms under simple administrative procedures (para. 25).

119. The main incentives assisting the domestic clothing industry are the tariffs and restrictions on clothing imports. The tariff on clothing is 100% which is higher than the 70% tariff on fabrics, resulting in an effective rate of protection of 175%. In practice, competition, coupled with the relatively low level of domestic purchasing power, means that domestic prices are not set as high above c.i.f. import prices as the tariff would allow. Nevertheless, domestic garment prices are still considerably higher than export prices, and unit profits are higher on the domestic market. A reduction in tariffs on both inputs and outputs would allow the domestic clothing industry to lower prices while still operating profitably.

#### I. Furniture

120. Many small shops and relatively labor-intensive technology characterize the furniture industry. Exports have increased significantly and now exceed \$25 million. Market and cost conditions are favorable for further substantial growth. More rapid development would benefit some of the outer regions, e.g., Cebu.

121. Problems facing the furniture industry are: availability of suitable raw materials, wood seasoning, lack of skills, finance, and design. "Narra" hardwood, an important and prized ingredient, has been hard to get. The Government has banned its export, but domestic supplies are still scarce and expensive. There is an overreliance on "narra" hardwood, and more effort needs to be made to use other species of timber. Technical assistance is needed but the Forest Products Research Institute, although working on this problem, is not providing sufficient help. The rattan industry is also facing serious constraints in obtaining rattan poles.

122. Seasoning of hardwoods is difficult to organize in an industry with many small units. Modern, centralized kiln-drying facilities are

needed, especially for the smaller factories. This might be facilitated by relocating small plants into specialized industrial estates. Further, more training of skilled workers and technicians for the industry is needed, as well as a wage structure that would encourage skill formation.

123. The following measures for the development of the furniture industry are recommended:

- (a) Expanding the availability of suitable woods, rattan poles, and other materials through a better controlled reforestation program, timber felling, and distribution coordinated with the manufacturers, together with liberalized imported inputs where needed to maintain supply and reasonable price levels;
- (b) More skill training programs, and the introduction of a wage structure to encourage skill development;
- (c) More finance for equipment, working capital, and export production. Possibly a special industry program should be set up within the Government's SMI financing schemes;
- (d) Establishing a Furniture Trade Exporters Corporation, partly with public capital, to help in export marketing, common materials procurement and seasoning, relocation, training programs, etc.;
- (e) Involving the Design Center in assistance in improving furniture design; and
- (f) Search for new export markets, e.g., in Europe, the Middle East and Asian countries, especially for wooden furniture made from timbers other than "narra".

#### J. Leather and Footwear

124. The leather and footwear industry has expanded considerably in response to both domestic and export demand. Total output was over 30 million pairs of shoes, of which 7 million were leather and the rest rubber. Exports reached 12 million pairs in 1978, of which more than 8 million were leather, mostly cheaper models, made with imported leather, and of designs prescribed by foreign buyers. At present levels of wages and productivity, there is a large potential for further growth. Outstanding proposals for new production and export marketing would more than double production.

125. The industry is composed of many small cottage firms and a few larger ones. In 1978, there were over 2,700 leather shoe manufacturers with over 20,000 workers in total. In all, about 125 plants had over 50 workers in 1977, and only 7 had over 200 workers.

126. Supply of local leather is poor. Most tanneries are primitive and produce low quality leather. The Philippines does not produce hides in sufficient quantity or quality. The tanning industry, therefore, relies to a great extent on imported hides - at least for production of better quality leather. Even with imported hides, the quality of finished leather from Philippine tanneries is low. A major long-term technical assistance program would be needed to bring locally-produced leather to quality standards. It would have to extend from cattle raising and the slaughtering of the animals to the treatment of hides, to the equipping of tanneries and the training of technicians and skilled workers.

127. Technical Assistance. There is as yet no technical institute to assist the shoe industry. Such an institute could be of assistance in improving the quality of indigenous materials as well as the use of plastics, rubber components, adhesives, and finishing materials. The Philippine Shoe Trading Corporation, set up in 1978 with mixed Government and private capital, has already undertaken some export orders. The Corporation can be instrumental in subcontracting, common procurement, financing and export marketing for small firms.

128. Recommendations. To achieve its full potential and sustain the present momentum of the industry, more comprehensive assistance is needed:

- (a) Expansion of the scope and activities of the Philippine Shoe Trading Corporation. All export firms, including small ones, should be permitted to import raw materials duty-free;
- (b) More finance must be made accessible to the smaller firms for working capital and equipment. The Government's SME financing program might benefit from a specific shoe industry component;
- (c) A Leather and Footwear Development Center, jointly operated by the industry and Government, should be set up; and
- (d) A long-term (10-year) program for developing a high-quality leather tanning industry is needed.



# INDUSTRIAL DEVELOPMENT STRATEGY AND POLICIES IN THE PHILIPPINES

## THE MAIN REPORT

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## CHAPTER I

### INTRODUCTION AND OVERVIEW

#### A. Introduction

1.1 This report studies the contributions which Philippine manufacturing can make to the principal objectives of the country's development policy - the improvement in living standards and greater equity among population groups and geographic regions, the creation of jobs and the generation of additional resources for investment through higher export earnings. Industrial strategy has an immediate bearing on several of the Government's policies in international trade and finance, regional development, the financial system and the provision of employment. Hence, the Mission, in assessing the role of industrial growth at the present juncture of Philippine development, investigated in detail several aspects of manufacturing policy. As a starting point, it analyzed the various elements of the Government's incentives for industry -- a broad range of measures including import tariffs, investment and export incentives as well as Central Bank licensing and credit policies (Chapter II).

1.2 A number of new initiatives in Government policy, starting with the 1970 devaluation, marked a move toward a more export-oriented industrial policy in the Philippines. However, a full turn-around toward a more outward-looking and labor-intensive strategy, in line with Government's development objectives, will require further adjustments in the incentive system, notably a reduction of import protection and a broadening of export promotion measures. These adjustments would aim at improving the performance of the industries at present producing mainly for the home market (mainly through changes in import tariffs and investment incentives) and solidifying and broadening the manufactured export drive.

1.3 Further liberalization of import policies cannot take place in a vacuum. It has to build on the present industrial structure and in several ways it must be accompanied by investment and rehabilitation measures to make possible more competitive and efficient industrial production. For this reason -- and in this light -- the Mission took a close look at several industries because of their key importance in further manufacturing growth - as for example the steel, mechanical and the food processing industries -- and because conditions in the industry would have to improve substantially before policies can be significantly liberalized. This latter factor is particularly important in the textile industry, much of which at present is high-cost and cannot supply the rapidly growing garment export industry at competitive prices. The Mission also studied several of the more labor intensive industries (garment, furniture and footwear) in which small- and medium-sized firms provide the larger share of output and employment and which are of importance in the country's export drive.

1.4 In its industry reviews (Chapters V through IX) the Mission sought to identify the steps to be taken toward further technological development, greater efficiency and competitiveness, which would help manufacturing

over-all to create more productive jobs and help the Philippines to become more integrated with the regional and international economy. At the same time, the Mission explored ways in which the Government's regional dispersion policies can be applied to manufacturing, and how industrial incentive policies can contribute to regional development (Chapter IV). Finally, because of the importance of cottage and small scale industries in employment generation and export development, special attention was given to policies for these industries (Chapter III).

1.5 The current and prospective policies for manufacturing development must be seen against the shifts in the Philippine industrial structure which have taken place since World War II. This Introductory Chapter briefly discusses the changing structure of Philippine manufacturing, and particularly its present and prospective role in export growth and employment creation.

## B. Structure of Philippine Manufacturing

### 1. Historical Performance

1.6 The postwar development of the Philippine manufacturing industry is well documented.<sup>/1</sup> Starting in the 1950s, import substitution of consumer goods became the principal policy instrument to promote industrialization. Initially, the manufacturing sector responded favorably, with output growing at an average annual rate of over 12% from 1950 to 1957. However, by the late 1950s, the domestic market started to impose a limitation on the expansion of the sector and output growth fell to an average level of 5% per annum. The sector was no longer in the lead of Philippine development. Government policies concentrated on relatively capital intensive projects oriented on the home market or the processing of primary products for exports.

1.7 Although the strict import restrictions prevailing in the 1950s were gradually decontrolled in the early 1960s, they were replaced by a highly protective tariff system (instituted in 1957). Policy reform in the 1960s therefore did not alter the bias of the incentive system in favor

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<sup>/1</sup> See, amongst others, J. Power and G. Sicat, "The Philippines: Industrialization and Trade Policies" (1971), and R. Baldwin, "Foreign Trade Regimes and Economic Development: The Philippines" (1975).

of import substitution. Manufacturing was limited in its backward integration and in developing new exports. Since 1956, total employment in the manufacturing sector remained virtually constant at 10-12% of total employment, growing at an average rate of less than 3% per annum.

1.8 By 1970 a number of new measures started a reorientation of Philippine manufacturing strategy which in the second half of the decade resulted in substantially greater earnings from manufactured exports and in increased employment creation. The 1970 measures included a devaluation of the peso by more than 60%, the promulgation of the Export Incentives Act, and the introduction of various arrangements for duty free importation of raw materials used in export production (see Chapter II). Further, the Philippines established an export processing zone (EPZ) at Bataan. Preferential Central Bank rediscount facilities were made available for export financing with special emphasis on the promotion of nontraditional exports. More recently, the Philippine Export Council was created to serve as the main body for Government and private sector cooperation in the expansion of exports.

1.9 The Government also made an initial start at correcting tariff distortions by simultaneously reducing the number of items subject to the highest protective rates and limiting the granting of tariff exemptions. In response to these measures, industries producing nontraditional, labor-intensive, products /1 expanded rapidly from a low base as their exports increased more than fivefold between 1973-1977. The average annual growth of manufacturing production accelerated to 13% in the "factory" sector although it remained stagnant in the "cottage" sector; taking the two combined, total manufacturing grew by 6.5% during the 1970s./2

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/1 Major nontraditional manufactured exports are: garments, electronic components, handicrafts, cement, chemicals, wood manufactures, food products.

/2 The "factory" or "organized" sector is defined as those manufacturing establishments employing five or more workers. The "cottage" or "unorganized" sector consists of establishments with less than five workers.

## 2. Structure of Growth

1.10 The Philippine manufacturing structure is highly dualistic. The distribution of both employment and value added has a very pronounced skewedness. "Unorganized" manufacturing employs nearly two-thirds of the manufacturing work force, but produces only a small fraction of total value added in manufacturing, the precise magnitude of which is difficult to determine since available estimates are residuals (Table I-1). However, it is clear that the "organized" sector produces most of the value added in manufacturing. The unevenness between shares in value added and employment is even more marked for the large establishments (with over 200 workers each) and has become increasingly pronounced over time. Chapter III pays special attention to the problems in the cottage and small business sectors.

1.11 The share of manufacturing in GDP increased from about 18.9% in 1960 to 21.2% in 1967, to approximately 24% in 1977. The composition of manufacturing value added has changed relatively little over the last ten years. Food processing, including beverages and tobacco, has consistently contributed well over one-third of total manufacturing value added. The contribution of the chemical industries, including rubber and products of petroleum and coal, steadily increased in relative importance, while the

Table I-1: SHARES IN EMPLOYMENT AND VALUE ADDED, 1960-74

Size (employment)	Employment (percentage)		Value added (percentage)	
	<u>1960</u>	<u>1974</u>	<u>1960</u>	<u>1974</u>
1 - 4	76.0*	62.6*	17.7*	3.4*
5 - 19	4.8	5.5	6.1	2.2
20 - 99	5.3	5.8	13.0	9.6
100 - 199	2.9	3.8	10.0	9.8
200+	11.1	22.3	53.2	75.0

\* residual estimates

Sources: NCSO Annual Survey of Establishments;  
NEDA National Income Accounts

relative shares of all other industries fell gradually over time. As expected under the prevailing tariff and trade regime, consumer goods constituted about 55% of manufacturing value added until 1970. But its share fell to 47.9% in 1977 mainly as a result of the rapid increase in the production of intermediate goods, particularly chemicals (see Table 1.1)./1

1.12 A comparison of the structure of Philippine manufacturing and that of other major East Asian countries is given in Table 1.2. A further comparison can be made on the basis of a 93 cross-country regression analysis aimed at determining the average, or "norm", industrial structure at different levels of development and according to country size. The analysis compares structural "norms", predicted on the basis of the regressions, with the historically observed or actual structural shares in Philippine manufacturing for 1973 (Table 1.3)./2 It shows that the Philippine manufacturing sector as a whole is relatively larger (measured as a percentage of GNP) than one would expect on the basis of the cross-country norm, while its services sector is relatively smaller. Within the manufacturing sector, this seems to be mainly the result of the relatively large size of resource-based industries (food and wood) and to a lesser extent of the chemical industries. On the other hand, the textiles, clothing and metal industries appear to be considerably smaller than expected from international comparison.

1.13 Philippine manufacturing structure may further be compared with that in Korea, Taiwan and Mexico (Table 1.4). The first two countries are representatives of a group of countries which adopted an outward-looking policy oriented towards the exportation of labor-intensive products after a first stage import substitution of mainly non-durable consumer goods was completed. Mexico, on the other hand, is an example of a country which placed relatively more emphasis on import substitution beyond the completion of the first, relatively easy, stage./3 Such a comparison, again, shows the large size of the Philippine food industry relative to Korea and Taiwan in particular. It also shows the relatively small size of Philippine textiles, clothing and metal products industries, the latter even in comparison to Mexico. Overall, the size of the manufacturing sector in the Philippines

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/1 The Statistical Appendix (Volume III) starts out with a comment on the quality and reliability of Philippine industrial statistics. Annex I-4 "Industrial Statistics in the Philippines" deals in more detail with statistical reporting and reliability in a special report prepared at the request of the Minister of Industry and discussed with Philippine officials while the Mission was in Manila.

/2 Methodology adopted from Chenery and Syrquin, Patterns of Development, 1950-70 (1975). Analysis conducted (on the basis of a 93 country sample) under a World Bank Research Project.

/3 Export Incentives and Export Performance in Developing Countries: A Comparative Analysis: IBRD/SWP 248 (1977).

is slightly smaller than in Korea and Mexico, but considerably smaller than Taiwan. In this comparison raw material processing (e.g., sugar and coconut related industries) are included in manufacturing output; however, these products are excluded from nontraditional manufactured exports.

### 3. Composition of Manufacturing Investment

1.14 The food and textile industries received the major share of manufacturing investment during the 1960-75 period, closely followed by such other capital-intensive sectors as chemicals, oil and coal products, non-metallic minerals and basic metals (Table 1.5). This investment pattern did not change significantly between 1960-69 and 1970-75 despite the tariff changes and export promotion measures taken in the early 1970s (Table 1.6).

1.15 The share of investment in industries with relatively low capital-labor ratios remained constant between 1960-69 and 1970-75. Yet both output and employment growth in these industries accelerated sharply during the 1970-75 period (Table 1.7). Average annual growth of output in industries with relatively higher capital-labor ratios, /1 on the other hand, fell considerably during 1970-75 while their employment growth stagnated. There is thus a reasonable indication that recent investment was channelled into comparatively more capital-efficient production processes with lower capital-labor ratios, i.e., a relative reduction of the pronounced bias in favor of capital intensity prevailing in the two previous decades.

### 4. Factor Intensities and Productivities

1.16 Average capital investment per unit of labor employed tends to rise with the size of establishment, except in the case of the furniture industry. Capital efficiency (as indicated by value added per unit of capital) shows considerable variation among establishment sizes in different industries. Small establishments are more efficient in their use of capital than larger scale enterprises in such industries as tobacco, textiles, wood manufacturing and miscellaneous, mainly light, industries, e.g., rubber shoes, foundries and metal working plants. (See also Chapter III). On the other hand, larger scale establishments appear to be more capital efficient in the food and beverage industries, furniture manufacturing and in such capital intensive industries producing chemicals, oil and coal products and transport equipment (Table 1.9).

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/1 Due to the distribution of capital intensity over Philippine manufacturing branches, industries such as textiles, beverages, printing are shown in Table 1.7 as industries with a below average  $K_b/N$  ratio (Table 1.8).

1.17 The Mission in its visits to some 100 plants, paid special attention to the extent to which capital intensive technology was employed. Although the Mission did not undertake a comprehensive review of this question, it would seem that Philippine manufacturing usually employs relatively labor intensive methods. The Mission encountered few, if any cases, of excessive capital intensity. Economic data on 44 plants are given in Annex I-2 and summarized in Table I-2 below. Export oriented firms had a capital investment per worker of \$2,800 and firms with predominantly domestic orientation, \$22,000. The recent growth of relatively labor intensive industries in the organized sector has thus significantly enhanced the contribution of manufacturing to Philippine employment (Section D).

Table I-2: SUMMARY OF PLANTS VISITED BY MISSION

Per plant data	All firms	Export firms	Nonexport firms
Investment (\$ million)	14.6	3.0	22.2
Number of jobs	1,033	1,083	1,002
Sales (\$ million)	17.3	4.5	22.0
Exports (\$ million)	7.1	6.0	8.5
Value added (\$ million)	8.2	1.2	10.6
Investment per job (\$)	14,114	2,764	22,111
Value added/sales (%)	47	26	49
Export/sales (%)	41	71	37
BOI benefits/sales (%)	7.8	6.8	8.9

Source: Annex I-2.

5. Relative Importance of Industrial Exports and Imports

1.18 With the increase in manufactured exports, their share in total manufacturing output increased from 12.9% in 1970 to 15.3% in 1977. Their share in incremental output during 1970-77 amounted to nearly 20%, with traditional and nontraditional exports each contributing half. The large relative contribution of the nontraditional exports are a good indication of the rapid growth that took place in response to the various export promotion measures taken in the early 1970s (Table I-3).

Table I-3: SOURCES OF GROWTH IN MANUFACTURING, 1970-77  
(billions of pesos/1977 prices)

	<u>Output</u>		<u>Incremental Output</u> 1970-77 (%)
	1970	1977	
<u>Manufactured Export</u>			
<u>Sector</u>	<u>10.2</u> (12.9)	<u>19.3</u> (15.3)	<u>19.4</u>
Traditional	9.3	13.9	9.8
Nontraditional	0.9	5.4	9.6
<u>Domestic-Market</u>			
<u>Oriented Industries</u>	<u>68.8</u> (87.1)	<u>106.7</u> (84.7)	<u>80.6</u>
<u>Total Manufacturing</u>	<u>79.0</u> (100.0)	<u>126.0</u> (100.0)	<u>100.0</u>

Source: Appendix Table 1.18.

1.19 Among the leading manufactured export sectors in 1974 were sugar milling, coconut oil, wood products, furniture and cement. These all exported more than 20% of their output, with the first two industries exporting more than half. For the manufacturing industry as a whole, exports amounted to about 14% of total output (Table 1.10).

1.20 The Philippine manufacturing sector's total direct import requirements amounted to only 17% of output in 1974. Import dependence is relatively low due to the importance of resource based agro-processing industries. The direct import content was the highest in such capital intensive industries as basic metals, chemicals, oil and coal products, textiles and rubber. Although the nontraditional export sector is dependent, to a considerable extent, on imported inputs (para. 1.27), its volume was still small in 1974 (see Table 1.11).



1.21 The composition of imports by end-use reflects the basic structure of industry resulting from the Government's industrial policies (Table 1.12). Capital goods industries are relatively underdeveloped and their products make up 30% of total imports (see Chapter VI). On the other hand, consumer goods, of which the importation is restricted through various controls, constitute less than 10% of total imports. Imports of raw materials and intermediate goods make up nearly 40%, confirming the high import dependency of such industries producing chemicals, metals, textiles and garments.

### C. Manufactured Export Performance and Prospects

#### 1. Recent Developments

1.22 The 1970 export promotion measures - in particular the facilities under which selected export firms can import inputs free of duty - caused a spectacular increase in non-traditional manufactured exports.<sup>/1</sup> They increased at an average real rate of 30% per annum from \$116 million in 1972 to \$1,045 million in 1978, or approximately 30% of total exports (Table 1.13). In the initial years of the export promotion effort, the Philippines benefitted from the relatively favorable demand conditions in the OECD countries. Subsequently, the Philippines have benefitted from its own measures putting export firms on a free-trade basis, its relatively favorable labor productivity in export plants, and the fact that its labor costs are low and declined relative to those of its competitors, e.g. Korea and Taiwan, some of which had filled their quotas in major markets for relatively simple products.

1.23 The impetus for the nontraditional export growth has come primarily from three categories of manufactured exports, i.e., garments, electrical and electronics equipment and handicrafts, together accounting for two-thirds of total nontraditional manufactured goods in 1978. Garment exports, constituting one-third of the total, comprise a number of articles ranging from embroidered cloth to gloves and ready-made apparel, over half of which are manufactured on a consignment basis. The electronics industry, the second largest nontraditional exporter (25%), manufactures mainly semiconductors on a subcontracting basis with corporations in the US and Japan. Handicraft exports, amounting to 10% of nontraditional manufactured exports in 1978, consist of a large variety of articles mostly made from local raw materials. Other leading nontraditional exports are chemical products (chemical elements and compounds, pharmaceutical products, resins, plastic materials, explosives), nonmetallic mineral products (mainly cement) and wood manufactures (mainly furniture made of wood and rattan). As a share of total nontraditional manufactured exports, however, each of these product groups accounts for less than 6% (Table 1.14).

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<sup>/1</sup> These are manufactures of which exports were less than \$5 million in 1968. Traditional manufactured exports are mainly processed primary products (e.g., sugar, coconut oil, copper concentrates, lumber and plywood). The production of many of these items is relatively capital intensive.

1.24 The uptrend in Philippine manufactured exports also means that its performance is improving relative to that of other countries in the region. Tables 1.15 and 1.16 compare Philippine manufactured exports with those of Korea, Malaysia, Thailand and Indonesia during 1967-75.<sup>/1</sup> In 1967, Philippine manufactured exports were comparable to those of the other countries in the East Asian region (except for Indonesia). In subsequent years, however, the Philippines fell behind: both in growth and absolute value Philippine exports in 1975 were, after Indonesia, lowest in the group. However, processed food exports in 1975, as a percentage of manufactured exports, were higher in the Philippines than in the other countries.

1.25 In contrast with primary export product processing, Philippine nontraditional manufactured export industries are relatively labor-intensive. Many of the export processing firms visited by the Mission had a capital investment per worker of less than \$2,000; the average was \$2,800 (see Table I-2). UP studies suggest that the average capital <sup>/2</sup> labor ratio in the sector is ₱ 20,000 or \$3,000 compared with ₱ 81,000 for manufacturing as a whole.<sup>/3</sup> The investment per worker ranges from ₱ 6,500 in the leather footwear industry to ₱ 8,500 in the manufacture of wearing apparel/garments to ₱ 15,000 in the wood and rattan furniture industry (1974).

1.26 There is considerable variation in the size of export producing firms. Many embroidery and handicraft exports are produced in the cottage sector in firms with less than 20 workers. On the other hand, the typical export processing firm has 200 or more workers and cannot be regarded as small or medium sized. UP studies <sup>/4</sup> suggest that the majority of establishments in such industries as handicrafts, garments and wood manufactures have a replacement value of fixed assets of less than ₱ 4 million. However, the cement, chemical and electronics industries are generally large scale operations with a capitalization of over ₱ 4 million.

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<sup>/1</sup> For the purpose of this regional comparison, manufactured goods are defined as SITC - categories 0-8, i.e., excluding mineral and agro-processing industries. Data for period after 1975 were not available.

<sup>/2</sup> Defined as the replacement value of fixed assets, expressed in 1974 prices.

<sup>/3</sup> Cf. E.A. Hife, Factor Productivity and Intensities in Philippine Manufacturing, 1974 (IPPP Working Paper No. 10).

<sup>/4</sup> Hife, op. cit.

1.27 Unlike the processing of primary exports, nontraditional export manufacturing is largely dependent on imported materials and has only few linkages with the domestic manufacturing sector. Handicrafts and wood manufactures, on the other hand, use local inputs. However, plant visits have indicated that industries involved in the production of such leading nontraditional exports as electronics, watches, leather shoes and garments import between 35-60% of their inputs. Value added is only about 25%. The contribution of nontraditional manufactured exports in terms of net foreign exchange earnings is limited to about 40% of gross earnings.

## 2. Prospects

1.28 In the next eight years or so (1978-85) Philippine nontraditional manufactured exports can grow by 18% per annum if the Government continues to take effective export promotion measures and there are no major setbacks in the markets for Philippine products. To sustain this vigorous growth rate the Philippines will have to introduce several reforms in its incentive system as recommended in Chapter II. Rapid growth is essential to maintain a viable balance of payments position because of the recent slow-down in traditional exports.

1.29 On this basis, nontraditional manufactured exports would amount to close to \$3 billion (in 1977 prices) in the mid-1980s, with garments and electronic items each amounting to around \$750 million (Table 1.17). Nontraditional export output would contribute 15% to the increase in total manufacturing output, assuming the latter would grow by 8% per year in 1977-85 (Table 1.18). The strongly increasing earnings and output from manufactured exports would also have a profound impact on the structure of the Philippine manufacturing sector. An increasingly larger share of the sector would be labor intensive, with nontraditional manufactured exports increasing from 1% of gross value added in manufacturing in 1970 to 4% in 1977 and over 7% in 1985 (Table 1.19). Investment in nontraditional export industries would be relatively small but employment creation large:

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	<u>% of total in 1977-85</u>	
	<u>Investment</u>	<u>New employment</u>
Domestic manufacturing & traditional manufactured exports	90.4%	60.8%
Nontraditional manufactured exports	9.6%	39.2%

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Source: Appendix Table 1.19.

1.30 The Philippines has at present a strong competitive position in labor intensive manufactured exports. Labor productivity in export processing plants compares favorably with that in Korea and Taiwan. Philippine workers are literate in English and easily trainable; management in the export industries is up to international standards. At the same time Philippine wages have, since 1972, come down relative to those in several competing LDC's and industrial countries: by more than 50% relative to wages in Japan and Korea, 46% to those in Germany and 17% to wages in the US (see Table 1.20).<sup>/1</sup> While productivity in nonexport industries has lagged, productivity in Philippine export industries improved by 13% between 1969-74, thus keeping pace with manufacturing productivity in such countries as Korea, Japan, the US and Germany (see Tables 1.22 and 1.23). At present, Philippine wages are about half of those in Taiwan, Korea and Hong Kong. A survey of labor costs in Southeast Asian electronics factories, for instance, showed that in 1977 Philippine wages were only 60% of the wages paid in Taiwan, 50% of those in Korea, 40% of those in Hong Kong and 10% of the wages paid in Japan.

1.31 The medium term outlook, therefore, is for a strong competitive advantage in those industries which are intensive in the use of unskilled and semi-skilled labor. In fact, present productivity levels and range differentials would permit Philippine wages to increase without endangering the export drive. Besides garments and electronic components, this means a considerable export growth potential in industries such as wood manufactures, footwear, watch assembly, toys, artificial flowers, travel goods, etc., and for those industries such as handicrafts, chemicals and food products which have an (added) comparative advantage because of their natural resource base.

1.32 Exports of Philippine manufactured items are likely to benefit from structural changes in competing countries. Major international competitors in such areas as garments, electronic components, watch assembly, etc. are experiencing labor shortages and rapidly increasing wage costs and there is evidence that some of these labor intensive industries have in fact been moved to the Philippines.

1.33 Market Access and Diversification. Continuation of the present momentum in nontraditional manufactured export growth will require development of new products and new markets. It is important that Philippine products enter higher quality markets. A broadening range of Philippine products are subject to various kinds of quota restrictions and marketing arrangements: garments (Australia, EEC, US and Canada), footwear (Canada and Japan), fruit juices (France, Germany, UK), ceramics (Australia), and wood products (Australia and New Zealand) (see Annex I-3). To counter these protectionist measures and any further restrictions that may come about in the future, the Government will need to

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<sup>/1</sup> Reflecting in part the effect of the 1970 devaluation, over a longer period - 1966-77 - Philippine wages have come down even more: roughly 50% relative to wages in the US and Korea, and almost 75% relative to Germany and Japan (see Table 1.21).

embark on a more aggressive strategy to diversify into new or related manufactured export items. At the same time, efforts should be made to open up new markets for existing products in countries with which the Philippines have had no or only minimal trading relations.

1.34 In some items, notably garments and footwear, customer countries have relatively ample quota arrangements and some quotas have not been filled for Philippine products. Some plants were started by entrepreneurs from competing countries where quotas were exhausted. There are considerable opportunities to develop new, higher quality items not subject to quota arrangements.

1.35 For the nontraditional manufactured exports as a group, substantial market diversification and expansion should be possible. Although the major export markets for these products are obviously concentrated in the US and Western Europe, lucrative markets are also available in the EFTA countries, Japan and the Middle East. An integrated marketing plan including a trade information network, a market development and promotions program and an export publicity campaign has been proposed under the Philippine National Export Strategy for 1978-82 and is now being implemented.

1.36 Against the background of the recent protectionist measures taken in customer countries, there is a strong movement in the Philippines towards greater and more active intra-regional trade with neighboring ASEAN countries. However, the economies of the member countries are only partly complementary and intra-ASEAN trade has so far been limited; only 3-5% of total trade in the case of the Philippines. An initial step to further intra-ASEAN trade was taken in 1978 when a Preferential Trading Agreement was signed whereby over 800 commodity items of ASEAN member countries were accorded lower tariff duties; since then this list has been expanded to include 1,200 items. However, the impact of the tariff agreement on intra-regional trade is likely to remain small until the ASEAN industrial complementation program gets underway.

#### D. Employment

##### 1. Structure and Growth

1.37 Manufacturing employment in the Philippines - which doubled from 837,000 in 1950 to about 1.6 million in 1976 - falls into two distinct categories: employment in the "unorganized" or "cottage sector" and "factory" employment in enterprises with five or more workers. In 1976 there were about 630,000 jobs in factories and roughly one million in the cottage industries (Table I-4).

1.38 Employment in the cottage industries has increased relatively slowly (1.7% per annum) and, providing about two-thirds of total employment, this sluggishness has dampened the contribution of total manufacturing to Philippine employment (7% in 1956-77, as against 47% for agriculture and 38%

for services, see Table 1.25). In recent years, employment in the manufacturing sector declined as a share of total employment and grew by only 2.8%, creating a mere 40,000 jobs annually. During the same period, total employment in the economy as a whole grew at a rate of 5.2% or 660,000 jobs per annum (Table 1.26).

1.39 Factory employment, on the other hand, has increased rapidly rising from 206,000 to 1956 to 630,000 in 1976, or more than twice the rate of total manufacturing employment including the cottage industries. Employment in factories with over 20 workers increased even more rapidly at a rate of 6.7% p.a., accounting for nearly 56% of incremental employment growth in total manufacturing (see Table I-1). With a low starting base, the contribution of the factory sector to total Philippine employment was only 4.3% in 1976.

Table I-4: RATES OF EMPLOYMENT GROWTH IN PHILIPPINE MANUFACTURING, 1956-76

Size (employment)	Employment				Annual growth 1956-76 (%)	Incremental growth 1956-76 (%)
	1956		1976			
	'000	%	'000	%		
<u>Organized (factory)</u>						
5-19	55	5.7	80	4.8	1.9	3.5
20+	151	15.7	550	32.7	6.7	55.6
Subtotal	(206)	(21.4)	(630)	(37.5)	(5.8)	(59.1)
<u>Unorganized</u> (cottage industries)						
1-4	756	78.6	1,050	62.5	1.7	40.9
<u>Total</u>	<u>962</u>	<u>100.0</u>	<u>1,680</u>	<u>100.0</u>	<u>2.8</u>	<u>100.0</u>

Sources: Appendix Tables 1.27 and 3.4.

1.40 Clothing and footwear has consistently had the largest share (25-40%) of total employment in the manufacturing sector during the period 1960-75, followed by textiles and food (each with 12-16%) and wood products (6-7%). In the organized sector, however, the food industry has always had the largest relative share of employment (see Table 1.28). Compared with some other countries in the East Asian region, the Philippine performance in manufacturing employment generation has tended to lag: in 1963 for example it was considerably higher than in the other countries (as a share of total employment) but by 1975 this was no longer so and it had been by-passed by Korea (Table 1.29).

1.41 The limited labor absorption of Philippine manufacturing stems from a complex of causes. The most labor-intensive sector, the cottage industries, has remained the most important in employment provision but, in terms of employment growth, has steadily lagged behind the relatively more capital-intensive factory sector. Within the factory sector, the Government had a considerable influence on the composition of new industries and the choice of technology through the provision of official credit and investment incentives. In the 1960s, output and investment in industries with relatively higher capital intensity grew more rapidly than in relatively more labor-intensive industries. Investment incentives went predominantly to capital intensive industries producing for the home market and processing primary exports. These incentives themselves had a pro-capital bias and the pricing of capital goods in the economy reinforced the capital-intensive bias in the factory sector. With the growth of labor-intensive nontraditional manufactured exports after 1970, however, labor absorption of Philippines manufacturing has improved. As can be seen from Table 1.18, employment elasticity during 1970-77 in nontraditional manufacturing was 1.0 as against 0.6 for processed primary exports as 0.32 for industries producing for the home market. Consequently, exports of nontraditional manufactures accounted for more than 30% of manufacturing employment creation during 1970-77 while accounting for less than 8% of manufacturing investment.

## 2. Employment Creation (1977-85)

1.42 Continued growth in labor-intensive manufactured exports will bring about dynamic changes in the composition of manufacturing employment and its contribution to new employment creation in the economy. Moreover, as the domestic industry becomes a more efficient producer of intermediate inputs, the linkages between the export sector and the domestic economy can be strengthened. Manufacturing growth, and particularly the growth of manufactured exports, will also be a very substantial provider of employment in both the service sector (transportation, finance, procurement, marketing) as well as in the construction industry.

1.43 Based on the Mission's projection of nontraditional manufactured export growth of 18% p.a. and overall manufacturing growth of 8% p.a. in 1977-85, the manufacturing sector as a whole would create close to one million (i.e., 960,000) new jobs, i.e., 120,000 jobs per year, which is more than one-fifth of the growth in the labor force (600,000 per year) (Table 1.18). In recent years, new employment creation in the manufacturing sector was only 40,000 jobs, or less than one-tenth of the increase in the labor force. In all, manufacturing employment is expected to grow at an average annual rate of 5.9% (or about twice its historic rate) and reach 2.6 million in 1985. At the end of the eight year period, its contribution to the total employment in the economy would reach about 15%.

1.44 Direct employment creation as a result of the continued rapid growth in nontraditional manufactured exports would be around 360,000 new jobs during 1977-85. This compares with a total of 320,000 jobs generated by the manufacturing sector as a whole during 1970-77. Its average annual increase of 45,000 jobs would account for more than one-third of the yearly

addition to the manufacturing work force. Moreover, its share in total manufacturing employment would double from about 8% in 1977 to over 19% in 1985. On the other hand, the share of traditional export industries would remain constant at 7%, while the share of the domestic market-oriented industries in total manufacturing employment would fall from over 90% in 1970 (and about 85% in 1977) to less than 74% in 1985, mainly as a result of its relative capital intensity and its lower output growth (Table I-5 below).

1.45 The projected changes in manufacturing employment will change its structure in favor of factory employment. Employment in the factory sector would more than double between 1977-85 and its share in total manufacturing employment would increase from 30% in 1970 and about 40% in 1977 to over 55% in 1985. On the other hand, the cottage sector would continue to decline. At its historic annual growth rate of 1.5% it would contribute less than one-fifth to incremental manufacturing employment in 1977-85.

Table I-5: EMPLOYMENT GROWTH IN PHILIPPINE MANUFACTURING, 1970-85

	Employment (percentage distribution)			Annual growth (%)	
	1970	1977e	1985p	1970-77e	1977-85p
Traditional manufactured exports	7.0	7.1	6.9	3.9	5.2
Nontraditional manufactured exports	1.5	8.3	19.2	32.0/a	17.0
Domestic market-oriented industries	91.5	84.6	73.9	1.9	4.2
<u>Total</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>3.1</u>	<u>5.9</u>
Of which:					
Factory sector	30.5	37.5	55.4	7.1	10.4
Unorganized sector	69.5	62.5	44.6	1.1	1.5

/a Growth rate inflated due to low base.

e = estimated.

p = projected.

Sources: Appendix Tables 1.18 and 1.19.

1.46 The employment projections assume that investment per job will be \$20,000 in home industries and \$3,600 in nontraditional manufactured export industries (estimates based on the IPPP studies; the Mission's findings suggest investment per job may be lower, perhaps closer to \$2,800 or even lower; see Table I-2 and Annex I-2). These projections imply a decrease in the capital-labor ratio from \$30,000 (in 1970-77) to \$20,000 and an increase



in the employment elasticity of manufacturing output in home industries from 0.32 in 1970-77 to 0.57 in 1977-85. Such changes can be expected to materialize provided greater attention is given to employment effects and capital efficiency in investment decisions; better capital utilization will increase employment while output is accelerating. Should the Government not adopt the various policy recommendations of the Mission, the employment elasticity would not improve and output growth may likewise be lower - perhaps at 6% or less instead of the 8% assumed earlier. This would mean that employment in home industries would continue to increase by only 1.9% (instead of 4.2%), reaching 1.6 million in 1985 (instead of 1.9 million). If, in addition, nontraditional exports were to increase at a slower pace - assume 12% - than the 18% indicated before, the cost in terms of jobs lost would be another 160,000 jobs per year by 1985. In total, the loss in new job creation resulting from slower growth and greater capital intensity would be 450,000 - 500,000 jobs by 1985.

1.47 The acceleration in manufacturing employment and changes in structure are conditional upon the recommended improvements in the incentive system and the continued growth of manufactured exports. The projected changes in employment are not out of line with those observed in other countries in the region. The Philippines' projected growth in manufacturing employment of 5.9% p.a. for the period 1977-85 is less than what was achieved by Korea (15.2% p.a.) in 1970-75 and also Malaysia (6.6% p.a. starting from a low base). In Korea, in 1960-70, manufactured exports contributed 38% to employment growth in manufacturing and 33% in the economy (including indirect employment generation); in 1970 exports accounted for one-quarter of manufacturing employment. As manufactured exports became more important in Korea and Taiwan, the cottage sector also declined in relative importance.

### 3. Employment in Small- and Medium-Scale Industries

1.48 Because of its large relative share in total manufacturing employment and its inherently labor-intensive character, promotion of small- and medium-scale industries should also play an important role in improving labor generation in the manufacturing sector. Besides the need for improvement in labor productivity of small manufacturing activities (discussed in Chapter III), participation of small industries in export development should be encouraged.

1.49 Given a policy environment free of factor price distortions, small- and medium-scale industries in the Philippines should be able to exploit their comparative labor advantage and contribute a substantial part of manufactured exports. Processed foods, apparel, musical instruments, wooden furniture, and footwear are promising areas in this respect. Improvement in quality standards, however, is a necessary condition for a successful performance in the export market and technical assistance at the production level will be required. Since direct penetration of the export markets is intrinsically difficult for small manufacturers, forward linkages with larger scale industries should be developed. Present arrangements seek to accomplish this through internal subcontracting and the help of trading companies.

1.50 However, it should be realized that the product markets for small- and medium-scale industries are, and will remain, predominantly domestic, supplying consumer goods and services to low- and middle-income groups. The level of demand and thus the possibility of a rapid expansion of output in such commodities as processed foodstuffs, beverages, utensils, shoemaking, and ceramic products is dependent on the purchasing power of these income classes. Indeed, the present distribution of incomes in the Philippines seems to be at least a partial explanation for the poor labor absorption performance of the small-scale manufacturing sector during recent years. Wider income redistribution, including increased employment opportunities in rural areas should therefore be considered a major policy measure to stimulate the demand for locally-produced, labor-intensive consumer goods and thus increased employment generation.

#### E. Competition in the Private Sector

1.51 Most of the measures discussed in this report fall in the public domain. Yet it is well to realize that in the end it will be the private sector which must take action to achieve greater competitiveness and growth. With the exception of the National Steel Company, the industries reviewed by the Mission are all in the private sector. The attitude of private management toward industrial development, employment creation and Government initiatives are of crucial importance for the future course of Philippine manufacturing.

1.52 Private managers generally feel that administrative simplification will be a boon to future growth. There is also concern that a reduction in Philippine protection will endanger business in certain sectors and that, moreover, protection in customer markets increasingly handicaps export growth. However, the Mission observes that, while recognizing the real obstacles imposed by the "new protectionism" in industrial countries, Philippine exporters still have numerous opportunities in widening their markets (paras. 1.33 and 1.34). At the same time the Philippines can still go a long way toward removing the penalty on its own exports imposed by the present Philippine incentive system -- at least 30% gross and 20% net (after special export benefits).

1.53 Increased competition in industry and banking should have widespread benefits and would be enhanced by the reduction in tariffs recommended by the Mission. It is difficult to generalize about the state of competition in Philippine manufacturing. Like in other countries, certain industries (e.g., food processing and mechanical engineering) are characterized by a few dominating firms and a host of smaller entities (often using less sophisticated technology). Many businesses are family-held and are not run on modern management principles. It is not easy generally to attain greater competition, and where new investments and modern management inputs are needed, it may not be desirable to force competition before corrective steps are taken. Yet, greater competition will benefit development in most industries, improve capital utilization and product quality and lower costs. Competition is likely to increase with the greater integration of Philippine manufacturing with the international economy which can be expected from continued manufacturing export development.

1.54 Greater competition and eagerness to provide service to industry would also improve the performance of commercial banking, which is one of the main subjects of a parallel Bank mission on issues in the financial system. Increased commercial bank activity is especially important for industrial development outside Metro Manila and for the financing of small export firms. The Mission has dealt with financial issues in Volume Two, Chapters III and IV, and in the discussion of financing of export industries (paras. 34 and 35).

CHAPTER II

INCENTIVE SYSTEM AND POLICIES

2.01 This chapter discusses the major elements in the Philippine incentive system: the customs tariffs and import licensing, the BOI investment and export incentives and the other export promotion measures including certain export credit facilities. It has been well documented in the literature that the system had an impact in orienting industrial development toward the home market, and in giving an advantage to relatively capital intensive production. The industrialization pattern tended to reinforce regional and income disparities and its effect in raising employment and hence income in the poorest population strata was small. Since 1970 a major reorientation toward labor intensive export growth has been under way. In addition the Government has been giving increased attention to small industries (Chapter III). In the final section, the Mission makes a number of recommendations as to how the system might be adapted to the requirements of broader and continuing employment and export growth. The chapter starts out with a discussion of the overall impact of protection, based on the Mission's field work and the UP studies.

A. Overall Effects of Protection

2.02 The key element characterizing Philippine industrial policy since the early 1950s has been the protection of the domestic industrial sector from import competition. The level of protection for the domestic market is high and has remained so since the mid-1960s. The average level of effective protection for the entire economy in 1974 has been estimated at 36% (IPPP, 1979). For manufacturing the average level of effective protection fell from 51% in 1965 to 44% in 1974 (Table II-I). Protection of inputs into construction declined significantly in this period. Despite the over-all decline, the cascading structure of protection in the Philippines, so frequently observed in developing countries, is still strong. The capital goods sector receives considerably less protection than all manufacturing (see also Chapter VI). The export sector is penalized where producers are subject to taxes, in particular on their inputs. In practice, under the Export Incentives Act, many export firms have, since 1970, been put on a free trade basis. Since 1974 a number of tariff items have been reduced, but the 1974 estimates still correctly reflect the overall tariff structure and level.

Table II-1: EFFECTIVE RATES OF PROTECTION FOR MAJOR PRODUCT AND END USE GROUPS

	1965 (%)	1974 (%)
Exports	-19	-16
Manufacturing	51	125
Capital goods	34	18
Intermediate goods	65	23
Consumption goods	86	247

Sources: 1965 estimates are from John H. Power and Gerardo P. Sicat, "The Philippines: Industrialization and Trade Policies" (New York, Oxford University Press), 1970; p. 99. The 1974 estimates are those of Norma A. Tan, "The Structure of Protection and Resource Flows in the Philippines, 1974," IPPP, University of the Philippines, Ph.D. dissertation, 1979.

2.03 A striking feature of the Philippine protection system is the unevenness of effective protection over different industries. Such unevenness has the effect of channeling resources into those sectors with higher levels of effective protection. The food products sector, for example, possesses many industries which receive excessively high levels of both nominal and effective protection. Among these industries are flour milling products, bakery products, candy, cocoa and chocolate products, starch products, and vegetable lards (Table 2.1). Some other industries receiving inordinately high levels of effective protection include distilled liquors, wines, cigarettes, textile mill products, paper products, tanning and leather finishing, rubber footwear, tires, cosmetics, metal cans, household appliances, motor vehicles and fabricated plastic products.

2.04 In contrast, exported products (not benefitting from the Export Incentives Act) frequently receive negative effective protection. Fish canning, leather products, cigars, and embroidered products are but a few examples. That these products are exported at all is a reflection of the strong comparative advantage that the Philippines has in those products and the extension of free-trading regimes to the inputs of exported products. Through drawback schemes and the like, manufacturing exporters can import inputs for their exported products, thus bypassing the ill effects of discrimination by which Philippine commercial policy has raised the prices of tradable intermediate goods (Section B5). The estimate of negative protection for export industries in Table II-1 does not apply to firms enjoying a free-trade regime. These firms receive in effect a subsidy which offsets the effect of protection on inputs. In the garment industry, this "subsidy" is equivalent to 37% of export value and 150% of value added; assuming all inputs are imported, value added is 25% of output and the tariff on inputs is 50%.

2.05 The effect of the protective system has been to allocate resources out of those industries in which the Philippines has a comparative advantage and into those industries where it has, at least, a static comparative disadvantage. An analysis of domestic resource costs in the Philippines (IPPP, 1978) has identified those industries where Philippine domestic resource costs are the least, i.e., where its comparative advantages are the highest (Table 2.1). These industries are frequently those which are exporting. Conversely, industries with the highest domestic resource costs (DRCs) are generally those with the highest levels of effective protection. Statistical tests have demonstrated the strong, statistically significant positive relationship between DRCs and effective protection rates over industries (Table II-2). These same tests also suggest that there has been excessive import substitution in the Philippines. The highest DRCs are for those industries where the ratio of imports to total available domestic supply is the lowest./1

2.06 The greatest Philippine comparative advantages lie in labor-intensive and resource-based products. This is suggested by the positive relationship between DRCs and capital intensity (Table II-2). That this relationship is not even stronger reflects the fact that some primary export processing is relatively capital-intensive. Similarly, as noted above, the system of protection discriminates against those industries where the Philippines possesses the greatest comparative advantages./2

2.07 The incentive system overall has imparted a capital-intensive bias in the economy. The customs structure favors import substitution activities which are relatively more capital-intensive than export industries (other than primary processing), and moreover, capital goods received relatively low protection. The bias of the customs structure is reinforced by the nature and the administration of investment incentives under the BOI. As discussed in Section B3, investment incentives are largely tied to capital equipment, while the firms receiving the benefits have tended to be the larger and more capital-intensive ones in their industries. Further, BOI sanction usually facilitates the allocation of investment credits by official agencies. In short, the effect of the various measures has been

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/1 The actual tests carried out were done with Spearman rank correlations (Table 2.2).

/2 The rank order relationship between effective rates of protection and capital-labor ratios is positive but not statistically significant (Table II-2). Removing natural resource processing industries, and other related attempts involving exports, improved the positive statistical relationship but never beyond the 10% level of significance.

Table II-2: SPEARMAN RANK CORRELATIONS WITH DOMESTIC RESOURCE COSTS (DRCs) AND EFFECTIVE RATES OF PROTECTION (ERPs), 1974

	All manufacturing industries (76 industries)		Manufacturing less natural resources processing industries (54 industries)	
	Domestic resource costs (DRCs)	Effective rates of protection (ERPs)	Domestic resource costs (DRCs)	Effective rates of protection (ERPs)
Effective rates of protection (ERPs)	0.654/a	--	0.648/a	--
Ratio of imports to total available domestic supply (M/Z)	-0.189/a	-0.005	-0.138	0.014
Capital-labor ratio (K/L)	0.245/a	0.083	0.354/a	0.164

/a Denotes significance at the 5% level.

Source: IBRD staff calculations from IPPP data. Some of the data appear in Tables 2.1 and 2.2.

to lower the effective price of capital goods in the economy. However, since the 1970 devaluation and the granting of incentives to labor-intensive export industries, the capital-intensive bias has been lessened. While the Mission has not made a comprehensive review of capital intensity in industry, it did not, in its field visits, encounter cases of excessively capital-intensive production, and in fact in many instances the Mission calls for selective improvements in capital equipment through modernization, rehabilitation (e.g., the textile industry) or expansion or new investment (e.g., in the mechanical and food processing industries). On the other hand, even during the 'seventies manufacturing investment did not change materially in composition and continued to emphasize capital-intensive industries.

2.08 A comparison with other countries further emphasizes the high levels of effective protection for the Philippines (Table II-3). This is particularly the case when the comparisons are made with those countries that have enjoyed considerable success in promoting their manufacturing

exports and achieving high rates of economic growth in recent years. For example, after an import substitution phase Korea adopted more liberalized trading policies and by 1968 it has been estimated that the average level of effective protection for manufacturing was -1% (IBRD, 1977).

2.09 Countries which have experienced very poor performance with respect to economic growth and export growth have frequently possessed high rates of effective protection. For example, Chile and India have been among the developing countries most heavily protecting their industrial sectors (Table II.3). Their average annual total export growth rates for 1966-73 have been a slow 5 and 8%, respectively; manufacturing exports grew not at all in Chile and at 7% annually for India.<sup>/1</sup> In addition to the association between low rates of effective protection and high rates of manufacturing export growth, reductions in high rates of protection are frequently associated with an acceleration in industrial export growth. In South Korea, Taiwan, Thailand, Argentina and Brazil substantial growth in manufactured exports accompanied import liberalization measures.

2.10 The effect of the protection system in the Philippines is to impose the equivalent of a tax on the export sector, the magnitude of which is roughly reflected by the average level of protection. Estimates of the distortions imposed on the economy range from 19 to 34% (IPPP, 1979). The higher estimate, based on the UNIDO procedure, assumes the existing protective structures. The actual price effect in case of full removal of protection might, of course, be smaller, depending on the accompanying adjustments in the balance of payments, in particular the increase in exports which would be associated with a change in protection policy. Although these estimates were made for 1974, the lack of substantive changes in either the protection system or in the real purchasing power parity exchange rate since 1974 suggests that they retain their applicability for 1979.

2.11 Since 1974 the nominal peso-dollar exchange rate has varied little. The depreciation of the dollar in relation to the Japanese yen and European currencies has resulted in a slight real depreciation of the peso since 1974 (Table 2.3).

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<sup>/1</sup> See Bela Balassa, "Export Incentives and Export Performance in Developing Countries: A Comparative Analysis," Weltwirtschaftliches Archiv, Volume 114, No. 1 (1978), pp. 24-61.



Table II-3: AVERAGE EFFECTIVE PROTECTION FOR MANUFACTURING  
IN SELECTED DEVELOPING COUNTRIES

<u>Country</u>	<u>Year</u>	Average rate of effective protection in manufacturing (%)
Argentina	1958	162
	1969	89
	1977	39
Brazil	1966	181
	1967	76
	1973	47
Chile	1961	182
Colombia	1969	29
India	1961	313
Malaysia	1965	6
Mexico	1960	27
Pakistan	1964	271
Philippines	1965	51
	1974	125
South Korea	1968	-1
Taiwan	1965	33
Thailand	1969	50
	1971	40/a

/a Thai estimates are for the import competing manufacturing sector only.

Sources: Bela Balassa and Associates, The Structure of Protection in Developing Countries (Baltimore: Johns Hopkins Press, 1971), p. 54; Ian Little, Tibor Scitovsky, and Maurice Scott, Industry and Trade in Some Developing Countries (London: Oxford University Press, 1970), p. 174; Larry E. Westphal and Kwang Suk Kim, "Industrial Policy and Development in Korea," World Bank Staff Working Paper No. 263, August 1977, p. 3-10; Thomas L. Hutcheson, "Incentives for Industrialization in Colombia," Ph.D. Dissertation, University of Michigan, 1973, p. 68; William G. Tyler, Manufactured Export Expansion and Industrialization in Brazil (Tubingen: J.C.B. Mohr, 1976); IBRD, "Thailand's Industrial Sector: The Changing Role of Policies," East Asia and Pacific Regional Office, November 1978, p. 88; and IBRD, "Argentina: Structural Changes in the Industrial Sector," Latin America and the Caribbean Regional Office, March 30, 1979.

2.12 The international competitive position of the Philippines during recent years has also improved as a result of a decline in wages relative to those in both competing and customer countries (see Chapter I). In any case, wage levels in the Philippines remain low relative to other countries (Table 2.4), reflecting Philippine comparative advantage in labor-intensive products.

## B. Components of the Incentive System

### 1. Customs Tariffs

2.13 Present tariff rates range from 10 to 100%. The 10% tariff is considered a revenue tariff and is levied on all imports unless specifically exempted under an incentive program. The tariffs increase in 10% increments up to the maximum of 100%.

2.14 In addition to the tariff there is a compensating sales tax which is levied in such a way that the effective rate is slightly higher than that assessed on a comparable domestically-produced product.

2.15 The tariff rates as a whole are high. The (unweighted) average over all items is 46%. For agricultural and agriculturally-based products the average tariff is 66%, while for industrial products the average is 39% over the total number of items included. While these averages appear high, they may in fact be deceptively low because some very important single tariff items, such as automobiles and cotton textiles, have very high tariffs. Moreover, there is great unevenness in tariff rates among products and categories (Table 2.5).

2.16 The underlying economic rationale of the observed high tariff levels is the protection of domestic industry. Yet, in many instances, this rationale appears to be inconsistent with actual protection. For example, there is evidence of considerable tariff redundancy, e.g., beer, apparel and footwear. While firms producing these products could successfully compete with imports with much lower tariffs, the redundant tariff levels have an important quantity effect by assuring the domestic market or, as frequently is the case, reserving the entire market for domestic producers.

2.17 In addition to widespread tariff redundancy, the Philippine pattern of tariff protection provides rather high tariffs on products not produced in the Philippines. Products such as sheepskin leather, metallized yarn, woven fabrics made with metallized thread, rubberized textile fabrics, nuts and bolts, and screws are a few examples of those goods not produced in the Philippines but subjected to tariffs of 50 to 100%.

2.18 Changes in tariff levels are the administrative responsibility of the Tariff Commission, which is charged with making studies of the tariff system and conducting hearings. The Tariff Commission makes tariff policy recommendations through an inter-ministerial Sub-Committee on Tariff Matters. Recommendations are passed on to a ministerial level Board on Tariff Policy which in turn presents decisions for presidential approval. Since the last major revision of the tariff system in 1973, some further reductions in tariffs (e.g., on tires, cotton yarn, musical instruments, and electric hand tools) have taken place.

2.19 One significant proposal still being considered involves a reduction of tariffs on 77 textile items. This proposal grew out of a report by the Tariff Commission in March 1978. Action on this proposal was still pending at the time of the Mission's visit. The delay in acting on this proposal illustrates the importance of appropriate governmental agency coordination on tariff questions, and the need to coordinate tariff action with necessary rehabilitation of the industry (see Chapter VII).

2.20 One consideration in tariff reduction stems from the importance of tariffs as a means of collecting tax revenues. In 1977 tariffs accounted for 18% of the national Government's total revenues. To the extent that there are presently prohibitive tariffs, tariff reduction could actually increase tariff revenue by increasing imports by more than the commensurate offsetting decrease in tariffs. It depends upon the elasticity of import demand with respect to price changes brought about by the tariff changes. It is clear that a careful fiscal assessment of tariff policies is desirable. In certain cases (especially luxury goods) tariffs could be replaced by sales taxes.

## 2. Import Licensing

2.21 In order to import certain types of products the approval of the Central Bank is necessary. The requirement for Central Bank approval has an effect similar to import licensing. The system applies mostly to commodity categories classified as "non-essential" and "unclassified" consumer goods. All goods in these classes are restricted and therefore require Central Bank authorization for importation which, if granted, allows importation with the payment of the import taxes. These two restricted categories total 670 out of some 3,500 items in the Philippine tariff schedule. They include such products as canned meats and fish, fresh and preserved fruits, cigarettes, alcoholic beverages, paper, kitchen utensils, television sets, household appliances, automobiles and apparel. Many of these items are exported or are potential exports.

2.22 In addition to import licensing for the "non-essential" and "unclassified" consumer goods categories, the Central Bank also restricts

the importation of a small number of intermediate goods consisting of yarn, textiles, and steel plate. These products are inputs into export production (e.g., garments) or inputs into products used in export production (e.g., cans used in the food processing industry). While imports are supposed to be freely allowable without taxes for a number of export production schemes, in practice there appear to be delays and difficulties in obtaining the import licenses.

2.23 The licensing system appears to be an element in balance of payments management. Nevertheless, the system can be expected to impart a protection element. One attempt (IPPP, 1979) to assess the importance of quantitative restrictions on imports, made direct price comparisons between Philippine prices and international prices for some 200 six-digit SITC commodity groups. The findings were that "in no instance was there a plausible price comparison that suggested an implicit tariff higher than what is estimated from the tariff and tax system." As such, this study minimizes the importance of quantitative import restrictions. In plant visits, however, the Mission found several instances in which the import licensing system is an obstacle toward product improvement, greater competition, and the provision of intermediate goods for export industries and firms. In some cases (e.g., steel products) price controls keep down the prices of licensed products; this has at times aggravated supply problems and further contributed to plant inefficiency. The restriction of competition from imports has enabled a number of firms (e.g., in the textile and steel-rolling industries) to operate at uneconomic levels of capacity utilization and costs. Furthermore, there are frequently important quality differences between domestic and imported consumer goods. Tastes for such goods also frequently favor the imported product. Without import licensing there would unquestionably be greater imports of luxury consumer goods.

2.24 The Central Bank also administers exchange controls related to capital movements, service payments, and foreign travel. Restrictions on foreign exchange purchases for travel abroad have been detrimental to Philippine export marketing efforts and, as a result, to export growth. Exporters often experience difficulty in arranging travel abroad to market their products.

### 3. The BOI Incentives

2.25 In the past decade a new form of industrial policy has emerged in the form of a system of fiscal incentives administered by the Board of Investment (BOI). With the implementation of the Investment Incentives Act (R.A. 5186) in 1967 a series of fiscal incentives was established to attract investment into activities deemed to have priority and to be consistent with national economic development objectives. Both new and established firms are eligible in the preferred industries for the incentives. A so-called "pioneer" project, involving either new products or processes, is eligible for additional benefits. The intention of the legislation was to provide

incentives to both projects where domestic capacity was estimated to fall short of domestic demand and to projects with an export potential. In practice, the emphasis under this Act tended to be on import-substitution type of activities. In exports, the emphasis was initially on relatively capital-intensive processing of primary products rather than labor-intensive manufactured exports.

2.26 To offset this deficiency and provide a promotional thrust to manufactured export activities, the Export Incentives Act (R.A. 6135) was passed in 1971. While most of the incentives under the two incentives acts are quite similar, the Export Incentives Act offers some additional benefits to export-oriented firms. The restrictions on foreign ownership are waived for firms exporting more than 70% of their output, and there are a few extra fiscal benefits, involving mainly the possibility of operating a bonded manufacturing warehouse for the duty-free importation of intermediate goods used in the production of exports. As a result of the Export Incentives Act an increasing proportion of incentives granted by the BOI is now extended to nontraditional manufactured exports. In 1977 34% of total BOI benefits were extended under the Export Incentives Act. It should be realized, of course, that many projects benefitting under the Investment Incentives Act are also export producers (largely primary product processing, both agricultural and mineral). In 1977 Investment Incentives Act benefits went to firms producing \$875 million in exports, while firms receiving Export Incentive Act benefits produced exports of \$715 million (Tables 2.6a and 2.6b).

2.27 Of the varied incentives described in detail in Annex II-1, there are several that predominate (Table 2.7). For projects registered under the Investment Incentives Act, the exemption of import taxes on imported capital equipment and the accelerated depreciation allowance amounted to 40% of the total value of the incentives granted in 1977 (65% in 1975). Both of these incentives, along with a few others, are subsidies on the use of capital.

2.28 While these incentives are also significant for export projects, other incentives, not involving a subsidy on capital usage, emerge as the most relevant. In particular, the provision allowing for the deduction from taxable income of an amount related to labor costs and indigenous raw materials expenditure accounted for 53% of the value of the incentives to export-oriented BOI-registered firms in 1977. The tax credits for import taxes on products used in export production accounted for an additional 21%. Tariff exemptions on imports used in export production are permitted under three additional programs: (i) the permission for some BOI-registered firms to operate bonded manufacturing warehouses; (ii) the drawback scheme, which refunds the tariffs paid; and (iii) export processing zones (see Section 5).

2.29 The protection from dumping, however defined, and the possibility of receiving additional tariff protection in the domestic market up to a

tariff level of 50% are potentially important protective instruments. Under the Industrial Incentives Act legislation the BOI is empowered to recommend the postoperative tariff increases to the Tariff Commission. In practice, the authority has been used quite sparingly, perhaps because tariffs in many instances already approach, or exceed, the 50% limit.

2.30 The effect of the BOI fiscal incentives for import-substitution projects is to complement the incentives for domestic market production provided by the tariff and import licensing system. Home market protection is increased. The additional protective effect afforded by the BOI incentives appears rather modest in the aggregate, although for individual firms it can be significant. Incorporating the BOI incentives into estimates of effective rates of protection does not appreciably change the level of effective protection for most industries <sup>/1</sup> (Table 2.8). Only in a few industries is there more than an increase of a couple of percentage points. Although tariff rates averaged 38.9% in 1974, it has been estimated that the tariff equivalent of tax subsidies averaged only 1.4% (IPPP, 1979); the reason for this relative insignificance at the aggregate level is that the BOI incentives and the output of BOI-registered firms are quite small in relation to output for the entire industry.

2.31 Seen from the point of view of the individual firm, BOI benefits can be an important factor in its profitability. Measured as a percentage of sales, the benefits frequently do not exceed the equivalent of more than 2 or 3%, but sometimes range up to 25 or 30% (cf IPPP Working Paper No. 16, Table 1). Annex I-1, based on Mission firm interviews, shows estimates ranging up to 11 or 12% of sales in the textile and garment industries, 29% in canned beef and 23% in the mechanical engineering industry.

2.32 If the magnitude of the BOI incentives for domestic market production are seen to be quite small in the aggregate, the same is the case for the incentives for exports. Yet the aggregate are not the most relevant measures. What matters are the effects that the incentives have on individual firm profitability. The BOI incentives can reach considerable magnitudes, especially if large investments are being made. On an operating

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<sup>/1</sup> There are two features in these estimates that overstate the additional protection in the domestic market afforded by the BOI incentives. First, the incentives themselves have been overstated. The full amount of a deduction from taxable income is considered as the amount of the incentive rather than only that amount times the corporate income tax. Second, no distinction is made between incentives awarded for home market production and those related to exports. The latter should be excluded.

and production basis, there are some limits imposed on the effective subsidies provided to export activities. In practice, the most important BOI incentive for export has been the tax deduction for labor costs and local raw material purchases up to 25% of the firm's export sales. Assuming the firm is exporting all its output and has sufficient labor and local raw material costs, the maximum that this incentive can reach in value to the firm is 8.75% of the value of its output.<sup>/1</sup> Depending upon the circumstances of the individual BOI-registered firms, the actual magnitude of the incentives provided to different incentives varies widely.

2.33 For the aggregate of all recipient firms in 1977, the total subsidies and rebates received under the Export Incentives Act amounted to 9% of their export sales (Table 2.9). This amount has increased in recent years; in 1973 it was only 3%. Of the BOI-registered firms interviewed, most indicated that their current BOI benefits received ranged from 2-12% of their export sales value. One firm, manufacturing sports shoes, indicated that it was receiving about 20% of its export sales in BOI benefits. Even for such a firm fortunate enough to receive the full complement of BOI incentives, these incentives are still not of such a magnitude to offset the distortions imposed by tariffs and government commercial policy. And most firms do not receive the full complement of BOI incentives.

2.34 In addition to being eligible to receive the BOI fiscal incentives, there are several other, more intangible benefits for a firm in being registered by the BOI. BOI registration in effect constitutes a governmental recognition and tacit approval of the firm and its activities. On the basis of this recognition, the firm's dealings with other parts of the Government may be facilitated. For instance, with a letter of endorsement from the BOI it is easier for a firm to obtain foreign exchange for marketing efforts abroad. In addition, the Central Bank is also said to treat a firm's requests for import licenses more expeditiously if it is a BOI-registered firm. Finally, BOI registration may facilitate access to long-term credit from official financial institutions such as the DBP.

2.35 A wide range of industries have received benefits from the BOI. Under the Investment Incentives Act the industries that have received the most benefits are copper smelting and refining (36% of total benefits in 1977), pulp and paper (16% of 1977 total), chemicals and chemical products, and synthetic textile fibers. For the export projects those industries which have received the most BOI attention and benefits include chemicals and chemical products, fiber products, garments and textiles.

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<sup>/1</sup> This incentive may in fact be very important for the profitability of the firm. Through this incentive some export-oriented producers producing goods with a high domestic raw material content escape national income taxation altogether.

2.36 Benefits under the Investment Incentives Act have tended to go to the larger and more capital-intensive firms, both firms producing for the home market and primary export processing firms. (In 1977 some 62% of benefits went to firms in industries with above average capital intensity. See Table 2.10). A relatively small portion of the benefits went to smaller firms (e.g., with fixed assets of less than P 5 million, as shown in Table 2.11). On the other hand, benefits under the Export Incentives Act have been more evenly distributed over firms of varying size and have gone to more labor-intensive firms (Table 2.12). Export-oriented firms have received benefits under both Acts, with the benefits under the Investment Incentives Act going to relatively more capital-intensive firms than those under the Export Incentives Act (Table 2.12). Finally, the capital intensity of BOI preferred projects were generally higher than industry averages while capital efficiency estimates were lower (Table 2.13).

#### 4. The Administrative Impact of the BOI

2.37 The BOI plays a key role in Philippine industrial policy through its administration of a complex set of incentives. As the manufacturing sector grows, the administrative burden and responsibility placed upon the BOI, under present arrangements, will increase. Reducing the administrative complexity of the incentive system and facilitating its administration will become increasingly important if the system is to function smoothly in an expanding economy.

2.38 As noted, the BOI operates within the priority plans, worked out in collaboration with the NEDA. In determining priorities, the BOI does not have at its disposal an overall strategy for the development of key subsectors. The Mission recommends that more work be undertaken on a strategy for the mechanical and food processing industries, which must necessarily play a critical role in the country's economic objectives in coming years.

2.39 Once a priority subsector is identified, all firms in that subsector are eligible for the relevant incentives. However, on the firm (project) level there is some unevenness in the way in which the incentives are in fact applied. In particular, given the administrative requirements imposed by the BOI on firms, only the larger firms can effectively benefit from the incentives. In other words, the system de facto discriminates against small- and even medium-sized enterprises. Moreover, there is an element of regional discrimination present as well. The BOI maintains its only office in Manila, and to deal with the BOI it appears a firm must either be located in Manila or send representatives to Manila frequently. The answer to this particular problem is not to create regional offices but rather to streamline and simplify the process regardless of firm size or



distance from Manila. In other words, greater automaticity should be introduced into the BOI system. A simplification of BOI rules and procedures would promote both SMI development and regional diversification.

2.40 In some situations the BOI rules may well tend to penalize managerial efficiency by placing limits on firm profitability. BOI rules stipulate that firms with a rate of return on equity over 20% are not eligible for the BOI incentives applied to capital equipment. Similarly, if a firm with benefits earns more than 33% for two consecutive years, the rules state that the BOI must terminate benefits. If the Government decides to encourage the development of a particular industry, equal treatment of all firms in the industry would avoid putting a penalty on good management and efficiency.

2.41 Future BOI efforts to simplify procedures could involve several elements. Certain incentives could be applied to all industry and not be subject to administrative discretion. For example, consideration might be given to including extra tax incentives for labor and local raw material cost in the fiscal system. Subsectors eligible for BOI incentives would be determined in advance on the basis of economic appraisal and special strategy studies.

2.42 Within the BOI system, the following might be considered: First, after a subsector has been deemed to warrant support, granting benefits to all firms in that industry would serve to reduce distortions and improve resource allocation, as well as reduce administrative burdens on the BOI. Second, general guidelines for the amount of incentives a firm could receive in a certain industry could be established from time to time. Within those guidelines, no separate BOI examination should be required, except for very large projects. The firm would be able to avail itself of incentives automatically up to the limits set by the guidelines.

2.43 A third means of simplifying BOI procedures could involve the "expansion plan" process. At present, firms are registered with the BOI for a certain capacity; expanding beyond that capacity requires BOI approval. If BOI incentives could be extended to plant expansion beyond the size originally approved, the detailed examination of extensive "expansion plans" by the BOI could be avoided. The government is, of course, interested in avoiding excessive capacity build-up within an industry (as happened in cement and coconut processing). The credit system could possibly become more effective in avoiding such excess capacity situations by being more restrictive in its willingness to refinance corporate failures. Until this happens the Government may have to continue exercising some check on excessive plant expansion.

2.44 Simplification of the procedures for granting incentives will require close coordination with other government agencies such as the Bureau of Internal Revenue and the Customs Service. The Mission feels that an increased emphasis on the economic analysis of projects would assist in streamlining the evaluation process.

## 5. Export Incentives

2.45 Export incentives have been instrumental in expanding and diversifying manufactured exports. Continued export growth will require simplification in the administration of export promotion measures. To the maximum extent feasible export producers, large and small, should have duty-free access to raw material inputs. Domestic supplies to the export industries should also be eligible for duty-free imports of their own inputs. Finally, small producers need help in maintaining uniform quality production standards, marketing, procurement and obtaining finance.

2.46 Import and Export Procedures. The various methods under which duty-free importation is currently approved are subject to administrative decision and often require considerable time for the entrepreneur, tie up working capital, or the eligibility rules are too restrictive. The marginal deposit scheme requires the local purchaser of imported materials to place a deposit, often up to 50% of the purchase price or more, with a commercial bank. Deposits may be tied up for several months, thus raising the cost of working capital finance./1

2.47 Duty-free importation of inputs is effected through the drawback system or bonded warehouse arrangements. The drawback system involves many steps of documentation and approval before a refund of the deposit (equal to the full value of import duty required) takes place. The duty is frequently returned only after several months and is partly in the form of tax credits.

2.48 The credit of the marginal deposit scheme and the drawback may add more than 5% to the export costs (Table II-4).

2.49 The bonded warehouse system enables the exporter to store imported materials for a longer period without having to pay duties and thus cuts back the time in which working capital is tied up in import duties. The bonded manufacturing warehouse system, or "manufacture-in-bond", permits export industries to operate on a truly free-trade basis without being physically located in an export-processing zone. This system is currently only available to exporters specifically "endorsed" for this purpose by the BOI and employing at least 150 workers in the case of an existing company or 600 workers in the case of a newly established manufacturer. An additional requirement is that at least 70% of the output is to be exported and strict conditions are set in terms of minimum domestic value added, the quality of the company's management and its financial position. As a result, the bonded manufacturing warehouse facilities are only available to well-established, larger scale, export industries.

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/1 Producers in EPZs are exempt from this requirement.

Table II-4: PENALTY ON EXPORT THROUGH CREDIT SYSTEM

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	% of export value
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<u>Drawback</u>	
6 months	2.00
3 months	1.00
<u>Marginal deposit</u>	
6 months	3.75
4 months	2.50
<u>Total penalty</u>	<u>3.50-5.75</u>

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Assumptions: interest rate is 15%; raw material imports are 50% of export value; duty is 50% of c.i.f. price of raw materials.

2.50 Paperwork and procedures required by government agencies appear to present a genuine obstacle to many export producers, especially the smaller ones. A recent Presidential Decree (No. 930) has already cut the required export documents from 13 to 6 and instituted exemptions for holders of periodic clearance certificates. It would seem appropriate to consider further simplification, in particular the creation of a "one-stop export office" to which every exporter would submit a single set of documents. Such an export office would have the responsibility of circulating papers among the various agencies and return them to the exporter within a prescribed time frame. The more individual authority this "export office" would have, the quicker the clearance process could be completed.

2.51 Export Financing. The Central Bank has a special rediscount facility (at a rediscount rate of 4%, recently reduced to 3%) for financing of exports.<sup>/1</sup> The present facility is split into financing of traditional manufacturers and nontraditional manufacturing exports. The latter has been underutilized (71% of the amount set aside has been taken up during the last three years), even though the borrower pays 10% (including 1% commission) as against the commercial rate of 16%. Exporters consider the percent preferential rate high in relation to the rates available to their competitors in other countries. Further, smaller producers find it difficult to make use of the facility.

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<sup>/1</sup> The value of eligible loans has been raised from 80% to 100%.

### C. Recommendations

2.52 Any changes made in the Philippine system of incentives should be discussed and undertaken in the context of certain overall objectives of industrial policy. These objectives are:

- (a) Facilitate export growth, particularly of labor-intensive industries.
- (b) Increase the linkage between manufactured export development and the rest of the economy, mainly through increased domestic procurement of raw materials and components at economic prices.
- (c) Encourage the economic development of manufacturing for the home market, particularly strategically placed but lagging sectors, and industries which can become more efficient through rehabilitation and renewal.

2.53 A rationalized system of incentives for the Philippines would consist of two principal elements. They are:

- (a) The reduction and evening out of tariffs and other forms of protection for domestic market production; and
- (b) The provision of greater incentives for export, especially of manufactured products.

#### 1. Reduction in Protection and Liberalization in Import Restrictions

2.54 The average level of tariff protection is excessive and should be reduced. A gradual reduction in overall tariff levels will make the economy more efficient and competitive, support manufacturing export development, and help spread its effects to the rest of the economy.

2.55 Modifications in the existing custom tariff structure should be aimed at progressively evening out the structure, while still providing for a flexible response in the demonstrated presence of dumping. The reordering of the customs tariff should possess the following elements. In introducing lower and more even protection, the Government should follow the course of expeditious across-the-board action, except in selected cases where specific industry programs are mounted to establish more competitive conditions through modernization, renovation and new investment. These selective programs will go hand-in-hand with the lowering of tariffs to levels suggested by the Mission (usually 20-30%). Across-the-board action can be taken in the short-run: this is true for the steps recommended under (a), (b), and (c). On the other hand, the establishment of protection levels tailored to specific industry conditions and programs may require a longer period of time (the steps recommended under (d), (e), and (f)).

- (a) The lowering of peak rates. There are many products with very high rates of nominal and effective protection. Included are such industries as cotton textile fabrics, paper products, bakery products, rubber footwear, paints and varnishes, household appliances, and fabricated plastic products. An acceptable rule of thumb would be to gradually, but very explicitly, lower all tariffs falling in the 70-100% range.
- (b) The lowering of tariffs to remove redundancy. In instances where there is redundancy in tariffs, the tariffs serve no positive economic purpose and should be reduced. Candidates for such tariff reductions include apparel, beer, furniture and pineapple products.
- (c) The lowering of tariffs for products not produced in the Philippines. There is no economic rationale for such protection. If tax revenue is to be raised by taxing such items, a general excise tax, applicable to both imports and any domestically-produced products, is the appropriate instrument.
- (d) The lowering of tariffs for those industries where studies have identified possibilities of achieving greater productive efficiencies through rehabilitation, restructuring and renewal. This is the case for textiles and steel products. Industries which supply inputs to export industries should receive special attention.
- (e) The use of tariff protection for infant industries possessing strong potential comparative advantages. If economic analysis indicates the possibility of economic import substitution, tariff protection should be employed during an initial period to promote that industry. Similarly, export subsidies can serve the same purpose. It is clear, for instance, that the Philippine capital goods industries are "underprotected" by commercial policies. Yet, as discussed in Chapter VI, there are very strong potential comparative advantages in some of those industries. In fact, the existing domestic resource cost estimates by and large demonstrate that the capital goods industries possess present comparative advantages as well. These industries should be actively promoted by government policy. As a rule, as viable projects are presented, tariffs on capital goods may be brought in line with the general tariff level, and exemptions from such tariffs, as allowed by the BOI for import substitution projects, should be selectively curtailed.
- (f) The linking of tariffs with export performance. The provision of protection in the domestic market in selected situations should be made conditional upon export performance. This amounts to a cross-subsidization of manufactured exports. Experience elsewhere

has demonstrated that such a scheme, if properly applied, can be highly instrumental in promoting exports. The cross-subsidization system works by requiring that a minimum proportion of sales be exported in exchange for retaining tariff protection in the domestic market. The export percentage can be implemented gradually and set in cooperation with the industry producers' associations. Selected new projects receiving BOI investment incentives could have export targets expressed as a condition for receiving the incentives. While many industries should fall under this type of arrangement, some leading examples are automobiles, consumer durable products, chemicals and textile rehabilitation projects.

- (g) The overall reduction of tariff levels should be accompanied by a concomitant winding down of the import licensing system. Without the concerted reduction of import licensing, tariff reductions would result in a possible expansion of the restrictions imposed by the import licensing system and an increase in the windfall profits for those importers fortunate enough to secure import licenses from the Central Bank. Consequently, for tariff reductions to be economically effective, the import licensing facility should be phased out, products effected. To ward off untoward events in a balance of payments crisis, an office in the Central Bank could be established to monitor imports and impose quantitative restrictions for balance of payments purposes under emergency circumstances.

## 2. Changes in the Export Incentive Regime

2.56 Providing greater incentives for exports should include the establishment of free trading regimes for manufactured export industries to the maximum extent possible. This involves: (a) duty-free importation of raw material and components; and (b) providing additional assistance to help industries overcome the disadvantage of operating in an economy with high protection. While duty-free importation of inputs used in export production is currently allowed under a number of schemes, the machinery needs to be strengthened and effectively extended to small firms. The drawback scheme, for instance, reportedly works poorly.<sup>/1</sup> These schemes should be simple, automatic, fast and entirely certain.

2.57 Even with perfectly functioning drawbacks and tariff exemptions, the present system is restricted to firms engaged in direct export manufacturing. "Indirect exports" are placed at a disadvantage; in fact under

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<sup>/1</sup> One firm with frequent drawback dealings reported that it had never received the full amount it was entitled to under the drawback.

present policies, given tariff protection, domestic suppliers to export firms are discriminated against. The extension of free trading regimes to all inputs for export production presents a danger of providing further discrimination. Care must be exercised not to discriminate against local producers supplying intermediate inputs.

2.58 Steps toward more effective export procedures and financing might appropriately start with the introduction of a special facility for the financing of inputs into export production. Such a facility could, of course, be introduced only if it fitted into the country's overall financial policy. On the basis of export orders, producers would be able to obtain low-cost financing (letters of credit) for raw material and component purchases (both imports and domestic procurement). The letters of credit, subject to special Central Bank rediscounts, would also make the import eligible for duty-free entry. In the case of local procurement, the domestic producer could use the local letter of credit for duty-free importation of his requirements. This system has two advantages over present arrangements: (i) it provides special financing for raw material imports which are not covered by the present Central Bank facility, and (ii) it makes duty-free import of exporter requirements more general and automatic. Thus, it would extend the free trade regime for exporters, make the present arrangements (described in Section B5) more automatic. Under such a system the present Export Incentives Act would play a less important role.

2.59 If the proposed credit-cum-duty-free entry arrangements could not be adopted, several other steps should be considered as a next best solution to make the present system more effective: (a) reduce the delays in refunding deposits of import duties in the case of the drawback and bonded warehouse systems; (b) refund duty payments instead of providing tax credits and (c) relax the stringent requirements for the operation of bonded manufacturing warehouses and make the system more easily available to both small entrepreneurs and new export industries./1

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/1 In this connection, attention should also be given to a wider application of Customs Administrative Order No. 3-78. This CAO provides for the release from customs custody (without payment of duties and taxes but under bond) of imported materials to be processed into export products by small-scale industries which do not have the financial capacity to make prior payments of duties or to operate a bonded warehouse. A certified copy of a valid and subsisting contract between the local firm and the foreign buyer is required. Small-scale industry under this Order is defined as having an authorized capital stock of less than one million pesos. The present CAO is limited to imports under consignment and it might usefully be liberalized to include imports on own account.

In the longer run, consideration should be given to the establishment of a network of regionally dispersed mini-industrial estates which should include bonded export processing facilities. This will enable small-scale producers, in particular, to participate in export production, possibly on a cooperative basis.

2.60 Commercial banks can improve their service to export firms, particularly the smaller and newer ones, by setting up special "export departments," staffed with experts to assist and encourage potential or existing exporters to make use of the export financing facilities. Export loan application procedures could be simplified and made more comprehensible to small businessmen. Further, the absence of an export credit guarantee scheme limits export development. Action should be taken to establish an export credit insurance and guarantee scheme which would minimize credit risks in export transactions. A Philippine Export Credit Insurance and Guarantee Corporation was created in March 1972 but is still not operating.

2.61 Small exporters initially lack the essential production, marketing and quality control skills to produce a consistently competitive export commodity and are, therefore, considered high risk clients by the commercial banks. Close supervision and technical assistance at the production level are required to make such small exporters more creditworthy. Efforts should, therefore, be made to establish a form of "supervised credit," either through collaboration between the commercial banking institutions and the existing small business advisory organizations or through the closer liaison with cooperative bodies as is currently under experimentation in the shoe industry. Such a system might be eventually considered for all SMI operations.

2.62 The "Accredited Trading Companies" (ATCs), which the Government recently decided to promote, could potentially play an important role in this respect. P.D. 1319, which became effective at the start of 1979, provides very sizable incentives for ATCs in terms of access to favorable rediscounting privileges, liberal export payment terms and access to the incentives under the Export Incentives Act. These private trading companies are expected to (a) assist in marketing of the products of small-scale exporters, (b) enforce quality control through technical assistance, and (c) provide export financing. So far, however, the response from the private sector to the new legislation has been negative. While the incentives are generally perceived as advantageous, the eligibility requirements with respect to minimum net worth, minimum export sales, range of export products, number of overseas representatives, etc., are considered too restrictive. A relaxation of these conditions is therefore recommended.



CHAPTER III

SMALL AND MEDIUM INDUSTRIES

3.01 Small- and medium-sized industries (SMIs) employ, together with the cottage sector, close to 80% of the work force in manufacturing and produce only 25% of value added. While these data are highly tentative, they do illustrate the low output per worker, particularly in the smaller-sized firms. The low labor productivity is in part caused by limited use of capital equipment - in many cases perhaps even more limited than is indicated by the low level of labor costs.

3.02 Small-scale enterprises are concentrated in those industries which have been reviewed in Chapters VI and IX of this report: mechanical engineering, garments, footwear and furniture. SSI accounts for more than half of value added or employment in these industries. The role of SSI in food processing is also large, but it has been declining (see Chapter VIII).

3.03 Like large-scale manufacturing (in enterprises with 200 workers or more), SMIs are heavily concentrated in Metro Manila and the surrounding central regions (see Chapter IV). However, the cottage industries are less so concentrated.

3.04 Since the early 'seventies the Government has been giving increasing attention to the role of SMIs in Philippine development, and as part of this effort, the sector has been receiving larger amounts of technical assistance and finance. NEDA identifies the SMI sector as of strategic importance in employment creation and regional dispersion. To improve understanding of the needs of the sector, several studies have been undertaken or are under way. The Mission has drawn on these studies.

3.05 In dealing with the SMI policies, one must necessarily allow for the effectiveness of present SMI assistance measures as well as for the impact which general industrial policies have on small-scale enterprises. The small size of enterprises and their dispersion puts them at a disadvantage vis-a-vis the large-scale enterprises. With the exception of programs specially designed to deal with SMIs, the Government's general programs for industrial development, e.g., those embodied in the incentives administered by the BOI, are mostly geared to the larger enterprises.

A. The Cottage Sector

3.06 Most of those employed in the manufacturing sector work in very small enterprises (less than 20 workers) are usually referred to as cottage industries. The cottage or unorganized sector employs over one million workers, about two-thirds of the total number employed in the manufacturing industry as a whole. This group includes many very small service workshops and some producers of low quality utilitarian goods such as footwear, furniture and garments which find a market among the poorer consumers of the domestic market. The overwhelming majority are engaged in what may be termed cottage or household craft industries (see Tables 1.28 and 1.29).

3.07 Cottage industries are relatively more important in the Philippines than in many other industrializing countries. In the mid-1970s about 2.5% of the total Philippine population were engaged in household and cottage industries against a percentage of as low as 0.2% in Brazil.

3.08 Cottage industries, registered with the National Cottage Industry Development Authority (NACIDA), are exempt from sales or other taxes and from minimum wage legislation. To be eligible, firms must have fixed assets below P 100,000 and sales below P 400,000. In 1978 some 86,000 firms were officially registered with NACIDA (Table 3.1). Firms manage to continue their NACIDA registration even after their asset value has outgrown the legal limits. Others reorganize the enterprise under a new name after an initial year and thus are able to start a new NACIDA registration.

3.09 Cottage industries are so organized that for each directly employed worker there are 3 to 4 "indirect workers" engaged in their own households for the cottage enterprises.

3.10 Cottage industries make a significant contribution to the Balance of Payments. Exports of craft industries grew from US\$27 million in 1973 to US\$84 million in 1977 (an annual growth of 33%) (Table 3.2). Only the garment industry and a few special categories (e.g., rattan furniture) have been able to show similar growth rates in manufacturers' exports. In addition a large part of the output of the cottage industries is sold to tourists and foreigners residing in the country. As tourism has grown substantially since 1975, the sales within the country of local handicrafts has increased also. In addition, domestic value is relatively high since virtually all the cottage industries work with local materials such as wood, rattan, bamboo, wicker, leather, shells, and local fibers and cloths.

3.11 Most cottage industries sell through private traders who, although take large profit margins, are the main organizers of handicraft export trade. NACIDA itself has some large stores, mainly in Manila, but the cottage industries claim they do not show aggressive marketing, and they take goods only on consignment. Many cottage enterprises prefer to use private trading channels.

3.12 NACIDA has developed programs for providing assistance in training and, together with the Design Center, has also helped in improving designs. The Design Center of the Philippines has made assistance to craft enterprises the major focus of its work. The technical assistance program of the Ministry of Industry - through the SBACs and MASICAP - has also given considerable assistance to cottage industries in the regions. In fact, in some areas the major beneficiaries of both these programs have been in the cottage industry category.

3.13 The cottage industry sector in the Philippines will continue to play a significant role in employment and exports, and deserves continued support from the Government. Employment is provided at times and in regions where it can complement the seasonality of agricultural demand for labor.

However, more effort must be made to integrate the activities of the sector within the general programs of industrial development. For this reason, NACIDA needs to upgrade its staff and be integrated more with the programs of the Ministry of Industry. At present, NACIDA activities depend on the Ministry of Trade, and there is little relationship with the Ministry of Industry which has the primary responsibility for industrialization and exports.

3.14 Technical assistance is needed primarily in marketing, skill upgrading and design. This is particularly important in those cottage industries which sell in competition with large-scale industries such as footwear, furniture, garments, ceramics and some metal and food items.

3.15 The present system of providing support through tax exemptions may, in many cases, act as a deterrent to growth of some enterprises for fear of losing these privileges. Further, more financial resources need to be made available. The cottage industries still depend to a great extent for working capital on short-term, high-interest financing from traders, as the amounts made available through the commercial banking system are inadequate. According to Central Bank records, only 2% of the portfolio of commercial banks at the end of 1977 was in credit to cottage industries and the overwhelming majority of this was in the Metro Manila area in the form of short-term working capital loans. (See Table 3.3.)

3.16 As the organized sector grows, it may increasingly draw labor away from the cottage sector. However, as long as opportunities for industrial employment remain limited outside the Metro Manila area, and wages in the organized sector remain low, cottage industry as a source of income for the rural labor force, will continue as a reasonable - and in many cases as the only - alternative. Government efforts should therefore be directed both at assisting the modernization of these activities (transformation into SMIs), and improving incomes for those who continue to be engaged in cottage industries.

## B. Growth of SMIs

3.17 Between 1968 and 1977 some 11,000 new SMI firms were established. The annual birth rate over the 25 year period 1951-1977 was 560, but this increased to over 1,000 in the 1968-77 period (see Table 3.4).

3.18 Failures among SMI firms are relatively high. The causes have not been studied in detail, but excessive competition, inadequate finance and poor management are important contributory factors. Usually the Government permits market prices to operate and does not help out small failing enterprises, as it often does with larger firms (or as is done in some other developing countries).

3.19 The Mission projects manufacturing employment to increase by some 120,000 jobs per year in the next several years (Chapter II). Labor-intensive industries are likely to be major providers of new employment. Most of these

are likely to be labor-intensive export industries operating through large-scale firms. If the SMIs are to expand and contribute to new employment, they will have to become more efficient and be more closely integrated with large-scale manufacturing. As recommended in the chapters dealing with specific industries, steps toward greater efficiency and rationalization will need to be bolstered by increased access to both short- and long-term finance.

3.20 Additional efforts may best be concentrated on existing, relatively more efficient firms rather than creating new enterprises. To some extent this is happening already. It appears to be the approach followed by PDCP in the allocation of investment credits. Further, in the Cebu area, there appeared to be stagnation among firms with less than nine employees, while employment in the large firms increased by 11% in 1975-78.

3.21 Special efforts are called for to help disperse SMIs to the outer regions. Concentration in and around Metro Manila has been strong. From 1967 to 1972 small- and medium-scale industries with 10 to 199 employees in Metro Manila and its adjacent areas of central and southern Luzon increased from 61.3% of the total number of SMIs in the country to 69.9%. In 1972-75, after some measures to restrict further development in the capital and some incentives and assistance programs had been initiated in the outer regions, the concentration remained almost unchanged. In 1975, 69.2% of SMIs were located in the central areas around Metro Manila. Although the increase in concentration around Manila was halted, only 32.5% of new SMI firms were established outside the central regions in 1972-75 and in 1975, 47.3% of Philippine SMI firms were still located in Metro Manila.

### C. Labor Intensity and Capital Efficiency

3.22 Smaller firms are generally more labor-intensive than larger enterprises. The following table (taken from an UP-ISSI sample study) gives the book value of assets (in thousands of current pesos) per worker:

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Year	SSI	MSI	LSI	Total
1968	6.5	14.9	13.2	11.0
1970	6.9	15.2	18.2	14.2
1973	8.0	18.4	26.3	19.9
1974	8.5	19.7	25.8	19.1

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3.23 The upper limit in the DBP and IGLF financing program guidelines for SMIs has been ₱ 30,000 (more than \$4,000). A Presidential Decree (No. 1123, dated June 1976) defined labor-intensive industrial activities as those with capital-labor ratios of not more than ₱ 30,000 in capital assets per unit of labor (about US\$4,000).

3.24 The Mission is not in a position to arrive at any general conclusion about the capital efficiency in Philippine manufacturing. Within some industries small-scale firms are the more efficient users of capital (as estimated by data on the value added per unit of capital). Where this is true (as for example in rubber shoes, foundries, fabricated metal products) there may be a strong basis for productive technical assistance. Some studies suggest that in manufacturing as a whole capital efficiency is generally larger in the relatively more labor-intensive industries. /1

#### D. Subcontracting

3.25 Both the efficiency and quality of small-scale enterprise could be helped through subcontracting by the larger enterprises. However, this interrelationship between SMIs and large manufacturers is not yet well developed in the Philippines. The larger industries lack confidence in smaller suppliers, particularly with regard to quality and delivery. A sample survey conducted by the UP/ISSI in 1974 found that 16% of the SSIs sampled were engaged in some form of subcontracting work to fill orders by larger industries. This may be compared with 60%, estimated to be the proportion of SMIs in Japan engaged in subcontracting in 1976. In the automobile industry procurement from smaller firms was an element in the PCMP, but for several reasons this has been achieved only to a limited extent (paras. 6.23-6.27). Similar efforts are contemplated in the production of trucks and other products.

3.26 More generally, the main reasons for the low level of subcontracting in the Philippines are:

- (a) The relative underdevelopment in manufacture of parts of machinery, appliances, transport and electrical equipment, etc., where most subcontracting could develop;

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/1 A UP study that ranked industries by capital intensity found that 9 out of the 10 most labor-intensive industries with less than ₱ 5,000 unit per worker are also those with the highest value added per unit of capital. Only 4 out of the 72 industries that had a lower than average capital efficiency were labor-intensive industries according to this study. The labor-intensive industries that were inefficient in the use of capital were leather and leather products, wood furniture, and knitting (Table 3.5). Cf. "Factor Productivities and Intensities in Philippine Manufacturing with Emphasis on Establishment Size, 1974" (IPP Working Paper, UP, June 1978).

- (b) The inadequate capacity and capability of SMIs to undertake subcontracting work at the level required;
- (c) The insecurity and financial problems felt by SMI entrepreneurs in relying too much on subcontracting;
- (d) The inadequacy of assistance available to the SMI subcontractors either from large industry or from institutions to help them to meet quality and delivery requirements;
- (e) Ignorance on the part of the large-scale industries of where and who in the SMI sector has the capability and facilities for carrying out subcontracting orders.

3.27 It can be expected that, as discussed in the case of the mechanical engineering industry, these problems will be overcome as the individual industries themselves improve their technical capability. To a large extent this can be facilitated by large-scale firms and large users of industrial products (e.g., the Government). In this process the specialized technical institutes (e.g., MIRDC) can play a crucial role. The Ministry of Industry can help by giving advice on subcontracting under its SMI assistance program. The Government could provide incentive to subcontracting through public procurement favoring suppliers who subcontract substantial parts of orders to SMIs, and through encouraging bidding for Government contracts of groups of larger- or medium-sized enterprises together with a number of smaller subcontractors. Over time regional subcontracting offices could become clearing houses for the provision of advice and information on major procurement activities of Government agencies and larger enterprises.

3.28 In some situations subcontracting has been used as a means of avoiding the minimum wage legislation (e.g., in the furniture and garment industries). While the desirability of minimum wage legislation should be studied fully, there is a case for legislation, as has been enacted in Japan, to prevent abuses through subcontracting.

#### E. Technology and Assistance Programs

3.29 There are big variations in technology employed by different industrial enterprises in the Philippines. Most large-scale (and some medium-scale) enterprises resort to links with foreign firms to obtain technological guidance. Usually this is through technological licensing schemes. The Philippines spends tens of millions of dollars each year in payment of royalties for patents and licensing agreements. This is now supervised by the Technical Transfer Board in the Ministry of Industry. MOI scrutinizes technology agreements to ascertain that payments are not excessive and are for appropriate purposes.

3.30 Smaller- and medium-sized enterprises tend to use simple, even primitive technologies. Much of their equipment is either of a basic or obsolete type. This inadequate equipment, compounded at times with outdated

technological knowledge, helps to explain the low levels of labor productivity in many countries. The low wage level has, of course, contributed at times to poor labor utilization.

3.31 Some efforts are now being made to develop the use of indigenous technologies. An Invention Guarantee Fund (IGF) has been set up to provide financial assistance to invention projects, without the necessary collateral to obtain DBP or commercial bank financing. In such cases, the IGF will provide a guarantee and may thus provide some help and stimulate the growth of local innovation.

3.32 Several specialized institutions are engaged in the provision of technical advice and training for individual industries, e.g., textiles, mechanical engineering, food processing and forest products. As discussed in the individual industry chapters of this report, these institutions could become more effective through more active field work and stronger relations with financial and business advisory organizations. Most of these technical institutions require more budget assistance and some should be represented in the industrializing outer regions. (See Annex III-1.)

3.33 The major programs of the Ministry of Industry are the Medium- and Small-Industries Coordination Program (MASICAP), providing assistance in formulating SMI projects, and the Small Business Advisory Centers (SBAC) operating outside the central regions. Their activities and those of other Government agencies interested in SMIs have, since 1974, coordinated through the Commission for Small and Medium Industry (CSMI). In practice, the effectiveness of the CSMI has been limited by the diversity of its task and the multiplicity of the agencies represented.

3.34 There is an urgent need for strengthening vocational training, apprenticeship, and technical training throughout the Philippines, and particularly in the outer regions. The lack of skilled workers will soon become a major bottleneck to industrial development. Several industrialists, particularly in such fields as shipbuilding, furniture making, machine construction and maintenance, are already complaining of the difficulties of finding suitable skilled workers and retaining them. The Ministry of Industry, in part acting through the specialized technical institutes, might best take the lead in mounting a more effective program of vocational training for industry.

3.35 In all, Government budget outlays for the SMI assistance programs have been only P 8 million (Table 3.6). They could be made more effective by tackling some of the following shortcomings:

- (a) The lack of experience of the very young professionals (average age 24) who man the SBACs, and even younger in the case of MASICAP.
- (b) The poor coverage due to manpower constraint, high proportion of travel time, immersion in somewhat theoretical plant surveys involving 1 to 3 months consultant time and leading to limited recommendations.

- (c) Inadequate familiarity with and acceptance by local business and financial representatives.
- (d) Lack of adequate help and support to the centers from headquarters and technical institutes to whom referrals are made.
- (e) Too high staff turnover and staff movements due to poor salaries and difficult working conditions. Turnover which reached 42% (there is reason to believe the most competent and dynamic left) in 1977, dropped considerably in 1978 due to commitments of staff to serve a period after initial training.

3.36 MASICAP suffers from similar difficulties as the SBACs; but, as its role is more limited, it has more easily adjusted to staff limitations. MASICAP's inexperienced staff has generally dealt with only small projects - 42% of MASICAP's projects to the end of 1978 involve loan requests for less than P 50,000, and 70% for less than P 150,000, the upper limit of DBP branch manager's authority. There are two disturbing features that should be mentioned regarding MASICAP's performance:

- (a) The drop in number of MASICAP projects prepared despite staff increase (from 1,525 projects prepared in 1976 to 1,050 in 1977, and from 695 actually financed in 1976 to 544 in 1977). The full significance of this drop is difficult to assess since it may indicate a greater selectivity in the projects assisted and may also reflect the changed policies of the financing institutions.
- (b) The relatively high rate of arrears and failures in MASICAP projects realized. Somewhere on the order of 50% of all MASICAP prepared projects are in arrears, or have failed completely.

3.37 MASICAP and SBACs must be judged as a low cost program to reach out to the SMIs in the regions. More experienced personnel, available for consultation with younger staff, would be able to enhance the effectiveness of the advice given by SBACs and also the calibre and complexity of the projects prepared by MASICAP. Despite shortcomings, both programs have made contributions toward helping the sector and have created what may in the future develop into an important case of motivated extension workers for the SMI sector.

3.38 Some possible lines along which the assistance program may be strengthened are:

- (a) Organizing a group of more experienced older part-time technical consultants to help the SBAC and MASICAP group at each location drawn from large and medium industry, academic institutions, consultants, and - if such exist - retired professionals.
- (b) Encouraging the development of more field offices of technical institutes and close coordination of SBAC, MASICAP with this staff, and where feasible directed by regional offices of the MOI.



- (c) Building up groups of more experienced technical sectoral specialists at the regional level.
- (d) Organizing more advisory services at a group level through preparing modular materials, e.g., costing systems, planning and control, layouts for furniture, garment factories, machine shops, etc.
- (e) More reliance on technical information and quicker advice limiting assistance to no more than 4 or 5 days per firm to increase coverage.
- (f) Closer coordination of SBACs with financial institutions and training programs.

3.39 Bigger budgets, increased staff, some improvement in salary scales, travel allowances, and provision of more vehicles would probably help not only to raise quality of performance, but also improve morale and efficiency. A career development program for MASICAP staff members, including two years in industry after their MASICAP period, further advanced training, and then returning to work a number of years in SBACs might also help to improve staff performance levels.

3.40 A strengthened program of technical help for SMI will need to be reinforced by increased financial assistance. Commercial banks at present limit themselves essentially to short-term finance and are heavily concentrated on Metro Manila and the central regions. The DBP and the special rediscounting by the Central Bank through IGLF are the only programs, with external assistance, for investment finance available to SMIs. It seems clear that if the more efficient subsectors of small industry are to make a greater contribution to employment creation, and if their integration with modern manufacturing is to be accelerated, they will require more financing. The Mission has made some specific recommendations about the financing of small export firms (see Chapter II). One would hope that the activities of financial institutions be more closely integrated with the technical assistance programs for SMIs. They could also fruitfully focus on programs for specific industries (e.g., furniture or footwear, reviewed in Chapter IX). These observations are of particular importance for long-term finance and all types of credit provision in the outer regions. In addition, means should be explored for providing more equity finance to SMIs. (See Annex III-2).

CHAPTER IV

THE REGIONAL DISPERSAL OF MANUFACTURING

A. Present Concentration

4.1 Industry /1 in the Philippines historically has been concentrated in Manila. In 1975, some 73% of manufacturing value added and 65% of employment was located in Manila and the surrounding provinces. This represented a surprisingly small change from the 67% of value added in 1971.

Table IV-1: REGIONAL SPREAD OF MANUFACTURING, 1975

	<u>Manufacturing Value Added</u>		<u>Employment</u>	
	<u>P Million</u>	<u>%</u>	<u>No.</u>	<u>%</u>
Manila	8,472	51.2	732,353	45.3
Central Luzon and Southern Tagalog	3,524	21.3	312,143	19.3
Other	4,541	27.5	571,331	35.4
<u>Total</u>	<u>16,537</u>	<u>100.0</u>	<u>1,615,827</u>	<u>100.00</u>

Note: More detailed statistics are included in Tables 4.1-4.5.

Source: NEDA.

4.2 The only industries in which there is any degree of dispersion are the resource-based food and wood industries. If these industries were excluded, the 1975 proportion of manufacturing value added in Manila and environs would have risen to 87%. This is a striking figure. It means that virtually all manufacturing industry, outside of some resource-based industry and some small industry serving local markets, is based in Manila. Certainly all the labor-intensive industry, on which the successful export drive has been based, is in the Manila area. (For example, 91% of the clothing and footwear industry and 95% of electrical equipment.)

4.3 Most of the larger investment projects are also concentrated in and around Manila (Table 4.6). Up to the end of 1977, 275 of the 515 projects registered under the Investment Incentives Act were in Manila and environs./2 The projects registered under the Export Incentives Act were even more concentrated with 132 of 160 projects in Manila and Central Luzon. The industry that is located outside of Manila is, in turn, located mainly in

/1 This chapter considers only manufacturing industry. The mining sector is regionally diverse, but is concentrated in several large projects and its inclusion would distort the presentation.

/2 This figure includes mining projects.

the industrializing regions of the Western Visayas, Central Visayas and Northern and Southern Mindanao. These areas accounted for 19% <sup>/1</sup> of 1975 manufacturing value added, leaving only 8% for the remaining non-industrial regions. These remaining regions are overwhelmingly rural and agricultural and are not likely to industrialize rapidly in the next decade. Regional development, if it is to be cost-effective, should concentrate on agriculture in these regions, whereas industrial development efforts should be directed to the industrializing regions of the Visayas and Mindanao, referred to above. Additional efforts to encourage industry in the Central Region to ease the increasing population pressure are also warranted, including possibly a satellite cities strategy for Central Luzon and Southern Tagalog.

#### 1. Reasons for Concentration

4.4 The heavy concentration of industry in Manila has arisen for a number of reasons: political, social and economic. The policies followed during the import substitution drive of the 1950s and 1960s depended on the availability of imported materials and intermediate goods. The natural location of these industries was near the major port of Manila. In addition, the major consumer market was in Manila. At the same time, the Government licensing system that arose to administer the imported materials was centralized in Manila. Industries in the regions that relied on domestic resources did not get the same impetus from the Government's policies and, consequently, grew slower. The proportion of gross value added in manufacturing in Manila increased from 50% to 64% between 1948 and 1961. These pressures were reinforced by the lack of industrial infrastructure in the regions. Without adequate telephones, power, roads and water supply, modern industry will not develop. Some efforts, of course, are being made, for example through the National Electrification Program, but in many major regional cities, power is still expensive and subject to frequent interruptions, roads are congested, telephone service is poor, ports are crowded, and water is scarce and delivered at low pressure. The infrastructure problems, in turn, are worsened through the natural difficulties arising from the geographic isolation of many areas in the Philippines, with the accompanying need for more efficient inter-island transport.

4.5 Further constraints to the development of industry in the regions have arisen through the concentration of Government decision-making in Manila. Some organizations, such as NEDA, have regional staffs, but the BOI and the MOI have only one office in Manila. This has made it more difficult for entrepreneurs in the regions to avail themselves of the incentives offered for industry. The Mission believes that the correct approach to this problem is to restructure and simplify the incentives system and make it more automatic in its application (as discussed in Chapter II). This would help in making investment incentives more easily available for regional industry than at present.

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<sup>/1</sup> Including the metal fabrication facilities in Iligan City which is classified as Central Mindanao.

## 2. Effects of Concentration

4.6 The Government has been keenly aware of the regional disparities in industrial growth and investment and has sought to divert industry to the regions. The main concerns have been the desire to ease the overcrowding in Manila with its consequent economic and social costs, and to ease the problems of unemployment and outmigration in the regions. The problems in Manila with its congested roads and urban slums are obvious, yet Manila is still attracting more people each year. The 1975 Population Census recorded that the proportion of the population that had immigrated to Manila from other provinces between 1971 and 1975 was 8.3%; this compares to 3.1% for the rest of the country.<sup>/1</sup> This immigration pattern reflected closely the high and growing incomes in Manila compared to other regions (see Annex Table 4.7). For example, in 1975 per capita GDP in Manila was ₱ 4,529 (1972 pesos) compared to ₱ 1,625 for the whole country.

4.7 The most efficient way, in the long term, to tackle the problems of regional disparities is to increase incomes and provide infrastructure and key industrial services, including finance in the already industrializing regions outside Metro Manila. The key to increasing incomes lies in industrial investment leading to increased manufacturing output and absorbing work force increases that cannot be handled by increasing agricultural production.

### B. Present Strategies and Policies

#### 1. Planning

4.8 The Government, through NEDA and assisted by UNDP and the Bank, has devoted much effort to regional planning. The 1978-1982 Development Plan,<sup>/2</sup> inter alia, pointed to regional income disparities and stressed the Government's objective of making depressed regions grow faster than the richer, more developed regions. This would be achieved through an integrated approach to each region's development, highlighting the expansion of agricultural production, together with improvements in the distribution and marketing systems. At the same time, industrial development, particularly small and medium industries, would be encouraged and infrastructure support and social services provided. In general, industrialization is envisaged as the long-term output of the program and the key to providing productive

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<sup>/1</sup> The only other regions with relatively high immigration ratios were Northern Mindanao, 6.1%, and Southern Mindanao, 6.0%.

<sup>/2</sup> Five-Year Philippine Development Plan, 1978-1982, Manila, September 1977. In addition, a separate Plan has been prepared for each region.

employment. Under the Plan, the regional cities are to serve as the basic providers of services and facilities to the disadvantaged areas and as links between such areas and the national economy.

4.9 The Bank, in its role as Executing Agency for the NEDA/UNDP Regional Planning Project, has assisted NEDA in developing regional plans. /1 Regional investment programs will be prepared for each region during 1979, consisting of programs and project packages, to translate into action the objectives and strategies of the regional Five-Year Plans. This emphasis on project implementation cannot be stressed too much. Sufficient broad planning has been done and the efforts of the Government should turn towards the more difficult practical problems of designing and executing projects to increase income and thus lessen regional inequalities. Project implementation is discussed below.

## 2. Incentives

4.10 Industry in the Philippines operates under a comprehensive and complicated system of tariffs, import licensing and fiscal incentives (see Chapter II). In themselves the tariff system and most of the investment incentives are meant to be neutral in their regional impact, although to the extent that they disadvantage small and medium industry or labor-intensive industry, they indirectly discourage regional dispersal, since these are the industries that, ceteris paribus, might be expected to locate outside Manila. The industries that by and large have been encouraged in the regions are relatively capital-intensive primary-product processors located near supply sources. To the extent that the incentive system has encouraged relatively more capital-intensive import substitution industries, they have tended to locate in or near Manila.

4.11 The most direct policy designed to assist dispersal from Manila is the ban on new non-export projects within a 50 km radius of Manila. This ban, however, has meant simply that industry has grouped just outside this limit, particularly in Cavite and Laguna provinces. While this has helped ease the congestion in the heart of Manila, it has not helped the more remote regions. The 50 km ban has recently been relaxed following complaints about the difficulties it caused. Another discretionary policy influencing location is BOI's practice of negotiating the location of projects at the application stage. A large electronics factory is planned for Baguio, and a watch factory for Cebu. This practice is a step in the right direction, but

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/1 The Bank also studied in detail a regional strategy for Region VII. See Report No. 2264-PH, "The Philippines: A Development Strategy and Investment Priorities for the Central Visayas (Region VII)", January 4, 1979.

broader and more specific measures to assist industrial relocation are necessary if any real progress is to be achieved. Policy measures are discussed in paras. 4.19-4.25 below.

4.12 The only investment incentives specifically directed towards assisting regional dispersal are the deduction of twice labor cost plus local raw material cost from taxable income up to a maximum of 25% of export revenue, and a tax credit of 100% of infrastructure works undertaken by an export firm in the provinces. These incentives, however, have had a minimal impact on regional dispersal. Studies undertaken in the UP Study /1 found that firms did not regard them as significant. Since any registered firm can claim a labor cost plus local raw material deduction, the extra labor cost deduction is worth something only to firms with labor cost and raw materials less than 25% of export revenue; this severely limits the value of the incentive. The other incentive, the tax credit on infrastructure, amounts to a substitution for adequate public infrastructure expenditures, and many firms are not prepared to incur such heavy front-end infrastructure costs, even if they may eventually receive a tax credit, and then only if their project is profitable.

### C. Future Steps

#### 1. Infrastructure

4.13 The crucial bottleneck is in infrastructure, and this problem should be addressed as a matter of priority. The major regional cities need main infrastructure such as water, power, telephones and inter-island transport; and the Government's plans for provision of such infrastructure should continue to be given high priority. Experience in other countries has shown that industrial estates can be an efficient way to package infrastructure for industry at reasonable cost. In present circumstances, prepared industrial sites for the outer regions with available water, power, roads, telephones and other necessary services are a key prerequisite to regional industrial growth. Provision of such sites, of course, should usually follow delivery of the main infrastructure. NEDA and the Planning and Project Development Office of the Department of Public Works, Transport and Communication have drawn up plans for regional industrial estates. The problem is how to implement the estate program.

4.14 The industrial estate program, as outlined in the Five-Year Development Plan envisages estates in major regional cities, such as Davao and Cebu, but also proposes estates in the more depressed regions such as Albay and Northern Luzon. Such estates in depressed parts of the country are intended to ease the social problems arising from chronic unemployment and outmigration. While these objectives must be encouraged, the Mission questions whether providing industrial sites is an efficient way to achieve them. In

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/1 Working Papers Nos. 4 and 23.

remote areas, where industry is minimal, agricultural development will be more effective than industrial sites in increasing income. The absence of industrial sites and services is only one of the factors inhibiting industrial growth in the depressed regions. The absence of skilled labor, remoteness from markets, or lack of experienced entrepreneurs are likely to be stronger reasons for the lack of industry. By contrast, in the major regional centers, where industry is, at least to some extent, growing naturally, such factors are less important, and the infrastructure problem becomes of prime importance. Consequently, industrial estates, with the support of external infrastructure, should be focussed on major regional cities as growth poles.

4.15 Such a focus is also indicated because the resources, both financial and managerial, that can be devoted to estate development are limited, and their dispersal over many cities would only lessen the chance of quick, tangible results. To minimize initial costs, areas must be chosen which already have significant natural growth and future potential. This would ensure that the investments have the quickest and largest impact. Obvious cities for estates are Cebu, Davao, and perhaps Iloilo or Bacolod. These estates could handle medium-sized labor-intensive industries. The Cagayan de Oro/Iligan corridor, with its cheap power and deep water ports, is the obvious place to serve heavy industrial development. Other estate sites may be viable in the longer term, but should probably be developed only after the above projects have been proven successful. The estates should be developed in or near the existing towns, since their probability of success will decrease the further they are from the natural growth centers.

4.16 In addition to these projects, Central Luzon and Southern Tagalog, the most populated of the regions outside Metro Manila, must necessarily be developed as a major industrial center and as such, action should be taken to locate suitable industries in designated parts of this region. Such action would help provide an alternative pattern of industrial location, supplementing any restriction on industrial development in Metro Manila as discussed in para. 4.23 below.

4.17 While NEDA has drawn up the industrial estate program, the Mission feels that the responsibility for coordinating the program's implementation should rest with a line agency, preferably the Ministry of Industry. At the same time, actual project implementation should be carried out at the regional level, either by public or private companies. If necessary, regional development corporations could be established to operate estates.

4.18 The Government, through the Export Processing Zone Authority, (EPZA) has built an Export Processing Zone at Bataan and is constructing another on Mactan Island near Cebu. The Bataan Zone has been a great help to industries located there in simplifying import and export procedures. The Zone employs over 20,000 people and had gross exports of US\$44.8 million in 1977. However, the Zone was built in a remote area with consequent heavy costs which cannot be recovered. In the future, the EPZA intends to construct such zones in places where population and some infrastructure already exist. These zones will help exporters move to the regions. In addition, the regional

industrial estates should contain bonded warehouses for individual businesses or serving groups of smaller entrepreneurs to facilitate export. At present, bonded warehouses must belong to one firm and are allowed only to BOI-registered companies.

4.19 The Mission feels that industrial infrastructure in place, as discussed above, will substantially reduce the current bottlenecks. However, efforts will also have to be made to press ahead with plans for improving inter-island transport to link the major industrial centers with raw material sources and with markets. Such transport is crucial, given the geography of the Philippines, and without it industry will develop to serve local areas but will not reach the full potential that could arise through an efficient linking of the country's major commercial centers.

## 2. Incentives

4.20 It is clear that incentives should play a greater role in assisting regional decentralization, if the Government's objectives are to be achieved. Along with infrastructure development, appropriate incentives and credit provisions are the most effective tools to ensure that industry will move away from Manila and the Center (i.e., Central Luzon and the Southern Tagalog provinces adjacent to Manila).

4.21 Given positive steps to improve infrastructure and other essential services such as credit, a positive incentive policy would induce industries to locate away from the Center and make the best use of the advantages being offered in the outer regions. In particular, those regions which already have some industrial base (Western and Central Visayas and Northern and Southern Mindanao) have economic advantages (e.g., lower wage costs, lower construction costs in some cases, and less congestion) which entrepreneurs should be encouraged to exploit through proper incentives. A positive incentive policy would encourage regional dispersion by: (i) discouraging industry in Metro Manila; (ii) giving neutral treatment to investment in the growth region surrounding Manila; (iii) encouraging the outlying regions by giving them preference in the administration of a simplified incentive system; and (iv) avoiding excessive fiscal costs.

4.22 Further, export incentives would aim at putting all export producers on a free-trade basis, permitting duty-free imports of raw materials and other inputs into export industries, and providing preferential credit for working capital. The simplified system recommended in Chapter II would be easier to administer and give firms in the outer regions the same advantage enjoyed by those in the Center.

4.23 Until recently, industry in Manila was limited by the 50 km ban on non-export oriented projects. However, such a ban may be too restrictive in that it may not be practical for certain industries, say, for market or supply considerations, to locate outside of Manila. A more efficient way to discourage industry in Manila would be to levy an increased industrial property tax in Metro Manila and encourage, through a simplified incentive system, the establishment of larger projects outside the Center. For this



purpose the Center would include, in addition to Metro Manila, the Central Luzon Region and the Southern Tagalog Provinces adjacent to Manila. The objective would be to induce location of new major industries outside the Center, but still to allow those firms that had a sufficient need to be in the Center. Conditions in Manila could also be helped through more comprehensive locational planning to smooth traffic flow and ease industrial crowding. Another way to avoid congestion in Manila would be for the BOI, as a general policy, not to extend investment incentives in Manila, except in those special cases that fitted in with locational planning or could show that they did not add to congestion.

4.24 A property tax surcharge on industrial sites in Manila would lead to accelerated growth in the central region just outside Manila. Such development should be encouraged, but should occur naturally without special incentives. For the remainder of the country, special encouragement should be given, particularly to the larger projects. The Board of Investment can encourage the location of large economically viable projects in the outer regions by direct negotiations. The incentives, as discussed in Chapter II, should be simple to operate and administer and apply equally to all firms within the industries being encouraged. In administering them, special attention should be given to the economic rate of return, the protection required and the employment effect. Of special importance in the outer regions would be tax credits or subsidies for labor training, deductions of labor cost from taxable income, and tax credits for necessary infrastructure development. Further, in the outer regions, a somewhat lower rate of return might be tolerated in order to allow for any disadvantages of locating in the outer regions and the external benefits from easing congestion in Manila. For example, if in the Center the cut-off rate of economic return were 15%, it might be 10% in the outer regions. The extent of preference given is difficult to determine a priori but should be related to the additional costs of locating outside the Center. The Government could study these costs to obtain some idea of appropriate incentive levels. These recommendations, if adopted, would mean that the incentives system would have a much sharper focus in encouraging regional dispersal than is now the case.

4.25 The current BOI practice of regional promotion through negotiation on individual project location should be continued, particularly with respect to large capital-intensive projects. If such projects are economically justified, they should be directed to the regions where they would also be instrumental in attracting ancillary industries, often smaller and more labor-intensive.

4.26 It must be stressed that, without adequate infrastructure, such an incentive policy will not work. Industry will continue to group in and around Manila and additional taxes will only add to costs and prices. A dual policy of infrastructure and incentives is the key to a successful dispersal of industry.

### 3. Regional Industrial Promotion

4.27 Some decentralization of Government decision-making for industry is necessary. In many cases, businessmen have to be in close contact with government institutions and regional businessmen may be disadvantaged when they have to deal with Manila all the time. How much decentralization is necessary? Too much centralization will disadvantage regional entrepreneurs, but, on the other hand, too much decentralization will increase bureaucracy and impose additional burdens on the Government's already limited staff resources.

4.28 Currently, the planning function is regionalized through NEDA, but industrial policy decisions by the MOI and BOI are centralized in Manila. The small industry programs, such as MASICAP and SBAC, are regionalized and, in fact, MASICAP operates only outside Manila. At present, businessmen in the regions, especially the smaller ones, are handicapped by having to deal all the time with Manila in the complex and lengthy process of obtaining BOI registration and incentives. However, if incentives were simplified and the outer regions given preference, there might be fewer problems in dealing with Manila. The BOI Governors are making increasing efforts to represent their policies to the outer regions through personal visits and seminars. Further action in this complicated task may well be worth considering. For example, there might be some advantage in having one BOI officer stationed in major cities such as Cebu and Davao, to explain BOI procedures and help firms in applying for incentives. Regional industrial development would also be helped substantially through a strengthening of existing regional administration, in the cities and provinces and in the main line agencies. Proposals to strengthen regional administration should receive the wholehearted support of the Government and should be included in a program of strengthening industrial support services in the outer regions.

### 4. Finance and Credit Policy

4.29 Adequate industrial finance is another key prerequisite to a successful dispersal policy. The regions are presently served by branches of most major Philippine banks; development finance for industry is provided mainly through branches of DBP and through private development banks (there are 35 such banks spread throughout the country). IGLF funds are also available for SMI in the regions. Despite such services, businessmen in the regions continue to complain of difficulty in obtaining sufficient finance, particularly working capital finance.

4.30 The Government, attempting to make finance more readily available to regional industry, has directed that DEP and IGLF aim to channel 60% of their lending to areas outside Metro Manila. In fact, over the past three years, 59% of IGLF's loans and 71% of DBP's industrial loans have been made outside Manila, with 29% and 22% respectively in Central Luzon and Southern Tagalog. The commercial banks directed most of their industrial operations to Manila, and by March 31, 1978, 92% of total private commercial bank credits outstanding in manufacturing were in Metro Manila. Hence, there is no doubt that the commercial banks - and the financial community in general - should make a much greater effort in assisting industrial investment and production in the outer regions. Clearly, Government action in infrastructure and industrial

incentives should be supplemented by greater private financial support. Without more financial cooperation, regional industrial development will continue to suffer.

4.31 Businessmen in the regions also complain about the excessive time taken for DBP to process loans. One procedure that does delay processing of loans through DBP is that loans over P 150,000 must be approved by the head office in Manila. DBP's management restrictions, however, are necessary at this stage to ensure the quality of its loan portfolio in the regions. While it is necessary to continue improving project appraisal and supervision capabilities of branch staff, some restrictions are likely to be necessary to cut down on future arrears. Nevertheless, it is important that DBP make continued efforts to increase the supply of funds and reduce processing times, at least in the more rapidly growing industrial areas. This could be approached by finding ways to give more autonomy and increase staff capabilities in the larger branches. As an alternative, regional development banks could be considered for the more rapidly growing outer regions.

4.32 There are signs that project finance is becoming more readily available in the regions. PDCP now has 5 regional branches and has plans for one new branch per year. The private development banks are under review for increased financing through a rediscount facility with DBP, and DBP has established a training institute for staff of private development banks to upgrade their development banking skills. In the future, such banks may become an efficient channel for financing investment in the outer regions from official sources. Furthermore, the proposed extension of IGLF facilities to medium industries and the increased margins for banks using IGLF should increase the credit supply in the regions. Further impetus could be supplied if the Government were to consider favorably applications for new banks headquartered outside of Manila. In the final analysis, however, increased credit will come most readily with an increased pipeline of bankable projects and this will occur only if the Government introduces the correct policies to reduce the regional disadvantages described in this chapter and if more effective technical assistance is given to SMIs.

## 5. Other Policies

4.33 Many other Government policies will have an impact on regional industrial dispersal. The export policies, including trading houses and free zones (discussed in Chapter II), will certainly help the growth of export industries to use the low labor costs outside of Manila. Any strengthening of the MASICAP and the SBAC programs will directly help regional SMIs, since these programs are already directed away from Manila. Similarly, policies such as labor training and industrial extension services in the engineering industries will have a direct effect on SMI in the regions. In particular, there is a shortage in many areas of adequately trained skilled labor, and labor training in the regions should be given increased emphasis.

## 6. Regional Project Promotion

4.34 The projects that could feasibly be initiated in the regions fall into three main groups: (a) industries relying chiefly on cheap labor and infrastructure, such as garments, electronics, and footwear; (b) large capital-intensive projects, such as the proposed iron and steel complex; (c) projects based on domestic raw materials, such as in the food processing sector.

4.35 The analyses of individual industries (Chapters V-IX) give examples of branches that might have special advantages in the outer regions. Besides the leather and furniture industries, special mention might be made of the possibilities of locating food processing industries away from Manila (e.g., an integrated sardine project in Palawan). The suggested small power loom weaving project (Annex VII-2) would also be suitable for development in the regions. Certainly economically viable capital-intensive projects should be directed to the regions, where their linkages would create much needed employment and improve regional incomes.

4.36 Further project promotion and preparation work will result from the current phase of the NEDA/UNDP/IBRD Regional Planning Project. The outcome of this work should form the basis for a ranking of viable projects in accordance with resource availability. Accompanying such project preparation, regional and local government administration capabilities should be improved so as to ensure that the identified projects can be quickly and smoothly implemented.

### D. Summary of Recommendations

4.37 In summary, the Mission recommends the following steps to assist in regional dispersal of industry:

- (a) Emphasis on infrastructure improvement, particularly on industrial estates in selected areas of the country with high potential for industrial growth;
- (b) Simplification of investment incentives and hence no large-scale decentralization of BOI;
- (c) In administering investment incentives, the outer regions would be given preference, especially for larger projects, and location in Metro Manila would be discouraged through an increase in industrial real estate tax and unavailability of investment incentives except in special cases;
- (d) Improved planning of locating suitable industries in Metro Manila, Central Luzon and Southern Tagalog;
- (e) Increased commercial bank financing of industry in the outer regions; and
- (f) Increased investment finance through existing institutions and expansion of the private development banks in the outer regions.

CHAPTER V

THE STEEL INDUSTRY

A. Structure and Organization

5.01 Philippine steel making dates back to 1951 when a rolling mill for bar products was first started. Since then, it has developed into an industry with some 50 firms, with a rated (rolling) capacity of over 2 million tons per year (tpy).

Sub-sector	<u>Number of firms</u>	
	1974	1978
1. Melting and rolling plants	29	31
2. Sheet rolling mills	1	1
3. Tinning plants	1	1
4. Sheet - galvanizing plants	9	10
5. Tube and pipe mills	<u>5</u>	<u>7</u>
<u>Total</u>	45	50

5.02 As summarized in the following table, the structure of the Philippine steel industry differs from that of many other steel producing countries in that indicated capacity for rolling and finishing (over 2.0 million tpy) is large in relation to market demand (about 1.05 million tpy), and especially in relation to its very low rated raw steel capacity (about 450,000 tpy).

Table V-1: THE STRUCTURE OF THE PHILIPPINE STEEL INDUSTRY

Product Group	Number of Plants	Typical Products	Indicated Rolling/Finishing Capacity (tpy)	Steelmaking Capacity (tpy)	1977 Actual Production (tpy)	% Capacity Utilization
Non Flat Products	32	Wire rod/bar, Reinforcing bar, small sections	1,250,000	(Below)	472,000	38%
	(10)	(Of which have steelmaking capacity)		(458,000)	(234,000)	51%
Flat Products	1	Hot rolled coil, plate + sheet	500,000 <u>/a</u>	(None)	110,000 <u>/b</u>	22%
	2	Cold rolled coil and sheet	300,000 <u>/a</u>	"	193,000 <u>/b</u>	64%
Coated and Other Products	1	Tinplate	130,000	"	82,000	68%
	9	Galvanized sheets	395,000	"	102,000	26%
	5	Pipes and tubes	130,000	"	40,000	31%
Totals	50		2,700,000 <u>/a</u> (Appx)	458,000		37% <u>/c</u>

/a Not all is available for sale, i.e., some hot rolled product is used for cold rolling and pipe, some cold rolled is used for tin and galvanized, etc.

/b 1978 data.

/c Composite, including steelmaking.

5.03 National Steel Company, the main producer of flat products, has fairly modern (but low capacity) rolling mills for plate, hot rolled coils /1 and sheet, and cold rolled coils and sheet. It has no primary steelmaking capacity for flat products, but instead utilizes semi-finished products (mainly slabs, and some hot rolled coils /2) purchased mostly from Japan and Australia as its raw material.

5.04 In non-flat products, the industry is characterized by a large number of small rolling mills (primarily for reinforcing bar and wire rod) which are based mainly on use of purchased billets as raw material. However, several plants for non-flat products have their own small electric furnace and/or open hearth steelmaking shops which produce "billet-sized" ingots for rerolling. Almost half of the billet equivalent tonnage is locally produced. One firm (PBM) has a modern continuous casting machine for the production of continuous cast blooms for subsequent rolling. The range of production equipment runs from modern and efficient /3 electric arc furnace shops with modern rolling mills (i.e., Armco - Marsteel) to older bar mills using much manual labor, and old, high-cost open hearth steelmaking furnaces (PBM). Although continued operation of several parts of the non-flat steel producing sector may not be economic, the older (often almost fully depreciated) plants may still be able to compete in their own local markets with freer selling prices and less tariff protection. High production costs (especially with increasing costs of energy) may lead to shutdown of the least efficient facilities.

5.05 Given the structure of the industry, there is much competition among the firms in non-flat products, as well as in galvanizing. There is, however, only one firm now involved in the production of hot and cold rolled sheets and one other firm which manufactures tinplate.

5.06 Location. Over 80% of the individual steel producing firms in the Philippines are located in the Metropolitan Manila area. Most of the firms based in Manila are smaller producers of non-flat products, while the one large flat products producer is located in Mindanao./4

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/1 See para. 5.16 for description of limitations of National Steel's hot rolling mill.

/2 It also utilizes some CR coils to balance and make best use of its facilities.

/3 "Efficient" in terms of utilization of raw materials, fuels, labor and other inputs, and quality of output.

/4 National Steel's main facilities are located in Mindanao, but the Company has recently acquired a smaller cold rolling mill in the Manila area.

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Region	Installed Capacity (%)	Employment (%)
1. Metropolitan Manila	73	87
2. Luzon	1	1
3. Visayas	2	2
4. Mindanao	23	10

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Source: MIRDC, February 1979.

B. Operations

1. Labor

5.07 The labor force in the industry has increased from 10,800 in 1974 to 12,700 in 1978. There is an abundance of unskilled workers as well as graduate engineers. On the other hand, it is difficult to obtain, train and retain the many skilled and semi-skilled workers needed for an efficient steel industry. The education system is not well-matched to the requirements of the steel industry. Recently, the shortage of skilled workers has been aggravated by emigration of technicians to the Middle East for higher wages.

5.08 The Metals Industry Research and Development Center (MIRDC) has a good comprehensive program for training the required types of workers, but its capacity should be expanded to increase the number of workers it can train. Additional training - by industry itself - will also be needed, since MIRDC cannot but meet part of industry's requirements.

5.09 Labor costs are a small fraction, often 5% or less, of total production costs. This is because purchased materials represent the greater portion of costs (especially in non-integrated plants), while wage levels are low (often about US\$0.50/hr equivalent). Some plants use incentive pay systems, with a favorable effect on productivity (and overall machine capacity). Wages in the Philippine steel industry have risen more slowly than those in neighboring steel producing countries, giving the Philippines an advantage in cost per man-hour.



## 2. Performance

5.10 Operational performance of the industry has not been favorable over the last few years. Several factors besides domestic market limitations and excess capacity contribute to low productivity, quality problems, and poor overall utilization of installed production capacity: (a) Severe maintenance problems; causing breakdowns, long down time and equipment outages, and also some problems with consistent product quality, (b) Lack of preventive maintenance, and maintenance planning; (c) Long periods without adequate spare parts; (d) Frequent power outages, low line voltage, or frequency problems; (e) Lack of adequately trained personnel in operations and maintenance, contributing to breakdowns; (f) Difficult climatic conditions in some areas - constant high temperature and humidity, with occasional floods; (g) inadequate communication facilities, as needed to promptly correct difficulties. These problems have often resulted in high production costs.

5.11 Most managers feel it will take many years to overcome these difficulties and to start matching the levels of machine productivity and material yields being achieved in developed countries.

5.12 As indicated in the Table on page 2, the industry suffers from generally low capacity utilization. Field visits suggest capacity utilization rates of 50 to 60% were typical in 1978. Some improvement was expected in 1979.

5.13 Some of the problems of low productivity and high production cost are related to the use of older, less efficient equipment and facilities. For example, the small (40 ton), old open-hearth furnaces at the Philippine Blooming Mills are likely to have high fuel consumption and low productivity, and thus to yield high cost steel. Other furnaces of very small capacity (approximately 3 to 10 tons/heat) and older small rolling mills of less than 50,000 tpy capacity may be high cost producers when making plain carbon steels. However, some of the products being manufactured are very simple, and with low capital charges, and very low labor costs, the continued operation of smaller ("manually fed") rolling mills should not be ruled out categorically - especially where they adequately serve a small regional market, (and in cases where they do have furnaces to make their own raw steel, they may have a low cost scrap supply.)

5.14 In any case, increased freedom of competition - with gradually reduced tariff levels - would be the best means by which the truly high cost producers could be gradually phased out. Some of the more modern electric arc furnace operations, continuous casting, and rolling mills should be able to produce non-flat steel products at competitive costs if supplied with economic raw materials /1 and are properly operated and maintained.

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/1 There is some risk of high costs due to dependence on (imported) scrap which is subject to major variations in availability and cost.

5.15 In the flat products sector, machine productivity and overall utilization of installed capacity also appears to have been low in recent years. The key individual units involved (involving large capital investments) are the hot and cold rolling mills of National Steel Co. - which appear to have been utilized at only about 50% capacity (or less). Reasons are numerous: operational problems, maintenance problems, change of company management, market demand, quality, and other factors. In any case, the same equipment has achieved more favorable performance levels in other locations, and there is potential in the Philippines for increased production, higher quality, and lower costs of flat products.

### 3. Quality - Flat Products

5.16 One company, National Steel Co., produces flat products; several other firms, (especially coil galvanizing, and a tinplate producer) are involved in subsequent operations utilizing the flat products produced by National Steel Co. as well as imported steel. The major production facilities of National Steel include slab reheat furnaces, conventional roughing mill, reversing hot strip mill /1 (steckel) and pickling, cold rolling, electrolytic cleaning, annealing, temper rolling, shearing and finishing facilities. These facilities were considered up-to-date and reasonably modern in the late 1960s and utilize similar technical processes as being used today, but without the latest advances and refinements. They should be able to produce steel products of acceptable quality, if properly operated and carefully maintained.

5.17 In subsequent operations after the steel plant, consumers should have no major problems in galvanizing or in using hot rolled plate. Product quality of cold rolled sheets should be acceptable to appliance makers, the automotive industry and other users, although there may be some surface problems in the more critical applications, due to annealing and hot rolling limitations. Some deep drawing qualities and other specialized steel grades are not now available in the Philippines, and will probably continue to be imported.

5.18 Significant problems have, however, been experienced with quality tinplate production at reasonable costs. Can manufacturers complain about high costs, low quality, and lack of adequate supplies of locally produced tinplate./2 Domestic tinplate prices are now approximately 28% higher than

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/1 Includes reversing steckel mill - which is known to have some inherent problems with off guage material at coil ends, and other moderate problems with temperature control, and control of mill scale (surface).

/2 Imports have averaged some 40% of total consumption in recent years.

corresponding "World" prices, and the one company involved in tinsplate production (Elizalde Company) has been incurring substantial losses, even with its rather high selling prices. Reported overall product yields at Elizalde have been as low as 60% in some cases, with yields on prime products sometimes in the neighborhood of 35 to 40%. Under these conditions tinsplate could not be produced at reasonable costs.

5.19 The main cause of low yields and poor quality of tinsplate lies with the raw material, black plate. The most serious problem seems to be surface rusting, a problem which has been aggravated by the recent physical separation /1 between National Steel's cold rolling operations (conducted in Mindanao) and Elizalde's electrolytic tinning operations (conducted in Manila). The difficulty of packaging and transporting the steel coils for tinning includes a trip of about ten days involving multiple handling, high temperatures, and humid conditions. There are also believed to be some problems with operating practices and/or installations in the electrolytic tinning line itself, which are being analyzed and corrected by Elizalde.

5.20 Close attention to quality control in the production of black plate, especially in modified practices of electrolytic cleaning and annealing, will be needed. Also better packaging (at additional cost) and careful handling by truck, crane, and barge will be beneficial. In addition to the tin line modification being handled by Elizalde, these steps should result in significant improvements in product quality and some reductions in cost of tinsplate production. Further, more careful control of operating practices, quality, and equipment maintenance will be required to achieve reasonable production levels and product cost.

#### 4. Quality - Non-Flat Products

5.21 Some of the rolling mills used for production of non-flat products, especially reinforcing bars, may not achieve the close tolerances typical of most modern rolling mills. However, this is not believed to be a serious problem for the relatively simple rod and bar products produced in the Philippines. The physical quality of most of the products rolled from imported billets is believed to be suitable for the application involved. Complaints about product quality involving non-flat products are not believed to be a major problem. However, continuing small investments/replacements/refinements will be required in the future in order to keep abreast of a continuing trend toward higher quality products being produced in the world steel industry.

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/1 Electrolytic tinning operations were originally done at the same location as cold rolling, but for unknown reasons the tinning line was moved to Manila in early 1970's.

C. Protection

5.22 The structure of protection in the steel industry is highly uneven among different branches. It is governed by these factors:

- (a) Nominal import duties on inputs are low -- viz, 10% on scrap, billets, slabs and hot rolled coil. However, cold rolled coil, an input for galvanizing and blackplate used in electrolytic tinning, has a 30% duty. Outputs, viz tinplate, galvanized sheets and bars and rods, are subject to a 50% duty.
- (b) In bar, rod and sheet production the raw material input accounts for a high proportion (60-80%) of total cost. Hence, small changes in raw material costs markedly affect the protection on value added.
- (c) Imports of inputs are also governed by licensing, and domestic prices are set by official agencies. Thus, the domestic price of rods and bars is 23% above international levels, making the tariff redundant.

Item	Protection %		
	Nominal	Actual	On Value Added
<u>Tinplate</u>	50%	14%	-23
		14%	92 <u>/a</u>
<u>Galvanized Sheets</u> <u>/b</u>	-	60%	150
<u>Rods and Bars</u>	50%		283
		23%	103

/a Assuming duty-free imports of raw materials (coils).

/b Assuming industry uses domestic coils which cost 54% above international level.

Source: See Annex V-4.

5.23 The 32 rod and bar mills, production of cold rolled finished products by National Steel, and most galvanizing plants receive effective protection, (i.e., on value added) over 100%. The effective protection on rods and bars (103%) would be even higher (283%) if domestic prices were not controlled.

5.24 Tinplate production is put at a disadvantage because of domestic price controls. Government controlled prices for tinplate (especially tinplate used for the canning of milk) are not set high enough to offset the high cost of local inputs and otherwise high production costs. As a result, tinplate production normally receives negative protection. In 1979 the Government is permitting duty-free imports of 60,000 tons of cold rolled coils for tinplate, making domestic tinplate production profitable (effective protection 92%).

5.25 Protection policy has been partly responsible for low capacity utilization (often below 50%) and high costs in the industry. Despite high prices, profits and return on investment are unsatisfactory.

5.26 High levels of protection (through tariffs and import restrictions) have provided financial incentives conducive to premature investment in facilities (mostly in rolling mills). They have also relieved necessary pressure on many important parts of the industry to improve its basic performance and achieve reasonable levels of production costs. Lower levels of protection would have been conducive to more rational facility planning (new plants/expansion) in tune with realistic market estimates, and to higher standards of operating performance than have actually been achieved.

5.27 A rational realignment of tariff on various steel products would help the industry in improving its performance while increasing competitive pressure for modernization and better planning of facilities. This would require a review of individual product cost structures, and calculation of protection levels which individual branches (i.e., products) require to attain a reasonable return on capital investment. It would involve several changes from the present structure, with fully-finished products (tinplate, galvanized sheets) receiving protection below the present 50% (probably closer to 30%). Reduction in actual tariff rates would have to be accompanied by relaxation of restrictions (licensing) if it has to have a full effect on industry operations and prices.

#### D. Steel Expansion Plans

5.28 A number of rolling mills, particularly the larger ones, can be operated economically. Some of these mills require modernization and rounding out.

1. Cold Mill Expansion

National Steel's cold rolling mill, for example, has basic equipment (Tandem Mill) with an ultimate potential to produce about 700,000-800,000 tons per year (tpy), but at present has a capacity of at most 300,000 tons.<sup>/1</sup> Expansion (a pickle line, tandem and temper mill modifications, annealing, and auxiliary facilities) at a cost of about \$70-100 million should enable its capacity to be increased from its present level to about 700,000-800,000 tpy. This investment would permit the company to increase productivity, improve quality, lower costs of production, and ultimately to lower prices -hence make possible lower protection (as recommended in the previous section) -- and still obtain a reasonable economic return (roughly estimated at 15%) of the new investment.

2. New Integrated Steel Project

5.29 The Government and National Steel Company now have under study a major proposal for an integrated steel facility which would supply approximately 1.5 million tons per year of semi-finished products for home consumption. The cost would be approximately \$1.3 billion and the project could be operational five years after it gets underway. A revised feasibility study <sup>/2</sup> is currently under preparation.

5.30 The size of the integrated mill would, of course, critically depend on the prospective market. The present market is about 1.3 <sup>/3</sup> million tons (raw steel equivalent; see Annex V-2). Total projected demand which could be met by the proposed new integrated steel works would approach 1.5 to 1.6 million tons in 1985. This estimate assumes: (a) a 7%/yr compounded growth rate starting in 1978; (b) some expansion of existing steel producers; and (c) approximately 20% of domestic steel demand to be met by imports and steel producers other than the new integrated plant.

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<sup>/1</sup> Depending on product mix, which is somewhat unfavorable in the case of National Steel at the present time.

<sup>/2</sup> The original Japan International Cooperation Agency (JICA) "Pre-feasibility Study" covered a plant producing 1.0 million tpy; the size of this plant was increased tentatively to 1.5 million tpy at the same time as the Bank Mission, in February 1979; final size of the project will be determined this year.

<sup>/3</sup> This gives only about 31 kg annual per capita consumption or about 5% of consumption in highly developed countries.

(a) Design of the New Integrated Steel Project

5.31 Project design, makeup of production facilities, capital costs, production costs, sales revenues, and other factors influencing feasibility of the project all depend on the product mix and flow process assumed for the proposed new project. Thus, a new plan based on a larger project, say 1.5 million tpy instead of 1.0 million tpy (or possibly higher if deemed economic by other considerations), will require a detailed study including a re-evaluation of practical alternative flow processes and production plans.

5.32 In order to produce steel at reasonable costs, both the primary facilities (coke plant, blast furnace, basic oxygen vessels, and continuous casting) and also the individual rolling mills /1 (if any) must be of economic size (scale); if this is not the case, unduly high capital cost and operating cost would make Philippine steel less competitive than desired.

5.33 For the new proposed plant (at least 1.5 million tpy), the primary facilities, up through steelmaking, could be expected to be reasonably competitive in capital and operating costs if operated efficiently, and if sinter is made available from the Kawasaki (Japan) sinter plant to the blast furnace at a (negotiated) price close to its actual cost. (Use of advanced Japanese operating and raw material purchasing know-how, and existing large port and ore/coal vessels - up to 250,000 tons - together with the 5 million tpy sinter plant, should be of significant advantage and help in achieving reasonable production cost for primary iron; cost of primary iron is one of the most important single factors in overall cost of steel products).

5.34 However, the product mix of rolled products for the proposed plant (meeting the specific needs of the domestic market) may present some difficulties with respect to (a) size and cost of hot strip rolling capacity; (b) related size of continuous casting machines for slabs, and for blooms; (c) timing of installation, and economic utilization of installed capacity (in early years 1984-86).

5.35 Based on estimated market demand and specific product mix, the total requirement for hot rolled flat products (hot rolled coil, sheet and plate) could be expected to be about 1.0 million tons in 1985. Non-flat product tonnage would make up the remaining market to total about 1-1/2 million tons of raw steel equivalent in 1985.

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/1 The original plan evaluated by JICA called for a (small) billet mill producing 199,000 tpy of billets; for flat products it would utilize modified NASCO hot rolling capacity of 667,000 tpy; a new hot rolling mill was also being considered. In addition, all downstream rolling mills must be reviewed to assure technical compatibility with products of the new integrated plant; economic replacement/additions will also be required in the case of certain mills.

5.36 The capacity of the existing hot strip (steckel) mill (leased to National Steel Company) is about 500,000 tpy. However, that capacity has never been attained in practice due to continuing operating problems. Thus, if the existing slab mill/hot steckel mill /1 were utilized at full capacity, the remaining volume of tonnage for a new hot strip mill (if included as part of the integrated mill) would be small, and probably would not support economic levels of production for several years. Alternatively, the existing steckel mill, which is still usable, could be taken out of service and higher tonnages allocated to the new hot strip mill. Even if this were done, economic cost levels for hot strip production may not be achieved until after 1990 or until production levels could approach 1-1/2 to 2 million tpy. The economic solution to the problem, however, may be to delay building the integrated plant by about 4-5 years, or at least change the time phasing of some plant facilities, for example delaying acquisition and startup of a second slab casting machine, and a new semi-continuous hot strip mill and related facilities. Such delay would achieve a closer match between market growth and installed capacity, and permit a reasonably high degree of capacity utilization even in the earlier years of plant operation. Thus, the economic rate of return on invested capital could be improved (See Summary, para. 11 for additional details.).

5.37 Any proposed project should be evaluated objectively, with allowance being made for significant risks associated with past problems of low capacity utilization/low productivity, low product quality, and associated high over-all production costs. If effective use is made of competent technical assistance from an efficient operating steel company (possibly also with an equity interest in the project), such risks could be reduced significantly.

(b) Benefits of the New Integrated Steel Project

5.38 Based on an expanded project, producing about 1-1/2 million tons/yr in raw steel equivalent, the projected employment might be 4,100 new jobs and foreign exchange savings at full operating levels would be about \$ million per year./2 This savings results primarily from the costs which would be incurred to purchase semifinished steel products for Philippine market requirements if the project were not completed, as compared with the normal foreign exchange costs associated with the operation of the proposed plant (plus debt service) if it were to be built.

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/1 May include some modifications to increase capacity and quality.

/2 The indicated foreign exchange savings would increase rapidly with increases in steel product selling prices, which could occur during periods of world steel shortages - as in 1974. During such shortages, selling prices could increase the equivalent of 20% or more over the full year. Annual foreign exchange savings associated with the operation of the integrated steel plant could then easily double to about \$140 million per year.



5.39 The projected foreign exchange savings are relatively low in comparison to other Bank steel projects for the following reasons: (a) Main raw materials required to operate the plant (coal, iron ore, some fuels, and scrap) would be imported; (b) The foreign exchange cost of the products to be produced (mainly slab and billets) would be less than the foreign exchange cost of fully-finished products normally produced by a steel plant.

5.40 If the technical and operational issues mentioned above are resolved to a reasonable degree, the prospects for economic basic steel production in the Philippines would be influenced appreciably by how well the following business conditions are satisfied: (a) The existing world excess of steel supply over steel demand will be diminished significantly by the mid-1980s; (b) The availability of semi-finished products - billets, blooms, slabs for rerolling (also to a smaller degree, hot rolled coil) will become less certain, and supply of such items will be subject to increased price volatility; (c) Prices of semi-finished and finished steel products will strengthen relative to prices of major inputs (especially ore, coal, other energy, labor) by the mid-1980s; and (d) Relative prices of steel plant capital equipment are likely to rise.

5.41 Based on information available now, the economic rate of return for a small- to medium-size integrated greenfield steel project in the Philippines, if it can be operated with reasonable efficiency, may well be in the 7-11% range.<sup>/1</sup> The project would also contribute to the regional development, growth and diversification of the Northern Mindanao economy, including related industries such as refractories, rolls, castings, transport, other supplies and services; and it would also provide other indirect benefits such as technology transfer, improved management techniques and practices, advanced training in fields of mechanical/electrical/hydraulic equipment operation and maintenance. All of the above could contribute substantially to indirect employment in the long-term future.

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<sup>/1</sup> This range would be about equal to other conventional small- to medium-sized new steel projects which cannot rely on significant natural advantages. The final return may be slightly lower than new conventional or direct reduction steel plants located in areas where low-cost energy is available. Of course, the return on all steel projects could improve if there is a general increase in selling prices associated with possible shortages in the mid-1980s.

5.42 The rate of return indicated above may well be considered sub-marginal - particularly when considered in relation to alternative investments available to the Philippines (see Summary Report). A moderately higher return would be obtained on a larger integrated plant project - say about 2.5 to 3.0 million tons - particularly since it could be combined with more economical production of hot strip mill products (e.g., of 1.5-2 million tpy). The larger, better balanced capacities (2.5 to 3.0 million ton raw steel capacity and 1.5 to 2 million ton hot strip mill, as suggested in para. 5.36), would be justified by about 1991 and should produce a somewhat higher rate of return than the 1.5 million ton plant now being considered. Apart from the difficulty of arranging a larger amount of financing, such a postponement would, however, entail certain risks to the Philippine economy if serious shortages were to develop by the mid-1980s, and if such shortages were to raise world steel prices even above the cost level at which a 1.5 million ton plant can operate. In such a shortage situation, the price of semi-finished products (on which the Philippines would be dependent) could be particularly volatile, and supply conditions, especially for those products, could be sporadic, possibly placing the Philippines in a somewhat vulnerable situation with respect to steel supply.

5.43 In any case, further work on any Philippine steel project should be directly linked to additional effective technical assistance to assure improvement in operating practices, in order to achieve acceptable levels of utilization of installed plant capacity.

CHAPTER VI

THE MECHANICAL ENGINEERING INDUSTRY

A. Overview

6.01 The mechanical engineering industry assumes an important place in the economy: (a) it made up over 40% of gross domestic capital formation in manufacturing over the past decade; and (b) imports of capital goods made up at least one-third of total imports. However, the growth of the industry has fallen behind that of manufacturing generally; its share of value added in manufacturing fell from 12.6% in 1967 to 10.8% in 1977. As a result of the slow growth of the mechanical industry, the country has become relatively more dependent on imports, and it has had less opportunity to build "technological capacity" of industries other than consumer goods. Total imports of products of the mechanical engineering (ME) industry were over \$1.2 billion in 1976, of which \$652 million in non-electric machinery, \$201 in electrical machinery and \$313 million in transport equipment. Exports totalled \$24 million in 1976 and \$53 million in 1977 (see Annex VI-2).

6.02 The size distribution of firms in the industry is characterized by a few large companies (assembling cars, making sewing machines and household goods and two jobbing enterprises) and many very small companies. There are relatively few medium-sized companies (including production of motorcycles, appliances, metal containers and one shipyard). The following shows the relative importance of firms in the industry:

<u>Firm Size</u>	<u>% of Firms</u>
Large	11
Medium	13
Small	76

6.03 In the formal ME sector, the average capital-labor ratio is only one-half of the industry average. However, the share of ME sector in total manufacturing employment is only slightly above one-tenth, since investment in the ME factory sector has been low. However, in the informal ME sector (i.e., in enterprises with less than five workers) employment is more than three times that in the factory sector, and its share in manufacturing is also much higher than that in the factory sector.

6.04 In the present stage of Philippine development the industry uses relatively labor-intensive technology. In its plant visits the Mission did not encounter examples of excessive capital intensity. There is widespread use of general purpose machinery and second-hand equipment. This has meant that manufacturers have frequently tended to substitute labor for capital. While it is desirable not to rely heavily on highly automated or special purpose machines at this stage of development, there appears to be need

for selective modernization and quality-upgrading in certain subsectors. Further, worker training could be substantially improved in order to upgrade skills. Management efficiency should be stressed in order to improve production planning and control. Capacity utilization in the ME sector is perhaps better than in other sectors, although there are many cases of underutilization.

6.05 The Mission covered: (a) the auto ancillary and foundry industries - activities that comprise the major elements of local industrial inputs; and (b) heavy equipment manufacture - an activity in which the country can potentially achieve a comparative advantage. In addition, the state of the machine tool, the hand tool, the metal container (food cans), and the consumer goods (sewing machine and home appliances) industries were examined. Summary comments on each industry are given in Annex VI-1.

#### B. Comparative Advantage and Incentives

6.06 The ME industry can conveniently be split into two major subgroups: consumer products including cars and durables, and producer goods including capital goods. Philippine comparative advantage lies more in producer goods than in production of consumer items - this is evident from the Mission's plant observations (Annex VI-1), the difference in labor-intensity of the two major branches, and from computation of domestic resource costs (Table VI-2). While consumer goods industries are relatively less efficient, they have received higher levels of protection than producer goods industries. In the interest of efficient longer-run development, producer goods industries should receive greater assistance from the Government's incentive policies.

6.07 Protection in the ME industry is generally less than in manufacturing as a whole, although automobiles and consumer durables (refrigerators, etc.) receive high levels of effective protection.

6.08 Tariff rates for the major ME products can be classified into three groups (see Annex VI-2):

- (a) 10% to 20% - Producer-type ME products (such as industrial machinery and agricultural machinery)
- (b) 30% to 50% - Intermediate-type ME products (such as tubes, pipes, and bolts)
- (c) 70% to 100% - Consumer-type ME products (such as household electrical appliances)

6.09 The current tariff rates appear to be mainly based on the end use and degree of necessity of commodities rather than the static or dynamic comparative advantages of producing them. Protection of capital goods

(usually 20% or lower) is below the total price effect of the overall protection system (at least 30%). Hence, compared with international prices, domestic prices for capital goods are below those of other goods in the economy.

6.10 Effective protection of producer goods is one-fifth that of consumer goods (Table VI-1). The disparity is caused by the fact that while nominal rates on producer goods are less than protection of inputs, the reverse is true for consumer goods.

6.11 BOI incentives extend exemptions from duty and compensation taxes on imported capital equipment, and tax credits on domestically-produced equipment. Given a strong preference for imported equipment and the small size of domestic production the value of BOI tax credits (on domestic items) is small (less than 7% in 1977) in relation to tax exemptions on imports. These tax exemptions further lower the protection of producer goods in relation to consumer goods. In practice, the BOI has seldom been able to enforce the requirement that no incentives be granted to importation of capital equipment which can be produced locally. This requirement should, of course, not be applied to export industries, which the Mission recommends be permitted to import free of duty.

6.12 The ME sector has received relatively little investment credit from official sources. For example, in relation to value added, DBP credits to ME industries were only one-fifth of credits to manufacturing as a whole (P 11 per P 1,000 value added in ME, compared with P 49 in manufacturing as a whole). Further, unlike their foreign competitors, domestic machinery producers do not have low-cost credits to finance their sales. Increased export and local use of the domestically produced plant equipment can hardly be expected unless long-term capital funds with a low interest rate is available to the purchasers.

6.13 If the ME sector is to expand exports, it will be mainly through a gradual increase of export sales by firms initially producing for the home market. In the ME industry it is therefore particularly important that export incentives are applied in such a way that in effect all export production is on a free trade basis. In this way the many firms with initially relatively small export volumes can benefit. However, at present export incentives, in particular duty-free importation of inputs and capital equipment, is only granted to selected firms approved by the BOI. Usually only firms with exports over 50% of sales can import inputs and capital equipment duty-free (Chapter II).

6.14 There are at present some ME export producers which do not benefit from the BOI incentives. Thus, one firm, which has been exporting diesel engine components since 1973, has not been able to obtain tariff and tax rebates for their imported material inputs (which are about 70% of total material inputs), since it is not registered with the BOI and does not export more than 50% of its products.

Table VI-1: STRUCTURE OF PROTECTION IN THE ME SECTOR (1974)

<u>Major Categories</u>	<u>Industry Groups</u>	<u>Input-Output Sector No.</u>	<u>Average Nominal Protection Rate /a</u> (%)	<u>Average Effective Protection Rate /a</u> (%)
A. Producer Goods			<u>29</u>	<u>18</u>
	(1) Agricultural and industrial machinery	129-131	18	8
	(2) Basic metal products	120-121	23	14
	(3) Motor vehicle components and other transport equipment	144-147	60	16
	(4) Shipbuilding and repairing	142	17	26
	(5) Electrical machinery and equipment	132-135	29	27
B. Consumer Durable Goods			<u>67</u>	<u>90</u>
	(1) Hand tools	123	<u>39</u>	<u>34</u>
	(2) Electrical products	136-138	45	50
	(3) Motorcycles and bicycles	146	50	52
	(4) Fabricated, structural and stamped metal products	122, 124 - 128	51	75
	(5) Motor vehicles assembled	143	93	127
	(6) Jewelry	148	91	133
	(7) Household electrical appliances	139-141	100	167

/a Unweighted average computed from the estimates in Annex VI-2, Table A.2-1 (on page 258).

6.15 Impact of Incentives. The prime targets for the Philippine policy of import substitution have been non-durable and durable consumer goods. It might have been expected that this strategy would in time lead to the creation of the capital and intermediate goods industries through backward linkage of demand from the final consumer goods industries. However, the incentive structure has failed to provide an infant industry protection to the capital good industries, required to build technological capacity in competition with capital goods imports. While the consumer durable goods industries have supplied the major part of the domestic market, the domestic demand for capital goods have been met almost entirely by the imported capital equipment. Further, high protection has been associated with overcrowding. Of a total 36 overcrowded industries more than one-third are in the ME sector, and most of them are consumer durable goods industries (Annex VI-2).

6.16 Comparative Advantage. Relatively higher domestic resource cost (DRC) estimates for consumer durables suggest that the Philippines have relatively less comparative advantage than in producer goods (see Annex VI-2, Table 4-3). Protection is relatively higher in ME industries with higher DRCs and may itself have fostered inefficiency. The strong positive correlation between effective subsidy rates and DRCs observed in the ME industries also suggests the specific direction of incentive reform: to reduce the effective subsidies of the industries with high DRCs and to increase them in industries with low DRCs. In the Investment and Export Priorities Plan (Table 4-3 of Annex VI-2) the Government envisions more active export promotion and import substitution for most of the ME items for which it has a comparative advantage. For those ME items listed in the plan but for which the country does not have a comparative advantage now, more careful evaluation appears to be needed in order to ascertain the existence of dynamic comparative advantage. A more refined analysis to determine the social profitability of BOI projects is needed. This might be undertaken in the context of more detailed ME sector planning recommended at the end of this chapter.

### C. Consumer Durables

6.17 Much of the increase in ME output over the past 4 or 5 years was in consumer goods, led by auto assembly and home appliance manufacture, both high-cost operations serving exclusively the home market. A key development issue regarding these industries concerns their ancillary industries which are examined in paras. 6.22-6.28.

6.18 The appliance industry is relatively well established, with output more than doubling from \$30 million in 1972 to about \$70 million in 1977. This industry is characterized by a high direct local content of its products (average of over 80% for its major lines of refrigerators, air-conditioners and sewing machines) achieved through vertically integrated manufacturing operations. With improvements in production structure and facilities, this industry has a potential to export, and this factor should probably be a central consideration in its development planning. In this

connection, the product strategy can be crucial. Present products are older US models that should be difficult to export in competition with the products of the multi-nationals. As opposed to moving up to more advanced or sophisticated models, the industry might consider moving down to a more basic low-cost line of products not made in the industrialized countries, but a demand for which may be presumed to exist in the poorer countries.

6.19 Typical of products now made in the Philippines that have special export implications are food cans, hand tools and sewing machines. There has been some limited export of general-line cans to the regional market, but the importance of the can-making industry is as a supplier to food processing for export. Production of metal cans, mainly food cans, exceeded \$40 million in 1977. Excepting milk cans, whose production is integrated with milk processing, food can fabricators are operating at substantially below 50% capacity because of an apparent inability to supply products of acceptable quality and cost to the canning industry. In fact, some export food processors import empty cans. It is important that export producers are able to obtain tin cans at international costs and quality (see also Annex VIII-2).

6.20 The production of items such as hand tools and cutlery tends to favor low-wage countries because they are labor-intensive and the technology is relatively simple. However, in the Philippines they have a very high DRC. At the moment, hand tools are made by one large unit, but while it operates at well below capacity, imports totalled about \$10 million (1977). The industry feels that locally-made tools cannot compete quality-wise against imports at the high end of the market, and cost against imports from other low-wage countries at the low end of the market. A reassessment of product and marketing strategy is indicated.

6.21 In sewing machines, the local industry produced about 85,000 units (1977) valued at under \$10 million. All are foot-operated models, produced with about 50% local content or less, depending upon whether the machine heads are imported or locally assembled. There is no supplier of precision components in the country. The development strategy for this industry might consider local production of industrial-type machines of simple design, thereby linking this industry with garment-making in the SMI sector. Also, the export of cabinets (linked to the local wood industry) and stands (linked to the foundry industry), presently estimated at below half a million dollars, could be more aggressively promoted.

#### Ancillary Industries

6.22 With the automotive industry assembly-oriented and the appliance manufacture vertically-integrated, there has not been much opportunity for their ancillary areas to develop. The ancillary industries, as they exist in the country today, consist mainly of small units equipped with general-purpose machines serving the repair and replacement needs of the automotive as well as the non-automotive markets.



6.23 The Progressive Car Manufacturing Program (PCMP) created four key ancillary units within the automotive industry: one engine plant, two transmission plants and one body stamping plant. The program was of key importance in that it avoided the establishment of many additional automotive producers and encouraged both domestic production and exports of key components. In 1977 domestic component production was about 53% of car output, with exports of components by PCMP participants adding a further 12%. Yet the achievements of the program should be measured against the unavoidable limitations of a small domestic market. With sales of only 32,000 units divided among 5 major producers (and 15 different models) few economies of scale could be achieved and, in fact, the participants in the program suffered a combined loss in 1977 of ₱ 53 million. Capacity utilization in the 5 major plants producing key components was less than 50% in 1976 (see Annex VI-2).

6.24 The PCMP program has received protection of close to 100% on final products (through tariffs and tax exemption) resulting in effective protection of over 300%. The Mission estimates the domestic resource cost of aggregate PCMP production (based on book values) will range from at least 16 to 52 pesos per dollar (depending on whether BOI or AMII data are used). The incentive scheme has encouraged in-house production of components by PCMP participants rather than subcontracting.

6.25 Increased production of automotive components might involve larger sales abroad and/or more procurement from domestic ancillary firms for consumption at home. Either form would require changes in the incentive system. Additional export incentives could be required (even for PCMP producers), since sales in the protected home market may be more remunerative than exports. For the further development of the ancillary industries, they should receive the same incentive treatment as the PCMP participants. This will require technical assistance and investment credit from official sources. Once items for additional economic domestic production are identified they should receive the same protection as is awarded to PCMP participants.

6.26 With rules for incentives for ancillary production established, the specification of domestic procurement content need no longer play the same regulatory role as at present. Instead it would be better to consider the DRC of net foreign exchange savings or earnings under the PCMP program, and as already suggested, consider appropriate incentives to achieve them.

6.27 Further study is required to identify the products which could be manufactured at reasonable cost. Increases in the domestic requirement would easily lead to an excessive rise in automotive production cost.<sup>/1</sup> The automotive parts industry is composed largely of makers of non-metal parts such as

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<sup>/1</sup> The foreign exchange savings achieved by the domestic procurement are smaller than the 53% obtained in 1977; allowing for import requirements of part production may cut savings in half (see Annex VI-2).

rubber, plastic and glass items and includes relatively few makers of mechanical items. Metal items are mostly simple fabricated and pressed parts that do not require costly specialized tooling. Further progress in the local supply of original equipment parts would require that engine and driveline parts and other sophisticated mechanical components be produced locally, but new investments to produce them appear not feasible under present market conditions. As a strategy to develop the ancillary industries, it is therefore suggested that consideration be given to their independent development as efficient local suppliers of simple parts and as exporters. In world trade, the manufacture and supply of parts and accessories have developed into separate production and marketing activities of their own, quite independent of firms manufacturing the end products. One of the factories visited by the Mission appears to have successfully applied this strategy to accomplish a small but significant export of diesel engine replacement parts to the United States.

6.28 In developing a strategy for the sector, the possibility of complementary production of parts in other ASEAN countries could be more actively pursued. The Automotive Complementation Scheme deserves further detailed and analytical study to identify alternative economic production possibilities in the ASEAN region (see Annex VI-2).

#### D. Capital Goods

6.29 While growth has largely occurred in consumer goods manufacture it would appear that, in light of the Philippines' comparative advantage emphasis be given to a systematic buildup of capacity in capital goods. At present, capital goods manufacture is largely confined to jobbing operations supplying repair and replacement parts for mining and other industries, the production of a few lines of fabricated items and an infant machine tool industry:

Mining machinery - only some replacement parts are made.

Construction machinery - local production limited to concrete mixers and tractor parts.

Food processing equipment - some replacement parts are made, mainly parts for bakery equipment.

Sawmills - manually-operated sawmills are produced, plus repair parts.

Other plant equipment - some simple vessels, tanks, structural units are made and centrifugal pumps are produced but otherwise local production is limited to small replacement parts.

Total output of this subsector is estimated at \$70 million (1977).

6.30 In machine tools, there is one unit producing center lathes under Indian license, several units producing simple mechanical presses plus a large number of rebuilding and service establishments. Total estimated output of \$8 million (1977) reported for this industry actually includes, in large part, tools, dies and molds made by small jobbing establishments. While the capacity of this subsector is very limited, there is a large and growing market for low-cost standard machine tools (vocational schools, training centers and small shops) that domestic manufacturers can potentially supply.

6.31 Given proper stimulation and support, the ME industry can achieve economic import substitution of simpler capital items that comprise a substantial proportion of the import bill, and have relatively low DRCs, for example, material handling equipment, road rollers, bakery equipment, some foundry equipment, and heat exchangers, among others. With reference to the 1977 statistics, a modest 30% rate of import substitution translates to a capital goods market of more than \$100 million. In addition, export of foundry products, fabricated equipment and structural items should be possible.

6.32 The Foundry Industry is comparatively large - some 180 units with an installed capacity of 150,000 tons. The majority are small units and the industry suffers from excessive fragmentation and competition. Although it is labor-intensive and the Philippines should be able to achieve a low DRC, the Philippines' foundries are not at present competitive. With sufficient market prospects, at home and abroad, it would be worthwhile to mount a comprehensive assistance program for the many small, independent foundries in the country, covering raw material supply, technical assistance, testing services and training. MIRDC would be an appropriate agency to formulate and implement such a program (see Annex VI-3).

6.33 Investments in expansions or new capacities in the capital goods subsector will be costly, and in fact, any substantial commitment by the country to undertake capital goods manufacture will probably require a minimum investment on the order of \$100 million over the next few years to cover modernization and expansion of some existing capacities and possibly one or two new projects. Areas of immediate opportunities could be: (a) mining, construction and material handling equipment where the country has some considerable experience in parts production. Investments here will largely be expansion and modernization of selected existing capacities towards the production of some standard lines of machinery. Foundries, fabrication shops and machine shops will all require some new tooling and improved plant layout; and (b) plant equipment which links with growing activities by local firms in plant construction, domestic and overseas. There is no appropriate existing capacity in this area. One large or two complementary smaller projects might be considered, possibly as joint ventures with established foreign makers, designed for efficient heavy fabrication, machining and assembly of selected lines for plant equipment. In addition, there is a need for upgrading operating practices within existing plants, product planning, process control and maintenance, as well as an expansion of training programs, especially for shop

supervisory personnel. Since at present the Philippines has limited design capability, external assistance would be useful either direct, through joint ventures, or by assisting MIRDC.

#### E. Conclusions and Recommendations

6.34 The ME industry is heavily concentrated on consumer products and has at present little capacity in capital goods production. About half of the output of ME industries consists of motor vehicles, home appliances, mining and construction of machinery spares. Another 40% constitutes manufacture of various small metal products.

6.35 The most crucial and perhaps most difficult task in manufacturing development will be the strengthening of the ME sector. This will require special assistance for stronger infrastructural linkages and improved tooling, design and production technology. It will be necessary to determine more carefully in which product lines, especially in capital goods, the Philippines has a comparative advantage and what type of assistance is most called for to help them get established. The most urgent problem areas in the industry are:

- (a) Raw materials - there are across-the-board problems with availability, quality and cost of local raw materials, notably scrap, tinplate and steel sheets.
- (b) Plant - constraints in investment and financing are reflected in crowded shops, frequently antiquated tooling, costly down time and obsolete methods of production. Further, capacity is often underutilized and productivity is low.
- (c) Manpower - there is a serious shortage of experienced shop supervisory personnel and skilled workers, yet very few plants have formal in-house training programs.
- (d) Technology - deficiencies in product design and enforcement of standards limit production largely to low-value items, and technical services by organizations such as MIRDC are severely constrained by lack of funds.

6.36 Emphasis will initially have to be on economic import substitution, e.g., in producer goods or items such as material handling and construction equipment, food processing machinery, heat exchangers, and some foundry equipment. In exports, electronic products and auto parts have been the most important items. Main opportunities to develop new exports should lie in: (a) relatively simple and labor-intensive items such as hand tools, cutlery, foundry products, auto parts and machinery replacement parts (for mining machinery); and (b) metal products that are linked to other export

sectors such as overseas construction and food processing for export. Further it may be possible that, under present levels of protection, the producers of consumer durables and participants in the PCMP can be encouraged to increase their exports of finished products and/or parts. The foundry industry also merits priority attention. A basic need is selective modernization and upgrading of foundries to achieve production specialization by type and weight of castings.

6.37 In Research and Development, the country might get into the development of some standard products, redesigned and adapted for the ASEAN market. This has been done for some agricultural machinery (IRRI tiller) and in connection with the Asian utility vehicle. Among the possibilities are basic, low-cost lines of appliances for the local and regional markets.

6.38 Incentives are provided through technical assistance, credit, protection and elimination of duty-free importation of capital goods in non-export industries. At present producer goods industries tend to receive less incentives than other industries. It is desirable that the Government establish a more even level of incentives: narrowing the present disparity between effective incentives in the ME sector and manufacturing in general, and, within the ME sector itself, between underprotected producer goods and overprotected consumer items. Adjustments in tariff rates may best be put into effect gradually as capacity in specific product lines is improved.

6.39 In the administration of incentives, improved capability of small- and medium-sized producers deserves primary emphasis. They need assistance in raw material supply, layout and tooling, production problems, product testing and training of shop personnel. Organizations like MIRDC will require substantially increased resources to render broader and more effective service to the industry. Substantially larger investment credits should be made available for increasing capacity.

6.40 These actions should be guided by more specific product planning within a comprehensive strategy for the sector. Active Government support is warranted for MIRDC's effort to initiate such a planning exercise. It will have to address the major problem areas listed in para. 6.35.

## CHAPTER VII

### THE TEXTILE INDUSTRY

#### A. Introduction

7.01 Until the mid 1950s the textile industry <sup>/1</sup> was of negligible size and importance. The pattern of growth from 1955 to 1978, as indicated by numbers of spindles and looms, is shown in Table 7.1. The industry grew very rapidly to reach roughly two-thirds of its present size during the first ten years. Thereafter, growth hardly kept pace with the deterioration of the older equipment, some of which was of pre-war vintage bought second-hand from the United States. Since 1965 the growth rate in numbers of spindles has been only 3.2% p.a. and in terms of numbers of weaving looms barely 1% p.a. Since 1974, the growth rate of spinning capacity has been slightly more than 2% p.a.

7.02 A complementary view of industry growth is given by Table 7.2. Based on NCSO Annual Surveys, this gives employment, value added and value added per employee figures for woven and knitted textiles for selected years from 1956 to 1974. In terms of employment and value added, the woven textiles sector has been very much more important than the knitted textiles sector throughout the period covered. Initially, knitting was the more rewarding in terms of value added per employee, but since 1960 has always shown a lower ratio and in 1974, the last year of the series, value added per employee in woven textile manufacture was 38% higher than in knitted textile manufacture.

#### B. Present Structure and Performance

##### 1. Processes

7.03 The industry is fully up-to-date so far as its range of processes and products is concerned. Possibly spurred on by the fact that cotton is not yet grown in substantial quantities in the country (in 1977 a little over 2% of consumption was domestically-produced), the industry is making extensive use of the whole range of man-made fibers now available in both staple fibre and continuous-filament form. In the absence of a sufficient supply of home-produced cotton, this is fully justified by the generally high durability and low real cost of man-made fibers, particularly the synthetics. The processes used in the conversion of raw materials of the industry into saleable fabric are thus: (a) conventional spinning of man-made and natural fibers; (b) texturing of continuous-filament yarns (principally synthetics); (c) weaving of both spun and filament yarns; (d) knitting of both spun and filament yarns; and (e) finishing (bleaching, dyeing and printing).

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<sup>/1</sup> This chapter discusses textiles, yarns and fabrics; clothing is discussed in Chapter IX.

7.04 The relationships between these processes is shown in the basic flow-chart (Annex VII-4). Table 7.4 indicates the relative importance of each process in terms of the employment which it provides. At the present time, the number of employed in weaving is disproportionately high for an industry with fairly modern equipment. The reason is that many of the older looms, although nominally automatic, are not being used as such. This is because they incorporate a now obsolescent shuttle replenishment mechanism, of Japanese manufacture, for which important spares are no longer available and it is therefore necessary to replenish the shuttles of these looms manually. Very little has been done by way of updating or renewing early installations and in consequence the present equipment of the industry is predominantly middle-aged, if not actually elderly. The situation of spinning is typical of the industry as a whole. Of a total of around one million spindles, the age distribution is:

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Pre-1945 (bought second-hand)	11%
Period 1946-55	6%
Period 1956-70	60%
Period 1971-78	23%
Total	<u>100%</u>

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Of these, only the post-1970 spindles can be regarded as fit for further service without some measures of reconditioning. The remaining 77% of the total require either complete replacement or substantial renovation and some updating.

## 2. Capacity and Size

7.05 The industry is now of the right order of size to be able to cater completely to the demands of the home market and have a little spare capacity for export. Although of adequate potential size, the industry does not in fact manage to meet even domestic demand. During 1977, the last year for which the figures were available, approximately 73,000 tons of yarn were produced and 23,000 tons were imported. Of this total 96,000 tons of textiles, almost all was consumed by the home market. Only 5,000 tons was exported and that mostly in the form of garments. There is also believed to be a substantial amount of smuggled textiles taken up by the home market but there are, naturally, no hard figures to support this belief.

7.06 There are no really large mills and no very small mills. In other words the range of sizes met with in the Philippines is not great and, as most mills are very near the optimum size, no real effect of size was seen. In this connection, it is pertinent to note that in general there are no substantial economies of scale per se for units appreciably larger than those at present existing in the Philippines. The yarn count has some bearing on the optimum size of a mill but size is never a very critical element. It is generally worthwhile to increase size up to 40,000 spindles in a spinning

unit and up to about 500 conventional automatic looms (or the equivalent capacity in multi-width shuttleless looms) in a weaving unit. Above this size the benefits of more efficient machine utilization tend to be offset by logistic and management communication weaknesses.

### 3. Organization

7.07 The organization of the central core of the Philippine textile industry is essentially "vertical", i.e., there is little specialization in the major subprocesses of yarn manufacture, cloth production and finishing. Of the 32 mills which engage in the manufacture of spun yarn, only four regard yarn as their end product. On the scale practised in the Philippines, this form of organization is generally uneconomic and can thrive only in a protected home market. Its strength is flexibility in regard to end-product attributes but, except when practised on the largest scale (e.g., in the USA), this is achieved only at the expense of high production costs. The diametrically opposed alternative of "horizontal" organization, i.e., high specialization in single subprocesses, is a means whereby production costs can be substantially reduced and fabric quality (in the sense of freedom from defects) dramatically raised. The result is cheaper fabric and greatly reduced costs in garment making as a result of the reduction in the frequency of fabric faults.

7.08 The lack of specialization means that the Philippine textile industry is an inefficient producer. At the whole-world average rate of production per installed spindle, the million spindles of the industry would have produced 135,000 tons of yarn in 1977 - more than double that actually produced during that year. The basic reason for this very poor performance appears to be a lack of specialization by both process and product. Table 7.3 shows the degree of specialization existing in the spinning sector. Of total spinning capacity only 20% is in specialized mills, with the remainder integrated with fabric production and also, for the most part, with finishing. It is no coincidence that the productivity figures given in the table show the average per-spindle productivity of the specialist spinners to be 35% higher than that of the non-specialists; it is well documented that high process specialization increases productivity and, even more strikingly, reduces cost.<sup>/1</sup> This being so it is clear that, over all, the Philippine nation, with 80% of its spinning capacity non-specialist, is paying a high price for the somewhat illusory feeling of independence which integration gives to individual textile manufacturers. The situation is even worse in other sectors of the industry. Only 3% of the weaving capacity is with specialist companies and 77% is with companies which also have "in house" spinning and finishing. There are no specialist finishers and as a result there is a gross excess of finishing capacity.

7.09 However, integration is not wholly to be condemned. Combined with a sufficiently high degree of product specialization, integration can be very rewarding, particularly in the marketing advantages which it can give.

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<sup>/1</sup> Annex VII-1 gives an example of the effects of specialization.



In the circumstances of the Philippines, vertical organization (or "integration" as it is called locally) is justified in a small number of special cases. For example, there is a large mill producing only heavyweight denim (itself a highly specialized product) with complete integration of all processes from baled fiber to preshrunk fabric. Technically, this is a good operation producing denim (for blue jeans) as economically as is possible. A second example is in the making of sewing thread. Special properties are required of the yarn from which sewing thread is made and the subsequent processes are almost wholly unique to thread manufacture. These factors, together with the very narrow end-product range involved, fully justify the use of the integrated system of organization. By and large, however, it is true to say that the many "integrated" textile plants of the country are adding substantially to the cost of textiles.

#### 4. Management

7.10 The quality and performance of general management is good when viewed in relation to the conditions prevailing in the Philippines. Given a substantially integrated industry operating in a protected sellers market, it would be unrealistic to expect general management to be desperately concerned about production costs or to venture into the large-volume export markets. They could not hope to succeed in the latter because they are, for the most part, vertically organized and equipped for exploitation of the relatively lucrative domestic market. To succeed in the hard world of international "main line" textiles, they would need specialist equipment and an organization geared to the super-efficient production of long runs of a much narrower range of products than is now usual. Nevertheless, a number of companies contrive to do some export business, but this is largely confined to fringe interests of the textile market such as nylon tricot fabric, ramie tops and textured heavy denier filament yarn, and cannot be regarded as a foundation on which to build a major textile export industry.

7.11 The quality and performance of technical management varies greatly indeed. At its best it is good by world standards. In these mills the record of innovation in regard to both equipment, operating procedures and production control techniques is commendable. It is common to find expatriate technologists, often with a Hong Kong or Taiwan background, whose whole motivation appears to be a belief that a well-run mill is a thing of beauty and a worthwhile end in itself. These people have made their plants into almost show-place mills which are, within the limitations discussed above, efficient producers of good quality textiles. Regrettably, there are other companies operating old, worn-out machinery in a desultory fashion under deplorable working conditions. This may well be the most profitable short-term use of company resources as labor costs in these mills are low, virtually nothing is being spent on maintenance and renewals, and the products, poor as they are, are saleable on the protected domestic market. This is not, however, in the best interests of the industry as a whole nor even in the longer-term interests of the individual companies concerned.

7.12 The real cost of this mode of operation may be seen by a direct comparison of one such ill-run mill (Mill A) with a well-run mill (Mill B). Mill A was fully integrated and had a total of 100,000 spindles; Mill B was a specialist spinner with 40,000 spindles. Using directly comparable indices of productivity the relative performance was:

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	Mill A	Mill B
Per spindle productivity	1	2.6
Per worker productivity	1	8.3
Yarn fault rate	1	0.09

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This is not to say that all old mills are run inefficiently. Several mills with mostly pre-1965 machinery were seen to be run in an exemplary manner, with performance indices exceeding 80% of those of completely modern mills.

## 5. Performance

7.13 In view of the fact that the present organization of the industry precludes high product-specialization, the performance of the industry as a whole may be considered as being reasonably satisfactory. Over the past five years output has increased more rapidly than has the spindle population. The reason for this is that the new spindles introduced during this period are inherently more productive than the average of existing spindles. Most sound machinery in the industry is operated on three shifts, six days per week, which compares well with most other countries. Of the total installed capacity in 1978, 43% was operating at speeds below 7,000 revolutions per minute but almost all new spindles are suitable for speeds of 12,000 revolutions per minute or more.

## 6. Profitability

7.14 Table 7.3 shows that profitability is generally low. Even in 1973, a world-wide boom year for textiles, the return on total assets employed was only 4.5% and in 1976, the latest year for which the figures have been issued, it became a loss of 0.3%.<sup>/1</sup> However, these are average figures, and disguise a wide range of profits, with many efficient firms obviously making high profits. The returns on equity are particularly interesting in that the information available makes it possible to compare the performance of specialist and non-specialist firms. In the boom year of 1973, the specialist mills returned 28.0% against the non-specialists figure of 15.4% and in the slump year of 1976, when the non-specialists returned a loss of 2.7% on equity,

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<sup>/1</sup> These figures are taken from a survey carried out by DBP for the Government's Textile Study Group.

the specialists made a profit of 8.7%. These differences are substantial and support the comments made above on the need for more specialization in the industry. They are too great to be explained away by the relatively small differences in capital structure which exist.

#### 7. Supply of Capital Equipment

7.15 Virtually no major items of capital equipment for the textile industry are made in the Philippines. The machinery of today is so highly specialized and requires so high a degree of accuracy of manufacture in relation to the size of the total world market for textile machinery, that there has been a dramatic worldwide reduction in the number of companies engaging in the business during the past ten years. It is not surprising, therefore, that all machinery is imported. The choice of country of origin is generally unimportant in relation to technical aspects, and purchase decisions tend to be made on the basis of price, exchange rate and credit facilities.

#### 8. Availability of Raw Materials

7.16 Increased use of synthetic fibers, both as continuous filaments and as staple fiber (particularly polyester staple blended with cotton or wool worsted), has had an important impact on the world textile scene. Originally introduced as expensive, premium fibers, the synthetics have come down in price to such an extent that, even on a weight basis, they are cheaper than cotton and very much cheaper than wool. Over the past ten years synthetic fiber makers and natural fiber producers have overreacted (in opposite directions) to the changing situation. As a result, we are now in the position of having a world surplus of capacity for the production of synthetic fibers and a shortfall of the availability of natural fibers, cotton in particular.

7.17 The Philippines has sensibly decided to reduce the real cost of textiles by encouraging the use of synthetic fibers to increase durability. As part of this program, synthetic fiber plants have been set up with Japanese participation. The present capacity of these plants is rather less than the requirement of the textile industry and further investment in synthetic fiber manufacture is proposed. Unfortunately, there is a world-wide over-supply of all synthetic fibers and currently it is cheaper to shop around buying fiber at prices based on marginal costings than to set up a plant to make it oneself. It is, of course, difficult to say for how long this situation will continue, but it is clear that now is not a propitious time for further expansion of so capital-intensive a sector of the industry.

7.18 Ramie is a natural fiber which grows well in Mindanao and is currently being used in significant quantities both alone and in blends with polyester staple. During 1977, the weight of spun ramie was a little over 2,000 tons against a total of 20,000 tons of imported cotton and 437 tons of domestically-produced cotton. There is a strong possibility that a useful textile export industry could be based on ramie as the fiber, in its finished

form, has many of the attributes of linen and linen production in Europe has almost ceased, not because of lack of demand for the product, but because flax is no longer available in sufficient quantity.

7.19 Expansion of ramie growing and processing could be rewarding. It is a readily exportable end-product which would not be excessively capital-intensive. There is a bonus to ramie growing in that a by-product of ramie fiber production is considerable quantities of a feed suitable for commercial hog-raising. This is already being exploited in Mindanao.

## 9. Technology

7.20 Textile manufacture is no longer a craft dependent on direct workers who have served an apprenticeship or undergone a long period of training. The staff of a modern mill may be divided into three categories: (a) technologists; (b) direct operatives; and (c) technicians (i.e., mechanics, electricians, etc.).

7.21 The quality of the technologists (with regard to both knowledge and diligence), is crucial to operational efficiency, but the number involved is very small. A large spinning mill, for example, might operate with only four - a chief and three assistants. As has been noted earlier, technological management in most of the mills visited was excellent but was provided mainly by expatriates from such places as Hong Kong, Taiwan, Japan and India. While no facility exists within the country for full technological training, this is not important. The number of such technologists needed is very small and there are many excellent technical colleges and universities in the world at which suitable personnel can conveniently be trained. It may even be argued that training abroad is to be preferred because it avoids the dangers of in-breeding. The award of fellowships to enable four or five suitably-qualified Filipinos each year to go abroad for training periods of up to three years duration would fairly quickly reduce the dependence of the industry on expatriate technologists.

7.22 Although there is no textile technical college, there is the Philippine Textile Research Institute which could be a useful organ through which the industry could be kept in the forefront of development and which could help in the solution of problems inherent in the local industry or in particular mills. PTRI is wholly funded by the Government and is subject to the general supervision of the National Science Development Board. It has reasonably equipped work rooms in which a small amount of operative training is done, but discussions with the staff suggested that they had very little rapport with the industry. Discussions with members of the industry left the impression that PTRI was regarded as a remote, inward-looking organization of no direct value to the industry. This is an unfortunate situation which could be remedied by establishing better channels of communication between PTRI and the trade association of the textile industry. Whether or not PTRI could contribute usefully to the post-graduate training of technologists depends

very much on the mutual willingness of the two parties to cooperate in this sort of activity. If such willingness could be developed it would materially advance the technology of the industry as a whole.

10. Labor

7.23 In the view of the technologists met, and on the evidence of the operation of machinery seen in the mills visited, it is clear that the available labor (at least around Metro Manila) is entirely adequate. It is easily trained and, subject to technological supervision, fully competent. Manning levels needed are much higher than in America and Europe (although very much lower than in India) but this does not seem to be the result of inadequate training. It is rather the lack of a sense of urgency and dedication to the efficient performance of one's duties which is such a marked feature of workers in such disparate, but equally highly competitive, textile producing countries as the USA, Germany, Hong Kong and Taiwan. At the wage levels prevailing in the Philippines, however, this situation gives no cause for alarm. Some relevant comparative labor productivity figures for 1977 are:

	Labor productivity in	
	<u>Spinning</u>	<u>Weaving</u>
USA	100	100
EEC	72	49
Turkey	37	26
Philippines	31	24
Pakistan	15	9

7.24 It would be unrealistic to aspire to the American figures, which are a reflection of the very high degree of product specialization which is possible in that country. A reasonable target for the Philippines would be a performance between that of Turkey and that of the countries of the EEC, say 55 in spinning and 40 in weaving.

7.25 Technicians, particularly mechanics and electricians, are a very different matter. Modern textile machinery can only work well when in first-class condition and, although the technologists are able to define setting requirements, they are very dependent on the services of technicians for the achievement and maintenance of these settings. Labor turnover of technicians is very high indeed and the quality of technicians available has been harshly condemned by management. This suggests at least a shortage of adequately trained technicians willing to work in the textile industry. A common complaint of management is that after being trained in the mill as a technician a man is very likely to go away and use his newly-acquired skills either as a freelance or in a post offering higher remuneration as an automobile mechanic or electrician. This weakness is not confined to the textile industry and may well be an indication that industry generally is paying insufficient attention to the training of technicians.

## C. Issues of Current Operations and Expansion

### 1. Integration

7.26 As discussed in B-3 above, there are general operating inefficiencies introduced through the lack of specialization in the textile industry. Vertical organization (integration) is indeed the norm and there is no doubt that most of the industry's leaders wish it to remain so. The reason for this is that an entrepreneur with an integrated mill believes that he is much more the master of his own destiny. With a specialist-function mill he is but one link in a rather tenuous chain. In support of this preference to remain vertical, he will advance the argument that the closer contact and intimate liaison between the specialist subprocesses leads to true optimization of all intermediate product parameters and hence more efficient production. Worldwide experience has shown that this argument is fallacious except when associated with very high product specialization -- a condition applying to only a small minority of mills in the Philippines although, because of the much larger home market, not uncommon in the USA. It is difficult to assess precisely the extra cost which integrated working entails in the Philippines. A tentative estimate is that the overall cost could be reduced by about 40% by rationalization and efficient horizontal (i.e., specialist) organization of the industry. At this level of performance the industry would be able to compete internationally with such countries as Hong Kong, Korea and Taiwan.

### 2. Rehabilitation

7.27 Only about one-quarter of the existing equipment of the main line industry (conventional spinning, weaving and finishing) is less than ten years old and much of the remainder is about twenty years old. This old machinery is in need of substantial renovation and, in many cases, renewal. Lack of necessary renovation and renewal combine to give the industry a per spindle productivity performance about 40% lower than one might easily tolerate. A conservative estimate of the cost of rehabilitation in spinning alone, at 1979 prices, is \$100 million. Detailed estimates of the requirement of other sectors of the industry have not yet been made, but it seems likely that the total cost of rehabilitation of the whole industry will be about \$250 million. The effect of rehabilitation would be to reduce operating costs (but at the same time incurring a considerable capital liability) and to increase productive capacity by about 25%, assuming there is no increase in size of the industry in terms of numbers of spindles and looms. There would also be some quality improvement.

7.28 Without rehabilitation some of the older mills will cease to be operable while others will suffer a decline in productive capacity and a rapid increase in costs per unit of production. In fact, the rehabilitation program would involve phasing out some plants which, even after new capital outlays, could not be competitive at the proposed lower tariff protection. Renovation of the machinery is a relatively straightforward task in technical terms. The present need is to evolve a strategy of rehabilitation, by means

of which greater specialization may be introduced and productive efficiency thereby increased. A survey of the present position and rehabilitation needs of the equipment of the industry is underway through a subcommittee of the Textile Industry Inter-Agency Committee. So far, only the spinning and yarn texturing sectors have been completed. It is a thorough and extremely competent piece of work on which a master-plan for rehabilitation could be made with confidence in its technical soundness. It does not, however, give any attention to the matter of specialization vs. integration. It would be a step towards operating-cost reduction if the ground rules for rehabilitation loans were so framed as to encourage process and/or product specialization.

### 3. Protection and the Textile Industry

7.29 The textile industry currently receives substantial protection against imports with nominal tariff rates increasing as the stage of processing progresses from fiber through to finished cloth. The tariff rates are summarized below:

	Tariff rate <u>/a</u> (%)
Cotton	10
Staple fiber	30
Yarn, filament or cotton	50
Woven fabric	70
Clothing, finished fabrics	100

/a There is also a sales tax that must be paid on imports which is set at a slightly higher level than the tax on domestic production.

7.30 In addition to the tariffs, most textile and clothing items are included on the Central Bank's restricted lists and consequently these items are subject to quantitative restriction as well as tariffs. In practice, however, the import restrictions do not usually raise domestic prices of yarn and cloth above the duty-paid price of comparable imports. Thus, domestically produced synthetic yarn is priced at around 50% higher than the c.i.f. price of equivalent imported yarn, and fabric prices are generally some 40-80% higher than equivalent import prices.

Table VII-1: IMPORTED AND DOMESTIC FABRIC RELATIVE PRICES

	Import ----- (Pesos) -----	Domestic -----	Variance (%)
Polyester/cotton (yd)			
White (polyester)	4.35	6.58	51
White (cotton)	4.58	6.41	40
Plain, dyed (polyester)	4.80	9.17	83
Plain, dyed (cotton)	4.54	7.20	40
Cotton denim (sq yd)	10.73	18.54	73

Source: BOI.

7.31 The effect of escalating tariff levels is to provide high rates of effective protection on the value added in each process in the textile manufacturing chain. In spinning and weaving, where the value added at international prices is about 33% of the value of output, effective protection available is of the order of 90-110%.

7.32 These effective rates of protection are those available to efficient firms and give scope for very high profits, since given the low labor costs in the Philippines, profits are a large part of value added; less efficient firms, with higher costs and lower profits, will have less effective protection. At the margin, the high effective protection means that some badly-managed, high-cost firms can still survive, even though they are inefficient both by Philippine and world standards. Efficient firms operating side-by-side with high-cost firms have a comfortable life and are given no incentive to further reduce costs or increase productivity.

7.33 The high protective levels, as well as permitting efficient firms to make excess profits and high-cost firms to survive, lead to high prices for textile fabrics with consequent disadvantages to the domestic cost level and the price of clothing consumed by all levels of the population. A further damaging effect of the high cost of domestic textiles is that they cannot be used in the export clothing industry but are limited to the domestic market. As a result, an important opportunity for increasing value added and employment in the export industry is being missed.

7.34 While the present tariff levels may have been justified in the past as necessary to protect an infant textile industry, there is little case now for such high levels. The Government is particularly aware of the problems posed by the textile tariffs, and, in recent months, the Minister of Industry has stated the Government's intention to reduce tariffs on fabrics from 70% to somewhere around 30%, with concomitant decreases in fiber tariffs. The President has supported these proposals in a recent speech to the Textile and Garment Manufacturers Association.



7.35 The Mission agrees that textile tariffs should be substantially reduced. The final level of the tariffs should be designed to give roughly equal protection, in effective terms, to each stage of production, and should also bear some reference to tariff rates in other sectors of the economy to ensure that the textile industry is not given relatively less protection than other industries. The rates would also have to provide sufficient protection to the industry against dumping. The following schedule presents a set of tariffs that would broadly fulfill these objectives even though the new effective rates still show considerable variation. These tariffs are indicative only, and the exact levels of any reduction would, of course, have to be decided by the Government after appropriate analysis and consideration.

Product	Present tariff	Suggested revised tariff	Effective protection	
			Before reduction	After reduction
Cotton	10%	10%	20%	20%
Staple fiber	30%	10%	90%	30%
Yarn	50%	20%	90%	40%
Fabric	70%	25%	110%	35%
Clothing	100%	30%	170%	42%

7.36 To give the industry time to adjust, these reductions could be phased in over 2 to 3 years as rehabilitation of less efficient firms proceeds. At the same time, the import restrictions would have to be phased out, if the tariff cuts were to have their full impact. This would require the coordination of the Tariff Commission, the Central Bank and the Ministry of Industry. If the import restrictions remain, the price of textiles could still be maintained at their existing levels and any tariff reduction would only result in a transfer of income from the Government to manufacturers with no benefit to consumers.

#### 4. Effects of Tariff Cuts

7.37 The proposed tariff cuts would lower the excessively high rates of protection presently given to fibermaking, spinning and weaving, and would even out the protection given to each stage of production. The cuts would increase the competitive pressures in the industry, but efficient well-managed firms would have little trouble coping with them, (see Annex VII-2) especially if they increased their product-line specialization. Many marginal firms, however, would not survive under the new regime unless they replace obsolete equipment, improve management and increase overall efficiency; even then some plants will have to be phased out. Funds for rationalization should be hand-in-hand with the lowering of tariffs and

easing of import restrictions, and this will help firms wishing to modernize or streamline their production.

7.38 There is unlikely to be any long-term impact on employment as a result of the proposed policy changes. Textiles are not likely to be imported to any extent behind the proposed tariff levels (although there will, of course, be an increased possibility of import), and, in fact, the domestic market will increase in size in response to the expected price reductions thus increasing employment in the industry. Further gains in total employment will also arise if the lower prices and increased efficiency in the industry means that domestic textiles can be used more in the export garment industry.

7.39 While aggregate employment will not be affected negatively, some of the less efficient mills will have to close down and this would put the employees of these mills out of work. These jobs will be replaced as other mills expand output and as the market grows. Nevertheless, inasmuch as the new jobs are in different locations, this will disadvantage the displaced workers. Every effort will have to be made by the appropriate Government agencies to encourage other firms to use the buildings vacated by firms that go out of business and to assist workers who have to travel to other textile firms. Fortunately, any dislocation will take place in Metro Manila and so resettlement of workers will be unnecessary.

7.40 A planned program of tariff cuts and import liberalization is an essential prerequisite of any program to make the textile industry more efficient and competitive. The Government has expressed its desire that textile tariffs should be reduced, and such a reduction should be given high priority in any overall plan for tariff rationalization.

## 5. Expansion

7.41 Meanwhile, as the subcommittee continues to study rehabilitation needs, many companies within the industry are taking steps to increase their capacity. During 1978 a total of 72,000 new spindles were installed and in January 1979 nine new investment proposals received the approval of the BOI. These proposals are for an increase in industry capacity of 227,000 spindles, i.e., roughly a 25% increase. The Board has given approval subject to the condition that 69,000 of the new spindles will be used exclusively for the production of goods for export. In addition to these firm approvals, the Board has registered Letters of Intent from fourteen other companies for installation of a further 386,000 spindles. At present, these figures are merely approvals and statements of intention - that they will shortly become spindles and looms is by no means certain. A decision by Government to reduce the tariffs on imported textiles would probably cause some, if not all, of these plans to be abandoned.

7.42 The case for expansion of the industry is weak. An industry of the present size, in good condition and efficiently run, is sufficient to provide all the immediate and near-future needs of the country. Under the

export requirement policy in present and foreseeable future circumstances, it may not, in general, be possible to export textiles directly from the Philippines without the aid of some subsidies, either direct or indirect, through additional protection of the domestic market. On the other hand, some export or exposure to international markets will help the industry to be efficient and competitive.

## 6. Exports

7.43 The export of textiles can be a useful contribution to the economics of a developing country but it must be appreciated that the export market is a hard, keenly contested market. As presently organized, the textile industry of the Philippines is ill-fitted to enter the international arena and compete in the very substantial market which exists for standard textiles, i.e., shirtings, bed sheets, drapes, napery, etc. It would be wholly unrealistic to expect to succeed in this market by syphoning-off a fraction (even a large fraction) of the output from integrated mills, essentially geared to the relatively high variety demands of the domestic market. Success in the highvolume, low fault-rate international market requires the setting-up of large specialist mills designed and staffed for the efficient production of a small number of standard cloths. This could be done relatively cheaply by attracting major international companies of proven capability, and who would initially provide some capital and expatriate general and technical management, to operate in the Philippines under mutually profitable conditions. An alternative approach to the exporting of textile products is to concentrate on low volume, high value and relatively high profit 'premium' textiles, particularly in the form of garments or other made-up goods. Such an approach is discussed in Chapter IX-B.

7.44 The use of ramie as a textile fiber has already been discussed under the heading "Availability of Raw Materials" in Section B-8 above. Alone, or in blends with polyester, ramie could substitute for linen, now becoming a premium textile material, partly because of its crisp handle combined with high absorbency and also because of the very limited amount of flax now available. Ramie fabrics could become a valuable export, both in fabric form and even more so in the form of garments and made-up goods.

7.45 Although most textile processes are heavily capital intensive, the making of fully fashioned knitwear is an exception and this activity could well be expanded as an export industry. Other countries, notably Taiwan, Hong Kong and Korea, are already exporting substantial quantities to the USA and Europe but they have, so far, produced only for the lower end of the market, employing low specification yarns and constructions. It is very likely that an up-market approach using higher specification yarns and superior knitting constructions (i.e., higher stitch densities) would be successful and extremely profitable.

## 7. Location of Industry

7.46 The industry is presently concentrated in the Metro Manila area (see Chapter IV). However, there are severe impediments to setting up substantial mills for spinning, weaving or knitting in other parts of the country. Such mills require:

- (a) A pool of labor from which a machine operating force of 500 to 1,000 people, trainable and not adverse to factory life, can be drawn and a slightly smaller number, say 300, be available for the provision of infrastructure support;
- (b) Road, rail or some other efficient transport facility for the delivery of raw materials and the distribution of finished goods without undue delay or expense; and
- (c) An adequate power supply. A modern 50,000 spindle spinning mill will impose a steady demand, day and night, of about 4 megawatts plus a varying amount of power for air conditioning. During hot and humid weather a further 3 megawatts may occasionally be needed for this purpose. Alternatively, the mill may be provided with its own power supply from diesel, steam turbine or gas turbine equipment.

7.47 As described in Chapter IV, infrastructure such as transport and power may not, at this stage, be adequate to support very large mills. There are, however, some important textile operations which can be carried out reasonably efficiently wherever there is a supply of willing labor available. In spinning there is no viable alternative to the use of fairly sophisticated, modern machinery located in large mills. In weaving, however, small- to medium-sized units, based on the use of simple power looms without automatic weft replenishment facilities, can be used. Such looms are not suitable for use in large mills on account of logistic and personnel management considerations, but they are capable of producing high quality fabrics economically. Because of the smaller unit size, such a system affords scope for regional dispersal and has the advantage of being much less capital-intensive than is mill-scale weaving. It reduces the amount of fixed capital per employee from about \$27,000 per person, for mill-scale weaving on pirn changing automatic looms, to \$1,500 per person for small-scale power loom weaving on 'Lancashire' looms. The capital cost per unit of production is reduced by a factor of about 9:1 under conditions conducive to intensive operation.

7.48 Typical units would be equipped with from 10 to 40 looms, would give direct employment to 15 to 60 people and would require a power supply of about 500 watts per loom. This alternative to mill-scale weaving is discussed in greater detail in Annex VII-3 "Low capital-cost weaving in small units." The product would be indistinguishable from more typical mill-woven fabric, and is different from craft weaving (such as is carried out in Baguio and other places) for the production of such things as runners, place mats and Roman shades.

CHAPTER VIII

THE FOOD PROCESSING INDUSTRY

A. Overview

8.01 The food industry occupies an important place in Philippine manufacturing. It produces about one-fourth of value added in all manufacturing and employs one-fifth of the total manufacturing labor force. Some 450 establishments, employing more than 20 workers, produce approximately 26% of the value added by all manufacturing enterprises of that size. About two-thirds of these larger establishments are located in Metro Manila and surrounding regions. Employment and value added by small and cottage establishments in food processing (with less than ten workers) represent around 40% of the small scale and cottage sector in all manufacturing; they are more evenly spread throughout the country than the large establishments. Capital-labor ratios in the food industry average somewhat above those for manufacturing as a whole, but capital efficiency and value added per worker also tend to average higher. The employment effects of food processing should take into account employment in ancillary activities (storage and transport) as well as agriculture and fisheries; this indirect employment could be as much as ten times the direct. (See Tables 8.1, 8.2 and 8.3.)

8.02 The Mission focussed on processing of fruits and vegetables, fish and meat, which in value added, represent about 27.0% of total food manufacturing. Important processing /1 activities not covered by the Mission include sugar production, coconut products, edible oils and fats, dairy products, and grain milling.

8.03 Some 53 firms produced around 80% of the output and virtually all of the exports of processed fruits and vegetables, fish and meat. They provide some 50% of the employment of the sub-sector. The Mission's analysis is based on discussions with 21 large firms and a number of

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/1 The BOI staff defines food processing as "converting raw material into marketable form by a special treatment or series of actions that result in a change of the nature or state of the products, such as by slaughtering, milling, pasteurizing, drying or desiccating, quick-freezing, and the like. Merely packing, packaging or sorting out and classifying shall not, by themselves, constitute processing." This definition does not differentiate between either scale or degree of sophistication in transforming/converting processing operations. It is frequently convenient to distinguish between "primary" and "secondary" processing. Operations of cleaning, inspection, packaging and storage under regulated conditions are also normally reported as "processing" - albeit at the "primary" level.

trade associations and Government agencies which are listed in Annex VIII-1. <sup>/1</sup> Detailed data from selected firm interviews are given in Annex I-1.

8.04 The sub-sector /a has grown considerably in 1965-74:

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- - - - - in millions of constant 1972 Pesos - - - - -

Processing category	1965		1969		1974		Annual growth rates 1965-1974	
	Output	V.added	Output	V.added	Output	V.added	Output	V.added
Fruits & vegetables	144	64	356	115	400	149	12.01	9.83
Fish	NA	NA	15	5	40	13	21.67	21.06

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/a Processed meat and poultry are not included because statistics aggregate slaughtering with fresh and processed meat.

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<sup>/1</sup> The lower limit for "large" firms is total assets of P 4 million. The firms interviewed by the Mission had capital assets over P 20 million. The definition employed by the Government includes land and buildings, which might better be excluded for the purpose of the present analysis.

8.05 Overall growth has continued steadily since 1974, being particularly marked for processed pineapples, mangoes and marine products - all based on domestic raw materials - as well as for juices, nectars and meats using both domestic and imported raw materials. In the last several years there has been no significant increase in new undertakings; rather the more established firms tended to consolidate and strengthen their market position. To overcome frequent difficulties in obtaining their raw material supplies, large firms are seeking to establish their own production sources. Such integration reinforces the consolidation of established firms and puts the small processors and producers at a disadvantage. If left unchecked, this trend could also have far-reaching implications for the distribution of ownership in agriculture.

8.06 The industry has an important role to play in the improvement of nutrition of the lower income groups of the population. At least one-fourth of the Philippine population has an inadequate dietary intake. For some other parts of the Philippines, deficiencies may be more pronounced. Most of the food intake by the poorer classes is in the form of fresh products, but manufactured and processed foods should be expected to make an increasing contribution. Canned sardines and mackerel could provide a useful source of high protein food from domestic sources at relatively low prices.

8.07 Management. Senior management (frequently one or more members are substantial shareholders, especially with family-owned companies) is competent and appears to operate successfully. In general, its members are fairly young and many possess overseas training. In some firms, the middle cadre and supervisory staff gave the impression of superficial experience and a reluctance to accept responsibility; on-job training programs and profit sharing schemes might justify examination.

8.08 Workers. On the whole, factory workers were found to display a disciplined attitude to their duties and to evidence good productivity. One manager reported that, after a mere three months' on-job training, female labor in his firm gave a 40% greater productivity than similar workers at a comparable plant in a developed country. Many firms furnish on-job worker training but very few consider incentive payment schemes to be warranted. Worker turnover was reported as extremely low, as was absenteeism.

8.09 Facilities. Factory design and construction are generally suitable. With the exception of simple fabricated items, most plant and equipment are imported, principally from the USA. Some sophisticated plant (e.g., automatic can seamers) is supplied from Taiwan. A local company has recently begun to fabricate stainless steel. However, imports of more complex plant items as required by large firms will tend to persist because of: (a) their specialized character; (b) the reluctance of processors to risk teething troubles with local prototypes; (c) the high cost of producing custom-built items; and (d) the ready availability and low tariff of new (as well as modern second-hand good condition) imported plant and equipment.



8.10 Technology. Having regard to the number, types, sizes and the short runs of many products, the level of technology and process operations is considered satisfactory and appropriate. Most firms have direct linkage or back-stopping arrangements with sources of overseas expertise, ensuring ready access to technological advances, engineering and process guidance, senior personnel training, etc. The Mission did not encounter investments in unnecessarily sophisticated technology. Given higher volume throughout and longer runs on individual products and sizes, greater mechanization would be justified, for example, in handling of raw materials and finished goods, materials' preparation and filling into containers, automatic check-weighing, high-speed labelling and automatic casing. All firms seemed extremely alive to the importance of assuring consistent quality appropriate to market requirements and appear to be devoting much effort to that end. The larger firms themselves possess and/or are able to utilize facilities of testing, investigation, research and development; consequently, there is little demand for such services from official sources.

8.11 Most firms' sales are predominantly in the home market; however, many are developing export business which is usually more profitable. A few firms process either fruit or seafood almost exclusively for export and have little or no dependence on the domestic sales.

8.12 Because of the relatively low level of domestic demand and keen inter-company competition, the sub-sector's profits on home sales are said to average below 10% while trade margins are themselves very slender (see Annex VIII, Table 4). Statistical information on total family income and the classification of family income (see Table 8.5) show that the low income group, defined as families earning less than ₦ 6,000 p.a., is currently estimated to account for some 60% of rural families. Persons in this group are regarded as occasional consumers of processed foods and, even then, they tend to be purchasers of low-price items.

8.13 Of total direct cost (excluding returns to capital) in the processing industry, some 60% represents material inputs, 35% packaging and only 5% direct labor cost (see Table 8.6). The low proportion of direct labor cost is explained by the relative importance of capital equipment used in processing. Labor cost in the small and cottage industries can be expected to represent a considerably larger proportion.

#### B. Performance and Growth Constraints

8.14 The Fruit and Vegetable Industry is the most developed component of the sub-sector. The constituent firms have good operational efficiency. In summary, some features of the industry are:

Raw materials	Processed form	Principal outlets
Orange /a Concentrate	Canned and Tetrapak	Domestic
Grape /a Concentrate	Canned and Tetrapak	Domestic
Beans and Tomato /a	Canned	Domestic
Mango	Canned and Tetrapak	Domestic
Mango	Canned	Export
Fruit Purees	Bottled	Domestic
Banana	Pulp/Puree	Export
Pineapple	Canned	Export

/a Imported; all others indigenous.

8.15 Various other indigenous raw materials including papaya, mixed tropical fruits, peas and sweetcorn, are processed, albeit on a minor scale. Pineapple is the preeminent raw material in terms of weight and value. The two firms specializing in the export of processed pineapple also engage in its production. Throughout the Philippines, some 30,000 ha are under pineapple cultivation; good yields are obtained due to favorable climatic and soil conditions, especially in the areas of Mindanao and Davao. Of total Asian production in 1975 (about 1.9 million MT), Taiwan was in first place with 27% and the Philippines in second, accounting for 19% of total production. Excepting the two firms with integrated producing/processing operations for pineapple, others obtain the larger proportion of raw material inputs from independent growers and markets. Reported problems include: little or no grading, varietal variations, uncertainty of supply, and rapid upward price increase outside the glut periods. On this account, some firms are moving into raw material production.

8.16 The Philippines has no domestic producer of tomato paste (30/32%), which is imported from Taiwan and Europe. At least one firm produces tomato puree whilst another repacks imported paste into consumer-size cans. Examination of fresh tomatoes (Roma-type variety) in the San Andres market would suggest that tomatoes suitable for paste can be grown at a price to warrant consideration of processing; accordingly, investigations would be necessary to determine whether: i) more than one crop per year can be harvested, and ii) demand would justify the sizeable investment in a modern vacuum concentration plant.

8.17 The Seafood Processing Industry. Some characteristics are listed in the following tabulation:

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Raw materials <u>/a</u>	Processed form	Outlet
Sardines	Canned	Domestic
Mackerel	Canned	Domestic
Tuna	Frozen and Canned	Export
Shrimps	Frozen and Canned	Export
Cuttle Fish	Frozen	Export
Abalone	Frozen	Export
Lobster	Frozen	Export

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/a All indigenous.

8.18 Most factories/firms process seafood exclusively. However, a few process other commodities as production fill-in when no seafood is available. Raw material is derived principally from commercial fishing operations - either independent or under the processors' control - and, to a lesser extent, from municipal fishermen. The country's main fishing port and fish market is at Tagnig, Metro Manila, in which area most of the country's cold storage facilities are located, notably those of the Government-owned Food Terminal, Inc. A major obstacle to the industry's progressive expansion is the assured consistent supply of raw material for the maximum period, at a price and of a quality which makes processing rewarding. To this end:

- (a) Processors are locating and expanding operations outside the Metro Manila zone, at the same time developing their own fishing operations as well as organizing peasant fishermen as suppliers;
- (b) Government is launching a program for fisheries' development; and
- (c) The Fisheries Industry is listed as a "preferred area" under the Act for Investment Incentives for Agriculture (Agri-Business Unit).

8.19 Raw material should permit a "several-fold" /1 increase in the fish catch within territorial waters. Nevertheless, it would appear prudent for appropriate survey investigations to be undertaken during the coming decade so as to preclude any irreversible depletion of this renewable resource - as in fact has happened with over-exploited fisheries in other parts of the world.

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/1 Expression used by the Bureau of Fisheries and Aquatic Resources.

8.20 The Meat Processing Industry. From a modest base at the start of the present decade, the industry's output has steadily increased. Using modern processing systems, the firms inspected are achieving good efficiency. The industry's principal raw materials are: local cattle which are being upgraded through improved selection; imported beef, pigs and poultry raised by both the processors and contracted producers. The main products are open-pack meats, especially sausages of various kinds, corned beef and dressed frozen poultry. Sales focus on the home market; however, export business is being successfully built up for frozen poultry. The industry's growth is conditional on the price of raw material inputs in relation to both domestic purchasing power and the products' competitiveness in the export market. Thus, livestock improvement, better animal husbandry practices and access to keenly priced feedstuffs are all mandatory in assuring the industry's sound expansion. With the industry's further growth, consideration could be given to the local manufacture of protein-rich materials of vegetable origin to be used in part as substitution of meat in sausage products.

8.21 Sub-sector's performance is good, particularly so taking into account the constraints discussed below. The Philippines compares well with developing countries at a similar stage of industrial development. Individual firms could, however, make several improvements, e.g., (a) make more use of process instrumentation; (b) give more attention to product diversification so as to lower unit costs by increased throughput; (c) upgrade product presentation; (d) be more aggressive in promoting sales; and (e) secure higher productivity from their office staff.

8.22 Assured access to raw material inputs - as to quality, quantity, price and reliability of supply - probably constitutes the major obstacle to expansion of the sub-sector. This is true for both domestic and export production but measures to overcome this constraint are crucial if the Philippines is to expand exports of food products. Many firms are considering or are already implementing a "backward integration" policy whereby they undertake fishing, poultry and cattle-raising, horticulture, etc. Such trends (if not checked) can but diminish the participation of independent producers, especially the small-scale, in the industrial economy.

8.23 Cans. Because of their general use throughout the sub-sector, round cans ("open-top" or "sanitary" in trade terminology) feature as a key input. Domestic production of both electrolytic tin plate and its precursor, black plate, is quantitatively insufficient - reportedly due to malfunctioning of manufacturing facilities rather than to intrinsic capacity deficiency. Domestic plate quality varies considerably and is inferior to that manufactured abroad. Hence, to obviate difficulties with their buyers, processors of export lines pack in duty-free imported cans or, if they themselves fabricate cans, use duty-free imported first-grade tin plate. Although the shortfall of can fabricators' requirements is made up by importing, in practice licenses are almost invariably issued for second-

grade plate. Imports of tin plate are taxed at some 80% of the plate's c.i.f. value; however, black plate, the raw material for tinning, is sometimes brought in free of duty on an ad-hoc basis. Should the resultant cans be exported, processors say that no mechanism exists for a tax drawback. To combat the uncertain supply situation, fabricators are obliged to carry high inventories. Three fabricators, operating continuous automatic lines, plus six others with restricted mechanization and process control, sell to processors. Due to the diversity of sizes in demand, short production runs followed by machinery size change-overs are characteristics of the Philippines' open top can-making industry which reports utilization at 60%-70% of installed capacity. (See Annex VIII-2, Table 8.7 and Chapter V, paras. 5.18-5.20.)

8.24 Regulations. The Food and Drug Administration (FDA) of the Ministry of Health prescribes standards for the food industry. The large firms incur the extra costs (usually passed on to the consumer) in satisfying FDA requirements. The FDA has inadequate resources to enforce the requirements; thus, the small and cottage-type establishments receive scant control. Because many home market consumers are extremely price conscious, they therefore tend, when price disparity occurs, to purchase products made by small and cottage-type establishments which are frequently of inconsistent standard. This situation renders market penetration more difficult for the reputable processors and serves to perpetuate preference for the imported products. Widespread enforcement of realistic standards would be in the interest of the industry and of health conditions generally.

8.25 Operations of Food Terminal, Inc., which furnishes cold storage for raw materials and frozen foods, could be improved. At present, it suffers from deficient handling arrangements, delays in moving into storage, temperature variations, high charges, and remote location. The Terminal's Food Processing Department has the objectives of: (a) generating income from processing and research services; (b) developing and maintaining technical and manpower capability; and (c) establishing methods for minimizing post-harvest and storage losses. The Department needs more laboratory equipment and pilot-type plant, etc., to make its performance more effective. With improved facilities, the Department could undertake a valuable function in conducting developmental work designed to promote new processing opportunities.

8.26 There is at present no association of the industry as a whole which can bring industry-wide problems to the attention of the Government. The sub-sector has four trade associations; either these individually, or even single firms, make submissions to public agencies. Major matters of industry-wide concern would better be reviewed through a wider association such as the Philippine Federation of Food Processing Industries (PFFPI), which was formally organized in July 1977 to act as a single body to address shared problems of the entire food processing industry in relation to the ASEAN Federation of Food Processing Industries.

C. Incentives

8.27 Tariffs on food products show very considerable variation. Data in the UP study suggest that export products generally have low or negative protection. On the other hand, processed food and beverage products for the home market receive high protection; for example: a group of processed food products for which calculations were made in the UP study received tariff protection (with subsidies) at a level of over 80% (nominal) and 400% (effective).<sup>/1</sup> Bakery products receive nominal protection of 110%. Commercial fishing receives over 100% (nominal) and 116% (effective) according to the UP study; the tariff on canned mackerel and sardines is, however, only 10%, and hence the effective protection is below that of other fish products.

8.28 Given the relative favorable performance of the food processing industry, the present protection levels would seem to be on the high side. Some nominal protection of finished products may be justified where inputs are subject to protection or where the cost of domestic inputs are above international levels. Where the Government wants to restrict luxury foods consumption it might be more appropriate to increase domestic sales taxes, so that the commercial policy can be consistent with development of a rational and efficient industry structure.

8.29 The domestic sardine and mackerel industry could become a more important source of relatively low-cost high-protein food. At present, some \$25 million of this fish food is imported in canned form (300 million cans in 1978). The product is subject to a 10% customs tariff which may be justified (and sufficient) in light of the duties imposed on imported cans and tomato paste. The local product, considered by some as being of lower<sup>/2</sup> quality, is priced more than 10% below the import. However, larger and more consistent domestic production of canned fish could come about with improvements in the supply of cans (see Annex VIII-2) and other steps to help develop the fishing industry; this should not involve any permanent increase in tariff protection. Food products of which the Philippines can potentially expand exports should, in general, not require high levels of protection.

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<sup>/1</sup> For input-output sectors 40, 41, 45 and 46.

<sup>/2</sup> But domestically-canned samples examined by the Mission were considered to be of equivalent standard.

8.30 BOI Operations. Fish, meat, fruits and vegetables are all eligible for BOI incentives under the 1978 Investment and Export Priorities Plans. Furthermore, under Presidential Decree No. 1159 of June 1977, investment incentives for agriculture are now operative. This decree, unlike the Investment Incentives Act (R.A. 5186) and the Export Incentives Act (R.A. 6135), not only incorporates all the applicable guarantees provided by the two Acts but also adds new incentives, taking into account the unique bottlenecks and problems of investing in agriculture. P.D. 1159 has for its spring board a new dimension in agricultural development - the agri-business approach.

8.31 In the agro-based industries the greater part of BOI incentives have gone to products other than fruits, vegetables, meat or fish products. Food processing, in fact, has received only 2% of benefits in agro-based industries under R.A. 5186 and 14% under R.A. 6135 (export promotion) in 1975-1977. (See Table 8.8.) In all, some 37 firms (most of them large) benefited during 1971-78:

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Processing category	Number of firms
<u>R.A. 5186 (Domestic)</u>	
Seafoods	3
Fruits and vegetables	6
Meat	5
<u>Total</u>	<u>14 /a</u>
<u>R.A. 6135 (Export)</u>	
Seafoods	16
Fruits and vegetables	7
Meat	1
<u>Total</u>	<u>24 /b</u>

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/a Of a total of 118 firms in BOI's global category of "Processed Foods."

/b Of a total of 40 firms in BOI's global category of "Food and Beverage Products."

8.32 Most firms receiving benefits consider them "quite material" in facilitating their position, and they regard duty-free imports and tax credits as particularly important. However, some firms regard the incentive effect minor in the case of intrinsically sound and viable projects.

8.33 The Mission finds the food processing industry to be well-established and operating profitably. Extension of BOI benefits for expansion projects will usually not be required; rather, it would have the effect of further consolidating the already strong position of well-established companies. Instead, benefits might advantageously be extended for new products or processes and for "newcomers" to the industry. In any case, all processors should be encouraged to procure a portion (say, 30% depending on local conditions) of their requirements from small growers. The Mission feels that the Agricultural Investment Incentives Act should be administered with caution especially in cases where benefits for backward integration by large processors would endanger the small growers.

8.34 There is not at present a systematic effort towards developing specific project opportunities in food processing. Project studies, even if in preliminary form, could guide the Government and the BOI in their administration of benefits. The Mission considers that Government, in concert with the private sector, should draw up a systematic development plan for the food processing industry.

#### D. Investments and Prospects

8.35 Most of the new investment proposals encountered by the Mission envisage expansion of existing products. In all, the sub-sector may plan new investments of at least \$30 million in 1979-83, mostly for marine and fruit products. In addition to these industrial investments, the larger firms may enter into agricultural and fisheries investments.

8.36 Among the larger new projects is a third pineapple producing and processing undertaking scheduled to commence commercial operations in 1980. The project, located in Davao, would produce \$13 million in exports, employ some 2,000 workers and involve a capital outlay of some P 70 million. Aside from still further emphasizing the export potential for pineapple processing in the Philippines, the project illustrates that, given sufficient perishable raw material production, it is preferable for the processing plant to be adjacent to its source. Consequently, as general infrastructural betterments proceed throughout the Philippines, processing activities may increasingly tend to become located near major production areas.

8.37 Of special interest is a possible project which would integrate fishing and canning of sardines and mackerel. It might be located in Northern Palawan, thus helping to create jobs in a depressed area and, at the same time, provide essential food at lower prices. Some suggested characteristics of the project are: (a) fishing performed by domestically-constructed purse seiners; (b) incorporation of highly efficient handling and production systems in the cannery; (c) acquisition of modern good-condition second-hand plant, as available overseas where fish supply has



failed (due to uncontrolled fishing); (d) cannery capacity of 150,000 cans (202 x 308) per 8 hour shift; and (e) work-up of fish waste into high grade fishmeal. Preliminary calculations suggest the project would have a reasonable economic return and might help in reducing domestic prices. It warrants further study. If accepted, it might perhaps be realized with participation by local fishermen, thereby serving as a demonstration model for linking small producers with the industrial operations to which their raw material gives rise.

8.38 The Food and Nutrition Institute is conducting investigative and pilot plant work to evolve highly nutritional low-cost food ingredients/preparations using legumes -- notably the mungo bean (*Vigna radiata*), animal blood and other indigenous materials. A possible project for utilizing echinoderms (sea cucumbers) as a source of low-cost protein is described in Annex VIII-3. Projects for highly nutritional low-cost food will probably be perfected for manufacture in the Philippines on an industrial scale, such as has resulted in Mexico /1 and Guatemala./2 The Mission considers that, for the resultant materials to be widely consumed by the poor, a significant amount of subsidy will be necessary; in such event, it should be applied preferentially to the raw material component(s) rather than to the manufacturing operations. Furthermore, the Mission would stress the importance of assuring the end product's acceptance as attractive food rather than of promoting it for its nutritional qualities alone.

8.39 Exports were US\$88 million in 1976, against imports of US\$44 million (see Table 8.9). Preliminary data indicate that exports in 1978 were slightly above US\$100 million. Given present constraints, sustained export growth will require action on improving raw material inputs. Assuming corrective action is taken expeditiously, exports could reach US\$500 million p.a. by 1987.

8.40 Growth of home sales depends on the overall increase in purchasing power and the ability of firms to minimize an upward movement in their products' prices. Given adequate promotion, especially-good prospect is envisioned for fruit juices/nectars which should capture some of the market for carbonated beverages, with concomitant betterment of nutrition.

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/1 Fortified tortilla flour - developed by Instituto Mexicano de Investigaciones Tecnológicas.

/2 "Incaparina" - developed by Instituto de Nutricion de Centroamerica y Panama.

E. Recommendations

8.41 Raw Materials. Consideration should be given to adopt the policy whereby, within a determined period of, say five to ten years, all large processors procure not less than 30% by value of their domestic inputs from independent suppliers - preference being given to small growers and fishermen, formed into associations or cooperatives with which the large processors would contract.

8.42 An inter-agency commission, to function at two levels - policy and operational - should address the problems of raw materials, with special attention to production, storage and marketing in relation to requirements of both existing processor and the envisioned new opportunities.

8.43 Cans. Steps should be taken to improve the domestic can supply. Domestic can fabricators should be helped to operate their facilities more economically by more adequate /1 supplies of tin plate. As discussed in Chapter IV, the Government would be well-advised to permit freer imports at low duties of black plate and tin plate until domestic production of these imports can be increased to meet domestic requirements. Export industries would be able to obtain their can requirements at international prices and quality.

8.44 Tariff System. Given the relatively favorable performance of the food processing industry, protection is generally warranted only where it is needed to compensate for input prices over international levels. Hence, a phased reduction of tariffs could be effected. Concomitantly, a mechanism might be considered for imposing a sales tax on those products destined for the luxury (high-income group) market.

8.45 Incentives. (i) It is proposed that a shift in emphasis be made so as to accord yet further importance to raw materials production and their effective marketing; (ii) To facilitate small producers' access to incentives, BOI and the Ministries. Agencies directly concerned should set up arrangements so that intending applicants are assisted in formulating both their projects and applications; and (iii) Since incentives are no longer a determinant factor for existing large firms in expanding their present facilities to augment current output, it is proposed that incentives should be preferentially available to encourage existing large firms to diversify into new products and to adopt innovative process technologies. Newly-established undertakings should, however, be entitled to all pertinent incentives, given the firms' compliance with requirements.

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/1 As to price, quantity and quality.

8.46 Accredited Trade Entity. Many important issues - finance, tariffs, incentives, inputs, effects of FDA regulations, etc., - are of general concern to the food processing industry as a whole. With this in mind, the Ministry of Industry, in concert with the existing trade associations for food processors, might give de facto recognition to one overall entity (perhaps PFFPI) accredited for dialogue and negotiation with the Government agencies concerned.

8.47 Contacts at the Factory Level. It is appreciated that official agencies and Government-sponsored institutions experience constraints, for example: on the travel of their personnel. However, the Mission considers that increased contacts at the factory level, especially by technical and regulatory staff, should prove mutually beneficial.

8.48 Food Processing Opportunities. In recognition of the important role of food processing in furthering national aims through: (i) providing employment, particularly in the production of its raw material inputs; (ii) expanding exports; (iii) substituting for imports of semi- and processed foods; and (iv) raising the nutritional level of the poor, it is proposed that one specific entity on Government's part should be responsible for developing food processing "opportunities". This is seen as including identification and formulation of feasible projects as well as their promotion and realization by appropriate parties. The DBP could play an essential role in project identification and promotion.

8.49 Although the analysis in this chapter is based on the experience of the large firms, the identification, work-up, promotion and realization of opportunities for smaller-scale processing projects should receive attention. Potential exists both to improve existing small-scale operations and to establish new processing activities (especially of the "primary" type) adjacent to areas of production, such as might be developed through growers' associations and cooperatives.

CHAPTER IX

OTHER INDUSTRIES

A. The Cement Industry

9.1 The cement industry in the Philippines currently consists of 18 plants, operated by 16 companies, producing cement by wet, semi-dry and dry processes. The plants vary in rated capacity from 122 thousand m tons of clinker per year to 739 thousand m tons. Total rated capacity in the industry is 7.4 million m tons, but, in practice, this capacity is not attainable because of electricity supply problems, the impact of adverse weather, and the widespread operating problems described below. The actual present capacity has been reliably estimated at 4.6 million m tons. Current domestic demand is about 3.4 million m tons and exports about 300,000 to 800,000 m tons per year. So, in fact, the industry is operating near its present actual capacity. The industry is located near markets and/or raw material sources throughout the country with 11 plants in Luzon, 2 in the Visayas and 5 in Mindanao.

9.2 Until the late 1960s, the cement industry operated efficiently and profitably. Cement consumption was increasing and the firms in the industry enjoyed high profit margins. However, the high profits and ready finance available from the Government attracted new firms to the industry, almost doubling the capacity in two years from 3.6 million m tons in 1969 to 6.4 million m tons in 1971. Consequently, capacity utilization rates dropped from around 82% in 1969 to 43% in 1971 and have remained low ever since (with respect to rated capacity).

9.3 At the same time as the industry was hit by excess capacity, the peso devaluation of 1970 caused severe problems. The cost of inputs, especially oil, increased substantially and the industry's heavy debt obligations, much of it in foreign currency, increased correspondingly. The oil price increases after 1973 have also increased the pressure on the industry.

9.4 The combination of a depressed market, increasing costs, large debt burden, and severe underutilization of capacity led to large losses by most firms in the industry. Consolidated losses were ₱ 62 million in 1973, ₱ 75 million in 1974 and ₱ 97 million in 1975. These losses have continued through to the present. The lack of profits meant that working capital for plant maintenance was insufficient with a consequent rundown of plant facilities. Debts due could not be repaid and in many cases were refinanced, especially by DBP, but even the refinanced loans quickly ran into arrears. Current debts continue to be heavy and cannot be repaid by many firms under existing arrangements.

## 1. Technical Problems

9.5 In addition to the financial difficulties outlined above, much of the industry has severe technical problems. In a significant number of plants, maintenance of equipment is poor because of bad management and lack of spare parts; production is constantly interrupted by erratic electricity supply and extreme weather conditions; operating staff are inexperienced and supervision is lacking; ancillary machines and instrumentation are inadequate or in poor condition; some plants are dirty with consequent problems from breakdowns and poor employee morale. These difficulties have led to low operating efficiency with higher costs and lower output. A technical consulting group, comprised of British and French engineers, recently undertook a thorough review of the industry and recommended, inter alia, more expenditure on spare parts and equipment to rehabilitate the plants, together with a serious effort by the industry to set up training facilities for management and workers, research laboratories to investigate process control, and a control instrument workshop to provide the whole industry with adequate control instruments. There is also an urgent need for the upgrading of management skills, and a change in management in some of the firms.

## 2. Pollution Control

9.6 As well as the need for drastic measures to rehabilitate the industry, pollution control is also a problem. The National Pollution Control Commission (NPCC) has set stringent conditions for the dust in emissions from the cement plants, and has required the plants to reach these standards, which are in some cases stricter than those set when the plants were first constructed. The consultants found that significant decreases in dust pollution control could be obtained by simply cleaning the plants and spending relatively small amounts on repairs of existing anti-pollution equipment. The upgrading and replacement of existing equipment to meet the NPCC standards would involve, in many cases, high costs in equipment and production loss while the equipment was being installed. This would add further to the industry's current burdens. The cement industry should agree with the NPCC on a feasible plan for reducing exhaust dust, given the costs involved and the equipment already installed, and the current problems faced by the industry. This plan should be tied in with a program for the rehabilitation and rationalization of the industry.

## 3. Coal Conversion

9.7 For some time, discussions have been taking place between the cement industry and the Government on the conversion of cement plants from oil to coal firing. The aim of this conversion is to save foreign exchange by using domestic coal in place of imported oil, and to help the country's coal

development program by increasing the market for domestic coal production. In July 1978, the President appointed a high-level committee /1 to study the conversion, and following this committee's report, issued a Letter of Instruction requiring that four cement plants be converted by 1981, five the following year, and the other five converting after individual feasibility studies were carried out by DBP. DBP has been directed to supply the finance for this conversion.

9.8 The Ministry of Energy has undertaken to ensure the availability of coal of adequate quality. The coal supply will be part of an ambitious program to increase coal production from 426,000 m tons in 1978 to 1,185,000 m tons in 1980, 2,430,000 tons in 1983, through to 5,400,000 tons per year in 1987, i.e., a 33% annual increase. In addition to the cement plants, this coal will supply the new thermal power plants planned by the National Power Corporation over the next decade. The Ministry of Energy has also undertaken to supply the infrastructure for the delivery of coal to the cement plants. This will entail purchasing barges and completing three bulk terminals by mid-1982.

9.9 The cement industry naturally is concerned about the Ministry of Energy's ability to deliver both the coal and the infrastructure on schedule. To overcome this concern, the Government has guaranteed that it will supply coal of minimum quality at a price not greater than 70% of the equivalent oil price. It has also agreed to provide 100% financing for the conversion through DBP, and to allow the duty-free import of all conversion equipment.

9.10 This program raises some questions. First, the coal mines and the necessary delivery infrastructure have not yet been developed. It can be argued that there should be some progress made in this, before the cement plants are required to convert to coal. Otherwise, coal inputs may have to be imported and there would simply be a substitution from imported oil to imported coal plus conversion costs with the attendant disruptions to production. If, in turn, the infrastructure is not ready on schedule, the coal will not be able to reach the cement plants.

9.11 Second, the conversion may not be as technically simple as the Government's technical studies assume. There are potential difficulties in the conversion. These include the need to control the amount of ash in the coal by homogenizing the coal before delivery. With such potential problems

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/1 Consisting of the Ministers of Energy, Economic Planning, Industry and the Chairman of DBP.

in mind, it is important to start feasibility studies for conversion of the most efficient and smooth-running plants. Certainly, with appropriate technical expertise, good schemes will emerge for conversion to coal-firing in a select number of firms over the next two to three years with further plants following later.

9.12 Third, the conversion program assumes that all 14 oil-fired plants will be converted to coal-firing. However, some of the older, less efficient plants may be phased out of production within the next few years and it may not be worthwhile to convert these plants.

9.13 Fourth, the Government's commitment to supply coal at 70% of the equivalent oil price may lead to problems if the coal proves more expensive than currently projected. If the coal price is above 70% of the equivalent oil price, the Government has given an open-ended commitment to subsidize the difference. Some hard analysis has to be done on prices and the relative heating power of oil and coal to ensure that the chance of large budgetary payments is minimized.

9.14 A blanket conversion program should be approached with caution. The industry has many problems to overcome and an immediate conversion program will compound these difficulties. The house should be put in order before conversion begins and then conversion should take place gradually in efficient firms after careful technical study. This would, of course, mean a slower, more selective, conversion program, but in the long run, there would be a better chance that the coal industry would have a healthy cement market. If the coal production does go according to schedule and a surplus results, this could be exported, until the cement plants were finally converted to coal.

#### 4. Future Action

9.15 It is apparent that some rationalization is needed in the industry. Some obsolete plants will probably have to be phased out over the next few years. At the same time, new efficient plants must be constructed to meet increasing demand; if the industry continues to grow at 7 percent per annum, demand will reach 5.7 million m tons by 1985 and 8 million m tons by 1990. This would mean an addition of at least 4 million tons over the next ten years. In practice, this would be closer to 6 million tons as older plants were scrapped. New large-scale plants are needed to meet this demand.

9.16 The industry and the Government need to draw up a plan for rationalization, including plants to be phased out (or at least not to be rehabilitated) and new plants to be built. This plan could also include merging some of the existing firms with revamped management. Furthermore, details of a sensible program for anti-pollution equipment and cement conversion should be worked out. The needs of the industry for technical assistance and training must also be met. If such an overall program is not developed, the industry's situation will not improve and any further money spent may be wasted. Currently, there are many groups involved in one way or another in the cement industry, but their initiatives are not coordinated. The Cement Industry Authority and DBP are the obvious bodies to control the rationalization and rehabilitation program, and they should set up an official joint body to administer it with qualified full-time staff.

9.17 The first step in such a program may involve an investment of \$220-280 million. This would include anti-pollution equipment of about \$30 million, coal conversion at \$30-\$50 million depending on whether or not old plants are converted, plus plant rehabilitation at a further \$60 million, and could also include one new plant at \$100-\$150 million. Over the next ten years, investment in new plants might total \$1,100 million (at 1979 prices). The key financing agent for the program is DBP. Cement prices were recently increased by ₱ 5.65 to ₱ 20 per 40 kg bag); of the increase, ₱ 1.35 is being set aside in a rehabilitation fund and ₱ 1.84 for amortization of debt to the DBP. Domestic cement prices are in line with international prices, and rehabilitation and new capacity would permit continuation of exports while increasing domestic demand is met.

9.18 The most efficient way to provide financing is through private direct investment and /or a line of credit specifically for cement, available to any firm with proposals that fit in with the long-term rationalization plan. Proponents should be required to put in additional equity before funds would be available. The technical merit of project proposals should be assured by requiring their review by impartial consulting engineers assisting the program administrators. Where necessary, management changes could be required as loan conditions.

9.19 The cement industry is now at the crossroads. If the correct hard decisions are made, its efficiency will improve through plant upgrading and mergers. If these decisions are not made, the debt situation will become worse, costs will increase with consequent disruption to the vital construction industry, and the Philippines may even become a net importer of cement, despite its abundant raw materials.



B. The Clothing Industry

9.20 The clothing industry is the most dynamic industry in the Philippines. It has evolved since the 1950s from small tailoring and dress shops making clothing-to-order, to a multi-million dollar business with exports of over \$300 million in 1978, of which around \$120 million is net of imported fabrics. The export garment industry provides a striking example of what can be achieved by a combination of entrepreneurial talent and supportive Government policy taking advantage of the Philippines' low labor costs and high quality work force.

9.21 The garment industry has grown at 5% per annum over the past few years, with gross value added at constant prices increasing from P 533 million in 1973 to P 657 million /1 in 1977. In 1975, some 106,000 employees in 28,000 establishments produced clothing (see Table IX-1) in the organized sector, and many others undertake part-time commission work in homes and small shops. The reliance of modern clothing production on relatively cheap

Table IX-1: THE CLOTHING INDUSTRY, 1975

Size of establishment by no. of workers	No. of establishments	No. of workers	Value added (P '000)
1-9	27,014	73,099	241,631
10-19	428	4,277	15,988
20-49	80	2,160	17,905
50-99	30	2,019	20,428
100-199	19	2,693	17,186
200-499	11	3,354	46,898
500 +	8	18,409	94,823
<u>Total</u>	<u>27,590</u>	<u>106,011</u>	<u>454,859</u>

Source: NCSO, Census of Establishments, 1975.

/1 Including footwear which comprises around 10% of the total.

sewing machines means that garments can be produced efficiently by small industry, and in fact most of the industry's establishments are small cottage-type units providing half of total industry value added. The export sector, on the other hand, is based on larger firms catering to high-volume overseas orders. Of the 169 larger clothing firms registered with the BOI, only 17 can be considered as major exporters. The BOI currently has 8 project proposals under review with total investments of \$4.1 million. Those projects are expected to generate 2,283 jobs at an average cost of \$1,790 per job.

9.22        Around 53% of garment manufacturing establishments with over 9 workers are in Metro Manila or surrounding regions. By value, this concentration is much more marked, with 91% of 1975 value added in Metro Manila and its environs. This indicates the heavy concentration of the larger apparel firms in Manila.

#### 1. The Domestic Market

9.23        The domestic market is estimated at about P 600 million, i.e., less than one-third of the export market in 1978, and has grown at around 5% annually over the past four years. Demand will continue to grow, through natural population growth as well as through consumers' upgrading their clothing requirements as they become more affluent. Lower income families will switch more into cheaper ready-to-wear clothing and middle-class consumers will move away from dressmakers and tailors as ready-to-wear quality and styling improve. These factors could help increase the domestic market growth for garments to around 7% per annum over the next five years.

#### 2. The Export Market

9.24        From 1970 to 1978, clothing industry exports, based on imported fabrics, grew from US\$36.2 million to more than US\$300 million. Garments have been the cornerstone of the remarkable growth in non-traditional exports witnessed through the 1970s. The trend in garment exports is shown in Table IX-2.

Table IX-2: PHILIPPINE EXPORTS OF GARMENTS, 1970-77  
(US\$ million)

	Garments (1)	Total nontraditional manufactured exports (2)	Total exports (3)	% (1)(2)	% (1)(3)
1970	36.2	94.5	1,062	38.3	3.4
1973	57.9	226.8	1,871	25.5	3.1
1975	107.0	374.2	2,263	28.6	4.7
1976	184.9	545.9	2,516	33.9	7.3
1977	250.2	717.0	3,076	34.9	8.1

9.25 Garment exports increased at an annual compound rate of 32% over this period and more than doubled their share of total exports. These exports covered most types of clothing for men, women and children, with a heavy emphasis on embroidery (54% of 1977 exports) and on high-volume lines, such as standard suits and trousers for customers such as K-Mart or Sears. This dynamic market development reflects the Philippines' wage cost advantages in this highly labor-intensive industry.<sup>/1</sup> In addition to cheap labor, an important factor contributing to the export development has been the Government's policy of allowing the unrestricted and duty-free import of fabric under bond for making up into clothing for export. While it would, of course, be preferable if domestic fabrics could be used to make up into garments for export, this is not practical in most cases at present (see Chapter VII) on price or quality grounds. The policy of allowing imported fabrics to be used in making garments for exports has overcome the problems that would be caused if exporters were required to use domestic fabrics and has permitted the development of the export sector with the resulting employment and other spin-offs such as labor and management training.

9.26 The export growth has led to 70,000 new jobs in the past eight years, and, based on current projections of \$600 million in garment exports by 1983, another 70,000 jobs will be added over the next five years. While most of the increased employment will lie in larger factories producing for high-volume customers in Europe or the United States, a significant proportion will be in smaller businesses, particularly in the subcontracting

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<sup>/1</sup> Some manufacturers complain that the low wages are offset by low productivity. This is true in some factories but others have productivity just as high as in other exporting countries in the East Asia Region. Productivity is mainly a function of management and factory conditions.

of embroidery or knitting. Sub-contracting and the use of outworkers are growing and are excellent ways to encourage small industries, particularly outside Manila. The exact extent of such sub-contracting is unknown, but it is without doubt significant.<sup>/1</sup> In one firm visited by the Mission, some 3,500 outworkers were involved in hand embroidery and in knitting sweaters with mechanical knitting machines (at a cost per job of only \$650).

### 3. Direction of Trade

9.27 The garment exporters have traditionally relied heavily on the US, which took as much as 74% of clothing exports in 1975. But, spurred by the 1975 imposition of quotas on certain lines by the US, the industry has diversified its markets. In 1974, less than 5% of garment exports were destined for Europe, but this had grown to 24% by 1977, with Germany, the Netherlands and the UK the big customers. The geographic distribution of exports is shown in Table IX-3. The US is still by far the most important destination, particularly for embroidery products. The growth in the European markets has been mostly in standard ready-to-wear clothing.

Table IX-3: DESTINATION OF GARMENT EXPORTS, 1974-77  
(US\$ Million)

Country of destination	1974	1975	1976	1977
United States	74.0	79.1	110.2	156.7
Europe	4.3	8.0	41.9	59.9
Germany	1.5	3.3	15.5	23.5
United Kingdom	0.7	2.3	10.8	11.0
Netherlands	0.5	0.7	4.2	8.2
Other	1.5	1.7	11.4	17.3
Australia	3.6	4.8	6.5	8.0
Canada	2.3	4.2	6.9	4.6
Japan	4.0	3.3	7.9	4.6
Others	5.9	7.7	11.3	16.0
<u>Total</u>	<u>94.1</u>	<u>107.0</u>	<u>184.7</u>	<u>249.7</u>

Source: Board of Investment.

<sup>/1</sup> One estimate has been given of 450,000-500,000 workers, but this may be an overestimate. At best, such a large number of workers would devote only a small part of their time to making clothes.

9.28 The quotas placed on imports of garments from the Philippines by the US, Australia, the EEC and Canada give the industry cause for concern. In past years such quotas, overall, have not been a limiting factor. In fact, quotas have actually increased the Philippines' exports as production has shifted from previously successful exporters, such as Taiwan and Hong Kong, who have been restricted by earlier quotas. However, as the Philippines' exports expand, the pressure of quotas will undoubtedly become more severe. Europe, the growth segment of the market, is moving in the direction of imposing more quotas.

9.29 The business community is becoming increasingly concerned about the future impact of quotas, and this concern was frequently voiced to the Mission. By and large, the problem is beyond the control of the domestic industry and must be handled at a broader policy level. There are, however, several practical steps to take to minimize the impact of future quotas. The industry must be able to diversify its product lines, so as to have the flexibility to shift productions to lines unaffected by quotas. It must also try, wherever possible, to upgrade quality standards so as to avoid competition at the low end of the market. For this purpose, the industry needs to know precisely the fashion and market situation in other countries. Incentives must be provided to help Filipino entrepreneurs to travel overseas on business and/or to retain agents in other countries for feedback trends. These incentives could take the form of tax credits or deductions from taxable income of a given percentage of overseas promotional expenditure incurred. The question of minimizing the impact of quotas is tightly linked with that of export promotion, discussed below.

#### 4. Technical Performance

9.30 The Mission found the technical performance of the industry entirely satisfactory in one or two large units. In all the small and medium factories, operations are very primitive. This causes few problems in the smallest rural units, but in the medium to large factories, productivity and quality could be improved by a little low-cost automation. Simple jigs for more accurate sewing of pockets, collars and cuffs, the use of lay planning and pattern "grading" (i.e., making patterns of a whole range of sizes from a master pattern), and the use of some of the simple sewing machine accessories that are now becoming both cheap and widely used, would all increase efficiency. If garment manufacturers sent technical staff abroad on short, practical courses, the payoff would be substantial.

#### Issues

Use of Domestic Materials. The export garment industry relies almost entirely on imported raw materials, mostly fabric. In general, domestically-produced fabrics are considerably more expensive than imported fabrics, and in many cases their quality is inferior. The only cases the Mission found in which domestic material was used in garments for export

were some T/C shirting fabrics, nylon tricot fabrics and acrylic yarn for sweaters. In most cases, however, the garment industry imports fabrics from Hong Kong, Japan, Thailand, Taiwan, Malaysia and South Korea. Accessories such as zippers, buttons, labels and lace are also mainly imported.

9.31 These materials are imported for re-export duty-free through bonded warehouses or the Export Processing Zone at Bataan. This policy of free import has minimized the problems the garment industry would face if it had to rely on domestic fabrics under the present tariff system. In fact, the textile and the export garment industries are, for all practical purposes, two separate industries, with the textile industry operating under a high tariff regime and the garment industry at free trade prices. This is illustrated by the case of a big textile firm that produces fabrics for the domestic market and also operates a large export clothing firm based entirely on imported fabric. Other domestic garment manufacturers, who have applied for BOI registration as exporters, have indicated that they will shift to imported fabrics through bonded warehouses as soon as their applications are approved by the BOI.

9.32 While the free import of fabrics and accessories has helped the garment industry, it also means that a large potential market (some \$180 million in 1978) for the textile industry has gone begging. A crucial issue is what can be done to ensure that domestic textiles can be used more in the export garment industry. As long as the existing system of high tariffs and import restrictions supports the domestic textile industry, there is no incentive to produce textiles for export. Inefficient firms cannot meet the low prices needed to be competitive in export markets, and efficient firms comfortably make high profits on the domestic market. As the protection is reduced, however, the export market will appear relatively more attractive than at present, and the more efficient textile producers will be better prepared to make the effort needed to meet the price and qualities necessary for export. Garment manufacturers would be more than willing to use competitive domestic textiles to avoid the costs and delays associated with importing raw materials. (It may take up to three months to go through all import procedures before raw materials finally arrive at the plant.) By the same token, even though a reduced tariff would mean that the textile industry would have increased incentive to sell to the export garment industry, there will still be a price advantage on domestic sales (for example, a 25% fabric tariff would mean domestic prices could be some 25% higher than c.i.f. imports). This difference will not be as great as now, and there will be more reason to expand output and profits through sales destined for export.

9.33 Another step that the Government could take to increase fabric exports would be to ensure the wide availability of drawback of tariffs paid on inputs of textile firms which sell fabric to the garment industry for eventual export. There is provision for such indirect drawback for BOI registered firms, but the paperwork is complicated, and many firms do not attempt to get such drawback even when they are entitled to it. Such

drawback should be available to any firm, not simply to those registered with the BOI, and the administrative procedures for claiming it should be simplified. In addition, the import restrictions on yarn should be lifted if such yarn is destined for export. A weaver, even if efficient, will find it hard to export directly or indirectly if he must purchase higher-cost domestic yarn. In effect, drawback combined with unrestricted import of yarn used in weaving for the export garment industry would put the weaving industry on a free-trade basis for export, in the same manner as the garment industry currently operates. This, combined with increased efficiency in the textile industry through reduced tariffs and rehabilitation, would ensure that the textile industry expands rapidly into exports.

## 5. Export Promotion

9.34 The success of garment exporters speaks for itself and not a great deal of promotion is needed. Overseas buyers now actively seek out Philippine suppliers with large orders, and promotion is not as necessary as in other industries that have not developed their export potential. Nevertheless, export promotion could pay dividends in two areas: (a) encouraging smaller industry, particularly in the regions, to enter the export market, and (b) searching for opportunities to upgrade the quality of garment exports to help the industry break into higher priced markets and thereby maintain the impetus of the export drive.

9.35 The BOI already assists small exporters on an ad hoc basis through seminars, conferences and briefings, but a more systematic approach is warranted. This would include an information system to notify small producers of export opportunities, explain export procedures and introduce them to foreign buyers visiting the Philippines. In addition, to ensure that small producers have access to imported fabric and are not solely dependent on domestic textile mills, a system of bonded warehouses that could be shared by a number of smaller producers should be introduced. This would overcome the present disadvantage suffered by small producers who cannot afford a bonded warehouse solely for themselves, and would also increase the efficiency of use of the bonded warehouse system.

9.36 In general, most of the garment exports are in standard, low-priced categories and are thus subject to competition from other developing countries. Such competition will probably become more severe as China enters more deeply into world markets. There is no reason why the Philippines cannot aim an increasing proportion of its exports to a higher market level. In some cases, this has already been done. One manufacturer visited by the Mission is selling nightwear to quality stores in Europe, the US and Australia. The key to such upgrading is quality control and design. Design is something that a government cannot directly help with to any great extent, as it depends largely on individual talent. But the government can give indirect assistance through market information and tax assistance for overseas travel, as discussed above.

## 6. Tariffs and Incentives

9.37 The main incentives assisting the domestic clothing industry are the tariffs and restrictions on clothing imports. The most important incentive available to the export industry, by contrast, is the free entry of raw materials. The domestic industry is protected by a tariff of 100%. This is higher than the 70% tariff on fabrics, and results in an available effective rate of protection on the order of 175%. In practice, competition coupled with the relatively low level of domestic purchasing power and, in some cases, the lower quality of garments produced for the domestic market, mean that domestic prices are not set as high above c.i.f. import prices as the tariff would allow. Nevertheless, domestic prices are still considerably higher than export prices, primarily because material costs are higher (see Chapter VII), and also because profits on the protected domestic market are higher. In fact, all garment manufacturers seen by the Mission, who sell both domestically and for export, stated that profits per unit on the domestic market were higher than on the export market (see Annex IX-1).

9.38 Those garment manufacturers that are registered with the BOI are entitled to the normal range of fiscal incentives available to registered firms. In practice, however, these incentives mean less to the garment industry than to many other industries. Capital cost in garment manufacture is low and hence the incentives for expansion reinvestment, accelerated depreciation and exemption from duties on capital equipment are not so important. In a typical clothing factory, the latter two incentives would amount to less than 1.2% of annual output. The incentives allowing deduction of labor training expenses from taxable income has been useful to many garment firms, as has the deduction of direct labor cost from taxable income within certain limits. To profitable firms, this is worth about 2.5% of each year's sales. In conclusion, the best incentives that the garment industry can have are the continued absence of tariffs and import restrictions on inputs for all sections of the export sector, and for the domestic sector, a reduction in price of textile fabrics through lower domestic costs and reduced tariffs on textile inputs.



## C. The Furniture Industry

### 1. Recent Performance

9.39 Wood is one of the primary resources of the Philippines. In 1977, the export of logs earned the country US\$133 million (the 5th most important export item). Exports also carried US\$66.6 million in sawn lumber, and US\$40 million in plywood.

9.40 Nevertheless, the woodworking industry is relatively undeveloped, and there are few modern furniture factories. More than 95% of the furniture making firms are small-scale by any standard. Precise figures on the number of firms and the employment in the industry are not available since a large part of the furniture is manufactured in the Philippines by artisans and household carpenters. In the NACIDA registrations of November 1978, there were 8,125 "woodcraft" registered cottage firms employing 33,915 workers. There may be three times that number engaged in wood carving or woodworking "outside" as household workers.

9.41 Other estimates state that in 1977 there were 15,000 separate "manufacturers of furniture." This probably includes makers of rattan and "buri" (wicker) furniture, of which there were 2,300 separate NACIDA cottage industries registered, employing 9,297 workers.

9.42 The overwhelming majority of the furniture manufacturers - even those that are above the cottage and artisan level - use very little machinery, and have fixed assets of not more than P 200,000 (US\$30,000). A handful of firms, primarily exporting, have fixed assets above the range of P 4 to P 5 million (US\$500,000 to US\$700,000).

9.43 A study of the furniture industry in 1974 by UP/ISSI found that at that time most of the small furniture firms had an annual production of between P 200,000 and P 500,000 (US\$30,000 to US\$70,000). With very few exceptions, furniture industries in the Philippines were family concerns, single proprietorships without any expertise participation; and, they are still so today.

9.44 In general, local home demand for furniture is low; and, the most successful enterprises tend to be those that produce office furniture, for which there is great demand during business construction booms, or furniture for hotels. There was a rapid growth in the latter during the big hotel construction program of 1975-76. The smaller furniture manufacturers very often sell their custom-built items directly to customers from their own showrooms or stores.

9.45 The last few years have seen a significant increase in the export of furniture even though the total figures still remain modest. The increase in rattan furniture exports has been impressive, and there has also been some significant increase in the export of "buri" and wood furniture. The total value of furniture exports of all types amounted to only US\$854,000

in 1968 as against US\$21.7 million in 1977. It is estimated that furniture exports in 1978 exceeded US\$25 million. While this is impressive, furniture represented less than 1% of all Philippine exports, and it is a relatively small amount compared with Taiwan's furniture exports to the US of US\$152 million in 1977.

9.46 More than half of 1977 exports, or US\$11.4 million, was of rattan furniture. This is a spectacular increase from the US\$2.8 million as recently as 1975. US\$6.9 million represented the export of "buri" furniture in 1977, also a spectacular increase from less than US\$1 million in 1975. Wooden furniture, also increasing rapidly, was US\$1.59 million in 1977 (and is expected to rise to close to US\$2 million in 1978).

## 2. Supply of Raw Materials and Components

9.47 A major problem preventing the development of furniture for export is the availability of suitable raw materials. Despite large forest reserves in the Philippines, supplies of the attractive "narra" hardwood are becoming scarce. Large forest areas have been depleted, and the Government decided to impose severe restrictions on the amounts of this hardwood that can be felled, and banned its export. Furniture manufacturers complain that this ban made it very difficult for them to obtain "narra" wood, and has made it very expensive.

9.48 So far manufacturers are convinced that only the "narra" wood is suitable for export furniture. Experts at the Forest Products Research Institute (FORPRODICOM) in Los Banos claim that they are working on substitutes for "narra." This institute might give more direct assistance to the furniture manufacturers who complain they get little help from it. There is no doubt that more could be achieved using other species of timber available in the Philippines, and the overreliance on "narra" is due more to prejudice and lack of technical information.

9.49 Even more difficult is the supply of raw material for the rattan furniture industry. Exports are growing at a fast pace, which is straining the supply of raw materials. A ban has been placed on the exports of rattan poles, but this is being circumvented in all sorts of ways. Rattan manufacturers complain that they are only able to obtain rattan poles with great difficulty and at a very high price; and, that this now has become a serious constraint on the expansion of the export of rattan furniture. Daily, new buyers arrive and offer attractive orders, but the manufacturers are reluctant to take on these orders for lack of raw materials. A study is now going on as to whether there is need to allow the import of more rattan poles from Indonesia, and whether more suitable poles can be obtained.

9.50 Raw material is available for "buri" furniture. Although there has been a dramatic rise in the export of "buri" furniture, there are many in the industry who feel that the quality levels and design standards are being lowered by cut-throat competition, and that Philippine "buri" furniture may suffer from bad reports overseas on the quality of the products exported.

9.51 Apart from the availability of hardwoods, there is the serious technical problem of the proper seasoning of timber used in furniture for export to different climatic conditions. Most of the "narra" wood arrives from the forests with high moisture content and primitive kiln drying, or prolonged air drying, usually lowers the moisture content to only about 14%. However, a moisture content of 8% is needed for export furniture and for this, modern kilns with instrument-controlled drying programs are needed. Only a few of the larger modern factories have such kiln drying equipment, which is far too expensive for the smaller factories. The only solution would be the establishment of centralized kiln-drying facilities which could be used by the smaller factories. Some timber dealers are able to provide woods that have been dried to the required moisture content, but charge very high prices.

9.52 Apart from the wood, practically all the accessories and hardware used for exports, and in better-quality furniture for the domestic market, are imported. This applies not only to the metal accessories, but also to stains, varnishes, adhesives, and sometimes upholstery items, etc. It is difficult to see why the Philippines is not able to manufacture these items; and, efforts should be made to have local industries manufacture these accessories of sufficient quality and reliability (see Chapter VI). Meanwhile, the import of these items poses problems for the small- and medium-scale manufacturers who, until now, have had to tie up considerable quantities of working capital to pay the duties and tariffs (see Chapter II). A few larger firms have made arrangements for a bonded warehouse, but the cost of maintaining such a warehouse is too high for a single small or medium manufacturer. Again the solution could be in grouping. The recent Customs Administrative Order No. 78-3 allows small firms with authorized capital below P 1 million to import items under bond without the need to operate a bonded warehouse; but, it seems that few of the small manufacturers avail themselves of this possibility either through ignorance of its existence, or because of bureaucratic problems.

### 3. Export Problems and Prospects

9.53 The number of firms actually engaged in exports are few. A recent report <sup>/1</sup> mentions 64 manufacturers in Manila and Cebu who belong to the Chamber of Furniture Industries of the Philippines (CFIP) and who are oriented in any measure towards exports. Apart from the technical problems and raw material availability, investment financing is a primary problem. Most small firms are severely undercapitalized, and the furniture manufacturers are unable to meet the collateral requirements of the financing institutions to obtain loans for new equipment.

9.54 Exports of both wood and rattan furniture have gone primarily to the US, and to a much lesser extent, Australia and Japan. While there is no shortage of orders for rattan furniture, more effort will be needed if the industry is to expand substantially the export of wooden furniture. In addition, there seems to be difficulty in financing participation in international exhibitions, travelling expenses for salesmen, and even the high costs of freight (particularly of some items from places like Cebu, one of the centers of furniture manufacture).

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<sup>/1</sup> Studies on Philippine Industries; Number 21: "The Wooden and Rattan Furniture Export Industry", PDCP, August 1978.

9.55 Another difficulty facing the furniture industry is the depletion of skilled manpower. One cause is the migration of skilled workers to the Middle East. Another reason given is the inadequacy of training facilities so that not enough skilled carpenters and woodworkers enter the industry. The salary structure does not provide adequate rewards for skilled manpower to encourage the investment in training. This has led some firms to try to invest in machinery, and thus reduce the dependence on skilled workers.

9.56 A survey of manufacturing costs in a number of woodworking firms shows that labor accounted for 20% to 30% and materials for 50% to 60%. The same survey revealed that half of the workers were skilled. In rattan manufacture the number of skilled workers is higher. In the most modern furniture factory, developed exclusively for export as a joint venture with Danish manufacturers, the total cost fell below 15%, and the number of skilled workers required was substantially lower. In general, rattan furniture manufacture is more labor-intensive but, due to the ever rising costs of the rattan poles, the proportionate cost of the material remains high.

9.57 Capital investment in small or medium mechanized furniture factories is on the order of ₱ 10,000 (or between US\$1,000 and US\$2,000) per worker. One of the most modern furniture factories in the Philippines had an investment of between US\$4,000-5,000 equivalent per worker. Most rattan factories operate quite efficiently with investments around ₱ 5,000 per worker (less than US\$1,000). Rattan manufacture tends to require more space, and the bigger part of the investment is in factory accommodation.

9.58 There is great potential for growth in furniture, both of wood and rattan, for increased domestic demand and for exports. More export assistance is needed - possibly along the lines already started in the footwear industry - e.g., through the creation of a Furniture Trade Exporters Corporation. There might be a case for such a corporation relocating and regrouping its members on a type of industrial estate which could have common central kiln drying facilities, and might encourage the development of accessories manufacture.

9.59 Some assistance is needed also in design since, until now, most of the designs are provided by the importers who give the orders, or copied from foreign design for the domestic market. The Design Center of the Philippines (DCP) has not provided any assistance in furniture design, and should be encouraged to work in this field.

9.60 Above all, a way must be found to make available adequate supplies of suitable timber and rattan poles - either through regulating the flow of wood from the forests, or through liberalizing imports if this proves necessary.

#### 4. Recommendations

9.61 In conclusion, the following measures for the development of the furniture industry are recommended:

- (a) Expanding the availability of suitable woods, rattan poles, and other materials through a better controlled reforestation, felling, and distribution program coordinated with the manufacturers, and a research program of FOREPRODICOM, and with liberalized imports where needed to maintain supply and reasonable price levels;
- (b) More training, and the introduction of a wage structure to encourage skill development;
- (c) More finance for equipment, working capital, and export promotion;
- (d) Establishing a Furniture Trade Exporters Corporation, with part public capital, to help in export marketing, common materials procurement and seasoning, relocation and training programs;
- (e) Involving the Design Center in improving furniture design; and
- (f) Search for new export markets, e.g., Europe, the Middle East and Asian countries, especially for wooden furniture made from timbers other than "narra".

#### D. The Leather and Footwear Industry

9.62 In the last ten years the industry has grown considerably in response to both domestic and export demand. Total footwear production of all types was estimated to be 32 million pairs in 1976, of which 6.7 million pairs were of leather. Most of the shoe manufacture is carried on in small cottage-type industry. There were over 2,700 leather shoe manufacturers in 1978, with over 20,000 workers in total. In addition, there were a few large manufacturers of rubber shoes, employing about 10,000 workers and using local raw material. In all, about 125 plants had over 50 workers in 1977, and only 7 had over 200 workers.

9.63 The industry has substantial potential for further expansion. At present, only 20% of Filipinos possess a pair of leather shoes. Some five million pairs of shoes were imported in 1976, despite high protection. Export demand is strong at present price-cost relationships. However, the industry must overcome a number of problems, especially raw material supply and productivity.

##### 1. Raw Materials

9.64 Tanneries: Most tanneries are primitive and produce low quality leather. The Philippines does not produce hides in sufficient quantity or quality, the reason being the type and size of the cattle population, the manner of slaughtering, and the poor skills in flaying and preserving the hides. The tanning industry, therefore, relies to a great extent on imported hides - at least for production of better-quality leather.

9.65 Even with imported hides, the quality of finished leather from Philippine tanneries is low. A consultant study of leather production in the Philippines <sup>1/</sup> concluded that only 3 tanneries were producing leather of export quality; their costs were well above international levels. Even for the few tanneries that produced high-quality leather, all the hides and chemicals were imported, and the added value was low. Only 1,000 people were employed in all the mechanized and partially-mechanized tanneries - less than half of these full-time.

9.66 A major long-term technical assistance program would be needed to bring locally-produced leather to quality standards. It would have to extend from cattle raising, the slaughtering of animals, and the treatment of hides to the equipping of tanneries and the training of technicians and skilled workers.

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<sup>1/</sup> Feasibility study of "Integrated Program for the Philippines Leather and Footwear Industry" - ITALMACCHINE PLANTS S.P.A., Milan, Italy - October 1978.

## 2. Labor Productivity and Capital Intensity

9.67 Productivity in export firms is sufficient to permit further expansion of sales. A few factories reach a productivity of 7 shoes per worker per day. This compares with 10 to 15 in Italy. Philippine companies compare favorably with India where two to three pairs per worker daily is not uncommon in the smaller factories.

9.68 Low productivity is explained by low mechanization and poor skills. Further, there is virtually no footwear component manufacturing in the Philippines, so that each shoe manufacturing firm has to produce - or import - all parts of the shoe.

9.69 Even where the footwear industries have been equipped with modern machinery, the capital cost per worker remains low. One of the most modern shoe manufacture factories in the Philippines, in the Bataan export zone, produces over 2,000 pairs a day with 280 workers at a capital cost per worker of less than US\$3,000. In the rubber shoe manufacturing industry, capital costs are nearer US\$1,000 per worker.

9.70 Wage rates in the shoe industry are generally low, on the order of P 12 (i.e., US\$1.60 per day), but most firms work on a combination of day rates and piece work so that good workers with high output can earn up to P 17-18 (i.e., US\$2.30) or higher. Due to the high cost of leather and poor utilization of materials, labor costs represent only 16% to 18% of the total manufacturing costs in leather shoe factories. In the more efficient, larger exporting firms, labor costs are below 15% and the import content of the finished shoe is on the order of 65%.

## 3. The Export Industry

9.71 Exports have increased steadily since 1970 and reached 12 million pairs of shoes in 1978, 8 to 9 million of which were rubber. There has been a significant proportionate increase in the amount of leather and synthetic non-rubber footwear exported. The export industry uses mostly imported raw materials. The only exception to this is the case of one or two factories that have been very successful in exports of snakeskin sandals from local materials.

9.72 Most of these export items are relatively inexpensive shoes. In the US, the major market (70% of all leather footwear exports), Philippine shoes averaged \$4.45 as against \$9 for European shoe imports into the US. A few major exporters are able to get \$7 per pair.

9.73 Original designs of footwear in the Philippines are virtually unknown. Buyers usually present samples, and offer to order substantial quantities of these shoes for delivery at certain dates for an agreed price.

Many such buyers arrive and are prepared to offer substantial orders; but in many cases, the factories are unable to produce and supply in time, and at the required quality. In some cases the price offered is considered inadequate.

9.74 The Ministry of Industry has made progress in organizing the shoe manufacturing sector. The Shoe Trade Commission centered in Marikina (Metro Manila) was set up in 1977, but so far has progressed little in organizing training or services. The Philippine Shoe Trading Corporation (PSTC, set up in 1978 with 50% of the capital provided by the Government and 50% by a small group of shoe manufacturers) has already undertaken some export orders, and has subcontracted some of these orders out to smaller firms. Most larger exporters have until now claimed that they cannot subcontract export orders for fear of jeopardizing quality standards. The new Corporation's subcontract arrangements could constitute a promising development and provides the main hope for upgrading the better of the smaller and medium industries. Through PSTC the smaller firms together can operate a common bonded-materials warehouse, thus enabling them to import duty-free quality leather for re-export in shoes. The PSTC can also arrange the refinancing of foreign letters of credit through the special Central Bank scheme for providing export credits. This grouping, together with the Corporation, can also make contacts with additional buyers from new countries and may, in the course of time, help solve the problem of the lack of training facilities for skilled footwear technicians.

9.75 Technical Assistance. There is as yet no technical institute to assist the shoe industry. Such an institute could be of assistance in improving the quality of indigenous materials - both natural leather and synthetic - as well as such items as the use of plastics, rubber components, adhesives, and finishing materials. A center might also assist in creating original Philippine designs, possibly together with the Design Center of the Philippines. As a long-term aim, a leather and footwear development center might also develop some locally-made shoe manufacturing machinery.

9.76 Prospects. There is an increasing interest by foreign and local investors in footwear manufacturing projects in the Philippines. Six of the larger existing firms have already applied to the BOI for expansion geared to the export market. Twenty-four firms have submitted new investment proposals. If all these projects were implemented, this could add further capacity for over 60 million pairs of shoes, which would have to go primarily to export. This would amount to increasing present capacity by a further 150%, and could create more than 15,000 new jobs; but, there might be some marketing problems.

#### 4. Domestic Sales

9.77 For the home market, lower quality shoes are considered adequate. Smaller factories supply this market with designs copied from magazines or imported products.



9.78 Upgrading quality and productivity of the smaller factories would require substantial financial and technical assistance. Most of the manufacturers are severely undercapitalized. Although some of the Marikina (Metro Manila) medium-sized factories have managed to obtain DBP and IGLF loans, the lack of adequate collateral has prevented most of these firms from availing themselves of these lines of credit. Several smaller shoe manufacturers stated they still had to obtain working capital finance from traders at 3% per month.

##### 5. Recommendations

9.79 To achieve its full potential and sustain the present momentum of the industry, more comprehensive assistance is needed:

- (a) Expansion of the scope and activities of the Philippine Shoe Trading Corporation. All export firms, including small ones, should be permitted to import raw materials duty-free;
- (b) More finance must be made accessible to the smaller firms for working capital and equipment;
- (c) A Leather and Footwear Development Center, jointly operated by the industry and Government, should be set up; and
- (d) A long-term (10-year) program for developing a high quality leather tanning industry is needed.



INDUSTRIAL STRATEGY AND POLICY IN THE PHILIPPINES

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RELIABILITY OF INDUSTRIAL STATISTICS

The question of reliability of industrial statistics in the Philippines has been raised on a number of occasions. Some data series in the Philippines present problems in relation to their reliability, but the sets used here are on the whole consistent for the purpose of analysis.

This "Statistical Appendix" is grouped by Chapter categories. Some aspects of the reliability of the source data are indicated for each set of tables.

- (a) Comparative Data (Chapter I, several tables). The data on cross country comparisons is derived mostly from an IBRD Research Project "Patterns of Industrial Development" and other IBRD staff estimates. The data sets can be considered consistent and reasonably accurate.
- (b) Manufacturing Output and Structural Change (Tables 1.1 through 1.10). The tables in this section are generally drawn from:
  - (i) NCSO's Census of Establishments;
  - (ii) NCSO's Annual Survey of Establishments. The NCSO's censuses and surveys, while being reasonably reliable are somewhat out-of-date and this reduces their usefulness.
- (c) Investment (Table 1.5). The NCSO, Annual Survey of Establishments estimates are the basic source for this table. It is based on capital expenditures during the year and includes both new and used additional fixed assets. These estimates are reasonably accurate.
- (d) Exports and Imports (tables 1.13 through 1.17). The export and import statistics are reasonably reliable, being based on administrative records supplied by the Ministry of Trade.
- (e) Employment, Unemployment and Wages (Tables 1.20 through 1.29). The tables in this section are derived from a number of NCSO sources such as: Labor Force Survey, Annual Survey of Establishments, Population Census and Census of Establishments.

Similar comments can be made about the ASE and COE as in (b) above. The Labor Force Survey and Population censuses however are published within reasonable periods of time. Also, the reliability of the 1975 Population Census is questionable, as explained in footnote c of Table 1.28. It is quite probable that the 1970 Population Census labor force estimates based on a 5% sample, are more accurate than the 1975 results, even though the latter is based on a complete count.



- (f) Regional (tables 4.1 through 4.7). A variety of data sources are used for these tables including National Accounts, Economic Censuses, Labor Force Surveys and Population Census. Note should be made of the statistical discrepancies between the 1975 Regional Income Accounts and the National Income Accounts. The deflated series at Constant Prices should be carefully utilized as the price deflation at regional level is in its initial stages of development.
- (g) BOI Statistics (tables 2.6 through 2.14). Most of the data comes from the S-1 reports of the companies registered with BOI. The quality of the statistical tables derived from these sources should be reasonable.

#### Industrial Employment Statistics (Tables 1.20 through 1.29)

The employment statistics relating to the industrial sector come basically from two sources:

- (a) Central Bank - monthly indexes of employment (since 1949);
- (b) NCSO - Annual Survey of Establishments (ASE);
  - Economic Census of Establishments (EC);
  - Integrated Quarterly Survey of Households (IQSH/H) (formerly the Labor Force Survey);

The major problems of these data are: (a) reliability; (b) timeliness; and (c) data concept changes.

#### Reliability

This particularly relates to the CB index which is based on 777 establishments covering all industry sectors. There are a number of other methodological deficiencies in the series, which question the overall reliability of the only historical data source. However, this series is soon to be ceased and replaced by the IQSE with approximately 2,000 sampled establishments for the manufacturing sector alone. No results have been published from this survey as yet but can be expected by about mid-1979. The series should be more reliable than the old one but there are still some areas for improvement as mentioned in Annex I-4, such as: listing arrangements, reduced data content, collection arrangements, training and documentation, etc.

#### Timeliness

The fact that up-to-date data on employment is not available is a problem for the statistical system in the Philippines. The CB employment index and the NCSO's Population Census are produced within reasonable time limits. The IQSE, COE and ASE, however, have had more serious problems in regards to timeliness. The 1975 COE has not yet been published although some preliminary calculations have been made available to the Mission.

Data Concept Changes

The IQSH/H has been running since 1956 on a consistent basis up to 1976 and was available within reasonable time limits. However, from November 1976 a major definitional change occurred in this series relating to age definition of the labor force and the reference period for employment. These changes were quite significant in concept and as yet no measure is available to link the old and the new series. In fact the new series is not being published as quickly as the old series.

Conclusions

Obviously problems exist in the available employment data in the Philippines. The question of the reliability of the CB employment index will be resolved in the near future with the publication of the IQSE results replacing the old index. It is still expected that the CB will publish this new series, at least for the Metro-Manila area.

The problem of timeliness of results is more serious and to improve on this many of the recommendations will need to be implemented. Before any significant improvement is seen it could be at least a year or two.

Regional Industrial Statistics (Tables 4.1-4.7).

The recommendation in Annex I-4 that refers to regional statistics (i.e., 7.5-1.2) is related to the Integrated Quarterly Survey of Establishments (IQSE) only. It is recommended that regional data at the 2-digit or 3-digit level should not be published. The reason for this is based on the standard errors calculated at this level which indicated errors of the order or 20-50% and possibly higher as less than 100% response is obtained in these surveys. The figures at this level are just not reliable enough to most users of such data interested in trends in employment and output in these regions.

However, this is not to say that regional statistics, in general, should not be calculated and published. Clearly there is a demand for such statistics. The Annual Survey of Establishments and the Census of Establishments provide regional industrial statistics on number of establishments, value added, employment, etc. by size and region but not by industry.

These collections do have problems but these relate to the timeliness rather than reliability of results. For instance, the last published information available from the ASE is 1974. There is, however, some data available for 1976 although not at a detailed level.

The 1975 Economic Census results are again not yet available in detailed form. When available, it is planned that they will provide industrial statistics at the regional level by two digit ISIC industry level.

The timing of the results of these collections is certainly not satisfactory. Recommendations in Annex I-4 are designed to improve this situation, e.g., data content, collection arrangements, training and documentation, listing arrangements, etc.

However, it will still be necessary for the NCSO to calculate regional industry statistics from the IQSE to meet the needs of regional national accounts. It may be possible that if standard errors are available some regional industry cells could be provided to those users who understood the problems with the data.

Table 1.1: Composition of Gross Value Added in Manufacturing  
(at constant 1972 prices)

	<u>1967</u>	<u>1970</u>	<u>1977</u>
Food, beverages and tobacco	41.1	41.8	39.4
Textiles, clothing and leather	10.9	9.9	9.5
Wood, cork, furniture	6.2	4.9	4.2
Paper products, printing	4.9	5.3	5.2
Chemicals and related products	15.9	16.5	22.5
Nonmetallic mineral products	4.6	4.2	3.3
Basic metals	2.6	4.2	4.0
Fabricated metal, machinery & equipment	12.6	11.8	10.8
Other manufacturing industry	1.2	1.4	1.1
<u>All manufacturing</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
<u>Memo items:</u>			
Total manufacturing value added (P billion, 1972 prices)	9.8	11.8	18.8
Share of manufacturing in GDP (%, current prices)	21.2	22.5	23.9
Share of consumer goods in GVA <u>/a</u> (%, 1972 prices)	56.9	54.9	47.9

/a Defined roughly as food, beverages, tobacco, textiles, clothing, leather, furniture, printing, other industries.

Source: NEDA, National Income Accounts.

Table 1.2: SUMMARY OF MANUFACTURING SECTOR DATA IN THE EAST ASIA AND PACIFIC REGION

		Korea	Philippines	Thailand	Malaysia	Indonesia
Growth of real manufacturing value added:	1965-70	22.1	6.9	10.2	13.9	7.8
	1970-75	19.7	6.9	10.3	12.3	9.6
Growth of manufacturing employment (%):	1963-75	10.72	2.92	5.08	16.34	4.90
	1970-75	15.23	2.85	4.52	6.58	4.81
Employment in manufacturing (in thousands)	1975	2,265	1,412	852	363	3,295
	% of total employment	1975	19.1	10.9	N.A.	10.9
Manufacturing investment (US\$ million):	1970	414.6	223.3	254.8	65.7	102.5
	1973	850.3	214.3	298.1	122.8	204.1
% of total investment:	1970	19.8	17.7	16.7	10.1	8.0
	1973	29.0	11.4	17.9	7.5	7.1
% of GDP	1973	6.8	2.5	3.3	2.2	1.5
Share of manufactured exports in merchandise exports:	1967	69	9	8	11	2
	1970	80	12	16	16	2
	1975	84	16	25	24	2
Share of manufactured exports in manufacturing output:	1967	11.0	2.8	N.A.	N.A.	N.A.
	1970	15.0	3.0	8.0	14.3	1.8
	1973	31.4	6.4	13.0	19.8	3.4
Wages (annual earnings per worker in US\$):	1963	320.7	552.2	309.7	N.A.	N.A.
	1970	534.0	554.6	461.5	691.0	107.1
	1973	685.2	593.4	N.A.	780.5	172.8
Productivity in manufacturing (VA/L in US\$):	1967	1,250	3,018	3,371	2,412	330 (1970)
	1973	3,045	3,185	2,047	2,746	908
Output per worker (US\$)	1970	3,857	2,915	2,515	(6,000)	530

Source: IBRD Staff Estimates.

**Table 1.3: COMPARISON OF THE STRUCTURE OF PHILIPPINE MANUFACTURING  
WITH CROSSCOUNTRY STRUCTURAL "NORMS", 1973 /a**

Industry	Percent of GNP /b			Percent of total manufacturing /c		
	Observed (Actual)	Predicted (Norm)	Residual	Observed (Actual)	Predicted (Norm)	Residual
Food	8.11	4.06	4.06	37.54	24.10	13.44
Textiles	1.83	2.60	-0.77	8.46	15.46	-7.00
Clothing	0.29	0.73	-0.44	1.33	4.34	-3.01
Leather	0.04	0.11	-0.08	0.16	0.67	-0.50
Wood	1.13	0.55	0.58	5.21	3.25	1.96
Paper	0.62	0.52	0.10	2.85	3.09	-0.25
Printing	0.42	0.45	-0.04	1.93	2.69	-0.76
Chemicals	4.16	2.31	1.85	19.25	13.71	5.54
Rubber	0.42	0.42	-	1.93	2.50	-0.57
Nonmetallic minerals	1.01	1.04	-0.04	4.65	6.21	-1.56
Basic metals	1.10	1.19	-0.08	5.11	7.07	-1.96
Metal products	2.19	2.43	-0.25	10.12	14.46	-4.35
Miscellaneous	0.32	0.28	0.03	1.46	1.68	-0.22
<u>Total</u>	<u>21.62</u>	<u>16.83</u>	<u>4.79</u>	<u>100.00</u>	<u>100.00</u>	<u>-</u>
Primary sector /d	38.26	36.31	1.95			
Industrial sector /e	24.11	21.62	2.49			
Services sector	37.64	42.07	-4.43			

/a Comparison between the composition of Philippine manufacturing output and the results of a 93 crosscountry regression analysis aimed at determining the average, or "norm", industrial structure at different levels of development and according to country size.

/b Share of sectoral value added in GNP.

/c Share in total manufacturing value added.

/d Including agriculture and mining.

/e Including manufacturing and construction

Source: IBRD "Patterns of Industrial Development" Project.

Table 1.4: PHILIPPINE MANUFACTURING COMPARED WITH KOREA, TAIWAN AND MEXICO, 1973

Industry	Percent of GNP (observed)				Percent of total manufacturing (observed)			
	Philippines	Korea	Taiwan	Mexico	Philippines	Korea	Taiwan	Mexico
Food	8.11	4.44	4.57	6.34	37.54	18.16	11.56	24.96
Textiles	1.83	4.22	5.00	1.92	8.46	17.24	12.66	7.57
Clothing	0.29	0.94	2.82	n/a	1.33	3.86	7.15	n/a
Leather	0.04	0.17	2.10	n/a	0.16	0.69	5.31	n/a
Wood	1.13	1.13	0.76	0.18	5.21	4.60	1.93	0.70
Paper	0.62	0.68	0.89	1.59	2.85	2.79	2.24	6.26
Printing	0.42	0.40	0.38	n/a	1.93	1.62	0.95	n/a
Chemicals	4.16	4.00	7.33	3.21	19.25	16.35	18.57	12.62
Rubber	0.42	0.52	0.41	0.91	1.93	2.13	1.03	3.59
Nonmetallic minerals	1.01	1.25	1.45	2.24	4.65	5.12	3.66	8.81
Basic metals	1.10	1.85	1.04	3.72	5.11	7.56	2.63	14.66
Metal products	2.19	3.81	11.03	5.29	10.12	15.57	27.93	20.82
Miscellaneous	0.32	1.05	1.73	n/a	1.46	4.31	4.38	n/a
<u>Total</u>	<u>21.62</u>	<u>24.48</u>	<u>39.49</u>	<u>25.40</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>	<u>100.00</u>

Note: Agriculture-based industries, such as sugar milling and coconut processing are included.

Source: IBRD "Patterns of Industrial Development" Project.

Table 1.5: MANUFACTURING INVESTMENT /a /b  
(In millions of 1972 pesos)

Industry	1960	1961	1962	1963	1964	1965	1966	1967	1968	1969	1970	1971	1972	1973	1974	1975	Total investment 1960-75
Food	76	117	136	105	160	218	226	147	268	175	306	330	286	330	240	384	3,357
Beverages	26	30	20	17	32	29	40	56	27	41	30	47	44	54	56	129	622
Tobacco	15	15	26	15	18	22	24	12	29	16	47	45	69	44	43	31	459
Textiles	146	149	174	131	77	66	83	83	107	101	110	93	143	162	220	469	2,231
Clothing and footwear	9	11	16	9	9	10	8	8	14	15	11	12	10	9	6	37	186
Wood	22	36	52	51	90	57	79	158	32	66	80	80	213	91	71	144	1,164
Furniture	2	2	2	6	12	3	2	2	3	1	1	3	4	3	3	8	55
Paper	44	21	30	18	16	27	30	17	16	14	68	40	462	35	37	110	968
Printing	15	13	12	18	19	32	22	21	12	8	19	17	25	29	21	8	270
Leather	2	2	2	2	2	2	2	2	1	1	1	1	1	1	1	1	22
Rubber	17	11	26	15	16	17	22	9	23	15	13	26	30	38	18	18	305
Chemicals	39	36	58	51	63	86	152	128	126	49	85	102	109	140	99	99	1,294
Oil and coal products	NA	272	204	11	9	12	32	131	29	15	207	189	70	71	57	40	1,218
Nonmetallic minerals	52	26	28	63	92	54	127	134	156	79	189	98	222	90	238	48	1,562
Basic metals	7	19	14	42	7	51	43	9	19	434	329	65	21	43	102	51	1,247
Metal products	33	21	52	29	23	19	21	27	24	26	17	18	25	20	18	49	395
Nonelectrical machinery	4	15	6	2	4	8	6	5	7	5	8	14	26	10	38	25	178
Electrical machinery	22	9	30	26	40	17	16	14	16	16	68	43	52	26	29	43	453
Transport equipment	13	6	12	13	25	24	16	21	40	26	12	17	44	31	52	180	511
Other	15	9	10	6	9	10	13	12	9	15	18	18	18	15	34	123	322
<u>Total</u>	<u>559</u>	<u>820</u>	<u>910</u>	<u>630</u>	<u>723</u>	<u>764</u>	<u>964</u>	<u>996</u>	<u>958</u>	<u>1,118</u>	<u>1,619</u>	<u>1,258</u>	<u>1,874</u>	<u>1,242</u>	<u>1,383</u>	<u>1,997</u>	<u>16,819</u>

/a The years 1961, 1967, 1972 and 1975 refer to establishments employing at least ten workers, all other years to establishments employing at least five workers.

/b Series deflated by the National Accounts Implicit Price Index.

Source: NCSO, Annual Survey of Establishments and NEDA, National Income Accounts.



**Table 1.6: MANUFACTURING: VALUE ADDED, OUTPUT AND INVESTMENT**  
**IN 22 INDUSTRIAL BRANCHES, 1960, 1970 AND 1974 /a /b**  
(In millions of 1972 pesos)

	Value added			Output			Investments	
	1960	1970	1974	1960	1970	1974	1960-69	1970-75
Food	1,061	1,805	3,149	2,455	4,640	9,402	1,481	1,876
Beverages	294	602	565	466	1,013	1,141	262	360
Tobacco	185	516	627	405	1,060	1,392	180	279
Textiles	222	489	769	603	1,329	2,260	1,034	1,197
Footwear/clothing	144	127	113	410	337	279	101	85
Wood	163	305	314	401	791	830	485	679
Furniture	35	32	49	74	67	125	33	22
Paper	100	223	356	251	610	1,022	216	752
Printing	133	192	170	246	368	432	151	119
Leather	17	13	12	44	40	39	16	6
Rubber	122	233	208	255	484	522	162	143
Chemicals	375	959	1,016	1,002	2,607	3,024	660	634
Petroleum & coal	NA	535	830	NA	1,647	4,090	584	634
Nonmetallic mineral products	139	288	415	233	561	1,073	677	885
Basic metals	59	300	355	124	1,080	1,474	636	611
Metallic products	211	192	220	495	609	835	248	147
Machinery	72	71	209	111	137	407	57	121
Electrical machinery	120	271	308	246	620	787	192	261
Transport equipment	113	259	299	288	753	1,216	175	336
Other	275	95	155	455	245	447	96	226
<u>Total</u>	<u>3,840</u>	<u>7,507</u>	<u>10,139</u>	<u>8,564</u>	<u>18,998</u>	<u>30,797</u>	<u>7,446</u>	<u>9,373</u>

/a Establishments employing at least five workers.

/b Series deflated by the National Accounts Implicit Price Index.

Source: NCSO, Annual Survey of Establishments and NEDA, National Income Accounts.

**Table 1.7: MANUFACTURING: CAPITAL INTENSITY, INVESTMENT AND GROWTH IN OUTPUT, VALUE ADDED AND EMPLOYMENT IN 1960-74 /a /b**  
(In 1972 prices)

Industry and capital intensity	Kb/N (1974)	Investment				Average annual growth (%)					
		1960-69 (P'000)	1970-75	% of total		Output		Value added		Employment	
				1960-69	1970-75	1960-70	1970-74	1960-70	1970-74	1960-70	1970-74
Oil and coal products	621,191	584/c	634	7.8	6.8	9.7/c	25.5	5.2/c	11.6	4.8/c	-4.0
Food	24,469	1,481	1,876	19.9	20.0	6.6	19.3	5.5	14.9	3.3	7.1
Remainder, of which	16,899	5,381	6,863	72.3	73.2	7.6	8.0	6.4	4.5	5.5	7.2
I. Above average industry Kb/N /d	43,913	2,189	2,882	29.4	30.7	11.7	7.9	10.2	4.9	7.8	7.9
II. Below average industry Kb/N /e	10,064	3,192	3,981	42.9	42.5	5.7	8.1	4.9	4.3	4.9	7.0
All industry	19,957	7,446	9,373	100.0	100.0	7.4	12.8	6.0	7.8	5.0	7.1

/a Establishments employing at least five workers.

/b Deflated by the National Accounts Implicit Price Index.

/c Data is for 1961.

/d Industries included in this category are: nonmetallic minerals, paper, basic metals and chemicals. Oil and coal products and food products are also above the average Kb/N but are excluded.

/e All other industries except those in footnote /d.

Source: Table 1.8.

**Table 1.8: MANUFACTURING: VALUE ADDED, OUTPUT AND INVESTMENT ARRANGED BY INDUSTRIAL BRANCHES AND BY DECLINING Kb/N RATIO, 1960, 1970 AND 1974 /a /b /c**  
(In millions of 1972 pesos)

	Kb/N (1974)	Value added			Output			Investments	
		1960	1970	1974	1960	1970	1974	1960-69	1970-75
Oil and coal products	621,191	340	535	830	717	1,647	4,090	584	634
Nonmetallic minerals	70,314	139	288	415	233	561	1,073	677	885
Paper	57,793	100	223	356	251	610	1,022	216	752
Food	24,469	1,061	1,805	3,149	2,455	4,640	9,402	1,481	1,876
Basic metals	23,777	59	300	355	124	1,080	1,474	636	611
Chemicals	23,771	375	959	1,016	1,002	2,607	3,024	660	634
Transport equipment	15,033	113	259	299	288	753	1,216	175	336
Rubber	13,435	122	233	208	255	484	522	162	143
Textiles	13,157	222	489	769	603	1,329	2,260	1,034	1,197
Beverages	12,494	294	602	565	466	1,013	1,141	262	360
Wood	11,874	163	305	314	401	791	830	485	679
Printing	11,041	133	192	170	246	368	432	151	119
Machinery	10,933	72	71	209	111	137	407	57	121
Metal products	10,424	211	192	220	495	609	835	248	147
Electrical machinery	10,036	120	271	308	246	620	787	192	261
Miscellaneous	9,821	275	95	155	455	245	447	96	226
Tobacco	9,519	185	516	627	405	1,060	1,392	180	279
Leather	6,502	17	13	12	44	40	39	16	6
Furniture	4,294	35	32	49	74	67	125	33	22
Footwear and clothing	2,341	144	127	113	410	337	279	101	85
<u>Total</u>	<u>19,957</u>	<u>4,180</u>	<u>7,507</u>	<u>10,139</u>	<u>9,281</u>	<u>18,998</u>	<u>30,797</u>	<u>7,446</u>	<u>9,373</u>
	(Average)								

/a Establishments employing at least five workers.

/b Deflated by the National Accounts Implicit Price Index.

/c The capital-labor ratio (Kb/N) described above is based on book value of fixed assets which has considerable difference with replacement cost of fixed assets (Kr) as described in footnote /a of Table 3.5. The Kb is used in the Annual Survey of Establishments and does not account for price distortions, while the Kr requires some data manipulation to account for price distortions and equipment life. The Kb for all industries, for instance, is US\$2,734, while the Kr is US\$11,207, which represents a more realistic cost per job for the industry as a whole.

Sources: NCSO, Annual Survey of Establishments and NEDA, National Income Accounts.

Table 1.9: MANUFACTURING: CAPITAL PER WORKER, LABOR PRODUCTIVITY AND CAPITAL EFFICIENCY IN THE FACTORY SECTOR, 1974 (AT CURRENT PRICES) /a

	<u>Capital per worker (Kb/N)</u>			<u>Labor productivity (VA/N)</u>			<u>Capital efficiency (VA/Kb)</u>		
	<u>Number of workers</u>			<u>Number of workers</u>			<u>Number of workers</u>		
	5-19	20+	Total	5-19	20+	Total	5-19	20+	Total
Food	5,934	30,009	24,469	4,089	55,332	43,523	0.689	1.844	1.779
Beverages	3,269	12,547	12,494	5,361	46,416	46,182	1.640	3.699	3.696
Tobacco	667	9,524	9,519	5,667	44,035	44,014	8.500	4.624	4.624
Textiles	2,227	13,493	13,157	3,847	13,965	13,661	1.727	1.035	1.038
Footwear/clothing	1,978	2,815	2,341	2,767	5,923	4,136	1.399	2.104	1.767
Wood	3,022	12,974	11,874	5,175	12,126	11,365	1.712	0.935	0.957
Furniture	4,836	3,932	4,294	4,212	8,075	6,527	0.871	2.054	1.520
Paper	7,231	57,436	57,793	10,323	46,163	45,303	0.143	0.804	0.784
Printing	4,760	12,128	11,041	6,694	20,001	18,039	1.406	1.649	1.634
leather	4,777	6,976	6,502	4,586	8,750	7,852	0.960	1.254	1.208
Rubber	8,337	13,571	13,435	11,185	25,085	24,726	1.342	1.848	1.840
Chemicals	19,380	23,929	23,771	17,869	55,336	54,348	0.922	2.313	2.286
Oil & coal products	98,687	627,743	621,191	16,563	1,003,515	991,293	0.168	1.596	1.596
Nonmetallic products	7,084	78,751	70,314	4,602	27,820	25,097	0.650	0.353	0.357
Basic metals	7,398	24,104	23,777	9,585	33,432	33,092	1.296	1.387	1.392
Metal products	5,690	11,624	10,424	8,779	21,791	19,134	1.543	1.875	1.836
Machinery	5,658	11,911	10,933	9,089	30,357	26,926	1.606	2.549	2.463
Electrical machinery	7,832	10,101	10,036	9,154	25,040	24,639	1.169	2.479	2.455
Transport equipment	7,483	15,490	15,033	3,064	31,556	30,215	0.409	2.037	2.010
Miscellaneous	3,537	10,659	9,821	7,689	14,270	13,496	2.174	1.271	1.374
<u>Total</u> (Average)	<u>4,689</u>	<u>22,571</u>	<u>19,957</u>	<u>4,514</u>	<u>33,677</u>	<u>29,414</u>	<u>0.963</u>	<u>1.492</u>	<u>1.474</u>

/a Establishments employing at least 5 workers.

Note: VA = Value added; N = Employment; Kb = Book value of fixed assets.

Source: NCSO, Annual Survey of Establishments.

Table 1.10: Manufactured Export Production, 1974

Sector	Output	Exports /a	Exports as % of output
Sugar milling	5,656,693	4,251,861	75.2
Coconut oil	3,641,391	2,611,958	71.7
Other food	21,614,774	962,093	4.5
Beverages	1,782,044	23,048	1.3
Tobacco	2,457,589	25,089	1.0
Textiles	3,215,224	196,417	6.1
Clothing/footwear	1,627,961	151,556	9.3
Wood	1,951,641	552,611	28.3
Furniture	251,508	92,252	36.6
Paper	1,869,291	52,746	2.8
Printing	678,128	4,482	0.7
Leather	112,065	12,447	11.1
Rubber	773,324	7,678	1.0
Chemicals	4,265,831	106,151	2.5
Oil & coal	8,440,456	100,323	1.2
Cement	840,485	178,450	21.2
Other non-metallic minerals	725,578	53,913	7.4
Basic metals	2,077,359	138,484	6.7
Metal products	1,648,465	9,214	0.6
Machinery	563,526	22,740	4.0
Electrical machinery	1,031,961	17,389	1.7
Transport equipment	1,636,892	5,694	0.3
Miscellaneous	829,865	53,561	6.5
<u>Total</u>	<u>67,692,051</u>	<u>9,630,157</u>	<u>14.2</u>

/a Direct exports only.

Source: NEDA, Input-Output Table, 1974.

Table 1.11: DIRECT IMPORT REQUIREMENTS OF MANUFACTURING OUTPUT, 1974 /a

Input-Output Sectors	Imports	Output	Direct import requirement of one unit of output (Ratio)
Sugar milling	14,582	5,656,693	0.0025
Coconut oils	66,957	3,641,391	0.0183
Other manufacturing foods	1,323,764	21,614,774	0.0612
Beverages	69,791	1,782,044	0.0391
Tobacco	212,247	2,457,589	0.0863
Textiles	1,253,586	3,215,224	0.3898
Clothing and footwear	164,026	1,627,961	0.1007
Wood	84,475	1,951,641	0.0432
Furniture	31,503	251,508	0.1252
Paper	339,380	1,869,291	0.2136
Printing	93,989	678,128	0.1386
Leather	12,505	112,065	0.1115
Rubber	236,422	773,324	0.3057
Chemicals	1,207,527	4,265,831	0.2830
Oil and coal products	4,331,281	8,440,456	0.5131
Hydraulic cement	68,638	840,485	
Other nonmetallic mineral products	82,531	725,578	0.0816 0.1137
Basic metals	1,063,925	2,077,359	0.5121
Metal products	416,671	1,648,465	0.2527
Machinery	97,968	563,526	0.1738
Electrical machinery	149,395	1,031,961	0.1447
Transport equipment	132,315	1,636,892	0.0808
Miscellaneous	221,415	829,865	0.2668
<u>Total</u>	<u>11,381,163</u>	<u>67,392,055</u>	<u>0.1688</u> (Average)

/a See footnote /a in Table 1.24 for clarification of the methodology used to obtain direct requirements of output.

Source: NEDA, Input-Output Table, 1974

Table 1.12: IMPORTS (F.O.B.) BY END-USE  
(Value in millions of US\$)

Commodity group	1975	1976	1977
<b>CAPITAL GOODS</b>			
Nonelectrical machinery	655	625	589
Electrical machinery	157	187	138
Transport equipment	223	171	209
Aircraft, ships & boats	78	106	86
Professional, scientific & controlling instruments	36	37	55
<u>Total</u>	<u>1,149</u>	<u>1,126</u>	<u>1,077</u>
<b>RAW MATERIALS AND INTERMEDIATE GOODS</b>			
Wheat	95	113	79
Crude materials, inedible	128	133	189
Cotton	36	37	30
Synthetic and artificial fibers	41	43	55
Others	51	53	104
Animal and vegetable oils and fats	7	7	11
Chemicals	380	352	432
Chemical compound	108	132	160
Medicinal and pharmaceutical chemicals	34	39	43
Urea	46	10	29
Fertilizer, excluding urea	43	11	14
Others	149	160	186
Manufactures	457	461	549
Paper and paper products	31	29	36
Textile yarn, fabrics and made-up articles	66	50	80
Iron and steel	176	194	237
Metal products	93	81	71
Others	91	107	125
Embroideries	58	115	95
Materials and accessories for the manufacture of electrical equipment	41	91	107
<u>Total</u>	<u>1,166</u>	<u>1,272</u>	<u>1,462</u>
<b>MINERAL FUELS AND LUBRICANTS</b>			
Coal, coke and briquettes	2	2	9
Petroleum, crude	710	801	859
Others	58	87	125
<u>Total</u>	<u>770</u>	<u>890</u>	<u>993</u>
<b>CONSUMER GOODS</b>			
Food and food preparations	227	185	220
Dairy products	62	55	70
Fish and fish preparations	33	30	22
Rice	37	12	5
Corn	16	12	16
Others	79	76	102
Beverages and tobacco	23	35	44
Miscellaneous, excl. professional, scientific and controlling instruments	39	44	42
Miscellaneous, n.e.s.	85	81	77
Live animals nec for food	1	1	-
Articles temporarily imported or exported	67	58	55
Others	17	22	22
<u>Total</u>	<u>374</u>	<u>345</u>	<u>383</u>
<b>TOTAL IMPORTS</b>	<b>3,459</b>	<b>3,633</b>	<b>3,915</b>

Source: NCSO, Foreign Trade Statistics.

Table 1.13: EXPORT STRUCTURE, 1960-78  
(Percentage share/current prices)

Sector	Actual			
	1960	1970	1972	1978
Traditional primary <u>/a</u>	49.3	40.0	39.7	12.2
Traditional manufactured <u>/b</u>	48.4	49.8	46.9	48.3
Non-traditional primary (unmanufactured) <u>/c</u>	-	1.1	3.5	6.7
Non-traditional manufactured <u>/d</u>	1.2	8.3	9.9	30.5
Re-exports + special transactions	1.1	0.8	-	2.3
<u>Total</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
Value of total exports (millions of US\$/current prices)	560.0	1,142.0	1,168.4	3,424.9

/a Logs, copra, tobacco, abaca (unmanufactured), fresh fruit and vegetables (excluding bananas).

/b Sugar, coconut & food products, wood products (except furniture), mineral products (excluding nickel).

/c Bananas, nickel, fish, coffee, oil seeds.

/d Garments, electronic equipment, furniture, chemicals, cement, travel goods and handbags, etc.

Sources: NCSO, Foreign Trade Statistics, and BOI.



**Table 1.14: NONTRADITIONAL MANUFACTURED EXPORTS**  
(f.o.b. value in millions of US\$ at current prices)

Category	1972	1973	1974	1975	1976	1977	1978
Garments	39	58	94	107	185	250	326
Electrical equipment and components	-	11	27	47	84	124	253
Handicrafts	13	27	46	78	95	84	100
Nonmetallic mineral manufactures, partic- ularly cement	10	25	36	32	27	39	42
Chemicals	6	11	16	22	28	55	62
Wood manufactures, excluding plywood, veneer and lumber	8	17	25	17	24	36	21
Food products and beverages	11	15	17	15	20	31	41
Machinery and transport equipment	2	3	5	10	15	27	38
Textile yarn, fabrics and other related products	3	17	7	9	15	13	24
Cordage, cable, ropes and twines	3	5	10	8	10	13	12
<u>Subtotal - (ten leading groups)</u>	<u>96</u>	<u>190</u>	<u>283</u>	<u>345</u>	<u>503</u>	<u>672</u>	<u>919</u>
Others	20	37	44	29	43	45	126
<u>Total exports of nontra- ditional manufactures</u>	<u>116</u>	<u>227</u>	<u>327</u>	<u>374</u>	<u>546</u>	<u>717</u>	<u>1,045</u>

Source: National Census and Statistics Office.

Table 1.15 MANUFACTURED EXPORTS IN MAJOR EAST ASIAN COUNTRIES  
(US\$ million)

SITC Commodity	Korea		Philippines		Thailand		Malaysia		Indonesia	
	1967	1973	1967	1973	1967	1973	1967	1973	1967	1973
<u>Total manufactured goods /a</u>	<u>221.0</u>	<u>4,255.9</u>	<u>72.9</u>	<u>371.0</u>	<u>50.9</u>	<u>582.6</u>	<u>100.0</u>	<u>933.4</u>	<u>16.6</u>	<u>135.0</u>
0 <u>Manufactured food</u>	4.2	102.7	14.6	80.7	28.1	68.4	23.1	58.9	1.7	4.6
Fish-airtight containers	2.6	37.6	0.0	0.9	0.0	1.0	0.8	10.3	0.2	0.0
Meal & flour of wheat	-	0.0	-	-	0.6	0.1	3.3	0.0	-	0.3
Meal & flour of cereals	0.0	0.0	-	0.0	4.5	9.3	0.0	0.0	-	0.1
Cereals preparation	0.3	4.4	0.0	0.9	0.6	1.7	0.9	5.2	-	0.6
Dried fruit	0.0	0.1	-	30.4	0.0	2.9	0.0	0.1	0.1	0.0
Fruit, preserved & prepared	0.0	1.6	13.2	45.1	0.3	18.2	14.5	24.8	0.0	0.8
Vegetables, roots, tubers	1.2	27.9	0.0	0.5	21.8	23.6	1.7	6.1	1.2	0.1
Cocoa butter & paste	-	-	1.0	-	-	-	-	0.5	-	1.0
Miscellaneous food production	0.0	23.4	0.2	1.1	0.2	2.5	1.4	10.3	0.3	1.1
1 <u>Manufactured beverages/tobacco</u>	0.4	1.3	2.5	2.1	0.1	0.5	3.2	11.0	0.1	13.5
Alcoholic beverages	0.4	1.1	2.1	1.3	0.1	0.4	2.9	3.9	0.1	0.2
Tobacco manufactured	0.0	0.2	0.5	0.7	0.0	0.1	0.3	6.8	0.1	13.4
2 <u>Manufactured crude materials</u>	2.9	25.1	6.4	29.4	6.9	27.4	23.1	184.0	0.7	31.5
Wood shaped/simple worked	2.7	15.9	6.4	27.2	6.9	27.2	23.1	183.6	0.7	31.5
Pulp/waste paper	-	0.0	-	2.0	-	-	0.0	0.2	-	-
4 <u>Manufactured animal &amp; vegetable (oils &amp; fats)</u>	0.1	0.6	0.0	1.0	0.0	0.1	0.1	15.1	0.2	0.0
Animal/vegetable oil/fats	0.1	0.6	0.0	1.0	0.0	0.1	0.1	15.1	0.2	0.0
5 <u>Chemicals</u>	2.4	74.6	4.6	21.2	0.8	12.0	13.1	33.1	1.9	24.3
Organic chemicals	0.3	31.5	1.3	5.3	0.1	1.5	1.0	2.7	-	1.1
Inorganic chemicals	0.1	9.6	1.4	0.9	0.0	0.5	0.3	2.8	-	0.7
Dyeing & color materials	0.1	2.6	0.2	1.0	0.0	0.4	2.6	1.0	0.1	0.1
Medical/pharmaceuticals	0.1	9.7	1.0	2.2	0.4	4.9	2.0	7.2	0.0	12.4
Plastic materials	0.0	8.8	-	4.4	-	3.1	0.1	4.5	-	0.0
Other chemicals	0.0	12.4	0.1	7.3	0.2	1.6	6.8	13.0	1.7	9.7
6 <u>Manufactured goods</u>	99.6	1,471.1	41.2	119.8	12.5	195.6	23.4	171.9	1.2	8.1
Leather	-	0.7	-	0.0	0.2	2.4	0.0	0.1	0.1	0.4
Rubber manufactured	2.0	90.9	0.4	0.7	0.1	3.0	4.7	18.1	-	0.2
Wood & cork manufactures	36.6	227.5	35.9	59.8	0.8	22.7	4.2	85.6	0.1	1.1
Paper & manufactures	1.8	36.8	0.1	0.7	0.0	4.2	1.0	3.5	0.0	0.3
Textile yarns & threads	3.1	205.0	0.1	4.3	0.1	9.6	0.6	5.3	-	0.0
Cotton fabrics	12.6	50.5	0.2	1.7	0.3	17.1	3.1	20.0	0.5	0.4
Textile fabrics (noncotton)	19.5	271.7	0.2	0.6	2.2	27.2	0.0	4.0	0.1	0.1
Building materials	0.4	73.1	0.0	27.2	0.8	25.9	4.1	3.3	-	0.0
Glass/glassware	0.5	7.9	0.2	1.9	0.2	1.0	0.1	2.7	-	-
Pearls, precious (& semiprecious) stones	0.0	1.6	-	-	4.5	38.7	-	0.2	0.0	0.3
Iron & steel ingots	0.2	34.6	-	0.2	-	-	0.0	0.1	-	-
Iron & steel bars	0.2	46.5	-	0.0	0.0	0.1	0.0	0.9	-	0.1
Iron & steel plates	1.0	74.3	0.0	0.0	0.1	0.8	1.2	1.0	-	0.0
Iron & steel tubes	0.2	59.5	-	0.7	0.3	4.1	0.8	2.8	-	0.2
Tools	0.5	6.3	-	0.2	0.0	1.2	0.1	0.7	-	1.8
Other manufactured goods	20.4	260.4	4.1	19.9	2.8	35.3	2.7	19.0	0.4	3.0
7 <u>Machinery &amp; transport equipment</u>	14.2	700.7	0.7	12.8	0.5	28.5	3.9	238.8	10.4	32.1
Power generating machinery	1.0	2.4	-	0.0	0.0	0.2	0.0	6.7	-	8.0
Office machines	0.0	44.1	-	0.0	-	0.4	0.0	31.9	-	0.3
Electrical machinery	7.4	440.9	0.0	5.3	0.4	23.3	2.3	126.6	-	12.9
Road motor vehicles	0.9	3.4	0.0	1.6	0.1	1.0	0.1	12.8	-	0.2
Aircraft	0.5	14.3	-	0.0	-	0.0	0.0	10.1	-	3.0
Ships & boats	1.3	137.8	0.6	1.2	0.0	0.0	0.0	3.2	-	1.1
Other machinery & equipment	2.9	36.7	0.1	4.6	0.1	3.4	1.3	45.4	10.4	6.5
8 <u>Miscellaneous manufactured articles</u>	97.2	1,879.7	2.7	104.1	1.9	250.2	10.2	220.6	0.3	20.9
Furniture	0.1	10.8	6.6	5.2	0.0	3.1	1.3	4.0	-	0.2
Clothing & textile fabrics	59.2	1,131.6	0.3	33.1	0.9	53.5	3.2	42.2	-	2.4
Footwear	8.1	191.2	0.2	3.0	0.0	0.7	1.8	14.7	-	0.2
Scientific & medical instruments	0.3	23.0	-	0.8	0.0	1.5	0.1	136.1	-	2.6
Watches & clocks	0.1	43.0	-	0.1	-	3.1	0.0	2.9	-	0.0
Sound recording & musical instruments	0.1	83.2	0.0	1.4	0.0	0.1	0.5	3.0	-	0.4
Printed matter	0.5	16.3	0.1	0.4	0.0	169.0	1.2	2.6	0.1	8.4
Toys, sporting goods	0.8	69.0	0.0	-	0.1	0.7	0.1	1.0	-	0.1
Others	27.6	293.5	1.5	58.3	0.8	17.5	1.9	12.5	0.3	6.4

/a SITC categories, i.e., excluding mineral and agro-processing industries.

Notes: (1) Major commodity groups at one-digit SITC level are underlined and should add up to 100% except for rounding off. Within a commodity group, only those commodities with a share of 1% or more in any year have been listed.

(2) Entries of 0.0 show either a zero or negligible value. Dashes represent no entry in UN tapes, which presumably means either zero or no information available.

Source: UN tapes and "A Review of the Manufacturing Sector in Major East Asian Countries" (IBRD, Unpublished Draft).

**Table 1.16: MANUFACTURED EXPORTS IN MAJOR EAST ASIAN COUNTRIES**  
(X)

SITC Commodity	Korea		Philippines		Thailand		Malaysia		Indonesia	
	1967	1975	1967	1975	1967	1975	1967	1975	1967	1975
<u>Total manufactured goods /a</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>
0 <u>Manufactured food</u>	<u>1.9</u>	<u>2.4</u>	<u>20.0</u>	<u>21.7</u>	<u>53.2</u>	<u>11.7</u>	<u>23.1</u>	<u>6.3</u>	<u>10.2</u>	<u>3.4</u>
Fish-airtight containers	1.2	0.9	0.0	0.2	0.0	1.7	0.8	1.1	1.2	0.0
Meal & flour of wheat	-	0.0	-	-	1.2	0.0	3.3	0.0	-	0.2
Meal & flour of cereals	0.0	0.0	-	0.0	8.8	1.6	0.0	0.0	-	0.1
Cereals preparation	0.2	0.1	0.0	0.2	1.2	0.3	0.9	0.6	-	0.4
Dried fruit	0.0	0.0	-	8.2	0.0	0.5	0.0	0.0	0.5	0.0
Fruit, preserved & prepared	0.0	0.0	18.2	12.2	0.6	3.1	14.5	2.7	0.0	0.6
Vegetables, roots, tubers	0.5	0.7	0.0	0.1	42.9	4.0	1.7	0.7	7.3	0.1
Cocoa butter & paste	-	-	1.4	-	-	-	-	0.1	-	0.8
Miscellaneous food production	0.0	0.6	0.3	0.3	0.5	0.4	1.4	1.1	1.2	0.8
1 <u>Manufactured beverages/tobacco</u>	<u>0.2</u>	<u>0.0</u>	<u>3.5</u>	<u>0.6</u>	<u>0.3</u>	<u>0.1</u>	<u>3.2</u>	<u>1.2</u>	<u>0.9</u>	<u>10.0</u>
Alcoholic beverages	0.2	0.0	2.8	0.4	0.3	0.1	2.9	0.4	0.4	0.1
Tobacco manufactured	0.0	0.0	0.6	0.2	0.0	0.0	0.3	0.7	0.5	9.9
2 <u>Manufactured crude materials</u>	<u>1.3</u>	<u>0.6</u>	<u>8.8</u>	<u>7.9</u>	<u>13.5</u>	<u>4.7</u>	<u>23.1</u>	<u>19.7</u>	<u>4.3</u>	<u>23.4</u>
Wood shaped/simplely worked	1.2	0.4	8.8	7.3	13.5	4.7	23.1	19.7	4.3	23.4
Pulp/waste paper	-	0.0	-	0.5	-	-	0.0	0.0	-	-
4 <u>Manufactured animal &amp; vegetable (oils &amp; fats)</u>	<u>0.0</u>	<u>0.0</u>	<u>0.1</u>	<u>0.3</u>	<u>0.0</u>	<u>0.0</u>	<u>0.1</u>	<u>1.6</u>	<u>1.2</u>	<u>0.0</u>
Animal/vegetable oil/fats	0.0	0.0	0.1	0.3	0.0	0.0	0.1	1.6	1.2	0.0
5 <u>Chemicals</u>	<u>1.1</u>	<u>1.8</u>	<u>6.3</u>	<u>5.7</u>	<u>1.6</u>	<u>2.1</u>	<u>13.1</u>	<u>3.5</u>	<u>11.5</u>	<u>18.0</u>
Organic chemicals	0.1	0.7	1.9	1.4	0.3	0.3	1.0	0.3	-	0.8
Inorganic chemicals	0.1	0.2	1.9	0.3	0.1	0.1	0.3	0.3	-	0.5
Dyeing & color materials	0.1	0.1	0.3	0.3	0.0	0.1	2.6	0.1	0.9	0.1
Medical/pharmaceuticals	0.1	0.2	1.4	0.6	0.8	0.8	2.0	0.8	0.2	9.2
Plastic materials	0.0	0.2	-	1.2	-	0.5	0.1	0.5	-	0.0
Other chemicals	0.0	0.3	0.2	2.0	0.4	0.3	6.8	1.4	10.5	7.2
6 <u>Manufactured goods</u>	<u>45.1</u>	<u>34.6</u>	<u>56.6</u>	<u>32.3</u>	<u>24.6</u>	<u>33.6</u>	<u>23.4</u>	<u>18.4</u>	<u>7.2</u>	<u>6.0</u>
Leather	-	0.0	-	0.0	0.3	0.4	0.0	0.0	0.3	0.3
Rubber manufactured	0.9	2.1	0.5	0.2	0.2	0.5	4.7	1.9	-	0.1
Wood & cork manufactures	16.6	5.3	49.3	16.1	1.5	3.9	4.2	9.2	0.3	0.8
Paper & manufactures	0.8	0.9	0.2	0.2	0.1	0.7	1.0	0.4	0.0	0.3
Textile yarns & threads	1.4	4.8	0.1	1.3	0.2	1.7	0.6	0.6	-	0.0
Cotton fabrics	5.7	1.2	0.3	0.5	0.6	2.9	3.1	2.1	3.3	0.3
Textile fabrics (noncotton)	8.8	6.4	0.3	0.1	4.3	4.7	0.0	0.4	0.6	0.1
Building materials	0.2	1.7	0.0	7.3	1.6	4.4	4.1	0.3	-	0.0
Glass/glassware	0.2	0.2	0.2	0.5	0.4	0.2	0.1	0.3	-	-
Pearls, precious (& semiprecious) stones	0.0	0.0	-	-	8.8	6.6	-	0.0	0.1	0.3
Iron & steel ingots	0.1	0.8	-	0.1	-	-	0.0	0.0	-	-
Iron & steel bars	0.1	1.1	-	0.0	0.0	0.0	0.0	0.1	-	0.1
Iron & steel plates	0.4	1.7	0.0	0.0	0.3	0.1	1.2	0.1	-	0.0
Iron & steel tubes	0.1	1.4	-	0.2	0.6	0.7	0.8	0.3	-	0.2
Tools	0.2	0.1	-	0.1	0.0	0.2	0.1	0.1	-	1.3
Other manufactured goods	9.3	6.1	5.7	5.4	5.4	6.1	2.7	2.0	2.6	2.2
7 <u>Machinery &amp; transport equipment</u>	<u>6.4</u>	<u>16.5</u>	<u>1.0</u>	<u>3.4</u>	<u>1.1</u>	<u>4.9</u>	<u>3.9</u>	<u>25.6</u>	<u>62.8</u>	<u>23.8</u>
Power generating machinery	0.4	0.1	-	0.0	0.0	0.0	0.0	0.7	-	5.9
Office machines	0.0	1.0	-	0.0	-	0.1	0.0	3.4	-	0.2
Electrical machinery	3.3	10.4	0.0	1.4	0.8	4.0	2.3	13.6	-	9.6
Road motor vehicles	0.4	0.1	0.0	0.4	0.1	0.2	0.1	1.4	-	0.2
Aircraft	0.2	0.3	-	0.0	-	0.0	0.0	1.1	-	2.3
Ships & boats	0.6	3.2	0.8	0.3	0.0	0.0	0.0	0.3	-	0.8
Other machinery & equipment	1.3	0.9	0.1	1.2	0.2	0.6	1.3	4.9	62.8	4.8
8 <u>Miscellaneous manufactured articles</u>	<u>44.0</u>	<u>44.2</u>	<u>3.7</u>	<u>28.1</u>	<u>3.7</u>	<u>42.9</u>	<u>10.1</u>	<u>23.6</u>	<u>1.9</u>	<u>15.5</u>
Furniture	0.1	0.3	0.9	1.4	0.1	0.5	1.3	0.4	-	0.2
Clothing & textile fabrics	26.8	26.6	0.4	8.9	1.8	9.2	3.2	4.5	-	1.8
Footwear	3.7	4.5	0.2	0.8	0.0	0.1	1.8	1.6	-	0.2
Scientific & medical instruments	0.1	0.5	-	0.2	0.0	0.3	0.1	14.6	-	2.0
Watches & clocks	0.0	1.0	-	0.0	-	0.5	0.0	0.3	-	0.0
Sound recording & musical instruments	0.1	2.0	0.0	0.4	0.0	0.0	0.5	0.3	-	0.3
Printed matter	0.2	0.4	0.1	0.1	0.0	29.0	1.2	0.3	0.3	6.2
Toys, sporting goods	0.4	1.6	0.0	-	0.2	0.1	0.1	0.1	-	0.1
Others	12.5	6.9	2.1	15.7	1.5	3.0	1.9	1.3	1.6	4.7

/a SITC categories, i.e., excluding mineral and agro-processing industries.

Notes: (1) Major commodity groups at one-digit SITC level are underlined and should add up to 100% except for rounding off. Within a commodity group, only those commodities with a share of 1% or more in any year have been listed.

(2) Entries of 0.0 show either a zero or negligible value. Dashes represent no entry in UN tapes, which presumably means either zero or no information available.

Source: UN tapes and "A Review of the Manufacturing Sector in Major East Asian Countries" (IBRD, Unpublished Draft).

**Table 1.17: PROJECTION OF MANUFACTURED EXPORT GROWTH, 1977-85**  
(Constant 1977 prices)

	Projected annual growth rate	Exports				Incremental Exports	
		1977 (US\$ million)	1985 (US\$ million)	1977 (Percent)	1985 (Percent)	1977-85 (US\$ million)	1977-85 (Percent)
<u>Traditional Manufactured Exports</u>	<u>7</u>	<u>1,856</u>	<u>3,325</u>	<u>60.3</u>	<u>49.0</u>	<u>1,469</u>	<u>39.0</u>
Coconut products	9	761	1,515				
Sugar products	4	532	730				
Mineral products	7	302	520				
Forest products	10	261	560				
<u>Nontraditional Manufactured Exports</u>	<u>18</u>	<u>718</u>	<u>2,795</u>	<u>23.3</u>	<u>41.0</u>	<u>2,077</u>	<u>56.0</u>
Garments	15	250	765				
Electronics	25	125	745				
Handicrafts	10	75	160				
Chemicals	20	55	235				
Nonmetallic mineral products	10	39	85				
Wood manufactures	25	36	215				
Others (incl. food products)	20	138	590				
<u>Unmanufactured Exports</u>	<u>4</u>	<u>502</u>	<u>680</u>	<u>16.4</u>	<u>10.0</u>	<u>178</u>	<u>5.0</u>
<u>Total Exports</u>	<u>10</u>	<u>3,076</u>	<u>6,800</u>	<u>100.0</u>	<u>100.0</u>	<u>3,724</u>	<u>100.0</u>

Source: Mission estimates.

**Table 1.18: MANUFACTURING GROWTH: PAST, PRESENT AND FUTURE, 1970-85**  
(Billions of pesos/1977 prices)

	Output /a			Gross Value Added /d			Investment /e		Employment /g		
	1970	1977	1985 (proj.)	1970	1977	1985 (proj.)	1970-77 (est.)	1977-85 (proj.)	1970	1977	1985 (proj.)
<b>Manufactured Export Sector</b>											
Traditional manufactures	9.3	13.9	24.0/b	3.7	5.6	9.6	4.2	8.8	92/f	120	180
Nontraditional manufactures	0.9	5.4	20.2/b	0.2	1.4	5.0	3.0	9.0	20/f	140	500
<b>Domestic Market-Oriented Industries*</b>	68.8	106.7	185.8	20.6	30.8	54.4	32.3	75.8	1,211	1,420	1,920
<b>Total Manufacturing</b>	79.0	126.0	230.0/c	24.5	37.8	69.0/c	39.5	93.6	1,323	1,680/i	2,600
Of which:											
Factory sector /h									404	630	1,440
Unorganized sector									919	1,050	1,160 /j

\* The data for domestic market-oriented industries in this table are calculated as a residual.

/a For exports, an exchange rate of US\$1.00 = P 6.5 is used for 1970; a rate of US\$1.00 = P 7.5 is used for 1977-85.

/b From Table 1.17.

/c Based on a real rate of growth in gross value added of 8% per annum during 1977-85.

/d The following value added coefficients are assumed: 0.4 for traditional manufactures; 0.25 for nontraditional manufactures; 0.3 for total manufacturing sector.

/e The following ICORs are assumed: 2.2 for traditional manufactures; 2.5 for nontraditional manufactures; 3.0 for total manufacturing sector.

/f Estimated on the basis of the 1969 Philippine input-output data. See Table 1.24.

/g In thousands of workers. The following capital-labor ratios are assumed: P 150,000 for traditional manufactures; P 25,000 for nontraditional manufactures; P 100,000 for total manufacturing sector (1977).

/h Establishments employing more than five workers.

/i Because of a fall in total manufacturing employment between 1976-77, the estimate for 1976 is used.

/j Employment in the unorganized sector assumed to grow at its historic rate of 1.5% per annum during 1977-85.

Sources: - NCSO, Census of Establishments and Annual Survey of Establishments  
 - Emmanuel A. Hife, "Factor Productivities and Intensities in Philippine Manufacturing with Emphasis on Establishment Size, 1974" IPPP Working Paper No. 10, School of Economics, University of the Philippines, June 1978.  
 - Mission estimates.

**TABLE 1.18a: ALTERNATIVE PROJECTIONS FOR MANUFACTURING GROSS VALUE ADDED AND EMPLOYMENT, 1985**  
(Billions of Pesos/1977 prices/thousands of workers)

	<u>Alternative 1 /a</u>		<u>Alternative 2 /b</u>		<u>Alternative 3 /c</u>		<u>Alternative 4 /d</u>	
	G.V.A.	Employment	G.V.A.	Employment	G.V.A.	Employment	G.V.A.	Employment
<b>Manufactured Export Sector</b>								
Traditional manufactures	9.6	180	9.6	180	9.6	180	9.6	180
Nontraditional manufactures	5.0	500	5.0	500	5.0	500	3.4	340
<b>Domestic Market Oriented</b>	54.4	1,920	54.4	1,670	49.1	1,600	49.1	1,600
<b>Total Manufacturing of which:</b>	69.0	2,600	69.0	2,350	63.7	2,280	62.1	2,120
Factory sector		1,440		1,190		1,120		960
Unorganized sector		1,160		1,160		1,160		1,160

/a From Table 1.18

/b Same as alternative 1, but assuming employment elasticity of home industries to be equal to its historic rate (70-77) of 0.32 only.

/c Same as alternative 2, but assuming growth rate of home industry G.V.A. to be equal to its historic rate (70-77) of 6% per annum only.

/d Same as alternative 3, but assuming a real growth rate of nontraditional exports of 12% per annum only.

**TABLE 1.18b: ALTERNATIVE PROJECTIONS FOR MANUFACTURING GROSS VALUE ADDED AND EMPLOYMENT, 1977-85**  
(Percentage Annual Growth Rate)

	<u>Alternative 1</u>		<u>Alternative 2</u>		<u>Alternative 3</u>		<u>Alternative 4</u>		<u>Employment Elasticities</u>				
	G.V.A.	Employment	G.V.A.	Employment	G.V.A.	Employment	G.V.A.	Employment	1970/77	Alt.1	Alt.2	Alt.3	Alt.4
<b>Manufactured Export Sector</b>													
Traditional manufactures	7.0	5.2	7.0	5.2	7.0	5.2	7.0	5.2	0.74	0.74	0.74	0.74	0.74
Nontraditional manufactures	17.2	17.2	17.2	17.2	17.2	17.2	11.6	11.6	1.0	1.0	1.0	1.0	1.0
<b>Domestic Market Oriented</b>	7.4	4.2	7.4	2.4	6.0	1.9	6.0	1.9	0.32	0.57	0.32	0.32	0.32
<b>Total Manufacturing of which:</b>	7.8	5.9	7.8	4.3	6.7	3.9	6.4	3.0	0.55	0.75	0.55	0.58	0.47
Factory sector		10.4		8.3		7.4		5.4					
Unorganized sector		1.5		1.5		1.5		1.5					

Source: See Table 1.18a

**Table 1.19: STRUCTURE OF MANUFACTURING GROWTH, 1970-85**  
(Percent share at constant 1977 prices)

	Output			Gross Value Added			Employment			Investment		Incremental Employment	
	1970	1977	1985	1970	1977	1985	1970	1977	1985	1970-77	1977-85	1970-77	1977-85
<u>Manufactured Export Sector</u>													
Traditional manufactures	11.7	11.0	10.4	15.1	14.8	13.9	7.0	7.1	6.9	10.6	9.4	7.8	6.5
Nontraditional manufactures	1.1	4.3	8.8	0.8	3.7	7.3	1.5	8.3	19.2	7.6	9.6	33.6	39.2
<u>Domestic Market-Oriented Industries</u>													
87.2	84.7	80.8	84.1	81.5	78.8	91.5	84.6	73.9	81.8	81.0	58.6	54.3	
<u>Total Manufacturing</u>													
100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Of which:													
Factory sector							30.5	37.5	55.4			77.6	82.3
Unorganized sector							69.5	62.5	44.6			22.4	17.7

Source: Table 1.18.



**Table 1.20: PHILIPPINE MANUFACTURING WAGES IN RELATION TO THOSE IN US, GERMANY, JAPAN AND KOREA:  
AND CONSUMER PRICES IN RELATION TO THOSE IN SINGAPORE, MALAYSIA,  
THAILAND AND TAIWAN, 1977 (1972 = 100)**

Country	Wages (1972 = 100) 1977	Consumer prices (1972 = 100) 1977
<b>I. <u>Wages</u></b>		<b>I. <u>Consumer Prices</u></b>
Philippines (daily rates)	132.9	Philippines 188.6
US (hourly earnings)	148.6	Singapore 160.6
Germany (hourly earnings)	149.5	Malaysia 145.7
Japan (monthly earnings)	215.1	Thailand 163.0
Korea (monthly earnings)	342.6	Taiwan 184.1
<b>II. <u>Exchange Rates</u> (Foreign exchange per Peso: 1972 = 100) /a</b>		<b>II. <u>Exchange Rates</u> /a</b>
US	92.5	Singapore 76.7
Germany	60.7	Malaysia 76.6
Japan	73.5	Thailand 90.2
Korea	112.2	Taiwan 87.8
<b>III. <u>Philippine Wages Relative to:</u> /b</b>		<b>III. <u>Philippine Consumer Prices</u> <u>Relative to:</u> /b</b>
US	82.7	Singapore 90.1
Germany	54.0	Malaysia 99.2
Japan	45.4	Thailand 104.4
Korea	43.5	Taiwan 89.9

/a Based on exchange rates per US dollar as follows:

	1972 = 100	1977
Philippines (Peso)	6.789	7.379
Germany (DM)	3.200	2.105
Japan (Yen)	302.0	240.0
Korea (Won)	398.9	484.0
Singapore (S dollar)	2.82	2.338
Malaysia (Ringgits)	2.817	2.365
Thailand (Baht)	20.928	20.40
Taiwan (NT dollar)	40.05	38.00

/b Based on  $W_1R/W_2$  where  $W_1$  are Philippine wages or the consumer price index,  $W_2$  foreign wages or the foreign price index (in local currency units) and R is the exchange rate - foreign currency per peso, all in indices 1972 = 100.

Source: IMF, International Financial Statistics; ILO, Yearbook of Labor Statistics.

**Table 1.21: PHILIPPINE MANUFACTURING WAGES IN RELATION TO THOSE IN US, GERMANY, JAPAN AND KOREA: AND CONSUMER PRICE IN RELATION TO THOSE IN SINGAPORE, MALAYSIA, THAILAND AND TAIWAN, 1977 (1966 = 100)**

Country	Wages (1966 = 100) 1977	Consumer prices (1966 = 100) 1977	
<b>I. Wages</b>		<b>I. Consumer Prices</b>	
Philippines	149.8	Philippines	145.3
US	146.2	Singapore	105.3
Germany	153.5	Malaysia	113.9
Japan	204.8	Thailand	124.4
Korea (1968-1977)	284.9	Taiwan	133.1
<b>II. Exchange Rates /a</b>		<b>II. Exchange Rates /a</b>	
US	52.9	Singapore	40.2
Germany	28.0	Malaysia	40.8
Japan	35.0	Thailand	52.2
Korea	94.8	Taiwan	50.3
<b>III. Philippine Wages Relative to: /b</b>		<b>III. Philippine Consumer Prices Relative to: /b</b>	
US	54.2	Singapore	55.5
Germany	27.3	Malaysia	52.0
Japan	25.6	Thailand	61.0
Korea	49.8	Taiwan	54.9

/a Based on exchange rates per US dollar as follows:

	1966 = 100	1977
Philippines (Peso)	3.89	7.379
Germany (DM)	3.977	2.105
Japan (Yen)	362.47	240.0
Korea (Won)	270.00	484.0
Singapore (S dollar)	3.08	2.338
Malaysia (Ringgits)	3.07	2.365
Thailand (Baht)	20.68	20.40
Taiwan (NT dollar)	40.00	38.00

/b Based on  $W_1R/W_2$  where  $W_1$  are Philippine wages or the consumer price index,  $W_2$  foreign wages or the foreign price index (in local currency units) and R is the exchange rate - foreign currency per peso, all in indices 1966 = 100.

Source: IMF, International Financial Statistics; ILO, Yearbook of Labor Statistics.

Table 1.22: CHANGES IN MANUFACTURING OUTPUT, EMPLOYMENT  
AND PRODUCTIVITY IN THE PHILIPPINES, 1974  
(1969 = 100)

	Employment	Output	Productivity (% change)
Export industries <u>/a</u>	147.9	173.9	117.6
Food industries	134.6	162.5	120.7
Export and food industries	146.0	172.3	118.0
Other (non-export or food industries)	123.9	123.6	99.8
Industries above average Kb/N <u>/b</u>	141.6	112.1	79.2
Industries below average Kb/N <u>/c</u>	129.6	72.2	55.7
All industries	132.3	130.9	98.9

/a Export industries include food products, textiles, clothing and footwear, furniture, machinery, electrical machinery and transport equipment.

/b Above average industry Kb/N (1974): Nonmetallic minerals, paper, basic metals and chemicals. Oil and coal products and food products are also above the average Kb/N but are excluded.

/c All other industries except those in footnote /b.

Source: NCSO, Annual Survey of Establishments.

Table 1.23: CHANGES IN PRODUCTIVITY IN MANUFACTURING INDUSTRY  
IN THE PHILIPPINES, US, GERMANY, JAPAN, AND KOREA

Country	Real manufacturing output (1)	Employment (2)	Productivity (% change) (1)/(2) - 1
<u>1972-77</u>			
US	114.6	111.6	10.3
Germany	107.3	88.4	12.1
Japan	113.6	90.4	12.6
Korea	316.3	192.4	16.4
Philippines	120.4	131.9	-8.7
<u>1969-74</u>			
US	116.3	110.4	10.5
Germany	117.0	98.4	8.4
Japan	140.3	102.3	13.7
Korea	250.0	163.5	15.3
Philippines	130.9	132.3	-1.1

Source: IMF, International Financial Statistics.

**Table 1.24: DIRECT EMPLOYMENT REQUIREMENTS FOR MANUFACTURED EXPORT PRODUCTION (LDE), 1974 /a**

Input-output sector	Total /b employment	Manufacturing		Direct employment requirement for one unit of output (ratio)	Direct employment (LDE) required for export production (No. of workers)
		Output (p 000)	Exports (p 000)		
Sugar milling	}	5,656,693	4,251,861	}	}
Coconut oil	} 198,207	3,641,391	2,611,958	} 0.0064	} 50,086
Other food	}	21,614,774	962,093	}	}
Beverages	40,001	1,782,044	23,048	0.0024	516
Tobacco	36,852	2,457,589	25,089	0.0149	374
Textiles	214,959	3,215,224	196,417	0.0668	13,121
Clothing/footwear	405,426	1,627,961	151,556	0.2490	37,737
Wood	101,071	1,951,641	552,611	0.0517	28,570
Furniture	39,943	251,508	92,252	0.1588	14,650
Paper	21,347	1,869,291	52,746	0.0114	601
Printing	52,241	678,128	4,482	0.0770	345
Leather	6,743	112,065	12,447	0.0601	748
Rubber	21,640	773,324	7,678	0.0279	214
Chemicals	55,908	4,265,831	106,151	0.0131	1,391
Oil & coal	5,988	8,440,456	100,323	0.0007	70
Cement	}	840,485	178,450	}	}
Other non-metallic minerals	} 42,747	725,578	53,913	} 0.0272	} 6,320
Basic metals	29,734	2,077,359	138,484	0.0143	1,980
Metal products	33,817	1,648,465	9,214	0.0205	189
Machinery	68,345	563,526	22,740	0.1212	2,756
Electrical machinery	44,350	1,031,961	17,389	0.0429	746
Transport equipment	96,089	1,636,892	5,694	0.0587	334
Miscellaneous	120,419	829,865	53,561	0.1451	7,772
<b>Total</b>	<b>1,429,000</b>	<b>67,692,051</b>	<b>9,630,157</b>	<b>0.1423</b>	<b>203,350</b>
<b>1970 Totals /c</b>	<b>1,323,000</b>	<b>19,284,451</b>	<b>1,634,666</b>	<b>0.0847</b>	<b>112,060</b>

**Methodology:**

/a The direct labor content of manufactured exports is obtained by dividing sectoral employment by the corresponding column vector of total sales and then multiplying the result by the final demand component (column vector) for exports. This measures the direct labor content only.

/b The two-digit employment breakdown is for 1975, the total refers to 1974.

/c Employment refers to 1970, output and exports to 1969.

Sources: NEDA, Input-Output Table, 1974 and 1969, and NCSO, Population Census, 1970 and 1975.

**Table 1.25: EMPLOYMENT GENERATION BY SECTOR, 1956-77**  
(In thousands, except percent)

Year	Annual change in employment		
	Agriculture	Industry /a	Services
1956	-	-	-
1957	170.0	61.0	(54.0)
1958	269.0	54.0	82.0
1959	139.0	(63.0)	47.0
1960	4.0	98.0	22.0
1961	186.0	57.0	173.0
1962	320.0	96.0	69.0
1963	69.0	135.0	105.0
1964	15.0	(13.0)	212.0
1965	(81.0)	(21.0)	170.0
1966	394.0	168.0	101.0
1967	379.0	52.0	110.0
1968	(245.0)	41.0	156.0
1969	108.7	131.7	233.0
1970	108.7	131.7	233.0
1971	108.7	131.7	233.0
1972	816.0	(110.0)	(119.0)
1973	399.0	45.0	170.0
1974	399.0	30.0	19.0
1975	17.0	241.0	336.0
1976	350.0	64.0	434.0
1977	147.0	(12.0)	550.0
<u>Net Total</u>	<u>4,073.1</u>	<u>1,318.1</u>	<u>3,282.0</u>
Net total employment generation per sector as a percentage of net total employment generation in the economy	47.0	15.2	37.8
Of which manufacturing		7.4	

/a Includes mining and quarrying, construction, utilities, transport and storage, and manufacturing.

Sources: Data on employment are from the Bureau of the Census and Statistics Survey of Households Bulletin for the dates indicated in the table.

R.L. Tidalgo, "Labor Absorption in the Philippines, 1956-73", The Philippine Economic Journal, Vol. XV, Numbers 1, 2 (1976) and NCSO, Survey of Households Bulletin, 1973-1977.

Table 1.26: EMPLOYMENT BY SECTOR

	1970	1971	1972	1973	1974	1975	1976	1977
	<u>Thousands of persons</u>							
Agriculture, fishery & forestry	5,614	5,780	6,364	6,773	7,183	7,190	7,538	7,694
Mining & quarrying	50	56	46	55	44	54	56	47
Manufacturing	1,323	1,419	1,353	1,369	1,429	1,609	1,680	1,596
Electricity, gas & water	31	53	41	37	40	46	46	46
Construction	437	441	466	434	401	456	491	521
Commerce	815	1,487	1,515	1,550	1,534	1,591	1,812	1,934
Transportation, communication & storage	495	521	471	501	500	488	542	672
Other services	1,964	2,018	1,835	2,054	2,090	2,381	2,540	2,838
<u>Total employment</u>	<u>10,729</u>	<u>11,775</u>	<u>12,091</u>	<u>12,773</u>	<u>13,221</u>	<u>13,815</u>	<u>14,663</u>	<u>15,348</u>
	<u>Distribution (percent)</u>							
Agriculture, fishery & forestry	52.3	49.1	52.7	53.0	54.3	52.1	51.4	50.1
Mining & quarrying	0.5	0.5	0.4	0.4	0.3	0.4	0.4	0.3
Manufacturing	12.3	12.1	11.2	10.7	10.8	11.7	11.1	10.4
Electricity, gas & water	4.1	0.5	0.3	0.3	0.3	0.3	0.3	0.3
Construction	7.6	3.7	3.7	3.4	3.1	3.3	3.4	3.4
Commerce	4.6	12.6	12.6	12.1	11.6	11.5	12.4	12.6
Transportation, communication & storage	4.4	4.4	3.9	3.9	3.8	3.5	3.7	4.4
Other services	14.8	17.1	15.2	16.7	15.8	17.2	17.3	18.5
<u>Total employment</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

Source: NCSO, National Sample Survey of Households Bulletin

Table 1.27: CHANGES IN EMPLOYMENT STRUCTURE IN MANUFACTURING, 1956-1976 /a /b /c

Year	Structure			Percentage Distribution			Annual rate of growth (%)			
	Household/ Unorganized	Factory	Total (000's)	Household/ Unorganized	Factory	Total	1956/76	1956/66	1966/76	
1956	756,191	205,809	962	78.6	21.4	100.0	Total Em- ployment	2.82	2.48	3.18
1957	781,449	223,551	1,005	77.8	22.2	100.0				
1958	698,693	228,307	927	75.4	24.6	100.0	Factory	5.76	4.75	6.78
1959	753,334	238,666	992	75.9	24.1	100.0				
1960	787,219	248,781	1,036	76.0	24.0	100.0	Household/ Unorganized	1.65	1.77	1.53
1962	773,527	278,473	1,052	73.5	26.5	100.0				
1963	838,617	300,383	1,139	73.6	26.4	100.0				
1964 (May)	928,585	316,415	1,245	74.6	25.4	100.0				
1965	777,230	323,770	1,101	70.6	29.4	100.0				
1966	901,646	327,354	1,229	73.4	26.6	100.0				
1968	839,664	394,336	1,234	68.0	32.0	100.0				
1969 (May)	888,936	402,064	1,291	68.9	31.1	100.0				
1970 (May)	994,220	403,780	1,398/d	71.1	28.8	100.0				
1971	1,018,012	420,988	1,439	70.7	29.3	100.0				
1973	858,056	537,944	1,396	61.5	38.5	100.0				
1974	891,027	531,973	1,423	62.6	37.4	100.0				
1976	1,049,133	630,851/e	1,680	62.5	37.5	100.0				

/a Unless otherwise indicated data refers to the month of October of each year.

/b Employment in the household sector is derived as a residual from subtracting the factory sector (establishments employing at least five workers) and total manufacturing employment. It includes all firms employing one to four workers, all household industries, some larger firms and possibly, a large number of cottage industries registered with the NACIDA (National Association of Cottage Industries Development Authority).

/c The years 1961, 1967, 1972 and 1975 are not included because of the different classification of establishments by employment size used in the economic census for those years.

/d Refers to experienced workers 10 years old and over. The definition has been used for 1970 because a sectoral (two-digit) breakdown was available (used in Table 1.28). The difference between experienced and employed workers in 1970 was around forty thousand workers.

/e Preliminary employment data for 1976 is available only for the manufacturing sector and for those firms employing at least twenty workers. To complete the 1976 factory sector data; i.e., make it five or more workers rather than twenty or more; employment in firms employing five to nineteen workers in 1974 was added to the available 1976 data. The 1970-73 employment growth rate, 4.08% was applied to the 77,773 workers in the five to nineteen category making the total for 1976, 80,946 workers.

Sources: NCSO, National Sample of Households Bulletin (Total Employment) and Annual Survey of Establishments (Factory Employment).



Table 1.28: SECTORAL EMPLOYMENT IN HOUSEHOLD AND FACTORY SECTORS BY MAJOR INDUSTRY GROUPS, 1960-70 and 1975 /a

Industry	1960			1970			1975 /b /c		
	Household	Factory	Total	Household	Factory	Total	Household	Factory	Total
Food	80,437	61,463	141,900	38,718	85,019	123,737	86,514	111,693	198,207
Beverages	36,474	9,226	45,700	10,229	15,181	25,410	21,128	18,873	40,001
Tobacco	-	13,218	10,630	-	22,617	20,950	14,869	21,983	36,852
Textiles	81,186	24,574	105,760	148,768	46,974	195,742	128,099	86,860	214,959
Clothing/Footwear	205,918	30,022	235,940	473,884	40,178	514,062	363,207	42,219	405,426
Wood	4,419	19,371	23,790	55,212	38,855	94,067	58,385	42,686	101,071
Furniture	13,450	5,630	19,080	25,278	6,876	32,154	28,410	11,533	39,943
Paper	-	4,635	4,310	-	8,928	7,082	9,216	12,131	21,347
Printing	-	12,073	8,280	2,281	16,011	18,292	17,657	14,584	52,241
Leather	-	1,512	1,520	579	1,760	2,339	4,481	2,262	6,743
Rubber	-	4,986	3,800	-	8,612	5,730	8,676	12,964	21,640
Chemicals	-	12,685	6,830	-	22,774	19,004	27,063	28,845	55,908
Oil and coal	-	N.A.		1,579	1,523	3,102	4,696	1,292	5,988
Nonmetallic minerals	12,336	8,164	20,500	4,466	18,622	23,088	17,245	25,502	42,747
Basic metals	-	3,468	21,600	3,172	10,917	14,089	13,174	16,560	29,734
Metal products	3,678	14,454	2,580	2,580	16,197	18,777	16,108	17,709	33,817
Nonelectrical machinery	1,329	3,841	5,170	54,264	6,714	60,978	56,345	12,000	68,345
Electrical machinery	-	7,476	-	28,143	13,488	41,631	25,054	19,296	44,350
Transport equipment	-	7,210	5,280	28,286	13,565	41,851	80,829	15,260	96,089
Other	172,847	4,773	177,620	18,934	8,969	27,903	102,698	17,721	120,419
<u>Total</u>	<u>588,929</u>	<u>248,781</u>	<u>837,710</u>	<u>886,208</u>	<u>403,780</u>	<u>1,289,988</u> /d	<u>1,083,854</u>	<u>531,973</u>	<u>1,615,827</u>

/a Household employment is derived as a residual between the factory sector (firms employing at least five workers) and total manufacturing employment.

/b Factory sector data is for 1974.

/c Total employment as reported above differs by 289,382 workers from that published in the final volume of the Population Census, 1975. The actual number of workers reported was 1.33 million, which is lower than the 1.40 million reported in the 1970 census. Also, considerable difference is found between the 1975 census and the quarterly labor force surveys carried out by the NCSO. Therefore, an independent estimate has been made at the sectoral level. The distribution and totals (1.62 million workers) are probably in line with the 1.68 million workers reported for 1976 by the October round of the labor force survey.

/d See footnote /d in Table 1.27.

Sources: NCSO Population Census 1960, 1970, 1975, and Annual Survey of Manufactures 1960, 1970, 1974.

Table 1.29: MANUFACTURING EMPLOYMENT IN FIVE MAJOR EAST  
ASIAN COUNTRIES, 1963, 1970 and 1975  
(<sup>'000</sup> persons and %)

	Korea	Philippines	Thailand	Malaysia (Peninsular)	Indonesia
<u>1963</u>					
Labor force	8,343	11,364	n.a.	n.a.	n.a.
Employment	7,662	10,841	13,749	n.a.	32,709
Employment in manufac- turing	667	1,139	470	59	1,856
Employment in manufac- turing as % of total	8.7	11.7	3.4	n.a.	5.7
<u>1970</u>					
Labor force	10,199	12,378	n.a.	3,035	40,100
Employment	8,717	11,437	16,652	2,794	37,705
Employment in manufac- turing	1,115	1,383	683	264	2,605
Employment in manufac- turing as % of total	12.8	12.1	4.1	9.4	6.9
<u>1975</u>					
Labor force	12,340	14,156	n.a.	3,590	n.a.
Employment	11,830	13,576	n.a.	3,317	41,504
Employment in manufac- turing	2,265	1,616	852	363	3,295
Employment in manufac- turing as % of total	19.1	10.9	n.a.	10.9	7.9
Growth of manufacturing employment (%)					
1963-1975	10.7	3.0	5.1	16.3	4.9
1970-1975	15.2	3.2	4.5	6.6	4.8

n.a. = not available.

Source: IBRD Staff Estimates.

PHILIPPINES  
INDUSTRIAL SECTOR SURVEY

Table 2.1: The Structure of Protection and Domestic Resource Costs, 1974

I-0 no.	Sector	Nominal rate of protection (Tariffs & indirect taxes) (%)	Effective rate of protection (ERP) (%)	Domestic resource costs /a (DRC)
3	Bananas	-4	-6	n.a.
4	Citrus	62	70	n.a.
5	Pineapple	0	-3	n.a.
11	Coffee	0	50	n.a.
12	Cocoa	7	6	n.a.
14	Coconut incl. copra (in farms)	-6	6	n.a.
15	Abaca	-4	6	n.a.
16	Ramie & other fiber crops	10	8	n.a.
17	Tobacco (native & Virginia)	5	21	n.a.
25	Commercial fishing, ocean & off-shore	100	116	n.a.
29	Logging	-10	-10	n.a.
32	Copper ore mining	-4	13	n.a.
33	Iron ore mining	-2	4	n.a.
34	Chromite mining	-4	13	n.a.
35	Other metallic mining	2	2	n.a.
38	Other nonmetallic mining & quarrying	20	16	n.a.
39	Slaughtering & poultry dressing	25	128	8.00
40	Meat products, canned	25	5	8.26
41	Meat products, uncanned	39	68	9.43
42	Evaporated & condensed milk	16	5	1.67
44	Butter, cheese & other dairy products	33	52	18.13
45	Canned, fruits & vegetable products	19	80	10.33
46	Other preserved fruits & vegetables	13	19	9.94
47	Fish canning	11	-24	6.33
48	Other fish seafood products	55	76	9.36
49	Rice milling	0	-49	9.86
50	Corn milling	0	-46	7.45
51	Flour milling, cereal & flour-blended	41	1,148	26.02
52	Bakery products	110	3,371	15.68
53	Sugar milling & refining	-6	-12	6.40
54	Candy & chewing gum products	86	519	15.18
55	Cocoa & chocolate products	51	1,750	10.38
56	Processed coffee	46	36	9.97
57	Desiccated coconut products	-4	-10	4.69

I-O no.	Sector	Nominal rate of protection (Tariffs & indirect taxes) (%)	Effective rate of protection (ERP) (%)	Domestic resource costs /a (DRC)
59	Starch & starch byproducts	44	650	10.55
60	Macaroni, spaghetti & noodles	63	78	9.44
61	Vegetable lard and margarine	82	/b	n.a.
62	Prepared foods for animals & fowls	33	34	8.06
63	Flavoring extracts	9	7	n.a.
64	Miscellaneous food manufactures, n.e.c.	59	156	23.97
65	Distilled, rectified & blended liquors	209	394	15.61
66	Wines	57	113	n.a.
67	Brewery and malt products	72	69	n.a.
69	Cigarettes	182	18,758	18.13
70	Cigars, chewing & smoking tobacco	0	-12	6.15
71	Leaf tobacco processing	115	/b	26.26
72	Textile mills products	57	78	12.15
73	Knitting mill products	23	-4	6.92
74	Cordage, twine & net industries	0	-2	10.18
75	Carpets, rugs & linoleum incl. mats	28	43	n.a.
76	Other textile products	48	36	8.16
77	Footwear except rubber & plastic	19	18	6.47
79	Ready-made clothing	0	-26	5.13
80	Manufacture of embroidered products	0	-41	5.74
81	Other made-up textile goods	19	1	6.45
82	Lumber	-4	16	6.14
83	Plywood & veneer plants	-4	5	6.48
84	Doors, windows & other millworks	0	-2	11.53
85	Other wood, cane & cork products	0	0	10.18
86	Furniture & fixtures	1	0	5.77
87	Pulp, paper & paperboard manufacturing	46	38	9.14
88	Paper products	109	195	11.10
89	Paper & paperboard containers	128	181	11.47
90	Misc. converted paper products, n.e.c.	72	478	10.22
92	Books & pamphlets	25	19	8.17
95	Tanning & leather finishing	68	145	9.55
96	Leather products except footwear apparel	0	-27	6.25
97	Rubber footwear	108	454	20.36
98	Tires & inner tubes manufacturing & retreading	103	323	9.85
99	Other rubber & related products	27	21	28.41
100	Compressed & liquified gas	2	17	6.35
101	Basic industrial chemicals	17	-7	10.06

I-O no.	Sector	Nominal rate of protection (Tariffs & indirect taxes) (%)	Effective rate of protection (ERP) (%)	Domestic resource costs /a (DRC)
102	Fertilizer & lime	31	41	6.98
103	Coconut oil	-4	5	3.48
104	Other oils & fats	24	-28	7.34
105	Paints, varnishes & related compounds	95	221	15.36
106	Plastic materials	45	56	7.51
107	Medicinal & pharmaceutical preparations	23	9	6.33
108	Cosmetics & toilet preparations	249	/b	139.08
109	Soap & other washing & cleaning compounds	61	175	10.39
110	Insecticides, germicides & agric. chem.	19	17	4.03
111	Other chemical products	42	35	n.a.
112	Petroleum refineries	21	21	8.96
113	Other products of petroleum & coal	25	16	6.12
114	Structural clay products	5	-11	7.94
115	Structural concrete products	57	110	9.79
116	Glass & glass products	56	45	11.09
117	Pottery china & earthenware	47	31	8.68
118	Hydraulic cement	-4	-36	7.09
119	Other nonmetallic mineral products	28	26	n.a.
120	Basic ferrous metal products	35	27	13.06
121	Basic nonferrous metal industries	10	0	5.05
122	Metal cans, boxes & containers	57	110	4.78
123	Cutlery, hand tools & general hardware	39	34	13.74
124	Structural metal products	65	95	9.89
125	Stamped, coated & engraved metal products	37	38	7.26
126	Fabricated wire products	28	14	6.47
127	Heating apparatus, lighting, etc.	59	85	9.76
128	Other fabricated metal products	62	79	25.52
129	Agricultural machinery & equipment	29	14	5.87
130	Other special industry mach'y & equipment	13	4	4.75
131	General industry machinery & equipment	18	7	5.98
132	Office computing & accounting machines	29	27	n.a.
133	Electrical distrib. & control machines	25	18	5.40
134	Other electr. indus. mach'y & equipment	33	30	
135	Communication equipment	31	31	14.55
136	Batteries	56	73	5.45
137	Electrical lamps & fixtures	38	27	8.35
138	Electrical wires & wiring devices	40	51	n.a.
139	Household radio, TV sets, phonos & supplies	164	204	n.a.
140	Refrigeration & airconditioning equipment	142	195	14.91

I-O no.	Sector	Nominal rate of protection (Tariffs & indirect taxes) (%)	Effective rate of protection (ERP) (%)	Domestic resource costs <sup>/a</sup> (DRC)
141	Other household electr. appliances & wares	95	103	12.37
142	Shipbuilding & repairing	17	26	6.45
143	Motor vehicles, manufactured/assembled	93	127	
144	Motor vehicles engines, bodies & parts	29	23	9.82
146	Motorcycles, bicycles & parts	50	52	7.23
147	Other transport equipment, n.e.c.	6	9	n.a.
148	Jewelry, silverware & related articles	91	133	n.a.
149	Musical instruments	60	61	n.a.
150	Fabricated plastic products	92	194	23.24
151	Measuring, controlling, scientific eqpt.	15	12	4.21
152	Medical orthopedic & surgical supplies	14	9	4.39
153	Photographic & optical goods	37	30	n.a.
154	Sport equipment & supplies	91	93	n.a.
155	Pen, pencil office & artist's supplies	65	0	n.a.
156	Toys, dolls, parlor games excluding plastic rub	74	72	n.a.
157	Miscellaneous manufactures, n.e.c.	61	41	6.75

<sup>/a</sup> Using the UNIDO method, the shadow exchange rate for 1974 has been estimated at 9.21 (IPPP, 1978).

<sup>/b</sup> EPR cannot be calculated for the sector because of its negative-derived international value added.

Source: Nominal and effective rates of protection are from Norma A. Tan, "The Structure of Protection and Resource Flows in the Philippines, 1974", PhD dissertation, University of the Philippines, 1979. The domestic resource cost estimates were taken from Romeo M. Bautista and Gwendolyn R. Tecson, "Domestic Resource Costs in Philippine Manufacturing: 1969 and 1974", IPPP Working Paper No. 13, University of the Philippines, September 1978.

Table 2.2: CAPITAL INTENSITY, GROWTH AND IMPORT COEFFICIENTS  
FOR PHILIPPINE MANUFACTURING

Input- output classi- fication number	Industry	K/L 1974 (P'000)	Propor- tional output growth rate 1969-74	Ratio of imports of total available domestic supply (M/Z) 1974
40-1	Meat processing & canning	57.5	0.260	0.12
42	Evaporated & condensed milk	136.9	0.240	0.49
44	Butter, cheese & other dairy products	276.8	0.434	0.38
45	Fruits & vegetables, preserved	111.7	0.177	0.05
47-8	Processed fish & other seafoods	37.7	0.247	0.09
51	Flour milling, cereal & flour	254.3	0.273	0.00
52	Bakery products	30.0	0.215	0.00
53	Sugar milling & refining	289.4	0.388	0.00
54	Candy & chewing products	3.9	0.247	0.00
55	Cocoa & chocolate products	87.1	0.388	0.00
56	Processed coffee	146.8	0.253	0.00
57	Desiccated coconut	18.5	0.318	0.00
59	Starch & starch byproducts	64.9	0.263	0.00
60	Macaroni, spaghetti & noodles	6.6	0.263	0.00
62	Prepared feeds for animals & fowls	105.2	0.416	0.00
64	Other food products, n.e.c.	507.7	0.263	0.15
65-7	Liquors & wines, brewery & malt products	65.7	0.070	0.04
69-70	Cigars & cigarettes	61.0	0.168	0.01
72	Textile mill products	61.3	0.247	0.01
73	Knitting mill products	35.7	0.278	0.28
74	Cordage, twine & twine products	42.0	0.403	0.01
76	Other textile products	103.5	0.298	0.03
77	Footwear (excluding rubber)	9.1	0.196	0.29
79	Ready-made clothing	8.3	0.192	0.00
80	Manufacture of embroidered products	10.6	0.163	0.01
81	Other made-up textile goods	4.1	0.056	0.00
82	Lumber & sawmills with logging operations	33.2	0.300	0.02
83	Plywood & veneer plants	54.2	0.306	0.00
84	Doors, windows & other fab. millworks	49.7	0.250	0.00
85	Wood, cork, rattan & other cane products	240.5	0.355	0.02
86	Furniture & fixtures	7.6	0.296	0.03
87	Pulp, paper & paperboard manufacturing	300.7	0.183	0.03
88	Paper products	45.8	0.345	0.46

Input-output classification number	Industry	K/L 1974 (P'000)	Proportional output growth rate 1969-74	Ratio of imports of total available domestic supply (M/Z) 1974
89	Paperboard bags, boxes & containers	61.7	0.547	0.03
90	Misc. converted paper products, n.e.c.	124.5	0.213	0.41
92	Books & pamphlets	15.2	0.276	0.02
95	Tanning & leather finishing	23.5	0.141	0.48
96	Leather products	11.0	0.086	0.05
97	Rubber footwear	34.3	0.061	0.23
98	Tires & inner tube manufacturing	190.5	0.193	0.00
99	Other rubber & related products	302.4	0.296	0.07
101	Basic industrial chemicals	364.1	0.173	0.57
102	Fertilizers & lime	266.4	0.028	0.78
103-4	Coconut & other oils & fats	201.7	0.508	0.56
105	Paints, varnishes & related compounds	115.2	0.519	0.01
106	Plastic materials	162.9	0.356	0.14
107	Medicinal & pharmaceutical preparations	61.7	0.320	0.70
109	Soap & other washing & cleansing compounds	103.9	0.253	0.26
110	Insecticides, germicides & agric. chem.	96.0	0.300	0.04
111	Petroleum refineries	2,943.3	0.186	0.61
113	Products of petroleum, coke & coal	96.0	0.521	0.07
114	Structure clay products	117.5	0.110	0.17
115	Structural concrete products	55.2	0.237	0.46
116	Glass & glass products	129.4	0.170	0.00
117	Pottery, china & earthenware	72.2	0.187	0.16
118	Hydraulic cement	714.6	0.358	0.08
120	Basic ferrous metal products	290.7	0.298	0.01
121	Nonferrous metal basic industries	69.4	0.349	0.49
122	Metal cans, boxes & containers	52.4	0.206	0.75
123	Cutlery, hand tools, & general hardware	77.5	0.228	0.09
124	Fabricated structural metal products	52.0	0.299	0.79
125	Stamped, coated & engraved metal products	70.6	0.098	0.25
126	Fabricated wire products	88.5	0.190	0.09
127	Heating apparatus, lighting & plumbing fixtures except electrical	48.9	0.309	0.43
128	Other fabricated metal products, n.e.c.	473.1	0.684	0.25
129	Tractors & other agric. machinery & eqpt.	95.8	0.243	0.34
130	Special industrial machinery	33.6	0.670	0.65
131	General industry machinery & equipment	24.8	0.272	0.97
135	Communication equipment except radio & TV receiving sets	30.2	0.125	0.82



Input- output classi- fication number	Industry	K/L 1974 (P'000)	Propor- tional output growth rate 1969-74	Ratio of imports of total available domestic supply (M/Z) 1974
136	Batteries	83.6	0.489	0.83
137	Electric lamps & fixtures	690.2	0.223	0.04
138	Electric wires & wiring devices	690.2	0.326	0.41
139	Household radio & TV receiving sets, phonographs & accessories	690.2	0.125	0.79
141	Household electrical appliances & wires	690.2	0.249	0.22
	Misc. electrical machinery apparatus	690.2	0.152	0.20
142	Shipbuilding & repairing	32.5	0.263	0.33
143-6	Motor vehicles, manufactured & assembled engines	118.0	0.134	0.85
147	Other transport equipment, n.e.c.	125.3	0.268	0.44
150	Fabricated plastic products	17.1	0.361	0.36
157	Miscellaneous manufactures	7.6	0.330	0.08

Source: Norma A. Tan, "The Structure of Protection and Resource Flows in the Philippines, 1974", PhD dissertation, University of the Philippines, IPPP, 1979.

Table 2.3: Movements in Real, Trade-Weighted Purchasing Power Parity Exchange Rate, 1966-77

Year	Nominal exchange rate (Peso/US\$)	Wholesale industrial prices for the Philippines (100 = 1975)	Real, trade-weighted purchasing power parity exchange rate /a (Peso/foreign exchange) (100 = 1975)
1966	3.89	30.0	91.4
1967	3.92	30.8	90.7
1968	3.92	31.7	90.4
1969	3.92	32.1	92.1
1970	6.44	39.7	126.6
1971	6.44	45.9	117.9
1972	6.79	51.9	115.4
1973	6.74	64.2	110.1
1974	7.07	94.9	94.1
1975	7.51	100.0	100.0
1976	7.44	109.2	98.1
1977	7.38	120.0	100.4

/a The trade weights were computed on the basis of the Philippine's three major export markets, the US, Japan and the Netherlands. The implicit assumption is that those country shares represent the overall shares of dollar, yen and European currency areas in Philippine exports. Wholesale industrial prices in the three leading market countries were used to make adjustments for price level changes.

Table 2.4: INTERNATIONAL COMPARISON OF WAGES IN MANUFACTURING, 1977

Country	US\$ per month	Exchange rates per US\$
Philippines <u>/a</u>	57.0	7.38
Hong Kong <u>/b</u>	149.4	4.62 (end of 1977)
Japan <u>/c</u>	836.5	240.00
Korea <u>/d</u>	142.9	484.00
Singapore <u>/e</u>	125.8	2.34
Thailand <u>/f</u>	32.7 (1975)	20.40 (1975)
Colombia <u>/g</u>	101.5	38.10

/a Average basic pay in pesos per month.

/b Basic rates in dollars per day.

/c Basic earnings in yen includes salaried employees and bonuses.

/d Basic earnings in won includes salaried employees and family allowances.

/e Basic earnings in cents rates per hour.

/f Unskilled workers, baht rates per hour.

/g Basic earnings in pesos per hour.

Sources: ILO, Yearbook of Labor Statistics, 1977; NCSO; IMF, International Financial Statistics, April 1979; "Thailand: Toward a Development Strategy of Full Participation - A Basic Economic Report", (IBRD Report No. 2059-TH).

Table 2.5 Average Tariff Rates for Major Product Groups  
in the Philippines Tariff Schedule, 1979

Tariff schedule chapters	Commodity description	Average tariff rate (%)	Import-weighted average tariff rate (%)
1-5	Live animals, animal products	68.9	11.6
6-14	Vegetable products	58.1	52.0
15	Fats & oils & kindred products	52.1	29.4
16-24	Prepared foodstuffs, beverages, spirits, & tobacco	73.4	45.1
25-27	Mineral products	15.9	19.2
28-38	Chemical products	29.2	21.9
39-40	Resins, plastics, cellulose esters & ethers, rubber & kindred products	38.0	32.5
41-43	Hides, skins, leather products & kindred products	72.0	56.9
44-46	Wood & wood products	60.1	36.9
47-49	Paper making materials, paper & paper products	63.4	29.1
50-63	Textiles & textile articles	64.9	26.1
64-67	Footwear, headgear, umbrellas & assorted kindred products	83.1	68.0
68-70	Nonmetallic mineral products	48.7	27.2
71-72	Jewelry	48.3	10.0
73-83	Rose metals & articles of rose metals	28.2	19.7
84-85	Machinery, mechanical appliances, electrical equipment & machinery parts	32.4	22.0
86-89	Vehicle, aircraft & other transportation equipment & parts	18.4	24.3
90-92	Scientific & other instruments	26.5	18.6
93	Arms & ammunitions	82.9	70.0
94-98	Miscellaneous manufactured articles	72.6	47.2
99	Arts & antiques	10.0	10.0

Source: Philippine Tariff Commission.

Table 2.6a Value Added, Benefits, Export Earnings and Sales of Firms Registered Under the BOI Investment Incentives Act, 1977

Sector/product category	No. of reporting firms	VA	B	Export earnings	Sales
		----- (P'000) -----	-----	(US\$'000)	(P'000)
<u>Agro-Based Sector</u>					
Livestock	16	132,443	11,329	23	607,097
Marine products	23	84,115	6,291	-	193,164
Rice production	2	46	-	-	2,340
Corn production	1	1,930	98	-	2,023
Wood & wood products	40	420,422	18,607	88,260	995,637
Pulp & paper	11	412,441	97,472	17,614	1,309,229
Starch processing	3	9,726	-	-	47,481
Vegetable oil processing	13	328,253	15,033	164,728	1,628,943
Processed coconut & byproducts	3	133,941	9,773	87,497	341,990
Processed foods	4	96,998	5,812	2,786	371,783
Cotton	1	2,844	555	117	7,754
Bag of natural fiber	1	4,092	-	-	15,607
<u>Total</u>	<u>118</u>	<u>1,627,251</u>	<u>164,970</u>	<u>361,025</u>	<u>5,523,048</u>
<u>Mining &amp; Mineral Processing Sector</u>					
<u>Metallic Mining</u>					
Iron ore	2	101,302	11,931	29,240	215,121
Copper	12	1,387,652	218,602	361,654	2,349,952
Gold	2	8,579	38	82,443	8,172
Zinc-lead concentrates	1	24,980	-	4,150	30,526
Mercury	1	-	-	-	-
Nickel	1	-	-	-	-
<u>Subtotal</u>	<u>19</u>	<u>1,522,513</u>	<u>230,571</u>	<u>477,487</u>	<u>2,603,771</u>
<u>Nonmetallic Mineral Processing</u>					
Glass products	8	196,102	7,813	3,748	399,247
Perlite	1	290	1,047	56	710
Barite	1	5,822	-	-	7,232
Dinnerware	3	22,085	1,254	1,152	57,663
Rock aggregates	3	46,370	-	-	69,467
Refractories	1	-	-	-	-
Beneficiated clay	1	77	-	-	149
Ceramics	1	2,556	-	71	5,475
<u>Subtotal</u>	<u>19</u>	<u>273,302</u>	<u>10,114</u>	<u>5,027</u>	<u>539,943</u>

Sector/product category	No. of reporting firms	VA	B	Export earnings	Sales
		----- (P'000) -----	-----	(US\$'000)	(P'000)
<u>Metallic Mineral Processing</u>					
Ferro-alloys	3	67,482	33	2,967	9,544
Primary steel	1	-	-	-	-
Subtotal	<u>4</u>	<u>67,482</u>	<u>33</u>	<u>2,967</u>	<u>9,544</u>
<u>Total</u>	<u>42</u>	<u>1,863,297</u>	<u>240,718</u>	<u>485,481</u>	<u>3,153,258</u>
<u>Metal-Based Sector</u>					
Machinery & equipment	14	19,458	3,338	223	63,845
Shipbuilding	6	52,574	12,277	188	121,662
Motorcycles	3	50,311	408	-	149,226
Automotive parts	2	26,191	2,364	-	31,517
Metal products	15	311,367	27,905	8,160	445,705
Electrical equipment	12	59,121	7,521	2,744	149,099
<u>Total</u>	<u>52</u>	<u>519,022</u>	<u>53,813</u>	<u>11,315</u>	<u>961,054</u>
<u>Chemical-Based Sector</u>					
Chemical & chemical products	17	223,792	39,890	5,861	652,993
Footwear	2	4,595	-	1,479	13,300
Petroleum products	1	101,525	26,214	2,241	503,897
Textile products	1	-	-	-	-
Rubber products	1	3,561	532	-	7,210
Synthetic bags	2	191,518	13,116	680	63,427
Synthetic fiber	5	221,094	37,381	-	434,780
Synthetic & cotton	7	107,871	14,790	6,653	296,296
Ramie	1	39,603	8,713	808	93,325
<u>Total</u>	<u>37</u>	<u>893,559</u>	<u>140,636</u>	<u>17,722</u>	<u>2,065,228</u>
<u>GRAND TOTAL</u>	<u>249</u>	<u>4,903,129</u>	<u>600,137</u>	<u>875,543</u>	<u>11,702,588</u>

Source: BOI

Table 2.6b Value Added, Benefits, Export Earnings and Sales of Firms  
Registered Under the BOI Export Incentives Act, 1977

Sector/product category	No. of reporting firms	VA ----- (P'000) -----	B -----	Export earnings (US\$'000)	Sales (P'000)
<u>Agro-Based Sector</u>					
Food & beverage products	17	73,758	15,500	16,273	198,671
Processed rubber products	1	2,251	311	444	6,065
Wood & wood products	29	58,052	15,914	10,431	133,542
Handicrafts	25	50,445	18,568	18,107	134,882
Fiber products	3	54,377	42,417	9,989	104,752
Pulp & paper	4	160,839	8,466	249	255,295
Leather products	2	6,227	282	831	22,083
Coconut byproducts	1	-	-	682	5,038
Feeds	4	2,396	2,616	880	7,570
<u>Total</u>	<u>86</u>	<u>408,345</u>	<u>104,074</u>	<u>57,886</u>	<u>867,898</u>
<u>Mining &amp; Mineral Processing Sector</u>					
Metallic products	2	39,809	-	8,137	59,921
Nonmetallic products	13	438,564	17,298	21,113	646,786
<u>Total</u>	<u>15</u>	<u>478,373</u>	<u>17,298</u>	<u>29,250</u>	<u>706,707</u>
<u>Metal-Based Sector</u>					
Metal products	14	107,007	12,200	7,236	191,282
Machinery, equipment & parts	3	8,779	362	226	30,050
Electrical products	3	19,818	1,408	426	40,876
Transport equipment	1	13,283	14,782	3,590	-
Jewelries	2	484	-	74	550
Household appliances & utensils	2	8,725	-	-	20,505
<u>Total</u>	<u>25</u>	<u>158,096</u>	<u>28,752</u>	<u>11,552</u>	<u>283,263</u>
<u>Chemical-Based Sector</u>					
Chemicals & chemical products	14	93,223	57,637	46,224	303,907
Plastic products	16	69,543	3,000	2,590	152,158
Footwear	5	57,502	-	3,762	177,439
Garments	77	567,246	38,218	111,860	1,203,997
Textiles	27	523,005	19,686	25,417	1,691,514
<u>Total</u>	<u>139</u>	<u>1,310,519</u>	<u>118,541</u>	<u>189,853</u>	<u>3,529,015</u>
<u>Other Products</u>	<u>7</u>	<u>7,668</u>	<u>1,172</u>	<u>465</u>	<u>18,999</u>
<u>Others</u>					
Export traders	19	3,007	2,404	2,544	37,317
Service exports	19	126,863	54,460	31,063	429,537
<u>Total</u>	<u>38</u>	<u>129,870</u>	<u>56,864</u>	<u>33,607</u>	<u>466,854</u>
<u>GRAND TOTAL</u>	<u>310</u>	<u>2,492,871</u>	<u>326,701</u>	<u>322,613</u>	<u>5,872,736</u>

Source: BOI

Table 2.7 Composition of BOI Incentives Availed  
by Registered Firms, 1975 and 1977

Type of incentive	Percentages of BOI incentives granted under the Investment Incentives Act (R.A. 5186)		Percentages of BOI incentives granted under the Export Incentives Act (R.A. 6135)	
	1975	1977	1975	1977
	<b>A. <u>Value of Deductions from Taxable Income to Firms</u> /a</b>	<b>25.7%</b>	<b>38.0%</b>	<b>38.4%</b>
Expansion reinvestment allowance	14.0	13.5	2.3	0.6
Accelerated portion of organizational and preoperating expenses	1.2	1.1	0.7	n.a.
Accelerated portion of depreciation changes	6.6	10.7	1.4	n.a.
Net capital loss carryover	0.9	5.6	14.5	2.6
Reduced income tax	2.9	4.6	19.0	53.1
Labor training expenses	0.1	0.5	0.5	0.5
Other tax deductions	0.0	1.9	0.0	1.0
<b>B. <u>Tax Exemptions</u></b>	<b>68.5</b>	<b>51.6</b>	<b>36.4</b>	<b>17.9</b>
Compensating tax on imported capital equipment	16.8	8.6	7.2	4.7
Customs duties on imported capital equipment	41.8	19.3	12.7	6.4
Compensating tax on raw material imports of registered pioneer enterprises	2.5	6.2	12.7	n.a.
Sales tax, etc. - pioneer enterprises	5.7	10.9	0.7	2.2
Export tax	1.5	0.4	3.0	0.0
Other tax exemptions	0.2	6.2	0.0	4.5
<b>C. <u>Tax Credits</u></b>	<b>5.8</b>	<b>10.5</b>	<b>25.2</b>	<b>24.2</b>
Equivalent compensating tax and customs duties for purchase of domestically produced capital equipment	0.4	1.6	1.3	2.6
For sales, compensating & specific taxes on raw materials/supplies of exported completely finished products	1.5	2.4	23.8	21.3
For interest withheld on foreign loans	3.8	6.6	0.0	n.a.
Other tax credits	0.0	0.0	0.0	0.4
<b>D. <u>Total</u></b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>	<b>100.0</b>
<b>E. <u>Percentage of Total BOI Incentives Granted</u></b> (Under both R.A. 5186 & R.A. 6135)	<b>86.2%</b>	<b>66.0%</b>	<b>13.8%</b>	<b>34.0%</b>

/a The value of the deductions from taxable income for firms has been computed on the basis of the prevailing 35% tax rate on business profits.

Source: Calculated from information contained in BOI, "Incentives Availment of BOI Registered Firms, 1975-77", unpublished report.



Table 2.8: Nominal and Effective Rates of Protections as Afforded by BOI Subsidies  
Classified by Products of BOI-Registered Firms, 1974  
 (Percent)

I-O Sector		Nominal rates		Effective rates	
		Without subsidies	With subsidies	Without subsidies	With subsidies
<u>Agro-Based</u>					
3	Fruit production	-4.0	-3.1	-6	-6
39	Livestock production	25.0	25.1	123	128
62	Animal feeds	33.0	33.0	34	34
25	Marine products	100.0	100.1	116	116
59	Cassava, starch, cornstarch	85.0	85.8	650	676
103	Coconut oil	-4.0	-3.1	-5	-2
57	Processed coconut products & byproducts	-4.0	-3.8	-10	-10
40,41					
45,46	Processed food & beverage products	86.1	86.3	445	449
48,52					
54,56					
16	Ramie	10.0	109.8	8	154
74,75	Fiber products	13.6	16.0	14	19
77	Footwear	24.0	24.0	18	18
83,82	Wood & wood products	-0.9	0.5	10	14
84,86					
87	Pulp & paper, pulp of straw & abaca	43.0	48.6	38	48
88,89	Paper products	117.0	117.0	159	159
85	Handicrafts	0.0	0.1	0	0
<u>Mining &amp; Mineral Processing</u>					
33	Iron ore	-4.0	-1.5	- 8	0
32	Copper	-4.0	+0.9	-10	-8
35	Gold	6.0	12.1	2	17
119	Mercury				
	Bentonite				
	Rock aggregate				
	Marble products	34.0	34.9	26	27
117	Dinnerware				
	Ceramics, ceramic products, beneficiated clay	56.0	61.4	31	36
116	Glass products, laminated safety glass	58.0	61.8	45	49
118	Cement	-4.0	-4.0	-36	-36

I-O Sector		Nominal rates		Effective rates	
		Without subsidies	With subsidies	Without subsidies	With subsidies
<u>Metal-Based</u>					
129-134	Machinery, equipment & parts	22.5	22.7	91	92
120-128	Metal products	38.1	38.4	28	29
136-138	Electrical equipment, elec- trical products	48.2	53.6	50	62
142	Shipbuilding	22.0	22.0	26	26
146	Motorcycles	53.0	53.0	52	52
144	Transport equipment	34.0	34.0	23	23
139-141	Household appliances & utensils	155.2	155.2	223	223
148	Jewelry	203.0	203.0	133	133
<u>Chemical-Based</u>					
99	Rubber products, processed rubber products	32.0	32.0	21	21
101,111	Industrial chemicals, chemicals & chemical products	24.6	30.2	0	6
113	Petroleum products	64.0	64.01	16	16
72	Synthetic fibers, textiles, textile products	59.0	60.6	78	84
76	Synthetic bags	53.0	53.05	36	36
155	Plastic products	96.0	96.09	194	194
107	Medicinal & pharmaceutical products	27.0	27.06	10	10
79	Garments	0.0	4.1	-26	-22
102	Fertilizer	35.0	35.0	41	41

Source: Norma A. Tan, "The Structure of Protection and Resource Flows in the Philippines, 1974", PhD dissertation, University of the Philippines, IPPP, 1979, pp. 53-54.

Table 2.9: Value of Benefits to BOI-Registered Firms  
Under the Export Incentives Act (R.A. 6135), 1973-77

	1973	1974	1975	1976	1977
Value of tax exemptions (P'000)	9,531	26,411	16,994	20,808	28,284
Permitted deductions from taxable income (P'000)	25,786	82,428	100,554	101,042	204,493
Value of deductions from taxable income to firms (P'000)	9,025	28,850	35,194	35,365	71,573
Tax credits (P'000)	8,617	19,906	28,086	17,493	36,119
Total value of benefits to firms (P'000)	27,173	75,167	80,274	73,666	135,976
Exports of nontraditional manufactures by BOI- registered firms (P'000)	912,663	1,434,793	1,740,247	1,873,005	1,511,217
Value of benefits as a proportion of nonradi- tional manufactures of exports by BOI-registered firms	0.030	0.052	0.046	0.039	0.090

Source: BOI, Statistical Survey, 1978. Data on nontraditional exports are from BOI, Nontraditional Exports: The Dynamic Export Group.

Table 2.10: BOI Investment Incentives Benefits and Capital Labor Ratios in Recipient Industries, 1975 and 1977  
(Benefits in thousands at current prices)

Industry	Capital /a Labor (1974)	Benefits /b	
		1975	1977
Oil & coal products	621,191	n/a	26,214
Nonmetallic minerals	70,314	12,389	10,114
Paper	57,793	13,446	97,472
Food	24,469	16,993	33
Basic metals	23,777	15,956	30,618
Chemicals	23,771	70,689	53,006
Transport equipment	15,033	969	15,049
Rubber	13,435	n/a	532
Textiles	13,157	46,306	60,884
Beverages	12,494	n/a	n/a
Wood	11,874	29,101	18,607
Printing	11,041	n/a	n/a
Machinery	10,933	1,257	3,338
Metal products	10,424	7,566	27,905
Electrical machinery	10,036	2,748	7,521
Miscellaneous	9,821	n/a	n/a
Tobacco	9,519	n/a	n/a
Leather	6,502	n/a	n/a
Furniture	4,294	n/a	n/a
Footwear/clothing	2,341	5,086	-
<u>Total</u>	<u>19,957</u> (average)	<u>222,506</u>	<u>351,293</u>

/a The capital labor ratio described above is derived from the Annual Survey of Manufactures and refers to book value of fixed assets.

/b Benefits represents tax exemptions, deduction from taxable income and tax credits granted to BOI registered projects.

Source: BOI; and NCSO, Annual Survey of Establishments.

Table 2.11: Capital Intensity, Capital Productivity and Board  
of Investments Benefits by Size of Firm, 1977  
(Nonexport-oriented firms)

Size by fixed assets (P mln)	No. of firms	Employ- ment (N)	Value added (VA)	Fixed assets (FA)	FA for firms with B	Bene- fits (B)	$\frac{FA}{N}$	$\frac{B}{FA}$	$\frac{VA}{FA}$
----- (P'000) -----									
Under 0.5	8	159	2,417	1,226	703	1,477	7,711	1.20	1.97
0.5 - 0.9	5	185	2,472	3,768	597	90	20,368	0.20	0.66
1.0 - 1.9	13	772	23,636	19,457	1,488	1,522	25,203	0.08	1.21
2.0 - 4.9	37	2,614	92,149	129,361	49,205	19,122	49,488	4.43	0.71
5.0 - 9.9	30	5,626	170,112	212,416	107,004	12,162	37,756	0.06	0.80
10.0 - 29.9	52	15,496	380,874	1,011,143	590,886	38,391	65,252	0.04	0.38
30.0 - 49.9	18	6,557	216,895	485,908	175,737	5,031	74,105	0.01	0.45
50.0	54	41,927	1,907,130	9,269,915	7,589,002	262,351	221,096	0.03	0.21
<u>Total</u>	<u>217</u>	<u>73,336</u>	<u>2,795,685</u>	<u>11,133,194</u>	<u>8,514,622</u>	<u>340,146</u>	<u>151,811</u>	<u>0.03</u>	<u>0.25</u>

Source: BOI.

Table 2.12: Capital Intensity, Capital Productivity  
and Board of Investments Benefits by  
Size of Firms, 1977  
(Export-oriented firms)

Size by fixed assets (P mln)	No. of firms	Employ- ment (N)	Value added (VA)	Fixed assets (FA)  (P'000)	FA for firms with B	Bene- fits (B)	$\frac{FA}{N}$	$\frac{B}{FA}$	$\frac{VA}{FA}$
<u>Export Incentives Act</u>									
Under 0.5	56	7,261	46,709	11,568	4,893	10,433	2,066	1.00	4.04
0.5 - 0.9	39	3,354	50,652	27,427	14,803	131,199	8,177	4.78	1.85
1.0 - 1.9	44	7,942	96,617	61,980	35,861	15,517	7,804	0.25	1.56
2.0 - 4.9	48	13,825	183,594	160,668	103,325	29,728	11,622	0.19	1.14
5.0 - 9.9	44	29,257	401,903	322,738	177,477	96,597	11,031	0.30	1.24
10.0 - 29.9	38	12,043	349,595	613,305	347,204	25,695	50,926	0.04	0.57
30.0 - 49.9	10	5,205	92,758	427,126	262,667	17,404	86,060	0.04	0.22
50.0	32	42,622	1,142,856	5,814,266	2,934,112	93,733	136,415	0.02	0.20
<u>Total</u>	<u>311</u>	<u>121,509</u>	<u>2,364,684</u>	<u>7,439,078</u>	<u>3,880,342</u>	<u>420,306</u>	<u>61,222</u>	<u>0.56</u>	<u>0.32</u>
<u>Investment Incentives Act</u>									
Under 0.5	-	-	-	-	-	-	-	-	-
0.5 - 0.9	-	-	-	-	-	-	-	-	-
1.0 - 1.9	-	-	-	-	-	-	-	-	-
2.0 - 4.9	2	61	2,132	8,477	4,554	750	138,967	0.09	0.25
5.0 - 9.9	3	231	8,457	19,130	12,700	558	82,814	0.08	0.44
10.0 - 29.9	-	2,823	37,735	128,311	64,925	5,831	45,308	0.05	0.29
30.0 - 49.9	9	4,851	92,758	377,849	213,390	17,285	77,891	0.05	0.25
50.0	15	27,973	1,654,666	5,433,726	5,153,372	222,464	194,249	0.04	0.30
<u>Total</u>	<u>29</u>	<u>35,939</u>	<u>1,795,748</u>	<u>5,967,493</u>	<u>5,448,941</u>	<u>246,888</u>	<u>166,045</u>	<u>0.04</u>	<u>0.30</u>

Source: BOI.

Table 2.13: Fixed Capital Per Worker, Capital Productivity and  
Labor Productivity: Comparison Between Large Manufacturing (1974)  
and BOI Projects, at 1972 Prices

Board of Investments project {pioneer (P) or nonpioneer (NP)}	Corres- ponding ISIC number	K/N (In '000s of pesos)		VA/K		VA/N (In '000s of pesos)	
		BOI preferred projects	Annual survey of establish- ments (20 or more workers)	BOI preferred projects	Annual survey of establish- ments (20 or more workers)	BOI preferred projects	Annual survey of establish- ments (20 or more workers)
Cotton, (P), nylon yarn & fiber (P), woven fabrics (NP), textile (NP), spun yarn (NP), polypropylene bags (NP)	3211	62.39	9.68	0.08	0.60	9.75	9.76
Leather shoes (NP)	324	16.59	4.38	0.06	0.57	2.64	3.42
Methanol (P), STPP (P), cellophane (P), carbon black (P), gum resin & gum turpentine (P), furfural (P)	3511	180.68	16.20	0.06	0.48	27.85	15.74
Lubricating oil (NP)	353	529.02	347.30	0.07	0.76	118.64	544.03
Synthetic fiber (P), polyester fiber yarn (P), polystyrene resins (P), polyvinyl chloride resins (NP)	35131	122.12	23.81	0.80	0.95	97.80	45.87
Industrial belts (P)	3559	15.34	4.90	0.28	0.72	9.33	5.76
Chemical fertilizer (NP)	35121	187.47	54.98	0.16	0.32	76.69	35.01
Fiberglass wood insulation (P), benefi- ciated clay (NP), barite (P), perlite (NP), rock aggregates (NP)	3699	40.37	17.70	0.05	0.28	6.24	10.25
Copper (NP)	372	44.76	8.64	0.10	1.12	15.47	20.60
Glass containers (NP)	36202	98.17	7.64	0.05	0.80	14.73	12.68
Steelforging (P), alloy steel casings (P), grinding balls (P), nickel steel tubes (P), iron sheets (P), ferro-alloys (NP), iron sand (NP), sintered iron ore (P)	371	276.67	11.40	0.05	0.57	32.49	14.36

Board of Investments project [pioneer (P) or nonpioneer (NP)]	Corres- ponding ISIC number	K/N (In '000s of pesos)		VA/K		VA/N (In '000s of pesos)	
		BOI preferred projects	Annual survey of establish- ments (20 or more workers)	BOI preferred projects	Annual survey of establish- ments (20 or more workers)	BOI preferred projects	Annual survey of establish- ments (20 or more workers)
Refractories (P)	3691	15.84	13.18	0.12	0.35	5.85	9.42
Dinnerware (P)	361	12.52	11.36	0.11	0.43	4.36	10.07
Barges & fishing vessels (NP), interisland ocean-going ships (P)	3841	52.79	8.78	0.11	0.90	9.92	10.23
Kilowatt-hour meters (P), circuit breakers (NP), magnetic starters (NP), flash- lights (NP), electrical tapes (NP), electric motors (NP), distribution transformer (P), telephone, line, switching equipment (NP), battery sepa- rators (NP)	383	23.19	6.48	0.58	1.59	25.98	16.09
Automotive engine block with cylinder head (P), shock absorber (NP)	38432	122.96	13.83	0.27	0.64	59.77	11.50
Motorcycles (NP)	3844	16.35	11.22	1.62	2.17	47.40	31.63
Pipe fittings (P), globe & gate valves (P)	3819	11.54	5.46	0.18	0.92	5.39	11.18
Oil exploration structures (P), boilers (P)	3813	65.70	5.08	1.05	1.94	114.76	12.91
Water meter (NP)	3851	13.66	8.21	0.25	1.23	5.59	13.24
Gas welding & cutting equipment (NP), drill press (P), lathe machines (P), saw blades (NP)	3823	42.81	7.45	0.11	1.40	7.67	13.63
Disc plows & harrows (NP), agricultural pumps (NP), power tillers (P), grain driers (P)	38221	14.42	11.94	0.36	3.51	8.69	54.82
Cranes (P), pumps (NP)	3829	27.11	9.21	0.36	0.99	16.31	11.87
Diesel engines (P)	382	44.81	9.14	0.16	1.94	11.69	23.21
Lumber products (NP)	33115	37.84	35.18	0.08	0.08	8.97	5.69



Board of Investments project [pioneer (P) or nonpioneer (NP)]	Corres- ponding ISIC number	K/N (In '000s of pesos)		VA/K		VA/N (In '000s of pesos)	
		BOI preferred projects	Annual survey of establish- ments (20 or more workers)	BOI preferred projects	Annual survey of establish- ments (20 or more workers)	BOI preferred projects	Annual survey of establish- ments (20 or more workers)
Veneer (NP), plywood (NP), sawn lumber (NP)	33114	38.40	7.13	0.07	0.39	7.47	5.87
Rough lumber (NP)	33111	14.77	3.58	0.18	0.92	7.84	6.84
Grain processing (NP), rice production (NP)	31161	26.73	47.29	0.005	0.16	0.26	11.63
Pulp & paper (P), paperboard (NP), fiber- board (NP)	3411	258.08	47.78	0.08	0.30	48.60	31.33
Cassava starch (NP), cornstarch (P)	31212	82.04	26.68	0.06	0.30	10.57	12.31
Palm oil (NP), coconut oil (NP)	3115	121.77	25.07	0.17	1.36	45.64	58.24
Desiccated coconut (NP)	31211	5.81	2.00	1.02	3.52	12.17	10.88
Frozen tuna (NP)	31147	27.26	11.34	0.12	23.94	6.63	418.85
Corn seed processing (NP), corn production (NP)	31162	126.52	8.44	0.14	1.22	36.30	15.94
Tuna loins (NP)	3114	51.80	9.66	0.26	0.58	27.36	8.57
Processed fruits & vegetables (NP)	3113	196.51	8.14	0.08	1.42	32.18	17.81
Meat processing (NP)	31114	21.46	12.72	0.40	0.62	17.70	12.12
Poultry (NP), hogs (NP), cattle (NP)	3111	30.61	9.18	0.12	0.83	9.84	13.76
Average		<u>86.59</u>	<u>24.20</u>	<u>0.22</u>	<u>1.38</u>	<u>26.59</u>	<u>40.69</u>

Notes: VA = value added; N = employment (production workers only); K = fixed capital.

Source: BOI; and NCSO, Annual Survey of Establishments.

**Table 2.13: INCENTIVES UNDER THE INVESTMENT INCENTIVES ACT ( R.A. 5186)**

**AND THE EXPORT INCENTIVES ACT (R.A. 6135)**

<u>Guarantees and Incentives</u>	<u>Investment Incentives Act</u>			<u>Export Incentives Act</u>		
	<u>Filipino Owned</u>		<u>Foreign Owned</u>	<u>Export</u>	<u>Export</u>	<u>Service</u>
	<u>Pioneer</u>	<u>Nonpioneer</u>	<u>Pioneer</u>	<u>Producer</u>	<u>Trader</u>	<u>Exporter</u>
A. Rights and Guarantees to Registered Enterprises						
1. Basic rights and guarantees provided in the Constitution	x	x	x	x	x	x
2. Right to repatriate investments and remit earnings	x	x	x	x	x	x
3. Right to remit foreign exchange to service foreign loans and obligations arising from technological assistance contracts	x	x	x	x	x	x
4. Freedom from expropriation	x	x	x	x	x	x
5. Freedom from requisition of investment	x	x	x	x	x	x
B. Incentives to Registered Enterprises						
1. Deduction of organizational and pre-operating expenses from taxable income over a period of not more than 10 years from start of operation	x	x	x			

Note: Granting of the incentive is indicated by the mark x.

Annex Table 5: continued

Guarantees and Incentives	Investment Incentives Act			Export Incentives Act		
	Filipino Owned		Foreign Owned	Export Producer	Export Trader	Service Exporter
	Pioneer	Nonpioneer	Pioneer			
2. Accelerated depreciation	x	x	x			
3. Carryover from taxable income of net operating losses during the first 10 years of operations up to 6 years following year of loss	x	x	x			
4. Full or partial exemption from tariff duties and compensating tax on importations of capital equipment	x <sup>2</sup>	x <sup>3</sup>	x <sup>2</sup>	x <sup>2,3,6</sup>		x <sup>11</sup>
5. Tax credit on locally fabricated equipment equivalent to 100% of the value of compensating tax and customs duties that would have been paid on the capital equipment had these been imported	x	x	x	x <sup>6</sup>		
6. Tax credit for tax withheld on interest payments on foreign loans provided such credit is not enjoyed by lender-remittor in his country and registered enterprise has assumed liability for tax payment	x	x	x			
7. Right to employ foreign nationals in supervisory, technical, or advisory positions within five years from registration	x	x	x <sup>4</sup>	x <sup>4</sup>		

Annex Table 5: continued

Guarantees and Incentives	Investment Incentives Act			Export Incentives Act		
	Filipino Owned		Foreign Owned	Export Producer	Export Trader	Service Exporter
	Pioneer	Nonpioneer	Pioneer			
8. Deduction from taxable income in the year reinvestment was made of a certain percentage of the amount of undistributed profits or surplus transferred to capital stock for the procurement of machinery and equipment and other expansion	x	x	x	x <sup>6</sup>		
9. Antidumping protection	x	x	x	x <sup>6</sup>		
10. Protection from Government competition	x	x	x	x <sup>6</sup>		
11. Deduction from taxable income of 1/2 of the value of labor training expenses but not exceeding 10% of direct labor wage	x	x	x	x <sup>6</sup>		
12. Exemption from all taxes under the National Internal Revenue Code, except income tax, on a diminishing percentage	x		x	x <sup>7</sup>		
13. Postoperative tariff protection	x		x	x <sup>7</sup>		
14. Tax credit equivalent to sales, compensating and specific taxes and duties on the supplies, raw materials and semi-						

Guarantees and Incentives	Investment Incentives Act			Export Incentives Act		
	Filipino Owned		Foreign Owned	Export Producer	Export Trader	Service Exporter
	Pioneer	Nonpioneer	Pioneer			
manufactured products used in the manufacture, processing, or production of exported products	x	x	x	x	x	x <sup>11</sup>
15. For the first five years from registration, deduction from taxable income of direct labor cost and local raw materials utilized in the manufacture of exported products but not exceeding 25% of total export revenues	x <sup>5</sup>	x <sup>5</sup>	x <sup>5</sup>	x <sup>8</sup>		
16. Preference in granting of Government loans	x	x		x	x	x
17. Exemption from export tax, impost, or fee, including stabilization tax				x	x	
18. Possibility, with BOI approval of operating a bonded manufacturing warehouse				x		
19. For the first five years from registration, deduction from taxable income of 10% of export sales						x
20. For the first five years from registration and additional deduction from taxable income of 1% of export sales						x <sup>12</sup>

Annex Table 5: continued

<u>Guarantees and Incentives</u>	<u>Investment Incentives Act</u>			<u>Export Incentives Act</u>		
	<u>Filipino Owned</u>		<u>Foreign</u>	<u>Export</u>	<u>Export</u>	<u>Service</u>
	<u>Pioneer</u>	<u>Nonpioneer</u>	<u>Pioneer</u>			
				<u>Producer</u>	<u>Trader</u>	<u>Exporter</u>
21. Additional incentives whenever a registered export producer establishes its processing or manufacturing plant in an area designated by BOI as necessary for proper dispersal of industry or which is deficient in infrastructure, public utilities, and other facilities						
22. For five years from registration, deduction from taxable income of 50% of total export fees during the year in which the incentive is claimed						
23. Financial assistance from insurance companies	x	x	x			

x<sup>9</sup>

## NOTES:

1. Subject to Sec. 74 of R.A. 265.
2. Full exemption is applicable to new or expanding pioneer projects with less than 20% return on equity. Expanding pioneer projects with 20% or greater return on equity and existing pioneer projects desiring to replace and modernize their facilities are only entitled to deferment of taxes and duties without any reduction thereof.
3. Partial exemption (to the extent of 40% to 60% of applicable duty/tax) is applicable to new and expanding nonpioneer projects with total assets not exceeding 500,000 for the first two years of commercial operation, and with less than 20% return on equity. Payment of the reduced tariff and tax may be made of a deferred payments basis for a period not exceeding 10 years. Expanding nonpioneer projects with 20% or greater return on equity shall only be entitled to deferment of taxes and duties without any reduction thereof.
4. When the majority of the capital stock of the pioneer enterprise is owned by foreign investors, the positions of president, treasurer, and general manager, or their equivalents, may be trained by foreign nationals.
5. In the case of traditional exports, local raw material component is not included in the computation of said deduction.
6. Applicable only to all projects for expansion under List A of the Export Priorities Plan and to both pioneer and nonpioneer projects under List B.
7. Provided registered export producer is engaged in a pioneer area.
8. Applicable to all registered export producers, except nonpioneer foreign firms registered on the basis of exporting at least 70% of their total production.
9. Additional incentives consist of:
  - a. Using an amount equivalent to double the export producer's direct labor cost in applying the reduced income tax formula; and
  - b. Applying in payment of taxes an amount equivalent to 100% of necessary infrastructure work undertaken by the export producer.
10. Applicable whenever a registered export producer or export trader shall use a new brand name for an export product that distinguishes it from products produced outside the Phillipines. An alternative incentive is deduction from taxable income of 1% of the increment of export sales during the year in which the incentive is claimed to the export sales of the preceding year.
11. Applicable only to service exporters producing and exporting television and motion pictures or musical recordings.
12. For a period of five years after registration, and additional deduction of 1% of total export sales shall be allowed to a registered export trader who extends financial assistance to registered export producers in an amount equivalent to not less than 20% of the export trader's total

Annex Table 5: continued

13. Exemption under Sec. 6 (b) of R.A. 5186 is applicable only to Filipino investors in pioneer projects.

SOURCE: BOI, Investment Opportunities in the Philippines (Manila: December 1978) and the SGV, "Doing Business in the Philippines," pg. 63-95.



Table 3.1: CAPITALIZATION AND EMPLOYMENT IN COTTAGE INDUSTRIES REGISTERED  
WITH THE NATIONAL COTTAGE INDUSTRY DEVELOPMENT AUTHORITY,  
November 1978

Industry	Number of registered firms	Capitalization (Pesos'000)	"Factory" workers	Capital per "factory" worker (Pesos)
Needlecraft	10,120	21,990	33,018	660
Embroidery	8,891	40,173	32,144	125
Woodcraft	8,125	35,284	33,912	104
Metalcraft	4,923	24,459	17,145	1,427
Ceramics	4,171	15,808	15,469	1,022
Food preservation	3,898	17,603	14,731	1,195
Lethercraft, footwear	3,355	16,357	15,176	1,078
Leathercraft, excl. footwear	111	1,245	475	2,621
Mat weaving	3,027	1,173	11,155	105
Loom weaving	2,407	3,004	7,925	379
Poultry & piggery	2,081	5,066	4,606	1,100
Fibercraft	2,144	5,924	11,990	494
Bamboo & rattanrafts	2,300	5,314	9,297	572
Shellcraft	1,740	6,123	9,595	638
Hat weaving	404	370	1,801	206
Toyrcraft	222	1,427	1,015	1,406
Small agric. hand tools	176	866	565	1,533
Small mining operation	99	391	416	940
Machine parts manufac.	53	530	217	2,442
Home cigar making	37	150	234	641
Rubbercraft	23	218	61	3,574
Related crafts	3,698	10,109	15,461	654
Other industries	2,550	16,209	9,892	1,639
<u>Total</u>	<u>64,555</u>	<u>229,793</u>	<u>246,300</u>	<u>933</u>

Source: NACIDA

Table 3.2 HANDICRAFT EXPORTS, 1973-77

(F.O.B. value in U.S. dollars)

	1973	%	1974	%	1975	%	1976	%	1977	%
Woodcraft	9,894,658	36.15	16,241,479	35.38	17,015,597	21.77	18,201,527	19.23	15,883,813	18.89
Shellcraft	2,438,603	8.91	5,638,277	12.28	23,026,015	29.45	15,165,272	16.03	11,817,656	14.06
Fibercraft	4,142,186	15.13	9,304,708	20.27	11,462,157	14.66	17,771,828	18.78	8,690,264	10.34
Ceramics	64,880	0.24	83,615	0.18	211,000	0.27	381,270	0.40	293,039	0.35
Plaits & plaiting materials	3,471,251	12.68	4,468,413	9.73	10,402,928	13.31	22,213,902	23.47	21,923,788	26.08
Textile materials	386,837	1.41	478,893	1.04	378,353	0.48	1,340,394	1.42	4,747,991	5.65
Others	6,975,549	25.48	9,694,913	21.12	15,680,995	20.06	19,555,810	20.67	20,707,028	24.63
<u>Total</u>	<u>27,373,964</u>	<u>100.00</u>	<u>45,910,268</u>	<u>100.00</u>	<u>78,177,045</u>	<u>100.00</u>	<u>94,630,003</u>	<u>100.00</u>	<u>84,063,579</u>	<u>100.00</u>

Source: NCSO, Foreign Trade Statistics.

Table 3.3: TOTAL CREDITS OUTSTANDING OF COMMERCIAL BANKS  
CLASSIFIED BY DIFFERENT CATEGORIES

Classification	Pesos, billions		% distribution	
	June 30 1974	Dec. 31 1977	June 30 1974	Dec. 31 1977
<u>Economic Sector</u>				
Industry and agriculture	11.2	19.7	53	49
Trade	7.0	12.0	33	30
Contract construction	0.5	0.9	2	2
Consumption	-	1.3	-	3
Others	2.4	6.3	11	16
<u>Total</u>	<u>21.1</u>	<u>40.2</u>	<u>100</u>	<u>100</u>
<u>Type of Borrower</u>				
Industrial	5.0	7.3	24	18
Single proprietorship	-	1.0	-	3
Partnership	0.7	1.0	3	2
Cooperative	0.3	-	1	-
Corporation	14.3	30.3	68	75
Government	0.8	0.6	4	1
<u>Total</u>	<u>21.1</u>	<u>40.2</u>	<u>100</u>	<u>100</u>
<u>Size of Firm</u>				
Cottage industries	n.a.	0.7	n.a.	2
Small-scale industries	n.a.	3.1	n.a.	11
Medium-scale industries	n.a.	3.1	n.a.	11
Large-scale industries	n.a.	15.5	n.a.	56
Others	n.a.	5.1	n.a.	19
<u>Total</u>	<u>n.a.</u>	<u>27.4</u>	<u>n.a.</u>	<u>100</u>
<u>Region</u>				
Metro Manila	n.a.	23.8	n.a.	87
Provinces	n.a.	3.6	n.a.	13
<u>Total</u>	<u>n.a.</u>	<u>27.4</u>	<u>n.a.</u>	<u>100</u>
<u>Maturity</u>				
Demand	n.a.	7.5	n.a.	19
Short term	n.a.	26.8	n.a.	67
Intermediate term	n.a.	4.2	n.a.	10
Long term	n.a.	1.7	n.a.	4
<u>Total</u>	<u>n.a.</u>	<u>40.2</u>	<u>n.a.</u>	<u>100</u>

Source: Central Bank

Table 3.4 : CHANGES IN EMPLOYMENT STRUCTURE BY SIZE OF FIRM, 1957-74

Year	Total employment	Total employment (%)	Employment in firms with				
			Less than 5 workers	5-19 workers	20-99 workers	100-199 workers	200 and more workers
1957	1,005	100.0	77.8	5.1	6.2		11.0
1958	927	100.0	75.4	5.4	6.1		13.1
1960	1,036	100.0	76.0	4.8	5.3	2.9	11.1
1962	1,052	100.0	73.5	4.6	5.8	3.0	13.0
1968	1,234	100.0	68.0	5.6	5.6	3.1	17.7
1970	1,398	100.0	71.1	5.2	4.4	2.7	16.8
1971	1,439	100.0	70.7	4.7	4.0	2.8	17.9
1974	1,423	100.0	62.6	5.5	5.8	3.8	22.3
1976	1,680	100.0	62.4	4.8		----- 32.7 -----	

Sources: NCSO, Annual Survey of Establishments and unpublished data.

Table 3.5: CAPITAL EFFICIENCY AND CAPITAL PER WORKER BY SIZE OF FIRM IN THE FACTORY SECTOR, 1974 /a

Industry	Value added/replacement cost of capital					Replacement cost of capital/employment (pesos)						
	Firms with employment size of					Firms with employment size of						
	5-19	20-49	50-99	100-199	200 +	Total	5-19	20-49	50-99	100-199	200 +	Total
Meat processing			0.414	0.749		0.496			48,784	22,347		37,857
Dairy products	0.372	0.337	0.476		0.360	0.346	7,565	28,067	50,270		144,510	114,278
Vegetable canning		0.800	0.440	0.438		0.399		6,571	58,676	87,789		81,496
Sugar refineries			0.315	0.545	0.970	0.968			13,217	45,652	99,656	96,226
Distilling, rectifying spirits	0.658			0.611	0.669	0.575	9,387			35,144	95,737	79,409
Cigarette factories		0.588	0.509	2.031	0.689	0.692		4,636	33,709	7,929	74,928	72,761
Spinning and weaving textiles	0.258					0.209	6,712					77,305
Hand weaving	0.307	0.701	0.504			0.214	6,062	3,984	5,070			12,183
Knitted wear		0.498	0.905	0.479		0.245		8,765	8,457	11,740		23,389
Footwear and clothing						0.534						8,310
Veneer, plywood	1.701	0.281				0.205	15,917	13,472				60,216
Sawmills, planning, woodmills	0.760	0.804				0.185	13,673	17,086				66,177
Wood products	0.584	0.799				0.203	10,818	12,946				56,137
Wood furniture		0.562	0.568		1.065	0.261		9,873	10,433		11,381	21,948
Pulp, paper and paper board		0.567	0.860	0.696	0.638	0.404		69,527	31,510	11,482	51,816	74,290
Printing and publishing	0.490			0.720		0.117	14,746			44,428		138,126
Leather products	0.526	0.621		0.401		0.328	9,038	13,208		30,249		24,285
Rubber shoes	1.675	0.430	0.950	0.249		0.215	1,739	5,732	11,956	22,042		39,283
Processed natural rubber	0.386		1.090			0.207	25,130		19,130			49,724
Pesticides	1.320	2.330	0.993	0.431	0.443	1.416	6,929	387,050	74,523	7,954	32,081	66,722
Manufacture of paints	0.795	1.068	0.537	1.124		0.845	20,000	20,840	82,017	53,396		57,419
Soaps and other preparations	1.017		0.768	0.687	1.157	1.079	32,270		53,190	37,260	76,926	66,952
Miscellaneous chemicals	2.153	0.840		0.545		0.453	9,861	58,120		69,076		105,479

Industry	Value added/replacement cost of capital						Replacement cost of capital/employment (pesos)					
	Firms with employment size of						Firms with employment size of					
	5-19	20-49	50-99	100-199	200 +	Total	5-19	20-49	50-99	100-199	200 +	Total
Glass products	0.370	0.892	1.296		0.434	0.329	9,830	12,226	17,120		34,672	48,419
Structural clay products	0.383					0.217	25,964					87,377
Structural concrete products			0.823	0.373		0.295			23,284	35,152		46,085
Nonmetallic minerals	0.238					0.241	14,363					65,748
Blast furnace products	0.383					0.056	25,562					737,057
Iron and steel foundries	1.553		0.336	0.285	0.463	0.420	5,365		38,180	28,429	43,970	39,494
Nonferrous basic metals	0.345	0.485	1.066		0.601	0.601	37,133	20,928	19,020		80,872	71,449
Metal cans	0.579			0.557		0.333	27,912			39,742		51,631
Stamped and coated metal			0.367	0.332	0.526	0.362			53,474	113,593	62,040	75,915
Fabricated wire and cable	1.528	0.748	0.534			0.499	9,333	24,390	88,021			74,450
Fabricated metal products		1.455	1.131	0.635	0.856	0.595		16,422	33,233	55,357	23,081	
Machinery and equipment, except electrical	0.713	0.311	0.426		0.477	0.436	13,046	36,552	48,012		99,498	61,865
Electrical machinery	0.880	0.557	3.102			0.588	9,128	31,339	15,923			45,753
Electrical apparatus & supplies	0.332	0.627	0.449			0.165	34,655	24,516	22,051			133,729
Shipbuilding & repairing			0.599	0.839	0.432	0.353			17,322	8,241	32,151	36,659
Motor vehicle parts & supplies	0.912					0.246	2,491					58,634
Motorcycles and bicycles	0.847		1.342	0.491		0.464	2,965		73,752	59,167		74,615
Professional & scientific equipment		0.940		0.478		0.154		17,672		23,065		54,608
Photographic & optical goods	0.249				1.140	0.154	27,848				5,007	54,341
All industries						0.330						81,810

/a The replacement cost of capital ( $K_R$ ) is the sum of all fixed assets at replacement (undepreciated) cost. It is a more accurate measure of capital than book value of fixed assets as presented in the Annual Survey of Establishments because it accounts for both the useful life of an asset and price inflation through a price index. The  $K_R$  equation is described as:

$$K_R = K_g \frac{P_t}{P_{t-T}} \quad (1) \text{ where } \begin{array}{l} K_g = \text{undepreciated value} \\ P = \text{price index} \\ T = \text{average age} \\ t = \text{year of survey} \end{array}$$

Source: E.A. Hife, "Factor Productivities and Intensities in Philippine Manufacturing with Emphasis on Establishment Size, 1974", IPPP Working Paper No. 10, School of Economics, University of the Philippines, June 1978.

Table 3.6: COMMISSION ON SMALL- AND MEDIUM-INDUSTRY BUDGET, 1977

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	(Unit: Peso)
<u>Total</u>	<u>7,973,839</u>
National survey/census on SMI	350,000
Project development program (MASICAP)	2,500,000 (2,500,000)
Entrepreneurial training	1,017,100
(Countryside entrepreneurship development)	(583,600)
(Entrepreneurship development program)	(151,500)
(Entrepreneurship development in general education)	(76,000)
(Entrepreneurship development program for rebel returnee)	(206,000)
Financing assistance	20,000
(Study on involvement of the commercial banking sector in SMI development)	(20,000)
Consultancy services	3,365,000
(SBAC)	(1,760,000)
(Technology transfer)	(975,000)
(Local study mission)	(230,000)
(Quality control center)	(300,000) } Funded
(Development of test and standard division of NIST)	(100,000) } by UNDP
Collective marketing system	721,739

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Source: Commission on Small and Medium Industries, Department of Industry,  
Document II CSMI Policy Report.

Table 4.1: GROSS DOMESTIC PRODUCT BY INDUSTRY AND REGION, 1975 /a  
(In millions of 1972 pesos)

Industry	Ilocos	Cagayan Valley	Central Luzon	Metro Manila	Rest of Southern Tagalog	Bicol	Western Visayas	Central Visayas	Eastern Visayas	Western Mindanao	Northern Mindanao	Southern Mindanao	Central Mindanao	Total
Agriculture, fishery and forestry	807.0	1,130.0	1,795.0	-	2,461.0	1,608.0	1,891.0	1,018.0	1,065.0	978.0	1,371.0	1,947.0	889.0	18,218.0
Mining and quarrying	415.0	1.1	90.9	6.3	179.5	7.5	130.6	538.5	45.9	9.5	18.3	0.6	1.3	1,445.0
Manufacturing	377.0	107.0	1,635.0	8,472.0	1,889.0	337.0	1,397.0	717.0	188.0	149.0	356.0	436.0	446.0	16,537.0
Construction	345.0	178.0	266.0	1,952.0	303.0	114.0	237.0	145.0	199.0	123.0	137.0	168.0	63.0	4,101.0
Electricity, gas and water	26.0	3.4	54.2	298.1	63.9	20.6	42.6	53.3	15.2	6.5	10.4	20.0	12.7	607.0
Transportation, communication and storage	109.3	28.1	230.8	1,805.1	395.8	60.9	154.4	279.9	23.9	41.9	39.6	126.8	49.0	3,277.0
Commerce	683.7	230.1	1,170.3	6,025.6	1,437.4	449.6	1,643.0	791.9	316.5	291.7	454.8	1,168.1	335.4	15,056.0
Services	409.1	187.3	513.8	5,142.3	575.9	303.6	529.5	522.0	198.3	175.3	202.3	315.9	162.8	9,120.0
<b>Total GDP</b>	<b>3,172.1</b>	<b>1,865.0</b>	<b>5,756.0</b>	<b>23,701.4</b>	<b>7,305.5</b>	<b>2,901.2</b>	<b>6,025.1</b>	<b>4,065.6</b>	<b>2,051.8</b>	<b>1,774.9</b>	<b>2,589.4</b>	<b>4,182.4</b>	<b>1,959.2</b>	<b>68,361.0</b>

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/a These are preliminary estimates of deflated Regional Gross Domestic Product (RGDP). The Central Bank Consumer Price Index is used for the Metro Manila area while NCSO indexes, derived from the 1972 and 1975 Economic Censuses are used for all other regions. According to the Regional Accounts staff, NEDA, the lack of a consistent index is responsible for the statistical discrepancies between the regional breakdown and total GDP. These are the following: agriculture 6.90%, manufacturing 0.18%, construction 0.03%, electricity 3.29%, transportation 2.09%, commerce 0.38%, services 1.29%, and total RGDP to GDP 1.47%.

Source: NEDA, Regional Accounts.



Table 4.2: GROSS DOMESTIC PRODUCT BY INDUSTRY AND REGION, 1975 /a  
(In percentages)

Industry	Ilocos	Cagayan Valley	Central Luzon	Metro Manila	Rest of Southern Tagalog	Bicol	Western Visayas	Central Visayas	Eastern Visayas	Western Mindanao	Northern Mindanao	Southern Mindanao	Central Mindanao	Total GDP
Agriculture, Fishery and Forestry	4.4	6.2	9.9	-	13.5	8.8	10.4	5.6	5.8	5.4	7.5	10.7	4.9	100.0
Mining and Quarrying	28.7	0.1	6.3	0.4	12.5	0.5	9.0	37.3	3.2	0.7	1.3	-	0.1	100.0
Manufacturing	2.3	0.6	9.9	51.2	11.4	2.0	8.4	4.3	11.3	0.9	2.2	2.6	2.7	100.0
Construction	8.4	4.3	6.5	47.6	7.4	2.8	5.8	3.5	4.9	3.0	3.3	4.1	1.5	100.0
Electricity, Gas and Water	4.3	0.6	8.9	49.1	10.5	3.4	7.0	8.8	2.5	1.1	1.7	3.3	2.1	100.0
Transportation, Communication and Storage	3.3	0.9	7.0	55.1	12.1	1.9	4.7	8.5	0.7	1.3	1.2	3.9	1.5	100.0
Commerce	4.5	1.5	7.8	40.0	9.6	3.0	10.9	5.3	2.1	1.9	3.0	7.8	2.2	100.0
Services	4.5	2.1	5.6	56.4	6.3	3.3	5.8	5.7	2.2	1.9	2.2	3.5	1.8	100.0
<u>Total GDP</u>	<u>4.6</u>	<u>2.7</u>	<u>8.4</u>	<u>34.7</u>	<u>10.7</u>	<u>4.2</u>	<u>8.8</u>	<u>5.9</u>	<u>3.0</u>	<u>2.6</u>	<u>3.8</u>	<u>6.1</u>	<u>2.9</u>	<u>100.0</u>

/a See footnote in Table 4.1.

Source: NEDA, Regional Accounts.

Table 4.3: GROSS VALUE ADDED IN MANUFACTURING BY INDUSTRY AND REGION, 1975 /a

(In millions of 1972 pesos)

Industry	Ilocos	Cagayan Valley	Central Luzon	Metro Manila	Rest of Southern Tagalog	Bicol	Western Visayas	Central Visayas	Eastern Visayas	Western Mindanao	Northern Mindanao	Southern Mindanao	Central Mindanao	Total
Food	81	46	472	708	367	248	1,237	402	110	54	110	223	91	4,245
Beverages	12	1	93	497	37	4	46	71	4	5	7	13	-	808
Tobacco	228	37	143	1,115	-	1	-	-	-	-	-	1	-	1,542
Textiles	2	-	116	704	63	16	3	7	1	-	3	5	-	923
Clothing and footwear	-	1	11	498	31	3	5	10	13	4	2	4	1	591
Wood	11	20	8	120	39	5	14	6	2	48	58	94	45	471
Furniture	1	-	5	46	5	1	2	9	1	-	1	3	-	74
Paper	1	-	60	296	54	15	-	9	1	-	33	16	7	486
Publishing	2	1	11	391	11	2	7	18	1	2	2	3	2	447
Leather	-	-	18	10	1	1	-	1	-	-	-	-	-	30
Rubber	1	-	3	249	1	1	1	2	-	6	1	1	2	263
Chemicals	1	-	325	1,433	76	33	42	54	33	17	63	39	70	2,165
Petroleum	-	-	200	121	934	-	-	-	-	-	-	1	-	1,230
Nonmetallic minerals	26	-	94	238	124	3	11	29	1	1	57	12	8	597
Basic metals	2	-	16	345	5	-	1	2	6	-	8	4	207	587
Metal products	-	-	4	374	8	1	1	8	-	1	3	4	1	398
Machinery	-	-	8	175	8	-	1	1	-	-	-	-	-	190
Electrical machinery	-	-	10	394	15	-	2	23	-	-	-	5	-	443
Transport equipment	4	-	22	618	100	2	23	63	13	1	1	2	1	842
Miscellaneous	2	1	16	140	10	1	1	2	2	10	7	6	11	205
<u>Total</u>	<u>377</u>	<u>107</u>	<u>1,635</u>	<u>8,472</u>	<u>1,889</u>	<u>337</u>	<u>1,397</u>	<u>717</u>	<u>188</u>	<u>149</u>	<u>356</u>	<u>436</u>	<u>446</u>	<u>16,537</u>

/a See footnote in Table 4.1.

Source: NEDA, Regional Accounts.

Table 4.4: GROSS VALUE ADDED IN MANUFACTURING BY INDUSTRY AND REGION, 1975 /a

(In percentages)

Industry	Ilocos	Cagayan Valley	Central Luzon	Metro Manila	Rest of Southern Tagalog	Bicol	Western Visayas	Central Visayas	Eastern Visayas	Western Mindanao	Northern Mindanao	Southern Mindanao	Central Mindanao	Total
Food	1.9	1.1	11.1	16.7	8.6	5.8	29.1	9.5	2.6	1.3	2.6	5.3	2.1	100.0
Beverages	1.5	0.1	11.5	61.5	4.6	0.5	5.7	8.8	0.5	0.6	0.9	1.6	-	100.0
Tobacco	14.8	2.4	9.3	72.3	-	0.1	-	-	-	-	-	0.1	-	100.0
Textiles	0.2	-	12.6	76.3	6.8	1.7	0.3	0.8	0.1	-	0.3	0.5	-	100.0
Footwear	0.5	0.2	1.9	84.3	5.2	0.5	0.8	1.7	2.2	0.7	0.3	0.7	0.2	100.0
Wood	2.3	4.2	1.7	25.5	8.3	1.1	3.0	1.3	0.4	10.2	12.3	20.0	9.6	100.0
Furniture	1.4	-	6.8	62.2	6.7	1.4	2.7	12.2	1.4	-	1.4	4.1	-	100.0
Paper	0.2	-	12.3	60.9	11.1	3.1	-	1.9	0.2	-	6.8	3.3	1.4	100.0
Publishing	0.4	0.2	2.5	87.5	2.4	0.4	1.6	4.0	0.2	0.4	0.4	0.7	0.4	100.0
Leather	-	-	60.0	33.3	3.3	3.3	-	3.3	-	-	-	-	-	100.0
Rubber	0.4	-	1.1	94.7	0.4	0.4	0.4	0.8	-	2.3	0.4	0.4	0.8	100.0
Chemicals	-	-	15.0	66.2	3.5	1.5	1.9	2.5	1.5	0.8	2.9	1.8	3.2	100.0
Petroleum	-	-	16.3	9.8	75.9	-	-	-	-	-	-	0.1	-	100.0
Nonmetallic minerals	4.4	-	15.7	39.8	20.8	0.5	1.8	4.9	0.2	0.2	9.5	2.0	1.3	100.0
Basic metals	0.3	-	2.7	58.8	0.8	-	0.2	0.3	1.0	-	1.4	0.7	35.3	100.0
Metal products	-	-	1.0	94.0	2.0	0.3	0.3	2.0	-	0.3	0.8	1.0	0.3	100.0
Machinery	-	-	4.2	92.1	4.2	-	0.5	0.5	-	-	-	-	-	100.0
Electrical machinery	-	-	2.3	88.9	3.4	-	0.5	5.2	-	-	-	1.1	-	100.0
Transport equipment	0.5	-	2.6	73.4	11.9	0.2	2.7	7.5	1.5	0.1	0.1	0.2	0.1	100.0
Miscellaneous	1.0	0.5	7.8	68.3	4.9	0.5	0.5	1.0	1.0	4.9	3.4	2.9	3.8	100.0
<b>Total</b>	<b>2.3</b>	<b>0.6</b>	<b>9.9</b>	<b>51.2</b>	<b>11.4</b>	<b>2.0</b>	<b>8.4</b>	<b>4.3</b>	<b>1.1</b>	<b>0.9</b>	<b>2.2</b>	<b>2.6</b>	<b>2.7</b>	<b>100.0</b>

/a See footnote in Table 4.1.

Source: NEDA, Regional Accounts.

Table 4.5: REGIONAL BREAKDOWN OF MANUFACTURING EMPLOYMENT, 1975

Manufacturing sector	Ilocos	Cagayan Valley	Central Luzon	Southern Tagalog	Bicol	Western Visayas	Central Visayas	Eastern Visayas	Western Mindanao	Northern Mindanao	Southern Mindanao	Total
Food	7,809	3,487	20,725	88,425	5,754	32,818	12,148	3,878	1,719	11,218	10,226	198,207
Beverages	1,411	689	3,724	22,145	731	1,729	4,208	1,576	319	2,015	1,454	40,001
Tobacco	3,800	2,681	1,301	27,815	370	154	156	61	32	177	305	36,852
Textiles	11,566	578	12,798	106,678	26,750	7,767	23,349	7,748	1,176	15,960	589	214,959
Footwear/clothing	15,942	5,391	61,718	220,945	15,792	23,614	19,927	9,546	6,230	15,940	10,381	405,426
Wood	6,771	7,743	7,301	29,715	5,802	7,655	7,470	3,209	2,594	15,815	6,996	101,071
Furniture	1,896	766	5,362	20,968	1,295	1,149	5,099	735	263	1,220	1,190	39,943
Paper	199	23	1,341	13,184	291	87	647	39	69	5,319	148	21,347
Printing	543	138	1,830	26,491	306	654	1,046	122	136	403	572	32,241
Leather	142	22	2,133	3,974	92	50	171	36	23	69	31	6,743
Rubber	412	217	1,727	16,135	305	553	650	198	372	600	471	21,640
Chemicals	1,044	186	4,298	42,127	410	948	3,478	227	194	2,136	860	55,908
Oil & coal products	170	49	691	4,121	142	177	185	74	84	192	103	5,988
Nonmetallic products	3,005	452	4,880	24,230	667	1,653	4,534	550	114	2,069	593	42,747
Basic metals	840	85	2,551	22,515	444	560	821	184	101	1,357	276	29,734
Metal products	917	189	2,621	25,241	658	893	890	342	351	1,020	695	33,817
Nonelectrical machinery	2,960	967	8,063	37,631	1,660	5,252	4,419	1,078	717	2,033	3,565	68,345
Electrical machinery	1,132	345	2,981	34,419	710	1,317	1,199	363	258	880	746	44,350
Transport equipment	3,910	787	10,043	62,125	2,167	4,297	3,966	1,134	1,428	4,074	2,158	96,089
Other	5,291	984	8,263	51,261	8,685	5,424	10,704	6,737	3,855	18,356	859	120,419
<b>Total</b>	<b>69,760</b>	<b>25,779</b>	<b>164,351</b>	<b>880,145</b>	<b>73,031</b>	<b>96,751</b>	<b>105,067</b>	<b>37,837</b>	<b>20,035</b>	<b>100,853</b>	<b>42,218</b>	<b>1,615,827</b>

Source: NCSO, Population Census, 1975.

Table 4.6: INVESTMENT GENERATION AND EMPLOYMENT IN BOI - REGISTERED PROJECTS BY REGION

	Under RA-5186 /a Number of registered projects as of 12/77	July 1968-December 1977			Under RA-6135 /b Number of registered projects as of 12/77	January 1971-December 1977		
		Total investment (P million)		No. of persons to be employed		Total investments (P million)		No. of persons to be employed
Ilocos	24	1,678	312	12,008	2	9	-	252
Cagayan Valley	7	51	11	1,803	-	-	-	-
Central Luzon	45	794	99	10,006	10	84	13	4,541
Metro Manila and Southern Tagalog	230	2,986	617	45,330	122	719	111	52,624
Bicol	13	91	15	1,860	1	2	-	905
Western Visayas	11	91	31	1,289	4	28	2	474
Central Visayas	33	1,100	288	7,538	5	13	2	663
Eastern Visayas	10	177	37	2,474	-	-	-	-
Western Mindanao	15	185	29	4,154	-	-	-	-
Northern Mindanao	45	1,993	316	10,916	4	141	16	668
Southern Mindanao	50	493	103	11,381	8	42	9	946
Eastern Mindanao	32	462	142	6,736	4	98	29	1,192
<u>Total</u>	<u>515</u>	<u>10,101</u>	<u>2,000</u>	<u>115,495</u>	<u>160</u>	<u>1,136</u>	<u>182</u>	<u>62,265</u>

/a Investment Incentives Act (RA-5186)

/b List B of Export Incentives Act (RA-6135)

Source: BOI

Table 4.7: PER CAPITA GROSS DOMESTIC PRODUCT BY REGION, 1975 /a  
(in constant 1972 pesos)

	GDP per capita	Population (*000)
Ilocos	970	3,269
Cagayan Valley	965	1,933
Central Luzon	1,320	4,361
Metro Manila	4,529	5,234
Rest of Southern Tagalog	1,522	4,800
Bicol	908	3,194
Western Visayas	1,453	4,146
Central Visayas	1,200	3,387
Eastern Visayas	789	2,600
Western Mindanao	867	2,048
Northern Mindanao	1,119	2,314
Southern Mindanao	1,541	2,715
Central Mindanao	946	2,070
<u>Total Philippines</u>	<u>1,625</u>	<u>42,071</u>

/a See footnote in Table 4.1.

Source: NCSO, Population Census, 1975 and NEDA, Regional Accounts.

Table 1: Growth of the Textile Industry

Year	Spinning		Weaving	
	Number of spindles	Annual compounded growth rate	Number of looms	Annual compounded growth rate
1955	35,800		500	
1960	400,000	62%	9,700	81%
1964	653,700	13%	18,200	17%
1970	821,100	4%	18,300	1%
1971	859,900	5%	17,700	3%
1976	979,400	3%	21,200	4%
1977	938,600	-4%	21,900	3%
1978	1,011,000	8%	20,900	-5%

Source: Ministry of Industry.

Table 7.2: EMPLOYMENT AND VALUE ADDED IN TEXTILE MANUFACTURING  
(In current prices)

	1956	1960	1965	1970	1971	1973	1974
<u>Woven Textiles</u>							
Employment (thousands)	4.9	19.6	28.9	40.0	40.2	48.5	50.2
Value added (million pesos)	21.1	71.4	149.0	323.7	430.4	651.6	819.9
Value added per worker	4.3	3.6	5.2	8.1	10.7	13.4	16.3
<u>Knitted Textiles</u>							
Employment (thousands)	2.4	3.8	n.a.	9.0	9.8	11.8	13.6
Value added (million pesos)	12.0	14.1	16.2	53.0	n.a.	136.9	160.5
Value added per worker	5.0	3.7	-	5.9	-	11.6	11.8

Source: NCSO, Annual Survey of Establishments.



Table 3: Degree of Specialization in Spinning

	Number of firms	Number of spindles	Production <u>/b</u> (tons)	Production <u>/b</u> by spindle (kgs)
Specialist spinners	<u>8/a</u>	206,000	16,400	79.6
Spinners with fabric production only	5	86,000	2,600	30.0
Spinners with fabric production and finish	18	718,000	44,800	62.4
<u>Total</u>	<u>31</u>	<u>1,010,000</u>	<u>63,800</u>	<u>63.2</u>

/a Of these, four are makers of sewing thread.

/b For year 1977.

Source: Ministry of Industry.

Table 4: Employment in Textile Industry Branches, 1976 /a

	Male	Female	Total	%
Spinning	12,950	6,690	19,640	29.1
Texturing	1,600	2,420	4,020	6.0
Weaving	15,420	8,790	24,210	36.0
Knitting	6,630	6,300	12,930	19.2
Finishing	5,010	11,520	6,530	9.7
<u>Total</u>	41,610	35,720	67,330	100.0

/a Estimate.

Source: Ministry of Industry.

Table 5: Profitability of the Textile Industry  
(In million pesos at current prices)

	1972	1973	1974	1975	1976
Fixed assets	607	630	777	1,162	1,434
Working capital	129	232	301	350	180
Total debt/equity ratio	68/32	71/29	72/28	70/30	73/27
Long-term debt/equity ratio	42/58	40/60	37/63	44/56	46/54
<u>Return on Total Assets (%)</u>	<u>1.6</u>	<u>4.5</u>	<u>1.9</u>	<u>0.4</u>	<u>(0.3)</u>
<u>Returns on Equity (%)</u>					
Specialist mills	14.2	28.0	10.5	1.0	8.7
Nonspecialist mills	4.3	13.7	6.2	(1.6)	(2.7)
<u>All Mills</u>	<u>5.0</u>	<u>15.4</u>	<u>7.0</u>	<u>1.3</u>	<u>(1.0)</u>

Note: ( ) denotes loss.

Source: Ministry of Industry.

Table 8.1 CONTRIBUTIONS OF FOOD MANUFACTURING SECTOR  
AND SELECTED COMPONENTS TO GDP, 1974 /a

(GDP and National Accounts in millions of pesos,  
sectors in thousands; all in current prices)

Sector	Annual survey of establishments (ASM)		National income accounts (NA)	
	1974	%	1974	%
Food manufacturing	4,861,544	4.87	6,626	6.65
Food processing	377,572	0.36	NA	NA
Meat processing	34,227	0.03	NA	NA
Dairy products	156,838	0.15	NA	NA
Fish processing	14,627	0.01	NA	NA
Fruits and vegetables	171,880	0.17	NA	NA
Coconut and other vegetable oils	455,307	0.45	NA	NA
Other food manufacturing	4,028,665	4.04	NA	NA
<u>Total manufacturing</u>	<u>15,647,292</u>	<u>15.70</u>	<u>24,608</u>	<u>24.69</u>
Gross domestic product	99,638	100.00	99,638	100.00

/a Methodology: The ASM's food processing sector refers to firms employing at least 20 workers; food and total manufacturing value added refers to establishments employing five or more workers. National accounts data covers establishments of all sizes, including the unorganized sector not included in the ASM. In part, the difference in the GDP shares reported by the two sources could be attributed to the underrepresentation and exclusion of firms employing less than 20 workers by the ASM and statistical discrepancies in the scope of the sources.

Sources: NCSO, Annual Survey of Establishments and NEDA, National Income Accounts.

**Table 8.2: FOOD MANUFACTURING SECTOR AND SELECTED COMPONENTS: SUMMARY DATA 1965-74 <sup>a/</sup>**  
 (Wages, Output, Assets in Thousands at Current Prices)

ISIC no.	Sector	Number of establishments			Employment			Wages		
		1965	1969	1974	1965	1969	1974	1965	1969	1974
3111	Meat processing & canning	NA	NA	4	NA	NA	301	NA	NA	1,159
	Slaughtering, preparing & preserving meat	NA	5	7	774	849	1,370	1,956	2,969	6,961
3112	Ice cream	NA	4	6	NA	900	1,268	NA	5,187	10,557
	Milk processing	NA	3	3	853	848	1,030	4,070	5,264	10,241
	Mfg. of dairy products	NA	10	13	1,616	1,871	3,318	7,159	11,095	33,304
3113	Fruit & fruit juices	NA	4	5	NA	7,426	5,109	NA	16,743	24,448
	Vegetable sauces	NA	7	8	726	525	683	1,807	2,210	3,731
	Fruits & vegetables	NA	17	16	4,470	8,543	6,251	8,843	19,950	29,060
3114	Fish freezing	NA	NA	3	NA	NA	452	NA	NA	2,066
	Fish canning	NA	8	14	NA	407	1,110	NA	897	4,332
3115	Coconut oil	NA	NA	20	NA	NA	3,010	NA	NA	19,147
	Vegetable & animal oils & fats	NA	13	29	1,412	1,707	4,569	4,439	5,572	31,851
	<u>Total Above</u>	NA	<u>53</u>	<u>79</u>	<u>8,272</u>	<u>13,377</u>	<u>16,618</u>	<u>22,397</u>	<u>40,483</u>	<u>105,508</u>
	Food manufacturing	358	326	451	70,754	84,694	101,693	147,992	215,063	477,179
	Beverages	64	66	81	12,134	15,035	18,873	44,429	60,685	131,595
	<u>All Manufacturing</u>	<u>2,153</u>	<u>2,170</u>	<u>2,843</u>	<u>323,770</u>	<u>402,064</u>	<u>531,973</u>	<u>765,842</u>	<u>1,147,074</u>	<u>2,398,007</u>

ISIC no.	Sector	Output			Fixed assets			Capital expenditures (year)		
		1965	1969	1974	1965	1969	1974	1965	1969	1974
3111	Meat processing & canning	NA	NA	31,059	NA	NA	5,910	NA	NA	363
	Slaughtering, preparing & preserving meat	25,992	31,804	161,307	28,263	29,787	22,842	848	2,626	19,711
3112	Ice cream	NA	41,857	120,872	NA	10,502	43,272	NA	2,493	2,497
	Milk processing	96,737	157,126	423,113	15,400	18,249	45,313	3,559	2,842	6,220
	Mfg. of dairy products	125,352	214,656	731,835	22,886	32,283	109,904	4,443	5,977	17,732
3113	Fruit & fruit juices	NA	175,251	362,513	NA	79,415	66,926	NA	11,354	7,542
	Vegetable sauces	19,126	32,150	92,094	8,108	4,493	10,683	239	1,978	1,734
	Fruits & vegetables	90,315	213,298	461,481	31,667	89,251	78,490	8,820	13,386	9,289
3114	Fish freezing	NA	NA	24,783	NA	NA	7,908	NA	NA	5,275
	Fish canning	NA	9,065	46,227	NA	4,870	16,539	NA	64	5,673
3115	Coconut oil	NA	NA	3,724,295	NA	NA	160,627	NA	NA	50,379
	Vegetable & animal oils & fats	338,682	353,233	4,255,178	21,322	29,037	195,949	4,865	705	66,822
	<u>Total Above</u>	<u>580,341</u>	<u>822,056</u>	<u>5,656,028</u>	<u>104,138</u>	<u>185,228</u>	<u>423,724</u>	<u>18,976</u>	<u>22,758</u>	<u>119,227</u>
	Food manufacturing	2,262,512	3,384,831	14,516,254	676,516	1,045,853	2,733,244	120,091	124,835	364,813
	Beverages	422,867	690,102	1,761,652	86,649	181,178	235,796	16,809	30,279	86,254
	<u>All Manufacturing</u>	<u>7,466,978</u>	<u>11,991,737</u>	<u>47,552,924</u>	<u>2,936,210</u>	<u>4,532,355</u>	<u>10,616,324</u>	<u>428,983</u>	<u>806,289</u>	<u>2,120,165</u>

ISIC no.	Sector	Inputs-Containers & Packing			Inputs-Supplies & Materials			Value Added		
		1965/ <sup>b</sup>	1969	1974	1965	1969	1974	1965	1969	1974
3111	Meat processing & canning	NA	NA	5,464	NA	19,068	NA	NA	5,630	
	Slaughtering, preparing & preserving meat	20,884	4,585	20,276	18,225	96,023	3,643	7,046	34,227	
3112	Ice cream	NA	5,984	21,237	12,636	54,560	NA	22,722	37,665	
	Milk processing	71,544	33,297	97,602	59,085	227,799	24,272	54,205	67,682	
	Mfg. of dairy products	86,432	40,782	140,086	81,717	394,439	37,672	80,971	156,838	
3113	Fruit & fruit juices	-	59,076	79,805	54,267	115,721	NA	57,767	146,248	
	Vegetable sauces	11,096	7,658	23,042	14,535	44,754	7,712	9,610	22,168	
	Fruits & vegetables	48,492	68,538	104,326	70,675	161,967	40,370	69,316	171,880	
3114	Fish freezing	NA	NA	421	NA	12,408	NA	NA	7,407	
	Fish canning	NA	1,534	5,167	3,618	18,216	NA	3,081	14,627	
3115	Coconut oil	NA	NA	41,071	NA	3,223,056	NA	NA	390,194	
	Vegetable & animal oils & fats	312,256	1,112	81,005	316,335	3,630,309	21,001	31,797	455,307	
	<u>Total Above</u>	<u>468,064</u>	<u>116,551</u>	<u>350,860</u>	<u>490,570</u>	<u>4,300,954</u>	<u>102,686</u>	<u>192,211</u>	<u>832,879</u>	
	Food manufacturing	1,106,783	228,796	688,222	1,680,128	8,175,941	630,106	1,107,315	4,756,306	
	Beverages	144,634	66,049	212,465	194,024	571,313	269,256	416,681	871,004	
	<u>All Manufacturing</u>	<u>3,868,602</u>	<u>471,548</u>	<u>1,682,033</u>	<u>NA</u>	<u>5,387,195</u>	<u>25,989,043</u>	<u>2,718,331</u>	<u>4,618,839</u>	

/a Firms with at least twenty workers.

/b All inputs.

Source: NCSO, Annual Survey of Establishments, 1965, 1969, 1974.

Table 8.3: FOOD MANUFACTURING SECTOR AND SELECTED COMPONENTS: SUMMARY DATA FOR SMALL AND LARGE FIRMS, 1967 AND 1972 /a /b

(Assets, Capital Expenditures, Inputs and Value Added in Thousands at Current Prices)

ISIC No.	1967		1972		1967		1972		1967		1972		1967		1972	
	No. of establishments Small	Large	No. of establishments Small	Large	Employment Small	Large	Employment Small	Large	Fixed Assets Large	Large	Capital Expenditures Small	Large	Capital Expenditures Small	Large		
1. Slaughtering & meat dressing	79	NA	24	NA	260	NA	84	NA	NA	NA	NA	NA	7	NA		
2. Meat processing except ham, etc.	}	NA	4	8	}	NA	17	1,344	NA	22,338	NA	-	15,517			
3. Mfr. of ham, bacon & sausage	21	NA	16	3	103	NA	44	34	NA	23	NA	-	-			
4. Chicharon factory	}	NA	67	6	}	NA	273	110	NA	274	NA	39	28			
5. Lechon, or whole pig roasting	}	NA	28	NA	}	NA	102	NA	NA	NA	NA	10	NA			
3111 <u>Slaughtering, Preparing &amp; Preserving Meat</u>	100	19	139	17	363	1,350	520	1,488	69,434	22,635	2,771	56	15,545			
1. Ice cream factory	208	27	162	10	873	1,080	543	1,184	4,325	41,226	712	119	4,714			
2. Sherbets, ice drop, etc.	}	}	216	12	}	}	972	148	}	1,388	291	459				
3. Natural cheese production	15	4	11	3	45	208	18	159	4,475	5,343	274	-	564			
4. Milk processing	NA	4	-	5	NA	997	NA	1,210	16,351	32,684	4,573	NA	37,228			
3112 <u>Manuf. Dairy Products</u>	235	35	389	32	951	2,285	1,533	3,437	25,152	88,249	5,560	410	45,545			
1. Vegetable sauces	6	11	1	14	18	463	4	1,183	8,475	14,307	273	-	2,565			
2. Fruit & fruit juices	13	4	5	4	39	8,096	21	6,801	72,796	106,371	7,359	-	5,704			
3. Misc. fruits & veg. n.e.c.	}	4	4	4	}	203	15	263	1,288	6,014	52	35	42			
3113 <u>Canning &amp; Preserving of Fruits &amp; Vegetables</u>	19	19	10	22	57	8,762	40	8,247	82,561	126,692	7,684	35	8,311			
Fish canning	15	14	18	6	72	266	45	234	4,412	2,665	3	3	219			
3114 <u>Fish Canning &amp; Preserving</u>	101	26	731	32	294	676	2,685	909	7,197	7,131	159	851	905			
Coconut oil	4	9	NA	10	32	1,338	NA	1,173	22,692	24,677	3,977	NA	3,094			
3115 <u>Vegetable &amp; Animal Oils &amp; Fats</u>	10	12	NA	23	88	1,755	NA	3,236	29,473	50,111	7,273	NA	10,998			
<u>Total above</u>	455	111	1,269	126	1,753	14,828	4,778	17,317	213,817	294,818	NA	23,477	1,352	81,304		
Food manufacturing	12,957	1,098	21,112	989	38,680	76,478	68,632	90,384	1,001,766	2,659,990	NA	104,798	39,576	266,907		
Beverages	91	75	271	86	711	19,976	671	15,148	118,153	153,405	NA	36,555	27	41,467		
<u>All manufacturing</u>	41,018	3,989	63,052	4,476	125,191	393,551	203,976	439,468	4,411,933	8,671,268	NA	659,883	83,864	1,783,072		

/a "Large" refers to establishments employing at least ten workers; "small" to those employing less than ten workers. This is the classification used by the economic census and differs from the one used throughout the rest of the Statistical Appendix.

/b ISIC numbers 3111, 3112, 3113, 3114, and 3115 do not add up to a subtotal or total due to arbitrary groupings of the National Census and Statistics Office to preserve confidentiality of information.

Source: NCSO, Census of Establishments 1967-1972.



	1967 Inputs - Containers + Packing		1972 Inputs - Containers + Packing		1967 Inputs - Supplies & Materials		1972 Inputs - Supplies & Materials		1967 Value Added		1972 Value Added	
	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large	Small	Large
1. Slaughtering & meat dressing	27	NA	NA	NA	1,999	NA	NA	807	NA	166	NA	NA
2. Meat processing except ham, etc.	}	NA	13,342	}	NA	NA	43,384	}	NA	35	20,701	NA
3. Mfr. of ham, bacon & sausage	}	8	3	}	NA	NA	188	}	NA	257	123	NA
4. Chicharon factory	}	NA	90	}	568	NA	682	}	360	NA	738	506
5. Lechon, or whole pig roasting	}	NA	NA	}	NA	NA	NA	}	NA	404	NA	NA
3111 <u>Slaughtering, Preparing &amp; Preserving Meat</u>	<u>36</u>	<u>5,342</u>	<u>13,435</u>	<u>2,568</u>	<u>30,546</u>	<u>44,254</u>	<u>1,169</u>	<u>18,032</u>	<u>1,600</u>	<u>21,330</u>		
1. Ice cream factory	}	66	3,942	}	1,663	15,939	28,560	}	1,650	16,762	1,000	43,768
2. Sherbets, ice drop, etc.	}			}			625	}			1,942	625
3. Natural cheese production		4	3,805		261	25,380	27,229		139	9,682	15	6,618
4. Milk processing	NA	4,764	82,486	NA	93,438	179,911	NA	80,440	NA	118,981		
3112 <u>Manuf. Dairy Products</u>	<u>70</u>	<u>12,512</u>	<u>99,038</u>	<u>1,945</u>	<u>134,758</u>	<u>276,727</u>	<u>1,822</u>	<u>106,884</u>	<u>2,957</u>	<u>218,139</u>		
1. Vegetable sauces	-	902	16,699		132	4,637	28,728		20	7,352	5	23,870
2. Fruit & fruit juices	-	4,941	4,841	}	557	32,835	84,041	}	136	69,619	181	134,688
3. Misc. fruits & veg. n.e.c.	-	570	755	}		1,278	1,622	}		1,878	12	1,249
3113 <u>Canning &amp; Preserving of Fruits &amp; Vegetables</u>	<u>-</u>	<u>6,413</u>	<u>22,295</u>	<u>689</u>	<u>38,751</u>	<u>114,391</u>	<u>157</u>	<u>78,849</u>	<u>198</u>	<u>159,807</u>		
Fish canning	3	32	174		222	1,153	2,451		93	1,114	40	1,565
3114 <u>Fish Canning &amp; Preserving</u>	<u>9</u>	<u>2,054</u>	<u>2,290</u>	<u>279</u>	<u>12,765</u>	<u>8,804</u>	<u>168</u>	<u>7,021</u>	<u>4,084</u>	<u>7,927</u>		
Coconut oil	67	1,273	915		495	245,934	268,662		141	40,325	NA	106,923
3115 <u>Vegetable &amp; Animal Oils &amp; Fats</u>	<u>171</u>	<u>6,794</u>	<u>21,667</u>	<u>1,146</u>	<u>300,985</u>	<u>480,533</u>	<u>387</u>	<u>54,942</u>	<u>NA</u>	<u>189,542</u>		
<u>Total above</u>	<u>287</u>	<u>33,115</u>	<u>NA</u>	<u>158,725</u>	<u>6,627</u>	<u>517,805</u>	<u>NA</u>	<u>924,709</u>	<u>3,703</u>	<u>265,728</u>	<u>8,839</u>	<u>596,745</u>
Food manufacturing	1,026	133,336	NA	334,494	58,755	2,082,982	NA	3,151,235	73,460	1,954,662	183,787	2,315,184
Beverages	694	62,430	NA	102,250	4,745	239,982	NA	346,008	3,340	558,945	757	436,419
<u>All manufacturing</u>	<u>2,370</u>	<u>363,158</u>	<u>NA</u>	<u>755,353</u>	<u>164,920</u>	<u>6,095,487</u>	<u>NA</u>	<u>11,071,696</u>	<u>205,921</u>	<u>6,265,426</u>	<u>438,474</u>	<u>8,637,384</u>

/a "Large" refers to establishments employing at least ten workers; "small" to those employing less than ten workers.

/b ISIC numbers 3111, 3112, 3113, 3114, and 3115 do not add up to a subtotal or total due to arbitrary groupings of the National Census and Statistics Office to preserve confidentiality of information.

Source: NCSO, Census of Establishments 1967-1972.

Table 8.4: EXAMPLES OF TRADE MARGINS IN DOMESTIC MARKET -  
POPULARLY PRICED CANNED FOODS

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Product	Net wt.	Cans per carton	----- Prices -----		
			Delivered wholesaler ₱ per can	Delivered retailer ₱ per can	To consumer ₱ per can
Sardines	5 oz	100	1.40	1.48	1.55
Mackerel	5 oz	100	1.40	1.48	1.55
Pork and beans	220 gms	48	0.85	0.87	0.90
Pork and beans	397 gms	48	1.00	1.02	1.05/1.10

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Note: 1) All products of domestic manufacturer.  
2) Prices applicable to Metro-Manila area in February 1979.

Source: Information supplied to mission by manufacturers of the products.

Table 8.3: TOTAL FAMILY INCOME AND CLASSIFICATION OF FAMILY INCOME IN THE FOOD MARKET

A. Total Family Income by Income Class, Urban and Rural: 1957, 1961, 1965 and 1971

	1957					1961				
	Philip.	Total rural	Total urban	Mia. & suburbs	Other urban areas	Philip.	Total rural	Total urban	Mia. & suburbs	Other urban areas
Amount ('000 ₱)	5,824,296	2,601,799	3,222,497	1,261,079	1,961,418	7,981,766	3,512,793	4,468,973	1,718,429	2,740,544
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under ₱ 500	5.3	10.1	1.4	0.1	2.3	3.3	6.3	1.0	0.1	1.6
₱ 500 to 999	16.1	27.7	6.6	1.4	10.0	12.0	22.0	4.1	0.8	6.2
₱ 1,000 to 1,499	13.7	19.2	9.3	3.7	12.9	12.2	19.1	6.7	3.6	8.7
₱ 1,500 to 1,999	12.3	14.8	10.2	6.1	12.9	11.5	15.0	8.6	4.4	11.3
₱ 2,000 to 2,999	14.1	14.4	13.9	11.1	15.6	14.5	16.2	13.1	9.7	15.2
₱ 3,000 to 4,999	14.4	8.6	19.1	17.9	19.8	15.2	11.4	18.4	16.7	19.4
₱ 5,000 and over	24.2	5.3	39.5	59.7	26.5	31.3	10.0	48.1	64.7	37.6
Median income (₱)	924	779	1,517	2,691	1,309	1,105	900	1,799	3,004	1,559
Average income (₱)	1,471	989	2,427	4,255	1,902	1,804	1,203	2,970	4,790	2,395
	1965					1971				
Amount ('000 ₱)	13,023,610	6,327,716	6,695,894	3,016,318	3,679,575	23,714,284	12,493,416	11,220,868	4,085,629	7,135,239
Percent	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Under ₱ 500	1.4	2.6	0.3	1	0.5	0.5	0.8	0.1	0.0	0.2
₱ 500 to 999	5.3	9.4	1.3	0.3	2.2	2.4	4.2	0.4	0.1	0.6
₱ 1,000 to 1,499	8.1	13.2	3.3	1.0	5.2	4.11	6.6	1.2	0.3	1.7
₱ 1,500 to 1,999	9.2	14.1	4.5	2.4	6.3	5.5	8.5	2.1	0.9	2.8
₱ 2,000 to 2,999	16.9	22.0	12.0	8.2	15.2	11.8	15.7	7.4	5.0	8.7
₱ 3,000 to 4,999	20.1	23.0	17.3	14.8	19.4	20.4	24.1	16.3	13.0	18.2
₱ 5,000 and over	39.0	15.7	61.2	73.3	51.2	55.3	40.0	72.4	80.6	67.7
Median income (₱)	1,648	1,359	2,636	3,730	2,285	2,454	1,954	3,972	5,202	3,650
Average income (₱)	2,541	1,755	4,405	6,590	3,463	3,736	2,818	5,867	7,785	5,141

Source: National Census and Statistics Office, Family Income and Expenditures Bulletin for 1957, 1961, 1965 and 1971.

B. Classification of Family Income in the Food Market

1. High income group = families earning over ₱ 15,000 p.a.
2. Middle income group = families earning between ₱ 6,000 to ₱ 15,000 p.a.
3. Low income group = families earning less than ₱ 6,000 p.a.

Source: Center for Research and Communication, the Profile Consumer of Food Products (adjusted to 1978 income levels).

Table 6: CHARACTERISTICS AND PRIME COSTS ANALYSIS - PROCESSED FOODS

Processor	A	B	B	B	B	B	C	C	C	C	C	D	D	D	D	E	E	E
Commodities	FH	MT	PT	VE	MT	VE	FR	FR	VE	MT	MT	FR	FR	FR	FR	FR	FR	FR
Product form	CD	BD	BD	BD	CD	CD	CD	CD	CD	CD	FN	FN	FN	FN	FN	CD	CD	CD
Net list of contents	5 oz	128 gms	128 gms	128 gms	92 gms	298 gms	6 1/2 oz	13 oz	14 oz	200 gms	2 kg	10 kg	10.8 kg	40 lbs	14 kg	66 1/2 oz	6 1/2 oz	6 oz
<b>Markets</b>																		
Domestic	X	X	X	X	X	X	-	-	X	X	X	-	-	-	-	-	-	X
Export	-	-	-	-	-	-	X	X	-	-	-	X	X	X	X	X	X	-
Institutional	-	-	-	-	-	-	-	-	-	-	X	X	X	X	X	X	-	-
Consumer	X	X	X	X	X	X	X	X	X	X	-	-	-	-	-	-	X	X
<b>Prime Costs (%)</b>																		
Contents	54.7	40.0	14.2	16.4	52.1	38.5	56.6	62.2	44.8	70.8	91.8	92.0	94.0	96.0	90.0	65.9	57.0	9.7
Jar/Bottle	-	51.1	75.8	73.8	-	-	-	-	-	-	-	-	-	-	-	-	-	-
Cin	32.9	-	-	-	38.9	50.1	27.3	31.2	48.6	23.7	-	-	-	-	-	-	-	-
Label	1.8	3.0	3.2	2.9	2.8	5.6	1.4	1.9	1.8	1.3	1.0	-	-	-	-	18.2	29.0	69.9
Carton, etc.	5.5	4.2	4.4	4.5	3.8	4.2	1.6	1.6	1.7	1.2	0.3	3.0	2.5	1.5	3.5	-	-	-
Flexible wrapping	-	-	-	-	-	-	-	-	-	-	3.9	-	-	-	-	-	-	-
Direct labor	5.1	1.7	2.4	2.4	2.4	1.6	3.1	3.1	3.1	3.0	3.0	5.0	3.5	2.5	6.5	15.9	14.0	20.4
Total prime cost	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

Notes:

1. The five large processors provided the information on the understanding that neither product description nor its identity would be revealed.
2. The prime costs are averages for November 1978 to January 1979 inclusive.
3. Legend: a) Commodities: FH - Fish; MT - Meat; FR - Fruit; VE - Vegetables. b) Product Form: CD - Canned; BD - Bottled; FN - Frozen.

Source: Five large food processors.

Table 8.7: SELLING PRICES <sup>/a</sup> - OPEN TOP CANS <sup>/b</sup>

<sup>/c</sup> Size and finish	----- Prices ex-factory per 1000 -----		
	<sup>/d</sup> Philippines P	<sup>/d</sup> Equivalent in \$	<sup>/e</sup> USA <sup>/f</sup> \$
202 x 306 plain	417.34	57.17	63.07
300 x 200 internally lacquered	539.00	73.83	89.59
211 x 304 plain	684.31	93.74	77.00
300 x 400 plain	831.93	113.96	105.75
211 x 414 ends lacquered	984.06	134.80	103.03

/a Ruling at end-February 1979, for orders of 50,000 each size.

/b Fabricated from electrolytic plate, 0.75 lbs per basis box.

/c Listed sizes are those principally used by Philippine processors.

/d Includes sales tax at 10%. (Sales tax and tariff duty, at effective rate of about 80%, are levied on imported tin plate.)

/e On basis of US\$1.00 equals P 7.34.

/f Quantity discounts apply; very few processors in USA would purchase in lots of 50,000 cans.

Table 8.8: ANALYSIS OF BOI INCENTIVES PROVIDED FOR PROCESSED FOOD,  
FOOD AND BEVERAGE PRODUCTS, 1975-77

Description	1975 -----	1976 (In '000 current pesos)	1977 -----
<u>Under R.A. 5186</u>			
Capital gains tax exemption	-	626	-
Accelerated depreciation	998	3,240	3,505
Expansion reinvestment allowance	2,485	2	1,125
Deduction from taxable income of direct labor cost and local raw materials utilized in the manu- facture of export products	-		55
Compensating tax on imported capital equipment	23	190	45
Import duty on imported capital equipment	61	634	229
Advance sales tax on imported raw materials, supplies, etc.			95
Tax credit for purchase of domestically produced capital equipment	42	12	303
Tax credit on raw materials/ supplies and semi-manufactured products of exported finished products		49	74
<u>Total</u>	<u>3,609</u>	<u>4,753</u>	<u>5,431</u>
<u>Under R.A. 6135</u>			
Cost of local raw materials and direct labor cost but not to exceed 25% of gross export sales	-	2,671	9,159
Compensating tax on imported capital equipment	8		73
Import duty on imported capital equipment	26		108
Capital gains tax exemption	3,485		1,911
Tax credit for sales tax on raw materials/supplies and semi- manufactured products of exported finished products	283	147	21
Tax credit for purchase of domestically-produced capital equipment	-		55
<u>Total</u>	<u>3,802</u>	<u>2,818</u>	<u>11,327</u>

Source: Board of Investments

Table 8.9 IMPORTS AND EXPORTS OF PROCESSED FOODS, 1970-76  
(F.O.B. in US\$)

	1970		1973		1976	
	Imports	Exports	Imports	Exports	Imports	Exports
01 Meat and meat preparations	5,177,192	30,519	2,166,095	77,675	8,569,955	523,682
03 Fish and fish preparations	16,783,468	2,550,969	19,698,475	19,820,128	30,423,859	27,134,724
05 Fruits and vegetables <u>/a</u>	2,201,055	27,755,660	3,119,241	27,756,212	4,955,850	60,598,958
<u>Total</u>	<u>24,161,715</u>	<u>30,337,148</u>	<u>24,983,811</u>	<u>47,654,015</u>	<u>43,949,664</u>	<u>88,257,364</u>

/a SITC 05, Fruits and vegetables does not include SITC 051, fresh and chilled fruits and nuts and 052, dried fruits. In 1976, 051 accounted for over US\$81 million in exports, mostly in the form of bananas and SITC 052, dessicated and shredded coconut, for US\$37 million.

Source: NCSO, Foreign Trade Statistics of the Philippines, 1970, 1973 and 1976.

Philippine Coordinating and Counterpart Groups

I. Joint MOI-BOI Coordinating Committee

- |                          |  |
|--------------------------|--|
| Rafael A. Sison          | - Deputy Minister<br>Ministry of Industry<br>Chairperson                                 |
| Conrado Sanchez, Jr.     | - Supervising Governor<br>Export Department (IED)<br>Board of Investments<br>Chairperson |
| Asuncion B. Kalalo       | - Director, Export Department, IED<br>Board of Investments                               |
| Federico G. Luchico, Jr. | Officer-in-Charge<br>BIIP<br>Ministry of Industry  |
| Meynard Orbeta           | - Chief, Economic Section<br>RISD<br>Board of Investments                                |
| Fidelita Lumbang         | - Chief Analyst, IED<br>Board of Investments<br>Secretary                                |

II. MOI Working Group

- |                          |   |
|--------------------------|---|
| Rafael A. Sison          | - Deputy Minister<br>Chairman             |
| Lilia R. Bautista        | - Assistant Minister                      |
| Jolyon V. Tiglao         | - Assistant Minister                      |
| Federico G. Luchico, Jr. | - Officer-in-Charge, BIIP                 |
| Lourdes K. Altamirano    | - Officer-in-Charge<br>Information Office |
| Emmanuel Almonte         | - Officer-in-Charge, CSMI                 |
| Zafrullah Masahud        | - Officer-in-Charge, BSMI                 |
| Wilhelm Ortaliz          | - Assistant Director/OIC<br>BIC           |



III. BOI Working Group

- |                         |  |
|-------------------------|--|
| Conrado Sanchez, Jr.    | - Supervising Governor<br>Export Department, IED<br>Chairman |
| Meynard Orbeta          | - Chief, Economic Section<br>RISD                            |
| Asuncion Kalalo         | - Director, Export Department<br>IED                         |
| Ramona Miguel           | - Director<br>Agro-Industries Department                     |
| Ignacio G. Salcedo, Jr. | - Director, CID  |
| Antonio V. Arizabal     | - Director, MMID   |
| Justiniano Y. Ascano    | - Director, PALD   |

IV. Inter-Agency Counterparts

Metals Industry Research and Development Corporation

Dr. Antonio V. Arizabal, Jr. - Executive Director

National Economic and Development Authority

PCS, NEDA Central Bank, Manila  
SPSS, NEDA, Amorsolo, Legaspi Vil.  
Makati, Metro Manila

Henry Pasimio	- Acting Director, PCS
Benjamin Tienzo	- Staff Statistician

Development Bank of the Philippines

Buendia Ext., Makati, Metro-Manila

Isidro Macaspac	- Special Assistant, IPDI
Francisco F. Lejano	- Manager, Bus. Research
Rodolfo Manalo	- Manager, IPD II

Tariff Commission

Philippine Deart Center for Asia  
East Avenue, Diliman, Q.C.

Chulia Azarcon	- Acting Commissioner
----------------	-----------------------

Ministry of Finance  
Central Bank, Manila

Reynaldo Palmiery - Acting Chief, Planning Service

Central Bank of the Philippines  
Manila

Guillermo Soliven - Special Assistant to the Governor

Angelina Z. Tiangco - Director, MEDIAD

Ministry of Natural Resources  
Quezon City

Elizabeth D. Samson - Executive Director  
Fishery Industry Development Council

Felix R. Gonzales - Director  
Bureau of Fisheries and Aquatic  
Resources

Benito Q. Bengzon - General Manager  
Philippines Fish Marketing Authority

Table 1: Plants Visited: Summary Data

Firm no.	Industry	Fixed plant investment (US\$'000)	No. of jobs	Sales	Exports (US\$'000)	Value added	Cost of borrowing (%)	Effective protection (%)	Investment cost per job (\$)	Ratios			BOI benefits/sales
										Value added/sales	Exports/sales	Share of imports in material inputs (%)	
<u>Food</u>													
1		1,644	300	3,500	3,500	233	10.0	NA	5,479	6.7	100.0	NA	NA
2		616	150	5,479	5,479	NA	NA	NA	563	NA	100.0	-	1.0
3		753	180	2,397	-	360	15.5	40	4,186	15.0	-	17.0	-
4		685	250	6,027	5,726	1,205	16.0	NA	2,740	20.0	95.0	-	1.0
5		9,779	216	37,482	1,154	5,183	16.0	10-100	45,271	13.8	3.1	12.0	3.0
6		2,740	400	7,534	6,781	NA	14.0-15.0	10-70-100	6,849	NA	90.0	5.0	0.4
7		689	107	2,781	49	418	16.0	100	6,437	15.0	-	32.0	29.0
8		11	14	247	-	37	14.0	100	1,507	15.0	-	2.0	-
9		11	25	137	123	27	16.0	100	438	20.0	1.0	-	-
<u>Textiles</u>													
10		52,230	1,211	45,066	-	29,360	16.0	400	43,129	65.0	-	96.0	4.3
11		22,990	497	7,668	-	NA	16.0	NA	46,258	NA	-	NA	8.5
12		3,411	478	5,163	-	2,388	NA	28	7,137	46.0	-	61.0	10.6
13		5,827	2,758	11,173	734	5,303	NA	NA	2,113	47.0	6.7	55.0	-
14		7,056	580	6,674	71	2,611	NA	248	12,166	39.1	1.0	37.0	4.1
15		29,918	988	9,041	335	4,973	7.0	215	28,257	55.0	3.7	49.0	-
16		19,273	3,591	24,833	1,175	7,710	16.0	313	5,367	31.0	0.5	50.0	2.9
17		13,038	2,731	12,784	831	NA	-	NA	4,774	NA	6.4	NA	-
<u>Garments</u>													
18		1,168	818	4,765	4,765	1,110	NA	-	1,427	23.3	100.0	14.0	-
19		1,034	370	356	356	106	NA	-	2,797	29.8	100.0	100.0	3.6
20		1,128	354	1,543	1,543	386	NA	-	3,189	25.0	100.0	55.0	2.5
21		1,486	428	1,071	868	214	NA	-	3,473	20.0	81.0	20.0	12.0
22		41	96	82	41	21	NA	-	428	25.0	50.0	40.0	-
23		685	280	4,526	4,521	NA	NA	-	2,446	NA	100.0	60.0	-
24		743	450	3,329	1,664	600	-	-	1,652	20.0	50.0	60.0	-
<u>Furniture</u>													
25		822	180	685	521	274	12.0	340	4,566	40.0	76.0	6.0	NA
26		55	40	164	1	NA	15.0	-	1,370	NA	-	-	-
27		111	430	1,096	877	NA	NA	NA	255	NA	80.0	5.0	NA
<u>Basic Metals</u>													
28		5,205	650	5,890	-	3,279	18.0-12.0	25	8,008	56.0	-	27.0	-
29		128,082	3,300	150,685	7,534	51,233	14.0	100	38,183	34.0	5.0	100.0	-
30		219,178	750	109,589	109,589	39,452	NA	-	292,237	36.0	100.0	95.0	-
31		1,644	90	6,849	-	1,808	-	150	18,264	26.0	-	100.0	-
32		12,603	300	15,068	3,918	4,789	16.0-20.0	NA	42,000	32.0	26.0	50.0	-
33		NA	400	NA	-	NA	16.0-21.0	-23-92	NA	NA	-	60.0	-
34		205	85	8,219	-	1,643	16.0-21.0	103	2,416	20.0	-	100.0	-
<u>Mechanical</u>													
35		2,466	600	4,110	4,110	1,027	NA	NA	4,110	25.0	100.0	35.0	NA
36		68	19	137	-	NA	14.0	NA	3,605	NA	-	50.0	-
37		80	140	473	33	166	19.0	39	569	35.0	7.0	95.0	-
38		10,686	255	2,671	187	1,602	16.0	38-58	41,906	60.0	7.0	25.0	-
39		17,031	8,260	76,712	37,904	46,027	16.0-18.0	38-58	2,062	60.0	49.0	38.0	11.0
40		689	80	454	-	159	20.0	11	8,610	35.0	-	95.0	-
41		28,285	2,000	102,786	-	20,557	16.0-18.0	380	14,143	19.0	-	75.0	-
42		4,275	2,400	26,205	-	13,102	15.0-20.0	170	1,781	50.0	-	40.0	-
43		7,808	3,500	8,904	8,904	3,116	16.0	-	2,231	35.0	100.0	30.0	-
44		10,684	4,700	13,699	13,699	5,479	16.0	-	2,273	40.0	100.0	35.0	23.0
Average for all firms		14,580	1,033	17,269	7,094	8,156	16.0		14,114	47.0	41.0	49.0	7.8
Average for export firms /a /b		2,994	1,083	4,452	5,956	1,148	15.0		2,764	26.0	71.0	46.0	6.8
Average for nonexport firms /a		22,155	1,002	21,606	8,474	10,557	16.0		22,111	49.0	37.0	52.0	8.9

/a Export firms are those with exports more than 50% of sales; nonexport are all other firms.

/b Excluding Number 30.



Table 2 : SECTOR: FOOD  
(All values in US\$)

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
	Fish	Fish	Fish	Shrimp	Processed and canned meat, fish, fruit & vegetables	Canned fruit & fish	Canned beef and other products	Processed meat (Small-scale industry) /a	Fruits (Cottage industry) /a
<b>I. Economic Data</b>									
(1) Location /b	B	A	A	A	A	B	A	A	A
(2) Fixed Plant Investment	US\$1,643,836	US\$616,400	US\$753,420	US\$684,900	US\$9,778,507	US\$2,739,700	US\$688,804	US\$11,000	US\$10,960
(3) Number of Jobs	300	150	180	250	216	400	107	14	25
(4) Sales	US\$3.5 m	US\$5,479,400	US\$2,397,260	US\$6,027,300	US\$37,482,425	US\$7,534,200	US\$2,781,213	US\$246,575	US\$136,986
(5) Exports	US\$ 3.5 m	US\$5,479,400	-	US\$5,726,000	US\$1,154,460	US\$6,780,800	US\$68,949	-	US\$123,288
(6) Value Added	US\$233,333	N.A.	US\$359,589	US\$1,205,460	US\$5,182,609	N.A.	US\$417,738	US\$36,986	US\$27,397
<b>II. Planned Expansion</b>									
(7) New Investment	US\$5.0 million	30% increase in production (1979)	Two new lines US\$75,000 (1979)	US\$136,900	Backward integration	US\$287,671	Manufacture of canned beef and baby cereals	Generators, cold storage (US\$27,000)	None
(8) Cost of (Recent) Borrowing	10.0%	N.A.	15.5%	16.0%	16.0%	14.0-15.0%	16.0%	14%	16.0%
(9) Source of Borrowing	Commercial banks (Pacific Banking Corp.)	N.A.	Commercial banks	Commercial banks	Local banks	Commercial banks	Commercial banks and PDCP	DBP	Commercial banks and Development Corporation
<b>III. BOI Benefits</b>									
(10) Value of Benefits	Tax credit and duty free imports	US\$41,096	Not BOI registered	US\$54,795	US\$1,258,808	US\$27,397	US\$142,363 (1978)	None	None
<b>IV. Protection</b>									
(11) Domestic Price/International Price	N.A.	N.A.	N.A.	Domestic prices are slightly higher than international ones.	0.7:1	N.A.	1.59:1	N.A.	Export price about 12% higher
(12) Nominal Tariff on Sale of Product	10%	10%	10%	70%	10% on canned fish 100% on canned meat & fruit & vegetables	10% and 70% on fish; 100% on fruit	100%	100%	100%
(13) Effective Protection	N.A.	N.A.	40%	N.A.	Meat - 200% Fish - 40%	N.A.	300%	210%	N.A.
<b>V. Ratios</b>									
(14) Investment Cost Per Job (2+3) (US\$)	5,479	563	4,186	2,740	45,271	6,849	6,437	1,507	438
(15) Value Added/Investment (6+2) (%)	142	N.A.	N.A.	176.00%	53.0%	N.A.	60.6%	336.2%	250.0%
(16) Value Added/Sales	6.7%	N.A.	15.0%	20.00%	13.8%	N.A.	15.0%	15.0%	20.0%
(17) Exports/Sales (5+4) (%)	1.00	100.0%	-	95.00%	3.08%	90.00%	0.02%	-	0.90%
(18) Share of Imports in Material Inputs (%)	N.A.	-	17.0% (cane)	-	12.0%	5.0%	31.5%	2.0%	-
(19) BOI Benefits/Sales (10+4) (%)	N.A.	0.80%	-	0.90%	3.4%	0.36%	29.1%	-	-
<b>VI. Comments</b>									
(20) Sales Organization/Management	Japanese assistance in management. Export sales via brokers, 30% direct.	Via overseas parent organiza- tion.	Management has excellent grasp on the business/ technological factors involved. Sales to wholesalers and large retailers.	Good management. Sales organization has own contacts.	Highly competent management. Own sales force and distribution.	High technical level and foreign colla- boration.	Very well managed. Com- pany operates own sales force and domestic dis- tribution (85%). Export sales made directly.	Management trained in food technology. Sales to super- markets and other food firms.	Effective management. Sales through wholesaler for local market and agent for export.
(21) Quality of Product	Good.	Good.	Generally good.	Good.	Good; well standard- ized.	-	High level. Standardized packs commanding premium price.	Generally good. Nam excel- lent.	Appropriate for local market and for overseas Filipino demand.
(22) Plant Layout	Designed by US plant suppliers.	Good.	Functional - except for cold storage location.	Cramped and non- functional due to rapid expansion.	Rather cramped, indicative of rapid expansion.	Good.	Excellent; high level of mechanization.	Rudimentary.	Rudimentary.
(23) Equipment	Good - all imported.	Good - all imported.	Modern and appropriate - equipment from USA and Taiwan.	Appropriate.	Excellent, all imported.	Modern and appro- priate.	To best international standard, all imported.	Rudimentary.	Rudimentary.
(24) Improvements	1. Improved productiv- ity. 2. Fish handling. 3. Training of small- scale fishermen so that they can supply the company better.	1. Process instru- mentation. 2. Given expansion mechanization justified.	1. Access to more and better quality raw materials. 2. Mechanical labelling should be introduced. 3. Process instrumenta- tion.	Expansion project being realized.	1. Resolution of problems of qual- ity and price of cans. 2. Better availabil- ity of raw materi- als.	Resolution of problems in securing cans and containers in quantity and price.	1. Access to better qual- ity raw materials. 2. Improvement in quality of cans. 3. Elimination of need to import glass jars.	Hygiene.	Hygiene.

/a Firms 8 and 9 are included to illustrate the differences of scale.

/b The country's regions have been grouped into three classes according to their level of industrialization:

- (A) the central industrial area composed of the Metro Manila Area, Southern Tagalog and Central Luzon;  
(B) the industrializing regions of the Western Visayas, Central Visayas, Southern Mindanao and Northern Mindanao; and  
(C) the other nonindustrial regions.



SECTOR: TEXTILES (all figures in US\$)

	(10)	(11)	(12)	(13)	(14)	(15)	(16)	(17)
<b>I. Economic Data</b>								
(1) Location <u>A</u>	A	A	A	A	A	A	A	A
(2) Fixed plant investment	52,229,616	22,990,180	3,411,499	5,827,260	7,056,388	27,917,808	19,273,421	13,038,215
(3) Number of workers	1,211	497	478	2,758	580	988	3,591	2,731
(4) Sales	45,065,875	7,668,082	5,162,738	11,172,757	6,673,990	9,041,000	24,833,450	12,784,266
(5) Exports	-	-	-	733,835	76,741	334,521	1,175,173	830,977
(6) Value added	29,359,569	N.A.	2,388,049	5,302,806	2,610,863	4,972,550	7,709,868	N.A.
<b>II. Planned Expansion</b>								
(7) New investment	Yes	-	-	Not indicated	Yes	Yes	Not indicated	Has borrowed US\$0.5 million for mill expansion.
(8) Cost of (recent) borrowing	16%	16%	N.A.	N.A.	N.A.	7% (in French Francs)	16%	-
(9) Source of borrowing	DBP, IFC, various other financial institutions	USA, Japan, Germany, and DBP	IFP, American Express	Supplier's Credit	Machine Suppliers' Credit	Commercial Banks	DBP	-
<b>III. ROI Benefits</b>								
(10) Value of benefits	1,917,808	65,708	549,300	N.A.	271,274	N.A.	724,384 (since 1971)	1,211,811
<b>IV. Protection</b>								
(11) Domestic price/international price	1.5x	N.A.	N.A.	N.A.	N.A.	1.7	N.A.	N.A.
(12) Nominal tariff on sale of product	50% and 30% (year)	50% and 30% (year)	20%	70%	70%	70%	70%	100%
(13) Effective protection	400%	N.A.	28%	N.A.	248%	215%	313%	N.A.
<b>V. Ratios</b>								
(14) Investment cost per job (2=3) (US\$)	43,129	46,258	7,137	2,113	12,166	28,257	5,367	4,774
(15) Value added/investment (6=3) (%)	56%	N.A.	70%	47.5%	37.0%	180.0%	40.0%	N.A.
(16) Value added/sales (6=4) (%)	65%	N.A.	46.3%	91.0%	39.1%	55.0%	31.0%	N.A.
(17) Exports/sales (5=4) (%)	-	-	-	6.70%	1.80%	3.70%	0.50%	6.4%
(18) Share of imports in material inputs (%)	96%	N.A.	61%	55.0%	37.00%	49.0%	50.0%	N.A.
(19) ROI benefits/sales (10=4) (%)	4.3	8.5	10.6%	-	4.1%	-	2.9%	-
<b>VI. Comments</b>								
(20) Sales organization/management	Excellent	Well run and good use of technology	Excellent in every respect. Has foreign management assistance. Output per worker is roughly five times greater than the Philippine norm.	Good	Excellent management and use of technology (partly foreign).	Very well managed	A very well maintained old mill which is operating very efficiently. Sales organization has close links with principal users of cloth.	-
(21) Quality of product	Good, but expensive	Excellent	Excellent. Suitable for export. All yarns of the finest quality.	Reasonable	Excellent	Good to excellent	Fair, not as good as the Philippine norm.	-
(22) Plant layout	Modern plant, well laid out	Best modern practices (excluding efficient recovery of all wastes)	Ideal.	Good having regard to the type of machinery installed.	Very perfect	Very good considering the extreme diversification in this plant.	Good	-
(23) Equipment	Good	Excellent	Completely modern but with minor simplification in deference to the capital cost/labor cost situation.	Mostly obsolete but well maintained. There has been selective reequipment of a discriminating kind.	Excellent, high degree of specialization.	Modern	Much of it is old but in good condition.	-
(24) Improvements	"A textbook operation"	None	None.	Replacement of machinery particularly in spinning.	None	None	Note modern machinery justifiable throughout but nothing needed very soon.	-

/a See footnote /b in Page 1.





SECTOR: GARMENTS (all figures in US\$)

	(18)	(19)	(20)	(21)	(22)	(23)	(24) (Footwear)
<b>I. Economic Data</b>							
(1) Location <sup>/a</sup>	A	A	A	A	B	A	A
(2) Fixed plant investment	1,167,546	1,033,972	1,128,337	1,486,466	41,095	743,200	684,900
(3) Number of workers	818	370	354	428	96	450	280
(4) Sales	4,765,159	356,160	1,542,608	1,071,128	82,191	3,328,767	4,520,500
(5) Exports	4,765,159	356,160	1,542,608	867,613	41,095	1,664,383	4,520,600
(6) Value added	1,110,282	106,191	383,652	214,226	20,547 (approx.)	600,000	N.A.
<b>II. Planned Expansion</b>							
(7) New investment	N.A.	110,000	N.A.	Yes	N.A.	N.A.	N.A.
(8) Cost of (recent) borrowing	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.
(9) Source of borrowing	N.A.	N.A.	N.A.	Commercial banks	N.A.	Internal company funds	N.A.
<b>III. ROI Benefits</b>							
(10) Value of benefits	6,238	12,873	38,077	128,545	Not registered	15,000 (yearly)	N.A.
<b>IV. Protection <sup>/b</sup></b>							
(11) Domestic price/international price	-	-	-	-	-	-	-
(12) Nominal tariff on sale of product	-	-	-	-	-	-	-
(13) Effective protection	-	-	-	-	-	-	-
<b>V. Ratios</b>							
(14) Investment cost per job (2+3) (US\$)	1,427	2,797	3,199	3,473	428	1,652	2,446
(15) Value added/investment (6+2) (%)	95%	10%	34%	14%	50%	81%	N.A.
(16) Value added/sales (6+4) (%)	23.3%	29.8%	25.0%	20.0%	25.0%	20%	N.A.
(17) Exports/sales (5+4) (%)	100%	100%	100%	81%	50%	50%	100%
(18) Share of imports in material inputs (%)	14%	100%	5%	20%	40%	60%	60%
(19) ROI benefits/sales (10+4) (%)	0.1	3.6%	2.5%	12.0%	-	-	-
<b>VI. Comments</b>							
(20) Sales organization/management	This is a complex company having very good diversified management.			Good	Family firm, very well run.		Very well managed.
(21) Quality of product	Very good.			Satisfactory	Excellent high quality product accepted in overseas quality stores.		Exported product very good, domestic good.
(22) Plant layout	Present set-up satisfactory but being extended.			Rather too cramped for highest efficiency	Good	Satisfactory	Very good
(23) Equipment	Mostly modern and some old but all in very good condition.			Basic only, but probably good enough	Basic but satisfactory.		Good
(24) Improvements	More factory space for the different operations			None	Expanding size.		Machinery should be more specialized.

<sup>/a</sup> See footnote <sup>/b</sup> in Page 1.

<sup>/b</sup> All export garment and footwear manufacturers operate from either bonded warehouses, receive duty drawbacks or are exempt from raw material (yarn, fabric) tariff; therefore the FPP is zero.



SECTOR: FURNITURE  
(All values in US\$)

	(25)	(26)	(27)
<b>I. Economic Data</b>			
(1) Location <sup>a</sup>	A	B	B
(2) Fixed Plant Investment	US\$821,900	US\$54,800	US\$109,589
(3) Number of jobs	180	40	430
(4) Sales	US\$684,900	US\$164,300	US\$1,095,800
(5) Exports	US\$520,500	US\$684	US\$876,600
(6) Value Added	US\$273,900	N.A.	N.A.
<b>II. Planned Expansion</b>			
(7) New Investment	None	US\$21,000	N.A.
(8) Cost of (Recent) Borrowing	12% (for fixed investments)	15%	N.A.
(9) Source of Borrowing	DBP	IGLF	N.A.
<b>III. BOI Benefits</b>			
(10) Value of Benefits	N.A.	Not registered.	Obtains tax exemptions.
<b>IV. Protection</b>			
(11) Domestic Price/International Price	About 50% higher. Domestic market for "quality" furniture limited	About 50% higher.	N.A.
(12) Nominal Tariff on Sale of Product	Tariff 100% and virtually no imports	Tariff 100% and virtually no imports.	Tariff 100% and virtually no imports.
(13) Effective Protection	340%	-	N.A.
<b>V. Ratios</b>			
(14) Investment Cost Per Job (2+3) (US\$)	4,566	\$1,370	255
(15) Value Added/Investment (6+2) (%)	33%	N.A.	N.A.
(16) Value Added/Sales (6+4) (%)	40%	N.A.	N.A.
(17) Exports/Sales (5+4) (%)	76%	0.4%	80%
(18) Share of Imports in Material Inputs (%)	6%	Up to 50% depending on whether product upholstered or not.	5%
(19) BOI Benefits/Sales (10+4) (%)	N.A.	-	N.A.
<b>VI. Comments</b>			
(20) Sales Organization/Management	Good management. Has own marketing, but it is not satisfactory.	Good management. Strong personal sales and leadership.	Individual entrepreneurship. Good sales, exports through containers.
(21) Quality of Product	Excellent, measures up to highest international standards.	Excellent, similar to those sold in international markets.	Good
(22) Plant Layout	Good	Fair	Poor - but mainly because plant is an overgrown cottage industry.
(23) Equipment	Excellent equipment. Company might have best equipment in the Philippines for their type of product.	Good but simple. Equipment is utilized at a maximum.	Virtually nonexistent.
(24) Improvements	-	Seasoning of wood a problem.	1. Rattan, the firm's basic raw material, getting scarcer and more expensive. 2. Shortage of skilled workers.

<sup>a</sup> See footnote 6 in Page 1.



SECTOR: BASIC METALS  
(All figures in US\$)

	(28)	(29)	(30)	(31)	(32)	(33)	(34)
<b>I. Economic Data</b>							
(1) Location /a	A	A + B	C	B	A	A	A
(2) Fixed Plant Investment	US\$5,205,400	US\$128,082,100	US\$219,178,000	US\$1,643,800	US\$12,602,700	N.A.	US\$205,400 (depreciated value)
(3) Number of jobs	650	3,300	750	90	300	400	85
(4) Sales	US\$5,890,400	US\$150,684,900	US\$109,589,000	US\$6,849,300	US\$15,068,400 (planned for 1979)	N.A.	US\$8,219,100
(5) Exports	None	US\$7,534,200	US\$109,589,000	-	US\$3,917,700 (planned for 1979)	None now; plan to increase capacity to permit some exports.	None; "too complicated"; slow government payments and then only as tax credit.
(6) Value Added	US\$3,279,402	US\$51,232,840	US\$39,452,740	US\$1,808,180	US\$4,789,026	N.A.	US\$1,643,200
<b>II. Planned Expansion</b>							
(7) New Investment	Expand 40 to 50% to 35,000 tons; cost of planned expansion US\$1.2 million.	Cold mill expansion.	N.A.	None	Expansion of melting capacity in the early 1980s.	-	Wants to install electric furnace shop but no government permission yet. Will add warehouse and shipping building only due to governmental restrictions.
(8) Cost of (Percent) Borrowing	18% for short term and 12-1/2% for long term.	14%	N.A.	-	16% to 20%	Short-term loans 16% to 21%.	16% (and 21% from private sources)
(9) Source of Borrowing	PRCP and ORP.	Philippine National Bank.	Foreign steel company.	-	Commercial banks.	Local banks.	Banks and private sources.
<b>III. BOI Benefits</b>							
(10) Value of Benefits	1. Raw material free of tax 1st year. 2. Initial capital tax reduction.	Government-owned	N.A.	N.A.	Still to be agreed on.	N.A.	None.
<b>IV. Protection</b>							
(11) Domestic Price/International Price	115% (wire rod)	140% (cold rolled sheet)	100%	160%	120%	128%	123%
(12) Nominal Tariff on Sale of Product	30% (on rod, ball and grain)	30% (cold rolled sheet)	None	50%	30% on main product, 10% on others	50%	50%
(13) Effective Protection (approximate)	25%	100% (cold rolled sheet)	None	150%	N.A.	Domestic coil: -23% Imported coil: 92% (negative if no tax)	103%
<b>V. Ratios</b>							
(14) Investment Cost Per Job (2+3) (US\$)	8,008	38,183	292,237	18,264	42,000	N.A.	2,416
(15) Value Added/Investment (6+2) (%)	63%	40%	18%	110% (per year)	38%	N.A.	800% per year (due to very low present valuation of assets)
(16) Value Added/Sales (6+4) (%)	55.7%	34%	36%	26.4%	31.8%	N.A.	20%
(17) Exports/Sales (5+4) (%)	-	5%	100%	-	26%	N.A.	N.A.
(18) Share of Imported Material Inputs (%)	27%	All slabs for hot rolled coil. Some hot rolled coil for cold reduction.	8%	Zinc 100%	50% of scrap	60% (for 1979)	100% of billets
(19) BOI Benefits/Sales (10+4) (%)	N.A.	-	N.A.	N.A.	N.A.	N.A.	-
<b>VI. Comments</b>							
(20) Sales Organization/Management	Good	Well experienced, but possibly could exert more effort on maintenance, productivity, quality and control of costs. Good on sales.	Good. Foreign ownership and management.	Run by the government. Most sales in the region.	Good. Foreign assistance in management and sales is available if needed.	Could not evaluate.	Good, family-owned business. Uses incentive wage system for production workers. Favorable overall impression.
(21) Quality of Product	OK by visual check; otherwise not known.	Moderate quality, problems on hot rolled products. Serious quality problems on black plate for tinning. (Aggravated by relocation of electrolytic tin line.)	Good.	Visually good but cannot comment on deformation and adherence quality, etc.	OK by visual check; otherwise not known.	Facilities should permit good quality on over half of the output tonnage, but actual quality not known.	Good by visual inspection; product is fairly simple and should be satisfactory to end user.
(22) Plant Layout	Unusual - not ideal, due to plant growth over many years without long-range plans.	Layout for mills OK. Layout for expansion being reviewed.	Good.	Good, straight flow.	Modern and efficient.	Good	Fair - old methods used.
(23) Equipment	Mixture of old and new - 25 years old to almost new equipment.	Quality control of hot rolled coil is a moderate problem due to limitations of steel mill. Present tandem mill not ideally suited to existing product mix.	Modern, good facilities.	Satisfactory, but differs somewhat from foreign practices due to lack of oxidizing & de-oxidizing furnace at entry end.	Modern and efficient.	One fairly modern (10 years old) ferrostan line and an older halogen line.	Built in the 1960s for limited capacity.
(24) Improvements	(a) Major problems: (1) High turnover in skilled labor, lost to Middle East. (2) Slow collection on payments - 20% one or two months late in paying. (b) Improvements: (1) Grinding ball machinery needed soon. (2) Quality and yield improvements. (3) Fuel savings.	1. Cold mill expansion to 800,000-800,000 ton/yr. 2. Cold mill quality improvement. 3. Tin mill expansion.	Plant operating at 60% of capacity due to depressed world steel markets.	No apparent improvements. Main problem is in availability of cold rolled coils.	Melting capacity of about 53,000 ton/yr will limit short-term growth. The mill, in general, will have to expand capacity in early 1980s.	1. Problems of price control on 2/3 of output. 2. Serious problems with quality of input raw material, aggravated by relocation of one of its tin lines, i.e., increase in transportation costs, poor coordination and timeliness. 3. Maintenance is a serious problem. 4. Low capacity utilization - newest Ferrostan line not being fully utilized. Very low yields - high cost on some product. 5. Some part of improvement in flood control system desired - mill was shut down for several months in 1979 due to flooding.	1. Main problem is lack of skilled employees as many leave for work in the Middle East at \$40/day (versus \$4 to \$6/day in the Philippines). 2. Low capacity utilization: about 60% in 1978.

/a See footnote /b in page 1.



## SECTOR: MECHANICAL: NONELECTRICAL MACHINERY AND ELECTRICAL MACHINERY /a

	(35)	(36)	(37)	Nonelectrical Machinery		Electrical Machinery		(43)	(44)	
				(38)	(39)	(40)	(41)	(42)		
<b>I. Economic Data</b>										
(1) Location /b	A	B	A	A	A	A	A	A	A	A
(2) Fixed plant investment	2,465,700	68,493	79,654	10,686,089	17,030,549	688,814	28,285,010	4,274,798	7,808,200	10,684,900
(3) Number of workers	600	19	140	255	8,260	80	2,000	2,400	3,500	4,700
(4) Sales	4,109,500	136,900	472,984	2,671,200	76,712,300	453,691	102,786,316	26,204,892	8,904,100	13,698,600
(5) Exports	4,109,500	-	33,110	186,900	37,903,500	-	-	-	8,904,100	13,698,600
(6) Value added	1,027,375	N.A.	165,544	1,602,000	46,027,300	158,792	20,557,263	13,102,446	3,116,400	5,479,400
<b>II. Planned Expansion</b>										
(7) New investment	N.A.	Planned expansion of US\$27,000	Loans outstanding of US\$54,795	Planned expansion of US\$342,400	New expansion planned	Due to space limitation expansion not possible	-	Planning to replace old equipment with modern	None	None
(8) Cost of (recent) borrowing	N.A.	14%	19%	16%	16 to 18%	20%	16 to 18%	15 to 20%	16%	16%
(9) Source of borrowing	N.A.	DBP	Commercial bank	Commercial bank	Commercial bank	Commercial bank and Philippine Development Bank	Commercial bank	Commercial bank	Commercial banks	PDCP
<b>III. BOI Benefits</b>										
(10) Value of benefits	N.A.	-	Not registered with BOI	N.A.	4,858,219 (for special machinery: pumps & steel casting)	Not registered with BOI	BOI registered under R.A.5186 as a pioneering industry	Not registered with BOI (only certified)	None	3,195,750
<b>IV. Protection</b>										
(11) Domestic price/international price	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	N.A.	No domestic market in the Philippines	No domestic market in the Philippines
(12) Nominal tariff on sale of product	N.A.	N.A.	30%	35 to 55%	35 to 55%	30%	100%	100%	10%	10%
(13) Effective protection	N.A.	N.A.	39%	38 to 58%	38 to 58%	11%	380%	170%	-	-
<b>V. Ratios</b>										
(14) Investment cost per job (2+3) (US\$)	4,110	3,605	569	41,906	2,062	8,610	14,143	1,781	2,231	2,273
(15) Value added/investment (6+2) (%)	42%	N.A.	208%	260%	270%	20%	73%	307%	40%	51%
(16) Value added/sales (6+4) (%)	25%	N.A.	35%	60%	60%	35%	19%	50%	35%	40%
(16) Exports/sales (5+4) (%)	100%	-	7%	7%	4%	-	-	-	100%	100%
(17) Share of imported material inputs (%)	35%	Up to 50%	95%	25%	38%	95%	75%	60%	30%	35%
(18) BOI benefits/sales (10+4) (%)	N.A.	-	-	-	13%	-	N.A.	-	-	23%
(19) BOI benefits/export sales (10+5) (%)	N.A.	-	-	-	11%	-	N.A.	-	-	23%

/a Comments found in Annex 6-1.

/b See footnote /b in Page 1.

Source: Data collected by Mission during plant visits.





Market Access

1. Quantitative restrictions with respect to exports of Philippine garments currently exist in Australia (global tariff quota) and Canada, US and the EEC (bilateral quotas). Together, these countries made up 90% of the Philippine export market for garments in 1977. The bilateral restraint arrangements contain specific base levels and growth rates for separate categories of garment exports and cover time periods from one to five years.
2. Exports of Philippine footwear are currently subject to import quotas in Canada and Japan. However, it is feared that exports of footwear, like garments, will soon be subjected to "orderly marketing arrangements" which will limit future growth. Certain electronic items are already subject to such arrangements but so far Philippine exports have not been affected. Other nontraditional exports subject to protectionist measures are handicrafts and ceramic sanitary wares (under the Australian GSP), various processed food items such as fruit juices (France, Germany, UK), and woodproducts, i.e., plywood (Australia, New Zealand) and utensils of wood (New Zealand).
3. In garment exports, considerable opportunity exists, however, for a shift in production from quota-restricted to quota-free categories. For instance, under the RP-EEC Textile Agreement (which is generally considered one of the more "restrictive" of the Philippines bilateral quota arrangements) only eight /1 of the 114 textile categories are subject to quotas or "restraint"; the rest, although subject to "trigger levels," can currently enter the Common Market without any limits./2 Some of the quotas,/3 however,

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/1 T-shirts, pullovers, blouses, gloves, overcoats, nightwear, dresses and brassieres.

/2 "Trigger levels" establish a maximum percentage of EEC imports of a particular commodity to be supplied by one particular developing country. If the ceiling is exceeded, bilateral negotiations take place at which a quota is negotiated.

/3 EEC quotas are set for the Community as a whole and also for the member countries individually. Considerable expansion is still possible in those items where some specific country quotas have been reached but the overall Community quota has not yet been exhausted.

are not even fully utilized. Although the RP-US Textile Agreement imposes restrictions on all categories of garments, the percentage annual increase in quotas is relatively generous compared with what other Asian nations have recently secured. Again, some quotas are at present underutilized or not utilized at all.

4. Some market diversification has already been taking place during the last few years. Trade statistics indicate that Philippine garments are now exported to some 60 countries apart from the major buyers, the US and Germany. In 1977, shipments to the US were 60% of the total compared to 80% exported three years ago. Nylon slips and chemises, for example, have been sold in substantial quantities not only to the US and Europe but also to countries such as Kuwait and Singapore.

Industrial Statistics in the Philippines

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Note: This Annex was prepared at the request of the Minister of Industry by Kerry B. Busteed, Consultant. It was discussed with Philippine officials in February 1979 and subsequently amended.

## 1 INTRODUCTION

### 1.1 GENERAL BACKGROUND

As part of the Industrial Sector Mission by the World Bank planned for February 1979, the Philippine Government requested technical assistance in reviewing the content and adequacy of the industrial statistics in the Philippines. The background to this request for assistance related to a belief by the Philippines Government that the industrial statistics currently being produced by the different statistical agencies were incomplete, conflicting, out-of-date and possibly misleading. The particular areas of concern were measures of value added, production and employment in the industrial sector.

### 1.2 SCOPE OF INDUSTRIAL STATISTICS

Industrial statistics are usually defined to cover the following sectors:-

Mining & Quarrying

Manufacturing

Utilities (Electricity Gas, Water Supply and Sewerage)

Construction

For the purposes of this study, statistics on all the above sectors will be covered but greater emphasis will be placed on statistics relating to the Manufacturing sectors. This is the most important sector both in relation to contribution to value added and employment, as well as being the subject of current Government economic policy development.

### 1.3 METHODOLOGY EMPLOYED IN STUDY

Detailed discussions were held with the following agencies:

National Economic and Development Authority (NEDA)

National Census & Statistics Office (NCSO)

Central Bank of Philippines (CB)  
Ministry of Industry  
Ministry of Labour  
Bureau of Internal Revenue

The views in this report are based on detailed discussions with each agency and a closer examination of all the documentation provided.

## 2 THE STATISTICAL SYSTEM IN THE PHILIPPINES

### 2.1 GENERAL

The Philippine Statistical System includes all government departments, bureaus, offices, agencies and instrumentalities of the national and local governments and all government owned or controlled corporations and/or smaller units within them that are engaged in statistical activities either as their major functions or as necessary parts of their administrative and the regulatory functions.

Statistical activities by government units or personnel include all functions associated with any one or a combination of the following activities:

(a) statistical collection, (b) data processing, (c) interpretation and analysis of results, (d) dissemination and publication of information, (e) statistical research activities, (f) statistical training, and (g) other activities involving the application of statistical methods and techniques.

The System is composed of about a dozen agencies that are major producers of primary statistics and more than a hundred other agencies with statistical units.

2.2 NEDA

"It is declared policy of the Government that a decentralized but well-integrated system of government statistical activities is not only more economical to operate but also more responsive to the various needs of the government. It is further recognized that there is need to strengthen the coordination of decentralized statistical operations."

It remains a decentralized system with a much stronger central coordinating body lodged with the National Economic and Development Authority (NEDA).

Among the major functions, power, duties and responsibilities of the NEDA is to "coordinate statistical activities of all government agencies, formulate statistical standards and methodology, and prescribe their use by government agencies; and prepare the national income accounts." To facilitate the performance of this function, the Statistical Advisory Board (SAB) is attached to it. This Board advises the NEDA on the development of a unified system of statistical services and the formulation of basic policies for government statistical operations.

For the implementation of its statistical function, the NEDA established its Statistical Coordination Office (SCO) as the central statistical coordinating body to promote and maintain an efficient statistical system to meet the requirements of the government, especially of NEDA.

Integration of the system for government statistical operations and coordination of statistical activities was further enhanced in March 1974 by reconstituting the biggest statistical operating agency, the Bureau of the Census and Statistics (BCS) into the National Census and Statistics Office (NCSO) under the administrative supervision of NEDA.

Overall statistical coordination, therefore, is the primary responsibility of the NEDA with its Statistical Advisory Board and its Statistical Coordination Office as the central coordinating body. All agencies of the government which engaged in major statistical activities fall within the coordination function of the NEDA. A number of other government agencies in the exercise of their administrative and/or regulatory functions also collect, compile and analyse statistical data principally for their own use. In addition, staff units of

reorganized departments, eg, Research and Statistics Division of Planning Services, also compile, analyze and integrate statistical data, including operational statistics for their departments. The statistical activities of all these government agencies are encompassed within the overall coordination responsibilities of the NEDA. Of course, the coordination of statistical activities within the department or agency is done by its organizational subdivision that engages in substantial statistical operations, or the agency's research and/or statistics unit responsible for the production of statistics.

### 2.3 THE STATISTICAL ADVISORY BOARD

Also provided for is a Statistical Advisory Board as one of three standing committees attached to NEDA to facilitate the performance of its functions. The functions, powers, duties and responsibilities of the Statistical Advisory Board include the following:

- (1) Advise the National Economic and Development Authority in the development of a unified system of statistical services and in the formulation of basic policies for government statistical operations;
- (2) Review the statistical aspects of the draft of the Annual Economic Report;
- (3) Formulate and develop policies and programs that will insure an adequate supply of technically and professionally trained statisticians; and
- (4) Perform such other activities necessary to carry out these responsibilities.

A Secretariat serves as the technical and administrative secretariat of the Statistical Advisory Board and provides assistance in the form of secretariat services to other inter-agency committees administered by the Statistical Coordination Office.

#### 2.4 STATISTICAL COORDINATION OFFICE, NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY

The Statistical Coordination Office (SCO) is one of the four technical staff offices of the NEDA Board and carry out day-to-day operations of NEDA. The functions and responsibilities of this office include the following:

Coordinate the statistical activities of all government agencies to prevent duplication of functions and activities; promote and maintain an efficient statistical system to meet the requirements of the government, especially of the NEDA; develop and maintain systems of economic accounts for the country; and serve as liaison among entities and organizations, and among private, government and international agencies on matters relating to statistics.

The SCO has a Statistical Programs and Standards Staff (SPSS) and a National Accounts Staff (NAS) with corresponding principal functions as follows:

##### (a) Functions of the Statistical Programs and Standards Staff (SPSS)

Develop and apply a comprehensive program of statistical production and services; and develop and prescribe statistical standards, classification systems, techniques, and procedures for adoption by other statistical agencies.

##### (b) Functions of the National Accounts Staff (NAS)

Develop and maintain a system of economic accounts in a form useful for economic analysis, development programming, and policy formulation; and prepare periodic statistical reports.

Recently the Statistical Development Committee has been set up by the Government with the Minister for Planning as Chairman and Ministers as members but at this stage it has met only once.



## 2.5 CREATION OF INTER-AGENCY COMMITTEES

The creation of subject-matter inter-agency committees is an innovation by NEDA to assist its Statistical Coordination Office in its task of developing the decentralized statistical activities into a well-integrated system. The committees have one common general objective which is to rationalize and integrate the production of statistics in all its aspects. Each committee serves as a forum for discussion and resolution of common statistical problems by technical representatives of the government agencies mostly involved with the particular subject matter in their field of statistics. The Committees that have some involvement with industrial Statistics are:-

Inter-Agency Committee on Survey Design - created to review, assess and evaluate the survey designs of government agencies engaged in censuses and sample surveys; to provide expert advice in the development, revision and preparation of survey designs of government agencies with the end in view of making such designs more responsive to the data needs of planning and policy formulation; and to study and recommend ways and measures for attaining maximum efficiency and economy in survey operations of government agencies.

Inter-Agency Committee on Industrial Statistics - organized mainly to integrate and improve the production of industrial statistics in all its aspects including collection, processing, analyses and dissemination.

Inter-Agency Committee on Monetary, Banking and Financial Statistics - organized to assess and evaluate existing government statistics on money, banking and finance; to determine the needs and uses for such statistics; to evaluate the system of collecting and reporting of these data by government agencies and the techniques and methodology used in producing them and to develop an efficient workable scheme for the allocation of agency responsibilities in the production of monetary, banking and financial statistics.

Inter Agency Committee on Labor and Employment Statistics - created specifically to coordinate the efforts toward the improvement of labor and employment statistics in all its aspects including collection, processing, analyses and dissemination.

### 3 AGENCIES INVOLVED IN INDUSTRIAL STATISTICS

#### 3.1 NATIONAL ECONOMIC AND DEVELOPMENT AUTHORITY (NEDA)

The role and function of NEDA is spelled out in detail in 2.2 above.

#### 3.2 NATIONAL CENSUS AND STATISTICS OFFICE

The largest major statistical operating agency in the Philippine government is the Bureau of the Census and Statistics. The Bureau was created under the executive direction and supervision of the President of the Philippines by Commonwealth Act No 591 on August 19, 1940 "to consolidate the statistical activities of the government."

1974 saw essential changes in the Bureau of the Census and Statistics. It underwent a change of identity with its transfer from the Department of Trade (formerly Department of Commerce and Industry) to the National Economic and Development Authority and is now known as the National Census and Statistics Office (NCSO).

The general functions of the NCSO is that it shall assist the Statistical Advisory Board and the National Economic and Development Authority in the formulation of a continuing comprehensive statistical program for the government and that it shall provide technical assistance and support to projects of other statistical agencies and institutions particularly those concerned with the improvement of economic statistics. In addition, it shall as usual provide service to the statistical needs of other government offices as well as those of the private sector. The specific functions of the National Census and Statistics Office include the following:

- (a) Prepare and conducts periodic censuses on population, housing, agriculture, fisheries, business, industry and other sectors of the economy.
- (b) Prepares and conducts statistical surveys, researches and studies on,

among others, all aspects of socio-economic conditions including agricultural, industrial, cultural and social, educational, demographic, social welfare, health, labour and employment, and price situations in the country for the use of the government and the public and issues such rules and regulations on the scope, coverage and standards as are necessary in the proper conduct of the same to insure a well-integrated, consolidated and coordinated national statistical system.

- (c) Collects and processes for statistical purposes data and records from the different departments, bureaus, offices and agencies for the government.
- (d) Conducts researches and studies on various aspects of the economy and maintains highly-trained technical men.
- (e) Trains theoretical, as well as applied statisticians in various fields of specialization and investigations.
- (f) Develops a well-integrated, consolidated and coordinated program of up-to-date statistical collection, production, analysis and publication for a more efficient statistical operation.
- (g) Develops a national program of population registration and makes and publishes from time to time estimates and projections of the population and its characteristics; and
- (h) Maintains an efficient system of civil registration pursuant to Act 3753 on the establishment of the Civil Registry.

The NCSO is headed by an Executive Director who is assisted by an Assistant Executive Director. Both are appointed by the President of the Philippines upon the recommendation of the Director General of NEDA. All other personnel are appointed by the Executive Director and are under his supervision and control.

For many years after it started its operation in 1941, the BCS (now NCSO) confined its activities in the compilation and production of secondary statistics such as foreign trade statistics, social and demographic statistics. However, now it is undertaking economic surveys which are conducted monthly, quarterly, semi-annually and annually to be able to supply adequate data necessary in the formulation of national development plans and programs. These surveys which cover almost all economic fields are being conducted for the purpose of collecting and preparing current and comprehensive statistics on industrial activities of the country such as manufacturing, mining, quarrying, electricity, gas and water and constructions; providing quantitative indices on employment, payroll and gross receipts of establishments engaged in service trades; providing up-to-date information on the current situation and trends in the level of economic activity; providing semi-annual primary data in local government services which measure the financial and social status of this sector of the government; providing statistics on the magnitude and types of construction projects of local governments as a measure of the contribution of public service and social conditions of the country; providing current data on the economic characteristics of wholesale and retail trade establishments; putting out quarterly indices of gross sales, gross margin, employment and payrolls; constructing monthly CPI for low, middle and all income groups for all provinces in the country and CPI for high income households in Manila and suburbs; providing statistical users, particularly the Government with current data on transportation, storage and warehousing; and gathering, compiling, analyzing and preparing for publication up-to-date statistical data pertaining to the labor force of the country and other demographic and socio-economic data. The NCSO is also conducting periodically complete inventories of persons, houses, farms and economic establishments.

### 3.3 CENTRAL BANK OF THE PHILIPPINES, DEPARTMENT OF ECONOMIC RESEARCH

Another major statistical agency in the Philippine statistical system, the Department of Economic Research, was created in 1949 to serve as the statistical arm of the Central Bank of the Philippines and the Monetary Board. As such, the Department is vested with the responsibilities of preparing data and conducting economic research for the guidance and use of the Monetary Board in the formulation and implementation of its monetary and fiscal policies, and in

compliance with the periodic data requirements of the Central Bank Governor, Financial Policy Committee, NEDA, international economic organizations and other interested parties.

The statistical activities of the Department of Economic Research are divided into three principal groups, namely the Financial Statistics Group, Balance of Payments Statistics Group, and the Price, Production and Employment Statistics Group. The Financial Statistics Group deals with data on banks, money supply, loans and discounts, interest rates and yields, cash operations, tax and customs receipts of the national government, receipts from foreign aid and grants, and public debt. The Balance of Payments Statistics Group deals with data on foreign exchange rates, external trade and balance of payments while the Price, Production and Employment Statistic Group is concerned with statistics on prices, employment, wages and production.

The primary statistics produced by the Department include monetary and financial statistics, price statistics, production, employment, wages, foreign exchange transactions and public finance statistics. Prior to 1973 it was also compiling and publishing current data on foreign trade. However, an agreement was reached between CB and the National Census and Statistics Office to have the latter as the only agency to collect primary data on foreign trade. Starting in 1973, therefore, the Central Bank of the Philippines had stopped compiling foreign trade statistics although they still publish it from data devised by NCSO.

#### 3.4 MINISTRY OF LABOR, LABOR STATISTICS SERVICE

The Labor Statistics Service of the Ministry of Labor is charged with the responsibility of establishing and maintaining, on a continuing basis, "a statistical reporting system for the collection, compilation, analysis, evaluation and dissemination of basic labor information". It also supervises the implementation of the Ministry program on research and statistics "in order to achieve maximum coordination in the conduct of special studies, the release of statistical data and the preparation of reports". As such, it serves as the center of coordination, evaluation and control of all research and statistical activities of the different operational units under the Ministry of Labor.

The major statistical activities of the Service and the associated Bureaus and the Wage Commission consist of (a) collecting, processing and publication of statistics on the activities of the Ministry of Labour; (b) collecting, processing and publication of work stoppage and industrial accident statistics; (c) compilation and publication of court decisions affecting labor management relations; (d) analysis of collective bargaining arrangements; (e) conducting surveys on wages and living conditions in specific industries for wages board purposes; and (f) compilation and publication of a glossary of operational terms for uniformity in concepts and terminology used in the collection, processing and presentation of labor statistics.

### 3.5 MINISTRY OF INDUSTRY

This ministry is a relatively new one, being created in 1974 for the Department of Trade. It is therefore new to the statistical collection fields and its statistical needs are not yet finalised. It is divided into two separate Divisions; one for Large Industries and one for Small and Medium Industries. Its role is to assist in the industrial development of the Philippines. The Large Industries Division has developed important links with individual industry associations and is in the process of determining base line data from a number of sources on individual industry sectors in order to monitor these sectors. They also have close links with the Board of Investment and share their data.

## 4 INDUSTRIAL STATISTICS PRODUCED BY THESE AGENCIES

### 4.1 NEDA

#### 4.1.1 National Accounts

The National Accounts Staff of NEDA are responsible for producing the National Accounts.

##### 4.1.1.1 Industrial Stats in National Accounts

The following industrial statistics are covered in the accounts:-

- (i) Gross Domestic Product (level, percentage distribution and growth rates) for industrial sectors at current and constant prices for

each semester.

- (ii) Gross Value Added (level, percentage distribution and growth rates) for industrial sectors at current and constant prices for each semester.

#### 4.1.1.2 Timetable

These data are available according to the following timetable:-

- (i) Advanced estimates for each year are available in 3rd week of December of that year for the Presidential Statement. It is generally based on data available for the first 6 months of the year and estimates for the 2nd 6 months calculated using regression analysis.
- (ii) Preliminary estimates for a year are available in April/May of the next year. Again these are based on both available data and estimates for later periods in the year.
- (iii) The first semester estimate (Jan-June period) is available in September of that year. Again a significant amount of estimation is required to produce these estimates.

#### 4.1.1.3 Sources & Methods

The Economic Census of Establishments is used as a base for the National Accounts as it provides the structure of industries. Constant Value added ratios are used in the intercensal period although these are adjusted as the results of the Annual Survey of Establishments become available. The basic data sources for indicators of gross output by sector are, the NCSO's Monthly production index, the interim results of the Integrated Quarterly Survey of Establishments as well as the CB index of production.

#### 4.1.1.4 Timing of Sources

The essential needs of the National Accounts Staff are data from the Integrated Quarterly Survey of Establishments some 6 weeks after the end of the period

with a reasonable level (say 70-80%) of response. Currently they are receiving preliminary results approximately 10 weeks after the end of the period with only a 40-50% response level.

#### 4.2 N.C.S.O.

##### 4.2.1. ECONOMIC CENSUS OF ESTABLISHMENTS

###### 4.2.1.1 Scope

The economic census of establishments run by the N.C.S.O. covers the following sectors:-

- Agriculture
- Fishing
- Logging and Forestry
- Mining and Quarrying
- Manufacturing
- Electricity, Gas & Water
- Construction
- Wholesale & Retail Trade
- Financial Services
- Business Services
- Transportation
- Personal & Community Services

These are covered by means of 6 different questionnaires, the one for the industrial sector covers:-

- Mining
- Manufacturing & Electricity
- Gas & Water
- Construction

###### 4.2.1.2 Listing Source

Prior to an Economic Census, field staff employed by the N.C.S.O. (some are locally recruited for the job while others are permanent staff of the regional offices), prepare a complete listing of all establishments (and those households



with economic activity carried out at the households. This listing provides:-

- (i) name and address of establishment
- (ii) whether establishment or household
- (iii) type of economic organisation
- (iv) type of legal organisation
- (v) Average Monthly Sales/Revenue
- (vi) 5 digit industry code according to PSIC
- (vii) Average total engaged
- (viii) Description of Activity & Industry

This listing provides the despatch list for the census as well as providing a framework for sample selection of small establishments. It is also supplemented from other sources such as:-

- telephone directory
- Board of Transport lists
- Contractors Association lists, etc.

#### 4.2.1.3 Sample Design & Data Content

For the industrial sector all establishments with 10 or more employees are completely enumerated and for those with less than 10, a 10% simple random sample is taken. For the main industrial sector the cut-off for complete enumeration is Average monthly sales/revenue of 50,000 pecos.

The data content of the questionnaires is quite extensive:- ie

- (i) Establishment Description
- (ii) Employment, Compensation & Manhours
- (iii) Costs
- (iv) Receipts
- (v) Electricity & Power
- (vi) Indirect Taxes & Subsidies
- (vii) Real & Financial Assets
- (viii) Total Liabilities, Net Worth & Capital Accounts.

#### 4.2.1.4 Timing

An economic census is run every 3 years, the last in relation to 1975 and the next in relation to the 1978 year. In the year of an economic census, the annual survey of establishments is not conducted.

#### 4.2.1.5 Despatch & Response

Questionnaires are delivered personally by N.C.S.O. regional offices in April of the year after the reference year (ie April 1979 for the 1978 Economic Census). This is due to the fact that Companies are only required to Send their 1978 calander year tax return to the Bureau of Internal Revenue (BIR) in April 1979. The questionnaires are then collected by means of personal visits, mail follow-up and telephone follow-up action. Response rates achieved were 50% after 6 months and 75-80% after approximately 9 months.

#### 4.2.1.6 Processing

The 1975 census was mainly processed in Manila with a very cursory edit being performed in the field. The clerical processing in Manila took some 12 months compared with the planned 6 months due to the poor quality of the responses and the amount of time taken to query incorrect responses back to the establishments. Once the questionnaires had been checked they were sent progressively to be punched for computer processing from the 1st half of 1977.

The computer processing system provided for consistency and completeness checks. 50% of all records failed on the 1st run and 2-3 iterations per record were required to clear the record. This was due to key-punching errors, errors not picked up in clerical processing and some tolerance limits, being too strict. It has taken over a year to computer process the census.

#### 4.2.1.7 Tabulation & Publication

Final tabulations have been produced for some sectors but are currently under review by the Subject-Matter divisions. This checking will still take some

time then the errors detected in the data will need to be corrected, final tabulations rerun, these data confidentialised and then prepared for offset printing. It is therefore unlikely that results from the 1975 Economic Census will become available until the 1st half of 1979.

#### 4.2.1.8 Plans for 1978 Economic Census

The 1978 questionnaires have not yet been finalised and printed but work is under way on this now. It is planned that for 1978 manual processing will be done by field staff in the regional offices and the Manila office will cover Metro Manila as well as reviewing questionnaires for all other regions. Advanced manual tabulations will be carried out in the field and so it is expected that preliminary results showing broad aggregates at provincial and regional level will be available before the end of 1979. At this stage it is planned to conduct the 1978 Annual Survey of Establishments as part of the 1978 Economic Census rather than suspend it as is the usual practice.

#### 4.2.2 ANNUAL SURVEY OF ESTABLISHMENTS (ASE)

##### 4.2.2.1 Listing & Scope

The listing source and scope of the annual survey of establishments is identical to that of the Economic Census. That is, the 1977 Annual Survey of Establishments uses the 1975 listing of establishments completed for the 1975 Economic Census, updated from the advices of the regional offices for new births and deaths.

##### 4.2.2.2 Sample Design

The ASE is a stratified simple random sample based on a stratification of Region x Industry (3-digit) x size. Size being measured for the industrial sectors by employment and average monthly sales for the non-industrial sectors. The sampling fractions vary amongst size classes within each industry group. In general, large establishments are heavily sampled relative to small establishments. The sample size for the ASE is 23,000 (approx) out of a population of some 500,000 establishments. For the industrial sectors the sizes are:-

Manufacturing	5931 sampled establishments
Mining	644 sampled establishments
Electricity, Gas and Water	228 sampled establishments
Construction	808 sampled establishments

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7611

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#### 4.2.2.3 Data Content

The questionnaire for the ASE is similar to that of the Economic Census containing the following sections:-

- (i) Establishment Description
- (ii) Employment, Compensation and Man-Hours
- (iii) Receipts
- (iv) Costs
- (v) Electricity & Subsidiaries
- (vi) Real & Financial Assets
- (vii) Liabilities, Net Worth & Capital Accounts

#### 4.2.2.4 Timing, Despatch & Response

The ASE has been conducted annual for some years now and the questionnaires are generally despatched mid to late January. However for 1977 because the printing of these questionnaires was delayed some 2 months the despatch and hence the rest of the timetable was put back 2 months. As with the E.C. response is not very good and after 10 months 70-80% of reports are received.

#### 4.2.2.5 Processing

The questionnaires are manually processed in the provinces then sent for checking and ADP processing to Manila. The ADP processing system is similar to that of the E.C. due to the complexity of the questionnaire. The 1976 ASE is still being processed at present and results for publication are not expected until early 1979. However for the 1977 ASE manual tabulations have been carried out based on approximately 60% response and some very preliminary results have been released for 9 of the 26 3-digit industry groups. They expect the ADP processing of the 1977 ASE to be quicker than 1976 as there were no changes to questionnaire design between 1976 and 1977. Their objective is to produce results one year after the end of the reference period but this has not yet been achieved. At this stage the 1974 ASE is the last published report.

#### 4.2.3 INTEGRATED QUARTERLY SURVEY OF ESTABLISHMENTS (IQSE)

The IQSE is an integrated statistical collection involving the following statistical agencies:- NCSO, NEDA, CB, MI, and ML. As it is one of the most important source of individual statistics for economic management purposes I will discuss it separately and in detail in Section 5 of this report.

#### 4.2.4 INTEGRATED SURVEY OF HOUSEHOLDS (IQSH/H)

##### 4.2.4.1 Background

The ISH/H provides data on employment rates in the industrial sector. It provides a time series six monthly (ie semesteral) from 1956 to 1970, and then quarterly up to date.

##### 4.2.4.2 Collection Arrangements

Since the 3rd quarter 1976 the NCSO and the Bureau of Agricultural Economics (BAECON) have combined to run this survey. Up till then the 2 agencies were collecting similar data separately. For the 1st and 3rd quarters of the year this joint arrangement is in effect while for the 2nd and 4th quarters the NCSO conducts the survey itself. The size of the sample for the joint collection is approximately 30,000, while the NCSO only collection is some 15,000 households. Clearly this creates some problems in trying to compare quarter to quarter movements in the time series.

##### 4.2.4.3 Results

The objective of the collection is to produce results some 3 months after the reference period - an objective that is good but has yet to be achieved. Some preliminary results showing very broad aggregates only have been released. The 1st Quarter 1977 and 1978 on September 11, 1978 and 3rd Quarter 1976 and 1977 on August 11, 1978. Detailed results, including the employment rates for the industrial sector for each region are unlikely to be available until the middle of 1979.

#### 4.2.4.4 Break in Series

In November 1976 a major definitional change occurred in this series. Up till then the Labour Force definition was based on age 10 years and over with a reference period for employment of 1 week. This has now been changed to a reference period of a quarter and age 15 years and over. The effect of these changes has not been shown (or mentioned) in the preliminary releases mentioned in 4.2.4.3. It appears as though some data showing the effect of the change in definition will be included in the detailed tables yet to be released. I understand that the main reason for the change was to have a better measure of underemployment in the Philippines, which is considered to be a major problem.

#### 4.3 CENTRAL BANK

- 4.3.1 (a) Gross Sales and/or Receipts Index
- (b) Employment Index
- (c) Manufacturing Production Index

##### 4.3.1.1 Background

The Central Bank have been compiling these indices since 1949 (on a monthly basis recently). They are available in The Statistical Appendix to the Annual Report of the Central Bank as well as the Quarterly Bulletin of Philippine Financial Statistics published by the Central Bank. As well the data are provided on a monthly basis to the Monetary Board of the Central Bank as part of the analysis of the Economic and Financial Developments in the Philippines.

##### 4.3.1.2 Sample Design

The original listing frame was obtained from the BIR master list of corporations and partnerships which filed income tax returns in 1971, verified after obtaining their gross receipts for 1971. The frame was stratified on basis of gross receipts and a sample selected to ensure all 3-digit industries would be represented and sample size not exceed 1,000 in total. As well large firms were given greater representation. The sampling method is therefore not

wholly probability based.

	SAMPLE SIZES FOR THE 3 INDICES WERE:-		
	(a)	(b)	(c)
Agriculture etc	-	13	-
Mining	-	11	-
Manufacturing	416	416	416
Electricity, Gas, etc	13	19	-
Construction	-	13	-
Wholesale & Retail	157	147	-
Transport, Storage etc	36	43	-
Finance & Bus. Serv.	-	78	-
Community, & Personal Serv.	34	37	-
	<u>656</u>	<u>777</u>	<u>416</u>
TOTAL			

The indices are computed as a simple weighted arithmetic average of quantity relatives. The weighting pattern is based on the value added figures in the 1969 Input/Output Table prepared by NCSO-NEDA.

#### 4.3.1.3 Response and Timing of Results

On the basis of the CB sample of 777 businesses response rates of approximately 75% were achieved after 3 months and these formed the basis of the preliminary results with 90-95% response being achieved after about 4 months.

#### 4.3.1.4 Known Deficiencies in this Series

As has been pointed out in several documents the CB series has several deficiencies:- viz

- (i) Small Sample size - it is difficult to see a sample of some 400 manufacturing businesses being fully representative of the total manufacturing sector.
- (ii) Out-of-date framework - the stratification basis is now quite old.

- (iii) Out-of-date weighting pattern - again the weighting pattern is based on figures 9 years old.
- (iv) No specific allowance is currently being made for births and deaths.
- (v) As the sample selection is not probability based no accurate measure of statistical reliability can be made.

The CB appears to be aware of these deficiencies and because of the current integration of their collection with the Integrated Quarterly Survey of Establishments run by the NCSO there appears no real gain in examining this series any further.

#### 4.3.2 Integrated Quarterly Survey of Establishments

The CB is a participating agency in the IQSE and this collection will be discussed in detail in Section 5 of this report.

#### 4.4 MINISTRY OF LABOR (ML)

##### 4.4.1 Employment Reports for Key Employment Centres

###### 4.4.1.1 Timing, Scope & Coverage

This collection is carried out quarterly as a compulsory complete collection of all establishments with 10 or more employees. However it is to be expanded to include all establishments with more than 5 employees.

###### 4.4.1.2 Data Content & Publication

Data collected includes employment and activity industry as well as vacancies, new hires and separation during the period. Data is published quarterly but only for selected key employment centres.

##### 4.4.2 Industry - Occupational Survey of Employment and Wages

###### 4.4.2.1 Timing, Scope & Coverage

This collection has been run for the first time in 1977 and it is planned to be done at 3 to 5 yearly intervals. It is a nationwide survey of some



6,000 establishments employing more than 10 employees (2-3,000 in Manufacturing).

#### 4.4.2.2 Response Rates, Data Content and Results

The response rates achieved in this collection have not been very satisfactory - 40% by November 1978 after a June 30 1978 despatch (however the response rate for Metro-Manila was 60% by that date). The survey asks for production, sales and employment data for the establishment as well as the detailed information on employees, such as position title, function, age preference, educational requirements, and salary levels.

It is anticipated that the results will be processed by ADP means through to Technological Resource Centre and detailed results available on employee data for industry by occupation at Regional level.

#### 4.4.3 Ad hoc Studies by Wage Commission

The Wage Commission of the Ministry of Labor carries out ad hoc studies of the labor market occasionally. They generally cover only one industry at a time, are infrequent and designed to meet the specific needs of that industry. For example, the June 1978 Survey of Base Compensation, Personnel Practices and Fringe Benefits for the Manufacture and Assembly of Motor Vehicles Industry was conducted by the Wage Commission.

#### 4.4.4 Integrated Quarterly Survey of Establishments

The Ministry of Labor is a participating agency in the IQSE. This survey will be discussed in detail in Section 5.

### 4.5 MINISTRY OF INDUSTRY

#### 4.5.1 Large Industries Group

##### 4.5.1.1 Data from Industry Associations

The Large Industries Group of the MI require statistical data to monitor the performance of the industrial sector as part of the "Industrial Development

Program". In order to do this they initiated a collection from members of industry associations registered with the MI. These associations (31 at present) cover 460 firms with annual sales/receipts of ₦4m or more and represent the 24 broad industry groups in the National Accounts.

Monthly questionnaires are sent to these 460 firms and they are returned on a quarterly basis. The data asked for includes Total Assets, Inventories, Trade Accounts and Short-Term Borrowings as well as some descriptive data on particular problems, etc for the individual firm. Response rates achieved are 50-60% after 3-4 months.

If 50% of the weighted representation for an industry group is received then the results are tabulated by hand and distributed to the MI, Board of Investment and the Industry Associations but it is not officially published.

This collection has now been integrated into the IQSE and 300 establishments are included in the IQSE sample while the remaining 160 are still collected by MI. This will be discussed in Section 5.

#### 4.5.1.2 Industry Sector Analysis Project

The MI is attempting to obtain base-line data on each industry to obtain a greater degree of knowledge of these industry, the way they operate and perform. The monitoring of this performance can then be measured against this base.

In order to obtain this data, they access many different data sources such as:-

- (1) NCSO data from Economic Censuses and Annual Survey of Establishments. Although this data is somewhat out-of-date.
- (2) Export and Import data from CB and Customs.
- (3) Stock Exchange Commission (SEC) for financial data on large partnerships and corp.
- (4) BIR.

As well they need to ask individual firms about:-

- (a) production processes
- (b) Relationship between Inputs and Outputs
- (c) Capacity utilisation
- (d) Machinery and Equipment installed
- (e) Technological development
- (f) Management and organisational aspects

They have already commenced this project and the data for the Textiles Industry is currently being collated. However to cover all industries is going to be a 5-6 year project.

#### 4.5.2 Small & Medium Industries Group

##### 4.5.2.1 NCSO Data Sources

The MI needs to determine the structure of the SMI sector as there has been a huge development in this sector over the last 5 years and it is continuing. The obvious source of data for this sector should be the NCSO's Economic Census and Annual Survey of Establishments. However there are 2 major problems with the NCSO data:- viz

##### (i) TIMING

The NCSO data is out-of-date - the latest reports available in the 1972 Economic Census and 1974 Annual Survey of Establishments.

##### (ii) DEFINITIONAL

The NCSO results are tabulated in terms of employment size and the MI believes that employment criteria is not the most appropriate to determine small & medium industries. They would therefore prefer results and stratification to be based on sales/receipts.

##### 4.5.2.2 Other Data Sources

As an interim approach the MI collects data in relation to their own "Project Feasibility Studies" and similar programs covered by the

Development Bank of the Philippines (DBP) and the Industry Guarantee Loan Fund (IGLF). Obviously these data sources are not completely satisfactory but do provide MI with some data on which they can monitor industry's performance.

## 5 INTEGRATED QUARTERLY SURVEY OF ESTABLISHMENTS

### 5.1 BACKGROUND

The NCSO have conducted a Quarterly Survey of Establishments since 1969. Although no data have been published from this survey, it has been used by NEDA as input to the National Accounts estimates. As mentioned in Section 4.3.1 the CB have compiled monthly indices of sales/receipts, employment and manufacturing production since 1949. The Ministry of Labour and Ministry of Industry both have fairly recent interest in economic statistics about establishments. It was therefore decided to integrate the different statistical collections and requirements into one survey to avoid the multiple approaches to establishments and the confusing and conflicting data output from different statistical collections. The surveys were integrated for the 1st quarter 1977 (however the CB only joined in the second quarter 1977).

### 5.2 PARTICIPATION AGENCIES, THEIR STATISTICAL NEEDS AND COLLECTION RESPONSIBILITIES

#### 5.2.1 NEDA

NEDA is not actually involved in the statistical collection aspects of the IQSE but as a user agency (their needs for data are for the National Accounts estimates) they have been involved in sample design and estimation procedures.

#### 5.2.2 NCSO

NCSO is the main data collector of the IQSE taking responsibility for despatch and collection of all sampled establishments located outside Metro-Manila.

### 5.2.3 CB

The CB require data on employment, gross sales/receipts and production on a monthly basis to replace the existing series of indices they have been producing since 1949. In the current collection arrangements for the IQSE they have responsibility for collection of all Manufacturing and Financial establishments located in Metro-Manila as well as any Manufacturing and Financial establishments located outside Metro-Manila but with head offices in Metro-Manila.

### 5.2.4 ML

The ML's data requirements include detailed information on Employment and Compensation for Production and Non-Production workers showing Daily Wage Earners, Monthly Salaried Employees, and Managers and above separately. The need to examine the structure of employment and compensation and determine what seasonal trends exist in these items. The ML has collection responsibility for establishments other than Manufacturing and Financial located in Metro-Manila.

### 5.2.5 MI

The MI are not involved in the actual statistical collection of the IQSE but their data requirements in relation to their Industry Associations collection as mentioned in 4.5.1 are incorporated in the IQSE.

## 5.3 DATA CONTENT AND FORM DESIGN

In order to incorporate all the data requirements of the participating agency into one survey a core questionnaire (IQSE-11) was designed to cover the basic data on Employment, Compensation and Gross Revenue. As well as this core questionnaire, supplementary questionnaires (or rider questionnaires) covered the data req. of the specific agency. eg IQSE - A (Non-industrial sector) and IQSE - B (Industrial sector) covers the detailed data on labor characteristics for the ML.

IQSE - C covers the detailed production item in order that a manufacturing production index can be computed.

IQSE - D covers the detailed requirements of the MI in relation to Manufacturing Industries.

#### 5.4 DESPATCH & RESPONSE

The questionnaires are despatched by the three different agencies and all have experienced relatively poor response rates. For example, the ML achieved 60% response after 3 months but this has subsequently dropped to 40%. The CB are achieving some 50-60% response after 3 months (but it is expected that they will improve on this when the additional staff are taken on and trained). The NCSO are achieving about the same level of response.

#### 5.5 SCOPE, COVERAGE AND LISTING SOURCE

The listing source is that obtained from the 1975 Economic Census updated regularly by NCSO field staff. The IQSE covers the sectors of

- Manufacturing, Mining
- Electricity, Gas & Water
- Construction
- Wholesale & Retail Trade
- Transportation etc
- Financing, Real Estate etc
- Community Services etc

#### 5.6 SAMPLE DESIGN AND ESTIMATION PROCEDURE

The IQSE is a stratified simple random sample based on a stratification of Region x Industry (3-digit) x size. Size being measured for the industrial sectors by employment and average monthly sales for the non-industrial sectors.

The sampling fractions vary amongst size classes within each industry group. In general, large establishments are heavily sampled relative to small establishments. It is a sub-sample of the Annual Survey of Establishments.

The sample size for the core questionnaire is 15,000 out of a population of some 500,000 establishments. For the industrial sectors the sizes are:-

Manufacturing	3,648 sampled establishments
Mining	644 sampled establishments
Electricity, Gas & Water	200 sampled establishments
Construction	457 sampled establishments

For the rider questionnaires a smaller sample is involved eg,

IQSE - A & B - approximately 25% sub-sample of the core questionnaire sample.

IQSE - C Manufacturing establishments only.

IQSE - D The 300 large manufacturing establishments being members of the industry associations.

## 5.7 PROCESSING & PRESENTATION OF RESULTS

It is planned to process the IQSE by ADP means and work is continuing on developing a system to process the core questionnaires as well as the rider questionnaire. This development has been delayed due to changed in form design and data content, delays in finalising the estimation procedure. Because of this it was decided that each agency could clerically process their own questionnaires. This is only being done now as the basic estimation procedure has only been finalised recently although some further work has to be done on the procedure for the production index.

### 5.8 SPECIAL ASPECT/PROBLEM ETC

#### 5.8.1 Data Content and User Requirements

The extent of the data requirements from this survey is quite substantial. The core questionnaire itself is quite detailed asking for monthly data of the components of Employment, Compensation and Gross Revenue. On top of this the rider questionnaires ask for much more detail. It does not appear that all

the data requested is fully justified by extensive user requirements. It should be borne in mind that each additional data item requested in the survey has a consequential effect on response rates, informant reaction, quality of data, processing time and, most importantly, timeliness of results. It appears as though some questions have been included in the questionnaire on the basis of a potential need rather than a known and justifiable user requirement. Since response rates have not been very satisfactory, consideration must be given to ways of improving response and a reduction in data content of questionnaires may help in this regard.

#### 5.8.2 Reliability v's Timeliness

Every statistical organisation in the world is faced with the same problem of relating timeliness of data to reliability of data. Is it better for users to have inadequate data as quickly as possible or more reliable statistics but at a later point in time. Obviously neither is entirely satisfactory and a balance must be reached between timeliness and reliability of statistical data. The statistical needs of NEDA can be taken as a guide to the timeliness and reliability of IQSE needed for National Accounts estimates ie Data 6-8 weeks after the end of the period with a response level of 70-75%. If this can be achieved then I am sure all other users of IQSE data will be satisfied. This is an objective that should be aimed at for all participating agencies.

#### 5.8.3 Co-ordination

In any decentralised statistical system it is essential that the co-ordination function between statistical agencies is carried out effectively. NEDA has this function and the inter-agency committee set up by NEDA help to perform it. However, if it is to be effective each participating agency must contribute as much as possible to the successful conduct of the IQSE. Every assistance possible needs to be given to NCSO and NEDA to ensure that the processing system is designed and tested adequately if all user requirements are to be met.



#### 5.8.4 Standard Errors

The results expected from the IQSE have been indicated as

- (i) 3 digit industry level for Philippines
- (ii) 1 digit industry level for Regions
- (iii) Possibility of providing some provincial data.

No estimates have been made for the measurement of the statistical reliability of the results of the IQSE (ie standard errors). Based on certain assumptions I have made very rough calculations of the possible standard errors likely to be obtained from the IQSE. The main assumption was that the coefficient of variation of the data items being measured (ie employment, compensation, gross revenue, production, etc) were of the order of 0.40-0.45. This is based on data from both Australian and other overseas countries who run similar surveys.

The standard errors for Manufacturing would be:

- (i) 3 digit industry for Philippines - Except for 2 industries (311 - food and 322 - Apparel - where the standard errors were of the order of 3-5%) the standard errors were in the range of 10-15%.
- (ii) 1 digit Industry level for regions. These would be in the range of 2-10%.
- (iii) 3 digit Industry level for regions. These would be in the range of 20-50%, except for the 2 industries 311 and 322 which could be less than 20%.
- (iv) Provincial data at 1-digit industry level could be in the range of 20-50% as well.

These estimates are based on 100% response of sampled establishments. Naturally with less than 100% response these standard errors would increase.

#### 5.8.5 Seasonal Adjustment

It is not planned at this stage to adjust the data series derived from the IQSE for seasonal factors. It is important in examining economic time series to derive seasonally adjusted data so that the seasonal influences are removed and the underlying trends can emerge. The X-11 program for seasonal adjustment developed by the US Bureau of the Census and now in use in the Australian Bureau of Statistics is a most suitable package for use by NCSO and NEDA.

### 6 GENERAL ISSUES OF CONCERN TO ALL AGENCIES

#### 6.1 RESPONSE RATES AND TIMELINESS OF STATISTICS

##### 6.1.1 Needs of Users

In many of the industrial statistic collections in the Philippines data is published very late in relation to planned objectives. It is generally accepted by most statistical organisations that a monthly collection should produce results about 1 month after the end of the reference period, a quarterly collection about 3 months, and an annual collection about 12 months. Very few of the surveys in the Philippines are achieving those objectives. Obviously this lack of data is effecting the users of statistics and the statistician's reputation is not enhanced.

##### 6.1.2 Reasons for Delays

At least 4 broad reasons for these delays can be identified:-

- (i) Response Rates
- (ii) ADP processing
- (iii) Systems Approach
- (iv) Continuous Data Input Changes

##### 6.1.2.1 Response Rates

Obviously the response rates in most collections have not been very satisfactory. To improve these response rates it will be necessary to increase the number and

quality of field staff involved in the statistical collection process. Greater dialogue needs to occur with informants to indicate to them benefits of quick response and the usefulness of statistics to them. Consideration also should be given to the greater use of the prosecution provisions of the NCSO's Statistical Act.

It should be recognised by statistical agencies that a non-response bias may exist. The last 20-30% of reports not received in time for estimates to be prepared may in fact differ significantly from those 70-80% responding. Some attempt should be made to try and measure the extent of the non-response bias especially in the IQSE. It may be best in intensive follow-up action to concentrate on the large (and hence statistically significant) outstanding reports. Consideration should be given to the possibility of providing an "imputation" package to impute data for missing non-respondents in the DQSE rather than allowing the sample to take care of it through the number raising estimation process. There are several ways this can be done and international documentation is available on the topic.

#### 6.1.2.2 ADP Processing

This problem is mainly one for the NCSO, as they do most of their own ADP processing. The major problem facing the ADP Section in NCSO appears to be the extent of the staff turnover in programmers and systems analysts. For the last 4 years the turnover of staff has been on average:-

30-50% annual turnover of Systems Analysts

15-20% annual turnover of Programmers

As well as this high level of turnover the no. of positions available is relatively small ie 6 positions of Senior Systems Analyst and 30 positions of Programmer. Currently they are absorbing on 5-6 programmers a year and due to the turnover a significant number of positions are vacant at any point in time. The main reason for the high level of staff turnover is the salary levels of NCSO ADP staff compared with the private sector computer establishments. The lowest salary level for programmer in NCSO is P 736/month whereas in the private sector it is at least P 1,000/month. One extreme example quoted

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is a trained NCSO programmer on ₱800/month moving to a job in private sector at over ₱3,000/month. Clearly if the NCSO ADP system is to be fully efficient it must provide programmers with an appropriate career structure, reasonable and competitive salary levels and there should be an increase in the no. of positions available in ADP area.

#### 6.1.2.3 Systems Approach

The design phase of most of the statistical systems covered appears to have been approached from the input side first. That is, the data content of the questionnaire was considered the priority and not enough consideration given to output and the ADP processing system prior to the commencement of the collection phase. A systems approach to sample survey design indicates that the first step in design is to determine your output requirements, then the data content of questionnaires, and design, develop and test the ADP processing system, all before the actual commencement of data collection. Obviously this requires lead time well in advance of when data will become available but I believe it to be a better procedure than that adopted for the IQSE and could have avoided some of the current delays and difficulties agencies are faced with at the moment with the IQSE.

#### 6.1.2.4 Continuous Data Input Changes

In the first 2 years of the IQSE and with other statistical collections there appears to have been a number of changes to data inputs on questionnaires. These continuous changes create a number of difficulties for both the informant and the ADP programmers designing the system. Such changes should be kept to a minimum and avoided if at all possible.

### 6.2 RECONCILIATION OF DIFFERENT DATA SOURCES

One of the difficulties facing the user of industrial statistics in the Philippines is the proliferation of different data sources which can lead to a lot of confusion. For example, NEDA produces National Accounts estimates of value added in Manufacturing, while the CB produces an index of manufacturing production. A user can get 2 different views of what is the trend in

Manufacturing from these 2 sources. Employment data on Manufacturing can be obtained from a number of sources, ie NCSO's ASE, EC and ISH/H as well as the CB's index of employment and the ML's different data sources.

It is therefore essential to be sure of the reasons for the differences in these data series and to have reconciled the data before the user asks for an explanation. It is important not only for the statistical agency itself to be aware of such differences but also the user agency. The user agency must be sure of the different sources to ensure the right series is used and appropriately qualified in advice to Ministers and the Government, etc.

### 6.3 TRAINING AND DOCUMENTATION

#### 6.3.1 Documentation

The extent and quality of documentation in all of the statistical agencies is, I believe, not satisfactory. It is particularly important to have a very good level of documentation due to staff turnover levels and the need for co-ordination in a decentralised statistical system operating through Inter-Agency Committees.

#### 6.3.2 Training

There appears to be a need for further training in most agencies on Statistical methodology. The IQSE Seminar on Estimation Procedures was a good example of how this training can be done and so further training on such matters as:-

- (i) Statistical Collection Procedures and follow up action
- (ii) Editing and Checking Procedures.

I would suggest that the ADP training the NCSO carries out on System Analysis and Design should not be restricted to ADP personnel only. Senior subject matter statisticians can gain a great deal from such training.

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## 7 CONCLUSION AND SPECIFIC RECOMMENDATIONS

### 7.1 GENERAL

The objective of this report was to examine the adequacy of the available industrial statistics in the Philippines. The only conclusion one can come to at this stage is that the industrial statistics are inadequate in the sense that they don't meet user requirements. Clearly the users are not receiving the data they want in the time frame in which they need it.

Given the amount of time available to examine the industrial statistics in the Philippines this report can only be considered a broad brush approach to the topic. Obviously with more time available a closer examination of the statistical systems may have produced some more detailed recommendations. However I believe I was able to identify the basic problems with the data thanks to the co-operation of all the agencies involved.

### 7.2 CHANGING SHAPE OF INDUSTRIAL STATISTICS

Perhaps the timing of this study was not the most appropriate. Industrial Statistics in the Philippines are undergoing a metamorphosis at the moment particularly with the integration of the Quarterly Survey of Establishments. One to two years ago when the IQSE was being designed could have been better. The original planning was taking place at that stage and a greater influence in this design phase may have helped to overcome some of the present difficulties.

The industrial statistics produced up to now have suffered from the deficiencies already identified, for example, the CB indices of employment, production etc being based on out-of-date framework, the lack of timely data from the NCSO's ASE and EC and the delays in producing results from the IQSE.

### 7.3 NCSO's PROGRAM OF INDUSTRIAL STATISTICS

In principal the NCSO's program of industrial statistics incorporating the Economic Census, Annual Survey of Establishments and Quarterly Survey of

Establishments is a good one. It is very detailed, planned to meet user requirements and the methodology on which it is based (listing source, sample framework and design and estimation) are at least adequate. The major problem as mentioned above is the timing of the results of these collections. The 1972 Economic Census is the latest available report. The 1974 Annual Survey of Establishments is the latest published results from this collection. No publishable data has yet been seen from the new IQSE.

#### 7.4 NEED FOR CO-OPERATION

A decentralised statistical system requires a great deal of co-operation from the participating agencies. The Inter-Agency Committees are an important element in this system and in concept they are quite good. I cannot stress too strongly the need for complete co-operation and co-ordination in these committees to ensure the success of the system.

#### 7.5 SPECIFIC RECOMMENDATIONS

In summary I recommend the following be implemented in order to improve the quality and timeliness of the industrial statistics in the Philippines.

##### 7.5.1 IQSE

###### 7.5.1.1 Collection Arrangements

The current collection arrangements for the IQSE are not the most efficient in terms of statistical resources. It can lead to confusion by the informant, delays in processing data as it is being done by different agencies with different response rates, etc, possible differences in quality of data produced by different agencies due to differing standards of processing etc.

As a long term objective the collection and processing of all of the IQSE should be the responsibility of one agency. However this could not be implemented until the processing system was fully developed and the new series shown to be adequate in terms of its quality and timeliness. As well the resources required by the NCSO would need to be made available to ensure the needs of users such as the CB could be met. Before this

implementation it will be necessary for the CB to give priority to the collection and processing of the new IQSE sample with a view to producing Metro-Manila monthly indices starting in 1977 and as a result cease the collection, processing and publication of the existing indices towards the end of 1979. The NCSO would still be responsible for producing a quarterly national series of indices from the IQSE.

#### 7.5.1.2 Data To Be Published

Because of the levels of the standard errors one could expect from the IQSE (see Section 5.8.4) it is recommended that Regional data at 2 digit or 3 digit industry level not be published and no provincial data at any industry level be published for the IQSE.

However they may be some regional x industry levels for which the standard errors are reasonable and these could be provided to users who understand the quality of data. An objective would be to reduce the data content of all questionnaires including the core questionnaire to the minimum required to ensure that the response rates are adequate and results can be published as quickly as possible. It is recommended that the split of "Apprentices, etc" and "Workers solely or commission" for both employment and compensation be deleted from the core questionnaire. This could be done from 1980. The split between basic pay and overtime pay may be left to the rider questionnaire only.

#### 7.5.1.3 MI Rider Questionnaire

The MI rider questionnaire should be deleted from the IQSE and left to the MI to collect. This collection is not based on a sample of establishments but a complete collection of large establishments belonging to industry associations. As their data requirements include the examination of individual questionnaires for descriptive data this collection should be the sole responsibility of the MI. This could be achieved if MI needs were met by aggregative indices from IQSE and MI only collected the qualitative type data. This would avoid any duplication of data collection.

#### 7.5.1.4 ML Rider Questionnaire

The data content of the ML rider questionnaires are too detailed and should be reduced to the minimum possible to meet at least the most essential of their



needs. At least the "Managers and Above" should be deleted for 1980 as it has caused problems in reporting by informants. I am not convinced at this stage that all the data is required monthly and consideration should be given to collecting at less frequent intervals, say six monthly from 1981 onwards.

#### 7.5.1.6 Listing Arrangements

A major listing every 3 years just prior to an Economic Census should be deleted and regular listing updating should commence by NCSO field officers. This can be done quarterly and advice to the Central Office as soon as possible of new births and deaths (preferably on a quarterly basis) would be appropriate. This would allow the IQSE to have sample revision annually to introduce new births and deaths into the sample. Consideration should also be given to using the data on new births, etc on a quarterly basis to adjust the IQSE estimates in between annual sample revisions. This would mean that the IQSE would reflect the effect of new births almost as soon as they occur. This may require a change to the organisational structure of the NCSO. It could be introduced in 1979 with the first annual sample revision occurring in 1980.

#### 7.5.1.7 Standard Errors

I believe it is important to give users an indication of the statistical reliability of the results of any survey. Considering the expected level of the rough standard errors I calculated for the IQSE, standard errors should be calculated at least for some broad characteristics and these should be referred to in the publication.

#### 7.5.1.8 Seasonal Adjustment

The X-11 program from the US Bureau of the Census (or a similar package from some other statistical organisation) should be obtained and the results of the IQSE and other data time series should be seasonally adjusted.

### 7.5.2 OTHER ISSUES

#### 7.5.2.1 NSCO's ASE and CE

The NSCO's program incorporating the IQSE, ASE and CE (on a 3 yearly basis) is a very ambitious one. The timing objectives of these collections are

not being met at present and consideration should be given to reducing this program in some way. As the IQSE and ASE have a very clear set of user requirements, perhaps the EC can be reduced in its frequency. I suggest that a 5 yearly or 10 yearly Economic Census may be satisfactory to meet most user requirements and this will provide extra resources to ensure the timetables for the IQSE and ASE are met.

#### 7.5.2.2. CB Indices

The present CB indices of employment, compensation and manufacturing production should be ceased towards the end of 1979 after the IQSE results are finalised and the new series introduced. Consideration has to be given to the treatment of those establishments outside Metro-Manila but with head offices located in Metro-Manila.

#### 7.5.2.3 NCSO's EDP Organisation

As mentioned in Section 6.1.2.2 the NCSO's EDP organisation needs strengthening to ensure, (a) a career structure is provided, (b) reasonable and competitive salary levels provided to programmers, etc to reduce staff turnover and (c) an increase in the no of positions available. As well the statisticians in Government agencies are relatively low paid which has caused high labor turnover rates.

#### 7.5.2.4 Use of BIR Data

As a part of the sources of data for National Accounts estimates better use should be made of BIR data. This is currently under review by the Inter-Agency Committee on Monetary, Banking and Financial Statistics. The BIR have some difficulties at present in relation to meeting the statistical needs of NEDA but the provision of new computer equipment in the next few years will help to resolve these difficulties. A more extensive use of BIR data will reduce NEDA's statistical data needs from the E. Census in particular, and hence improve timeliness of that collection.

#### 7.5.2.5 Training and Documentation

As mentioned in 6.3.1 and 6.3.2 more training particularly in statistical collection procedures and follow-up action, editing and checking procedures, should be carried out perhaps by NEDA, NCSO and the UP.

The level of Statistical documentation should be improved in each of the statistical agencies to help in the coordination function in a decentralised statistical system.

Board of Investment Incentives and Procedures

In administering the incentives there are three different levels at which the BOI operates. For a firm seeking to obtain the industrial incentives, these levels are viewed as different stages of its own relationship with the BOI. First, those subsectors eligible to receive the incentives must be selected for inclusion into either the Investment Priorities Plan or the Export Priorities Plan. Formally, this selection is made by the BOI in collaboration with the NEDA and is based upon economic priorities. In practice the subsector selection process is usually initiated by a firm desiring to either set up or expand its operation in the subsector. The BOI can respond by studying the firm's project or that of an "economic sized" plant. Subsectors that have been designated as "overcrowded," i.e., with substantial excess capacity and little export potentiality under existing policies, are not eligible for inclusion in the priorities plan.<sup>/1</sup> In the case of import substituting types of projects, i.e., those being considered for inclusion in the Investment Priorities Plan (under the Industrial Incentives Act), detailed trend line projections are made of domestic capacity and domestic demand. If projected domestic demand exceeds the envisaged domestic production capacity, a prima facie case is frequently made in favor of including the subsector into the priorities plan.

The BOI analysis stresses the technical dimensions of the project. The firm's project or the "economic sized" plant is carefully analyzed from the viewpoint of the equipment needed. In addition, an economic examination also takes place in which a number of ratios and other measures are calculated, although no overall attempt is made to relate them. Considered separately by the BOI are estimates of the foreign savings or earnings, the capital-labor ratio, the capital to wage ratio, capital productivity, the amount of imported capital equipment per unit of labor, and the usage of indigenous raw materials. Only limited analysis is made of the backward and forward linkages of a subsector being examined.

BOI procedures require that the financial and economic rates of return be computed for the "economic sized" plant as a part of the process to evaluate the suitability of a subsector for inclusion into one of the priorities plans. However, BOI analysis seldom includes calculation of the economic rate of return which the Mission regards essential. For tradable goods, the economic analysis should be carried out using international prices, net of tariffs and border taxes, and appropriate shadow prices, reflective of scarcity values, should also be employed.

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<sup>/1</sup> Examples of products included on the list of "overcrowded" industries at present are automobiles, cement, leather tanning, beer, radios, phonographs, refrigerators, and sewing machines.

Once the BOI analysis has been completed, the BOI's Board of Governors discusses the proposal to include the indicated subsector in the priorities plans. After approval the BOI recommendations for priority plans are submitted to the NEDA. While NEDA officially has an input, the BOI recommendations are normally accepted without alteration.

The second level of BOI analysis is the process of BOI registration for the firm. Once a subsector has been included into one of the priorities plans, a firm operating in the designated subsector can apply to the BOI for registration. The registration process amounts to a project evaluation by the BOI staff with final approval decided by the BOI Board of Governors. At present the BOI Board is approving about 120 new registrations annually in its weekly meetings. In practice several new registrations approved by the BOI may not materialize.

Assessing the eligibility of a particular firm for registration is an involved process, sometimes taking up to a year. In addition to providing a detailed project proposal, there is a lengthy application form to be completed involving much information provided by the firm to the BOI. Before an application is formally accepted by the BOI a checklist of information has to be satisfactorily completed. To assist them in dealing with the BOI applying firms frequently engage consulting firms. Once the application is deemed complete the BOI evaluation begins. At this stage of BOI examination a careful analysis of the technical characteristics of the project is made. The economic analysis, however, does not as a rule include an analysis of the economic rate of return at international prices, nor does it cover the amount of protection required to make the project financially viable. It does involve rough estimates as to the expected foreign exchange savings or earnings, the number of employees projected, and the tax revenues to be generated.

Once a firm is registered it may then apply to the BOI for the actual approval of individual incentives on a case by case basis. The incentives are by no means automatic. This is the third level of analysis conducted by the BOI staff and approved by the Board of Governors. Every incentive must be applied for, and the BOI makes a determination as to whether the firm in fact is eligible. This process is generally a matter of routine, but it still is detailed and places additional administrative burdens on the firm and BOI alike. Moreover, approval is not automatic and may be denied, sometimes on legal grounds.

The BOI incentives themselves, for either import substitution or export projects, are of three basic types: tax deductions, tax exemptions, and tax credits. There is a large assortment of incentives in each of

these categories (Annex Table 5). The most important incentives are:<sup>/1</sup>

- (a) Deduction from taxable income of BOI approved amounts of undistributed profits invested in capital equipment for expansion purposes.
- (b) Deduction from taxable income of organization and preoperating expenses for the firm.
- (c) Accelerated depreciation of fixed assets at a rate up to twice the normal rate.
- (d) Carryover of net operating losses incurred in any of the first ten years of operation for the following six years.
- (e) Deduction from taxable income, for the first five years from registration, of direct labor costs and local raw materials used in the manufacture of export products up to 15% of total export revenue.
- (f) Deduction from taxable income of 50% of labor training expenses up to 10% of direct labor wages.
- (g) Exemption from tariffs and compensating sales taxes on imports of approved machinery, equipment and spare parts.
- (h) Exemptions from all taxes except income taxes for preferred pioneer enterprises on a graduated schedule according to the life of the firm.
- (i) Exemptions from export taxes.
- (j) Tax credits equal to 100% of the value of the compensating sales taxes and tariffs that would have been paid on machinery, equipment, and spare parts purchased from a domestic manufacturer, had these items been imported. An additional tax credit, i.e., subsidy, equal to 50% of such compensating sales taxes and customs duties is provided to the domestic manufacturer.
- (k) Tax credits equal to the sales taxes, compensating taxes, specific taxes and tariff duties paid on materials and supplies used in the manufacture of export products.
- (l) Credit for taxes withheld on interest payments or foreign loans.

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<sup>/1</sup> BOI, The Investment and Export Incentives Acts (with Corresponding Amendments), Manila: Government Printing Office, 1978). See also the SGV pamphlet "Doing Business in the Philippines."

- (m) Possible permission from the BOI to operate a bonded manufacturing warehouse for the purpose of obtaining duty free imports of inputs used in export production.
- (n) Antidumping protection with respect to the importation of products that "unfairly" or "unnecessarily" compete with those produced by a BOI registered firm.
- (o) Postoperative tariff protection of up to 50% on the product being manufactured by the registered firm.

Technical and Technological Assistance and Training

1. The major source of technology for industry are the sectoral institutes. These are the Metals Industrial Research and Development Center (MIRDC), the Food Research and Nutrition Research Institute (FNRI), the Forest Production Research Industrialization Development Commission (FORPRODICO), and the Philippine Textile Research Institute (PTRI). These are coordinated through the National Science Development Board (NSDB) and the National Institute of Science and Technology (NIST). While these institutes are well equipped and reasonably well staffed with specialists, they seem to lack strong links with industry, and are known mostly for their training activities and some of their publications. They have limited budgets, and lack field services so that they are little known outside Manila; and, even in the capital area, most of the industries in the relevant sector have little contact with them. Some of them, particularly the MIRDC and FORPRODICO, have helped in some of major problems related to raw materials. All of them have not been very effective in providing information services or direct technological advice to small and medium industry. This situation could only be improved if the institutions had more staff recruited from industry, developed active field services, and worked closer with financing and business advisory institutions.
2. Apart from these sectoral institutes, there are several other agencies in the Philippines that give help of a technological nature to industry. The Design Center of the Philippines (DCP) tries to improve the design and quality of manufactured products, particularly those made from indigenous materials. It pursues this objective primarily through training courses, some exhibitions, and occasionally some direct advice. It has mostly been of assistance to the cottage industries.
3. The Development Academy of the Philippines (DAP) has collected and disseminated information on the management of small- and medium-scale industries, and has published various materials. It has conducted courses aimed at technical upgrading of rural SMI through transfer of technologies from large to smaller enterprises, and has also tried to help in promoting subcontracting.
4. The UPI/ISSI, already to as the oldest institution helping small industries in the Philippines, has carried out an active training program in the management of SMI and in entrepreneurship development, as well as conducting various studies. In the technological field it was one of the first to operate a technical information service in response to queries from small- and medium-scale industries, but service has been very little used until now. The UP-ISSI has also done some useful work in spreading the techniques of low cost automation, mainly involving use of hydraulic and pneumatic accessories, among SMI, partly because they received a demonstration workshop and technical assistance on this subject from the Netherlands Government some years ago.



5. One field in which efforts have been made by UP/ISSI, NIST, and DAP is in the field of quality control and standardization. Some courses in quality control have been initiated by UP/ISSI, and there is talk of their establishing a quality control center together with DAP. The NIST has started a program aimed at raising quality standards through the wider use of standardization.

6. Lastly, one should mention the activities of NACIDA which has, in a limited way, with the help of a Technology Development Center (TDC), built with Japanese Government aid, provided some technical advice, promoted the use of machinery, and helped with improving the quality of products of cottage industries. NACIDA has also been active in providing technical training in different crafts.

7. It is clear from the proceeding paragraphs that there exists in the Philippines a wide network of different institutions either marginally or fully engaged in improving technology and providing some form of technical training for industry in general and SMI in particular. There is a great deal of overlapping and the lack of sufficient coordination was the main finding of the recent survey on "technology services delivery systems" carried out with UNIDO's help by the headquarters staff of the CSMI in coordination with the technical institutes. This same study also found that although there existed a variety of institutions providing technological assistance, they were inadequately used, and in some cases virtually unknown to the small and medium industrialists, and particularly to those out in the regions. Efforts at referrals from the SBACs to the various agencies had minimal results. New efforts are now to be made to bring the staffs of the SBACs into closer contact with the various sectoral technical institutions of the NSDB in an attempt to improve the delivery system of available technological advice and services.

8. Within the last two years a new center has been established in addition to the institutions already in existence - the Technology Resources Center (TRC) - aimed at promoting indigenous technologies and dissemination of information on technologies from other countries. The TRC is well equipped and has a very adequate budget and staff, with links to various information retrieval systems in other countries, mainly in the US. So far the use of the TRC by industries seems to have been very limited, although recently there has been talk of a new TRC project to improve the technology of the garment industry. There exists at present virtually no cooperation between the TRC and the other technical institutions.

9. Despite the availability of these different institutions and agencies, there are some notable gaps. There is no institution or agency in the Philippines to help the leather and footwear industry (See Chapter IX Section D - Footwear). There are also as yet no special institutions to help in the fields of electronics, ceramics, or chemicals. UNIDO and UNDP have made proposals to help establish centers for leather and footwear and electronics.

10. Although various institutions are engaged in training, there are skill shortages in some of the regions. Part of this is due to the lack of adequate financial incentives for the acquisition of technical skills since the wage scales do not provide adequate differential for skills. This has also led to migration of skilled workers in carpentry, mechanics, metal working, to the Middle East and other countries where big construction projects have created high demand for skilled workers and where salaries are much higher.

11. There is an urgent need for reexamining the whole system of vocational training, apprenticeship, and technical training throughout the Philippines, and particularly in the regions, as the lack of skilled workers will soon become a major bottleneck to industrial development, particularly in the outlying regions. Several industrialists, especially in such fields as shipbuilding, furniture making, machine construction and maintenance, among others are already complaining of the difficulties of finding suitable skilled workers and of retaining them.

#### Programs for SMIs

12. In 1974, the Commission for Small and Medium Industry (CSMI) was set up incorporating 12 member government agencies that were involved in helping SMI. NACIDA was originally a member of CSMI, as set up by Presidential Decree No. 488 in June 1974, but later dropped out; and, the Central Bank, which administers the IGLF program, was added. With the exception of the UP/ISSI, the oldest organization in the Philippines to help the SMI sector established in 1967, for the rest of the agencies SMI was of only marginal interest. Several of the agencies, e.g., Department of Trade (DOT), Trade Advisory Councils (TAC), Development Academy of the Philippines (DAP), the Food Terminal Incorporated (FTI), the Design Center of the Philippines (DCP), and the different sectoral institutions of the National Science Development Board (NSDB) cater to much wider fields, and do not focus their activities only on help to small enterprises. The mission agrees with several of these agencies who feel that the CSMI must undergo some changes to achieve the aim of coordinating programs, or to resolve policy matters. This would include a strengthening of the MOI staff supporting the Commission's work and stronger agreement on increased budget allocations for SMI programs by participating agencies.

13. There are four agencies with the CSMI which are exceptions in that helping SMI is a focal point of their activities. The Central Bank and NEDA operate the IGLF. The DBP operates the SMI line of credit and therefore has a key interest in coordinating with other agencies providing nonfinancial assistance. The UP/ISSI (already mentioned) used to provide advice and management assistance to SMI, but has now been reduced to a training role mainly organizing courses in entrepreneurship development and to carrying out some studies on the SMI sector; unfortunately, the institution has lost most of its experienced staff - mainly to international organizations - in the last years, and now faces budgetary problems. Cooperation between UP/ISSI and the MOI's direct assistance has improved of late, but is still inadequate (see also para. 4 on other UP/ISSI activities).

14. The headquarters activity of the CSMI is carried out by MOI technical staff who engage in some survey work, project monitoring, and provide support for field staff through information services and programming.

15. Two special programs carried out by this staff are the subcontracting promotion program aimed at organizing subcontracting development offices to expand the volume of subcontracting in the regions, and work on the creation of a technology services delivery system to improve the transfer of available technology resources to SMI. UNIDO has provided expert assistance for this latter project. Other projects in the CSMI program are still in the planning stage.

16. The other direct program of MOI involves MASICAP and the SBACs. The MASICAP/1 program, initiated in November 1973, aims at stimulating investment in small and medium industries in regions outside Metro-Manila; this objective is achieved by assisting SMI entrepreneurs in the preparation of projects. MASICAP currently has 147 staff members, 137 in the field throughout the regions, (except Metro Manila) and 10 in headquarters. A unique feature of this program is its staffing. Senior year students with outstanding academic record are recruited for a fixed term of two years. Students are usually assigned to regions away from their home provinces.

17. Small Business Advisory Centers (SBACs),2 first established in July 1975, provide post-operations extension service to SMI in fields such as management, technical, marketing and finance. Initially, SBACs focussed their attention on specific problems of the business firms, but now greater emphasis is placed on integrated plant surveys under which all aspects of business enterprise are evaluated and appropriate measures recommended. The 12 centers, one in each region of the country, employ a team of professional staff comprising engineers, economists and business specialists. Currently, they have a staff of 70, 55 operating in the centers, and the rest still completing training before joining their respective field groups. There is also a headquarters staff to provide support with information and monitoring, and which includes a group of professionals working on the Metro-Manila Barangay Industries Development Program (MMBIDP), which focusses on developing economic projects for the urban poor of the capital area.

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/1 MASICAP - The Medium and Small Industries Coordination Action Program. A full account of this program is given in the Philippine Staff Appraisal Report on Small and Medium Industries Development Project (No. 2417-PH, May 1979) pages 43-46.

/2 SBAs were set-up under the Bank's first Philippine SMI Development Project (Report No. 667a-PH) approved in 1975.

Financing of SMI

1. As in most countries, the SMI sector suffers in the Philippines from inadequate access to financing even though since 1974 great efforts have been made by the Government, with external assistance, to make credits available to this sector.

2. Several reports are available on the financing of industry in the Philippines. Comments here, therefore, on the subject will be confined to a few observations on the general situation, mainly as commented to the Mission by various small industrialists and bankers.

3. The commercial banking system is well developed in the Philippines - and is by far the largest source of credit for industry. There are 25 privately owned commercial banks, 2 Government owned, and 4 foreign banks.<sup>/1</sup> These commercial banks provide the majority of the institutional funding borrowed by manufacturing industry and commerce, and it seems that the proportion of lending from these commercial banks has been increasing steadily since 1960. Table 3.3 shows the distribution of the portfolio of the commercial banks as classified by sector, size of enterprise, and region, as well as the term lending involved. The table shows clearly that at the end of 1977 only 2% of the portfolio of commercial banks were in outstanding credits for cottage industries and 11% each for the SSI and MSI sectors as against 56% of outstanding credits for large-scale industries.

4. Eighty-seven percent of the portfolio was loaned out in the Metro-Manila area which indicates the limited role of commercial banks in helping all industry and SMI in particular in regions outside Metro-Manila.

5. In addition, a very insignificant portion of the lending was long-term which, in the commercial banking definition, is from 1 to 5 years. In fact, 86% of all commercial bank lending was for short-term loans which generally means terms of less than 1 year. These figures show clearly that the commercial banks have been active only in providing very limited amounts of financing for working capital for SMI and virtually nothing for fixed assets.

6. It was, in fact, because of this that the Government developed the SMI credit program with the DBP and IGLF, financed partly through World Bank

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<sup>/1</sup> Information on the commercial banking role in financing SMI is taken from preliminary results of a World Bank Study (RPO) 67-159) of SMI in the Philippines still in progress later in 1979.

loans, and a rediscount and guarantee fund set up by the Government to provide lending to SMI through a credited institutions./1

7. From July 1975 through September 1978 DBP approved SMI loans amounting to P 466.4 million (US\$63 million) for 1,119 projects. During the same period IGLF approved 384 projects for P 97.8 million (US\$13.2 million).

8. Both these programs have passed through difficulties, and although they have provided significant amounts of financing for SMI during the past four years, they have not fully solved the problems of shortage of finance of the SMI sector. In particular, there remains an acute lack of short-term financing for working capital, and a number of small SMI cottage industries have to resort to informal money market obtaining credits through traders, and money lenders who provide loans at very high interest rates - around 3% a month- more than twice the interest rate of the commercial and development banks.

9. Even though there is more funding available, through the DBP and IGLF programs, the provision of adequate collateral remains a major difficulty which prevents many SMI from obtaining loans from the recognized financial institutions.

10. The major complaints of small-scale entrepreneurs in the financial field are:

- (a) Commercial banks are not interested in lending to SMI. They find the transaction costs too high and not profitable. The commercial banks regard SMI as too risky and insist on very high collateral or long proven records of creditworthiness.
- (b) Obtaining a loan from the DBP is a lengthy, time consuming process. On an average, it is claimed that the processing time for a DBP loan ranges from 4 months to 1 year and at least 3 more months for the release of funds, often longer. Loans over P 150,000 are above the DBP branch authority to approve and have to be passed for on a decision to DBP headquarters where it takes additional time. It is claimed that DBP requires from 10 to 16 supporting documents as well as a project feasibility study from an SMI loan applicant. DBP's SMI financing program has been handicapped by its institutional weaknesses, both at headquarters and in the branches. Under its previous SMI loans the World Bank has also stressed the

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/1 The IGLF is fully described in the Staff Appraisal Report (No. 2417-PH) on the Second Small and Medium Industries Development Project (May 1979).

need of appropriate institutional improvements. Whereas satisfactory results are being achieved (shorter processing time, reduced arrearages, better appraisal and supervision) at the headquarters most of the branches still need considerable improvement.

- (c) IGLF loans are somewhat quicker, but even here average time is more than 3 months. It is further claimed that the IGLF program has been very slow in developing. After a number of loans from this fund were approved in 1975, a number of the banks came to the conclusion that the IGLF was not profitable for them and that the whole process was too long and risky.

11. After some changes, principally a system of accrediting institutions rather than approve each loan, the IGLF program has slowly been reviving. One major private developing finance institution, the PDCP, has set up a special small business loans department and now accounts for more than 60% of IGLF loans up to September 1978.

12. Arrear rates have been high, both in the DBP and IGLF programs. In fact, it was the high arrears rate that caused many bankers to drop out of the IGLF Program in 1976-77. Steps are now being taken to reduce arrears and raise commercial bank margins under the IGLF program. As regards high transaction costs, the banks complained that these high costs were not covered by the margins they received. The high risks were born out by the higher proportion of arrears and defaults in such loans.

13. In the period since 1975, the arrears and default situation has gradually improved in both programs, although it remains higher than acceptable for the banks.<sup>/1</sup> Several commercial banks are prepared to lend to SMI through the IGLF only if their margin is increased and the entrepreneurs can show an adequate record of creditworthiness and produce collateral to cover the whole loan, claiming that retrieving the money guaranteed by IGLF is too complex and costly in time and litigation. The World Bank's second SMI project, approved in May 1979, incorporates a number of changes in IGLF's framework of policies such as higher margins to banks, and greater coverage of under-collateralized loans. After these changes IGLF should become more attractive to commercial banks.

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<sup>/1</sup> The improvement in the arrears situation is generally regarded as due to great selectivity of subborrowers, better appraisals, and more follow-up. This, of course, raises administrative costs, and there is a "trade-off" between these costs and losses on "defaults" and "loan write-offs."

14. The PDCP has developed a policy which seems to work of lending through IGLF only comparatively larger sums - above P 350,000 - which minimizes transaction costs, and building up a selective clientele.

15. There are various reasons given for the high arrears and default rates in both the small industry SMI credit programs. The banks say it is due to poor selection of loan beneficiaries, lack of management assistance, misrepresentation, inadequate records, misinformation, and a general over-optimism in presenting projects. The entrepreneurs counter by claiming that the banks do poor appraisals, do not help them in preparing projects, and that the delays often cause the figures presented to be out of date when the project is implemented so that equipment, construction, and production costs come out much higher than originally calculated. The delay they say makes the sums totally unrealistic, especially as the loans granted are for less than asked for, so that it becomes difficult, if not impossible to meet the financial obligations. On balance, the major reasons for high arrears seem to be poor evaluation of projects, inadequate supervision, low interest rates on DBP and IGLF loans and absence of any penalty charge on wilful defaults on IGLF loans.

16. Even if in the course of time many of the small enterprises will prove themselves creditworthy and thus be able to benefit more easily from credits from the financial institutions, this would only partly solve the problem. Most small firms in the Philippines are under-capitalized and tend to assume unreasonable debt burdens. There is need for more venture or equity capital in the small enterprises. A venture capital or organization (VIBES) (Ventures in Business Industries and in Enterprises Incorporated) was set up to assist SMI by providing equity capital, but has made only little progress. The National Development Corporation (NDC) has also tried to set up venture capital funds which will furnish equity financing for SMI projects located in the less developed areas of the country. However, both of these efforts need more support to achieve results. There is need for the financing institutions to help in creating venture capital companies and also to create more possibilities for SMI to lease equipment and factory premises so as to cut down debt obligations. An idea worth promoting has been suggested by one bank in Manila whereby equipment would be leased by banks to smaller enterprises. There is need to follow up this type of innovative idea for improving financial assistance to the SMI sector. These projects should, of course, be in addition to expanding the credit programs through DBP and IGLF.

**Table 1: HISTORICAL APPARENT DEMAND FOR STEEL PRODUCTS, 1968 to 1977**  
(in metric tons)

Steel products	1968	1969	1970	1971	1972	1973	1974	1975	1976	1977
<b>I. Flat Products</b>										
<b>A. Cold Rolled</b>										
GI sheets	145,159	169,494	133,169	122,300	112,171	153,495	89,234	85,448	107,344	115,454
Tin plates	98,481	115,501	132,085	95,000	92,199	94,600	116,668	96,922	118,477	144,736
CRS/C	<u>22,665</u>	<u>24,179</u>	<u>32,011</u>	<u>95,500</u>	<u>60,200</u>	<u>72,759</u>	<u>57,638</u>	<u>57,971</u>	<u>61,531</u>	<u>46,132</u>
Subtotal	266,305	309,174	297,265	312,800	264,570	320,854	263,540	240,341	297,352	306,322
<b>B. Hot Rolled</b>										
Plates	84,000	82,200	73,176	59,693	72,600	70,000	71,800	76,300	82,400	62,590
HRS/C	11,800	11,000	37,100	65,000	21,227	32,300	47,274	56,315	42,331	87,057
Pipes & tubes	<u>66,607</u>	<u>55,816</u>	<u>59,196</u>	<u>57,473</u>	<u>58,520</u>	<u>76,544</u>	<u>51,314</u>	<u>82,542</u>	<u>80,037</u>	<u>71,300</u>
Subtotal	162,407	149,016	169,472	182,166	152,347	178,844	170,488	215,157	204,768	220,947
<b>II. Nonflat Products</b>										
Steel bars	215,036	223,685	230,884	245,085	228,437	232,941	286,746	416,173	371,644	418,229
Wire rods & wire	96,247	85,231	104,069	82,117	72,381	79,548	71,927	88,713	92,816	97,819
Structural shapes and rails	<u>56,400</u>	<u>39,600</u>	<u>24,200</u>	<u>26,500</u>	<u>26,800</u>	<u>20,600</u>	<u>40,000</u>	<u>39,100</u>	<u>41,000</u>	<u>41,200</u>
Subtotal	<u>367,683</u>	<u>348,516</u>	<u>359,093</u>	<u>353,702</u>	<u>327,618</u>	<u>333,089</u>	<u>398,673</u>	<u>543,986</u>	<u>505,460</u>	<u>557,248</u>
<b>Total Finished Products</b>	<u>796,305</u>	<u>806,766</u>	<u>825,830</u>	<u>848,668</u>	<u>744,535</u>	<u>832,787</u>	<u>832,601</u>	<u>999,484</u>	<u>997,580</u>	<u>1,084,517</u>
<b>Crude steel equivalent /a</b>	<u>1,021,019</u>	<u>1,034,238</u>	<u>1,058,756</u>	<u>1,088,035</u>	<u>954,532</u>	<u>1,067,676</u>	<u>1,067,437</u>	<u>1,281,390</u>	<u>1,278,949</u>	<u>1,390,406</u>

/a Based on yield factor 0.78.

Source: Data supplied by National Steel.



Table 2: 1978 STEEL DEMAND ESTIMATES

Product	Local production	Imports	Total demand	% Increase/(Decrease)	
				1977 demand	1978/ 1977
<b>I. Flat Products</b>					
<b>A. Cold Rolled</b>					
GI sheets	117,000	11,000	128,000	115,454	10.7
Tin plates	60,000	79,000	139,000	144,736	(4.0)
CRS/C	34,000	24,000	58,000	46,132	25.7
Subtotal	<u>211,000</u>	<u>114,000</u>	<u>325,000</u>	<u>306,322</u>	<u>6.1</u>
<b>B. Hot Rolled</b>					
Plates	19,000	66,000	85,000	62,590	35.8
HRS/C	23,000	82,000	105,000	87,057	20.6
Pipes & tubes	44,000	31,000	75,000	71,300	5.2
Subtotal	<u>86,000</u>	<u>179,000</u>	<u>265,000</u>	<u>220,947</u>	<u>19.9</u>
<b>Total Flat</b>	<u>297,000</u>	<u>293,000</u>	<u>590,000</u>	<u>527,269</u>	<u>11.9</u>
<b>II. Nonflat Products</b>					
Steel bars	320,000	20,000	340,000	418,229	(18.7)
Wire rods & wire	70,000	15,000	85,000	97,819	(13.1)
Structural shapes & rails	-	36,000	36,000	41,200	(12.6)
Subtotal	<u>390,000</u>	<u>71,000</u>	<u>461,000</u>	<u>557,248</u>	<u>(17.3)</u>
<b>Total Finished Products</b>	<u>687,000</u>	<u>364,000</u>	<u>1,051,000</u>	<u>1,084,517</u>	<u>(3.1)</u>
Crude steel equiv. (at 0.78 yield)	-	-	1,347,000	1,390,406	(3.1)

Notes on estimates:

- All import figures are preliminary statistics gathered from import manifests of the Bureau of Customs.
- NSC sales statistics were used to represent domestic demand of the following products: (a) CRS/C  
(b) HRS/C  
(c) Plates
- For the other products (i.e., GI sheets, pipes & tubes, steel bars, and wire rods), domestic production was estimated by assuming an average monthly production volume for months wherein no production report has been submitted by the manufacturer.
- For tin plates: Local production was based on NSC's TMBP sales to ELISCO and ELISCO's imports for TMBP.

Source: Data supplied by National Steel.

Table 3: APPARENT DEMAND FOR IRON AND STEEL PRODUCTS, 1962 to 1967  
(In metric tons)

Iron and Steel Products	1962	1963	1964	1965	1966	1967
<u>Flat Steel Products</u>						
<u>A. Cold Rolled Flat Steel</u>						
1. GI sheets	91,938	94,042	110,265	122,283	121,995	136,690
2. Tin plates	34,478	56,551	77,443	84,383	87,085	104,430
3. Cold-rolled sheets	12,800	14,100	15,500	17,000	18,700	20,600
Total finished cold-rolled products	<u>139,316</u>	<u>164,803</u>	<u>203,208</u>	<u>223,666</u>	<u>227,780</u>	<u>261,730</u>
<u>B. Hot Rolled Flat Steel</u>						
1. Plates	29,300	32,200	35,500	39,000	42,900	42,200
2. Hot-rolled sheets	6,700	7,300	8,100	8,900	9,880	10,700
3. Pipes and tubes (Hot-rolled equiv.)	14,100	19,000	27,500	24,200	21,400	38,300
Total finished hot-rolled products	50,842	59,500	72,500	73,400	75,200	98,200
Hot-rolled equiv. of cold-rolled products	163,800	193,800	239,100	262,700	268,000	307,900
Total hot-rolled sheet requirement	214,642	253,300	311,600	336,100	343,200	406,100
<u>Bar and Rod Steel Products</u>						
A. Merchant bars	118,323	139,552	169,380	184,964	217,687	230,580
B. Wire rods	49,465	50,821	62,398	66,455	69,946	88,890
Total bars & rods	167,800	190,400	231,800	251,400	?	319,500
Structural shapes and sections	20,927	28,183	36,615	87,918	39,267	58,810
Total billet products	188,727	218,600	268,400	289,300	326,990	378,300
Billet equivalent	209,700	242,900	298,200	321,400	363,260	420,300
Total flat & bar steel prod.	424,342	496,200	609,800	657,500	706,400	826,400
Crude steel equiv. of						
Grand Total <u>/a</u>	471,500	551,300	677,600	730,600	784,900	918,200
Crude steel per capita (kg)	16.12	18.23	21.67	22.59	23.45	26,490

/a At 90% yield factor (crude to semi-finished materials, i.e., hot-rolled sheet and billet equivalent).

Source: National Steel - February 6, 1979.

Table 4: APPARENT DEMAND - MAJOR INDIVIDUAL STEEL PRODUCTS

Table 4.A: APPARENT DEMAND FOR TIN PLATES, 1968-77  
(In metric tons)

Year	Local production	Imports	Total
1968	49,981	48,500	98,481
1969	67,601	47,900	115,501
1970	92,285	39,800	132,085
1971	55,000	40,000	95,000
1972	49,499	42,700	92,199
1973	54,000	40,600	94,600
1974	80,068	36,600	116,668
1975	61,822	35,100	96,922
1976	68,877	49,600	118,477
1977	87,836	56,900	144,736

- Sources: 1. MIRDC (for local production, 1968-75).  
2. NSC and ELISCO sales (for 1976 local production).  
3. IISI World Steel Exports (for imports, 1968-77).

Table 4.B: APPARENT DEMAND FOR G.I. SHEETS, 1970-77  
(In metric tons)

Year	Local production	Imports	Total
1970	127,569	5,600	133,169
1971	114,000	8,300	122,300
1972	107,571	4,600	112,171
1973	138,995	14,500	153,495
1974	83,534	5,700	89,234
1975	79,248	6,200	85,448
1976	100,244	7,100	107,344
1977	102,454	13,000	115,454

Sources: 1. MIRDC (for local production figures).  
2. IISI World Steel Exports (for 1968-1977 import figures).

Table 4.C: APPARENT DEMAND FOR CRS/C, 1970-77  
(In metric tons)

Year	Domestic sales	Imports	Total
1970	17,711	14,300	32,011
1971	24,500	58,600	83,100
1972	6,000	54,200	60,200
1973	33,659	39,100	72,759
1974	28,538	29,100	57,638
1975	22,471	35,500	57,971
1976	38,531	23,000	61,531
1977	28,200	17,932	46,132

- Sources: 1. IISMI/NSC sales (for 1970-77 domestic sales; ELIPOL sales in 1973).  
2. IISI World Steel Exports (for 1970-76 import figures; 1977 NCSO export statistics).

Table 4.D: APPARENT CONSUMPTION OF WIRE ROD AND WIRE  
(In metric tons)

Year	Local production	Imports	Total
1970	44,887	50,182	104,069
1971	57,447	24,670	82,117
1972	52,814	19,567	72,381
1973	59,987	19,561	79,548
1974	33,986	37,941	71,927
1975	65,134	23,579	88,713
1976	64,035	28,781	92,816
1977	82,519	15,300	97,819

- Sources:
1. MIRDC (for 1970-76 local production).
  2. NCSO (for 1970-76 imports).
  3. IISI World Steel Exports (for 1977 imports).
  4. Manufacturers' Report to ISA (for 1977 local production).

Table 4.E: APPARENT DEMAND FOR HRS/C, 1972-76  
(In metric tons)

Year	Domestic sales	Imports	Total
1972	927	20,300	21,227
1973	15,000	17,300	32,300
1974	19,574	27,700	47,274
1975	27,834	28,481	56,315
1976	12,931	29,300	42,331
1977	11,603	75,454/ <u>a</u>	87,057

/a Dumping "Shiploads".

- Sources:
1. NSC/IISI Sales and Imports.
  2. IISI World Steel Exports.
  3. Bureau of Customs, Philippine Research and Statistics Service.

Table 4.F: APPARENT DEMAND FOR STEEL PLATES (3 mm and over) 1968-77  
(In metric tons)

Year	Local production	Imports	Total
1968	-	84,000	84,000
1969	-	82,200	82,200
1970	6,976	66,200	73,176
1971	5,493	54,200	59,693
1972	-	72,600	72,600
1973	-	70,000	70,000
1974	-	71,800	71,800
1975	-	76,300	76,300
1976	-	82,400	82,400
1977	3,590	59,000	62,590

Sources: 1. MIRDC (for local production figures).  
2. IISI World Steel Exports (for 1968-77 import figures).



Table 4.G: APPARENT DEMAND FOR STEEL PIPES AND TUBES, 1968 to 1977  
(In metric tons)

Year	Local production	Imports	Total
1968	23,207	43,400	66,607
1969	22,776	33,100	55,876
1970	18,096	41,100	59,196
1971	28,673	28,800	57,473
1972	31,120	27,400	58,520
1973	38,944	37,600	76,544
1974	32,314	19,000	51,314
1975	45,442	37,100	82,542
1976	44,737	35,300	80,037
1977	40,000	31,300	71,300

Sources: 1. MIRDC (for local production figures).  
2. IISI World Steel Exports (for 1968-77 import figures).

Table 4.H: APPARENT CONSUMPTION OF STEEL BARS  
(In metric tons)

Year	Local production	Imports	Total
1970	201,579	29,245	230,824
1971	203,753	14,332	245,085
1972	209,662	18,775	228,437
1973	214,168	18,773	232,941
1974	250,938	35,808	286,746
1975	390,788	25,385	416,173
1976	352,000	19,644	371,644
1977	389,035/ <u>a</u>	29,194	418,229

/a Estimates based on reports to ISA.

Sources: 1. MIRDC (for 1970 local production).  
2. NSCO (for 1970-77 imports).

Table 4.I: APPARENT CONSUMPTION OF STRUCTURAL SHAPES AND SECTIONS  
(in metric tons)

Year	Local production	Imports	Total
1968	-	56,400	56,400
1969	-	39,600	39,600
1970	-	24,200	24,200
1971	-	26,500	26,500
1972	-	26,800	26,800
1973	-	20,600	20,600
1974	-	40,000	40,000
1975	-	39,100	39,100
1976	-	41,000	41,000
1977	-	41,200	41,200

Source: IISI World Steel Exports (for 1968-77).

Table 5A: INFORMATION ON DISTRIBUTION OF PRODUCTS BY END-USE SECTORS

Estimated Distribution of Galvanized Iron Sheets Demand by End-Using Sectors, 1973, 1976, and 1977

End-using sector	Specific end-application	Distribution in percent						1973 Total
		1977			1976 /a			
		Imports	Local production	Total	Imports	Local production	Total	
1. Private Residential Construction	Rain goods/roofing and siding/building components as gates, doors/central air-conditioning, heating, cooling and ventilating systems/culverts/storage tanks.	21.1	50.0	46.8	20.3	50.0	48.0	50.0
2. Private Nonresidential Construction	- do -	60.6	20.0	24.5	58.0	20.0	22.6	20.0
3. Public Construction	- do -	-	20.0	17.8	-	20.0	18.6	20.0
Subtotal		81.7	90.0	89.1	78.3	90.0	89.2	90.0
4. Manufacturing and Fabrication:								
(a) Non-Food Container	Containers/packaging/strapping and shipping materials/shipping pails.	-	1.0	0.9	-	1.0	0.9	-
(b) Appliance and Related Products	Household laundry/equipment/ice box/other house- hold appliance.	13.2	0.5	1.9	17.3	0.5	1.6	-
(c) Automotive	Vehicle body parts.	1.7	3.0	2.8	-	3.0	2.8	-
(d) Shipbuilding and Ship Repair	Construction and repair of vessels and marine equipment.	-	2.0	1.8	-	2.0	1.8	-
(e) Other End-Uses	Fabrication of agricultural implements and equip- ment/miscellaneous fabrication and manufacturing.	3.4	3.5	3.5	4.4	3.5	3.7	10.0
Total		100.0	100.0	100.0	100.0	100.0	100.0	100.0

/a The 1976 market classification is based on the AISI market classification.

Sources: 1973 - Asia Research Organization, Demand Study on Iron and Steel Products, March 1974.  
1976 - Iron and Steel Authority Steel Demand Survey, 1977, Bureau of Customs Import Manifests, and Philippine Research  
- Statistics Service.

Table 5B: Estimated Distribution of Tin Plate Demand to End-Using Sectors, 1973, 1976, and 1977

End-Using Sector	Specific End-Application	1977			1976 /a			1973
		Imports	Local	Total	Imports	Local	Total	Total
Food container	Cans - sanitary and general line; crown caps and other closures; containers, packaging and shipping materials.							
Milk		8.5	43.9	28.7	1.0	47.3	29.3	
Fruits & Fruit Juices	Canning and preserving of fruits and fruit juices.	60.1	38.7	46.8	73.2	2.6	30.2	
Canned Vegetables		1.5	2.3	2.0	-	-	-	
Fish and Sea Foods		-	-	-	4.0	5.3	4.8	
Meat and Poultry	Meat processing & canning, except ham, bacon and chicharon.	3.5	1.1	2.2	5.5	7.2	6.6	
Beverage & Soft Drinks		1.9	-	0.7	0.5	21.7	13.4	
Cooking Oil		4.0	2.8	3.3	2.2	2.4	2.3	
Sauces & Seasonings	Canning & preserving of vegetable sauces.	-	-	-	1.8	0.8	1.2	
Other Foods		6.2	1.3	5.7	5.5	5.5	5.6	
Subtotal		81.5	90.1	86.9	93.9	92.8	93.4	70.0
Nonfood Container	Cans - sanitary and general line; crown caps and other closures; containers, packaging and shipping materials							
Pails & Related Products		4.3	3.0	3.5	1.5	2.1	1.8	
Motor Oil		6.1	3.1	4.2	1.6	2.2	1.9	
Other Non-Food		8.1	3.8	5.4	3.0	2.9	2.9	
Subtotal		18.5	9.9	13.1	6.1	7.2	6.6	30.0
<u>Total</u>		<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

/a The 1976 market classification was based on AISI market classification.

Sources: 1973 - Asia Research Organization, Demand Study on Iron and Steel Products, March 1974.  
 1976 - Iron and Steel Authority Steel Demand Survey, 1977.  
 1977 - Bureau of Customs Import Manifest and Philippine Research Statistics Service.

Table 5C: ESTIMATED DISTRIBUTION OF CRS/C DEMAND TO END-USING SECTORS, 1973, 1976 and 1977

End-Using Sector	Specific End-Application	Distribution in percent						1973 Total
		1977			1976 /a			
		Imports	Local production	Total	Imports	Local production	Total	
1. Private Non-Residential	Storage tanks, central air-conditioning, cooling and ventilating systems, smoke-stack, grain silos.	15.1	2.4	10.6	11.4	8.6	9.6	-
2. Public Construction	- do -	0.7	-	0.4	-	1.0	0.6	-
Subtotal		15.8	2.4	11.0	11.4	9.6	10.2	-
3. Manufacturing and Fabrication:								
(a) Non-Food Containers	Steel drums and pails.	36.5	-	23.6	2.0	30.1	19.5	32.0
(b) Appliance & Related Products	Refrigerators, freezers, room air-conditioners, electric fans, toasters, rice cookers, gas stoves, flat iron, television sets, stereo sets, radio.	22.9	43.9	30.4	46.5	17.0	28.2	28.0
(c) Automotive	Body stamping, fuel tanks, chassis frame, body panel, seat frames, muffler, assembly of cars, jeepneys, commercial/industrial vehicles, buses and vans.	21.8	49.1	31.5	39.7	22.0	27.5	12.0
(d) Steel Furnitures & Fixtures	Filing cabinets, safes, vaults.	1.0	-	0.6	-	4.3	2.7	5.0
(e) Shipbuilding and Ship-repair	Construction and repair of vessels and of marine equipment.	1.0	0.1	0.7	-	1.0	0.6	-
(f) Other End-Uses	Strip users, miscellaneous fabrication.	1.0	4.5	2.0	0.4	16.0	11.3	23.0
<u>Total</u>		<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

/a The 1976 market classification was based on AISI market classification.

Sources: 1973 - Asia Research Organization, Demand Study on Iron and Steel Products, March 1974.  
 1976 - Iron and Steel Authority Steel Demand Survey, 1977; Bureau of Customs Import Manifests, and Philippine Research Statistics Service.  
 1977 - Bureau of Customs Import manifest and Philippine Research Statistics Service.

Table 5D: ESTIMATED DISTRIBUTION OF STEEL PLATES DEMAND TO END-USING SECTOR, 1973, 1976 AND 1977

End-Using Sector	Specific End-Application	Distribution in percent						1973 Total
		1977			1976 /a			
		Imports	Local production	Total	Imports	Local production	Total	
Private Non-Residential Construction	Built up structurals (as beam, joist, girders), storage tanks, central air-conditioning, heating, cooling and ventilating systems.	12.0	12.0	12.0	18.5	-	18.5	13.2
Public Construction	- do -	3.0	-	3.0	15.0	-	15.0	13.2
Manufacturing and Fabrication:								
(a) Non-Food Containers	LPG cylinder.	7.0	-	6.0	7.7	-	7.7	15.3
(b) Appliance & Related Products		-	-	-	1.3	-	1.3	13.2
(c) Automotive	Cars, jeeps, commercial/industrial vehicles/ buses and mini-buses.	-	-	-	4.1	-	4.1	14.2
(d) Steel Furnitures & Fixtures	Safes and vaults.	2.0	-	2.0	-	-	-	3.3
(e) Shipbuilding and Ship-repair	Construction and repair of vessels and of marine equipment.	64.0	76.0	65.0	33.2	-	33.2	9.9
(f) Other End-Uses	Mine cars, agricultural equipment (as threshers, power tillers, dryers), miscellaneous fabrication.	12.0	12.0	12.0	20.2	-	20.2	17.7
<u>Total</u>		<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>-</u>	<u>100.0</u>	<u>100.0</u>

/a The 1976 market classification was based on AISI market classification.

Sources: 1973 - Asia Research Organization, Demand Study on Iron and Steel Products, March 1974.  
1976 - Iron and Steel Authority Steel Demand Survey, 1977.  
1977 - Bureau of Customs import manifest and Philippine Research Statistics Service.

Table 5E: ESTIMATED DISTRIBUTION OF HRS/C DEMAND TO END-USING SECTOR, 1973, 1976 AND 1977

End-Using Sector	Specific End-Application	Distribution in percent						1973 Total
		1977			1976 /a			
		Imports	Local production	Total	Imports	Local production	Total	
1. Private Non-Residential Construction	Storage tanks, duct works, reinforcing products as built up structurals (angles, channels, purlins).	26.4	21.1	25.8	15.0	19.0	16.3	
2. Public Construction	- do -	<u>19.8</u>	<u>15.8</u>	<u>19.3</u>	<u>11.2</u>	<u>12.0</u>	<u>11.4</u>	
Sub-total		46.2	36.9	45.1	26.2	31.0	27.7	
3. Manufacturing and Fabrication:								
(a) Non-Food Containers	LPG cylinder.	-	5.7	0.7	9.0	4.2	7.5	
(b) Appliance & Related Products	Refrigerators and room air-conditioners, gas stoves, televisions, stereo speaker yoke.	4.7	3.8	4.6	4.5	10.1	6.2	
(c) Automotive	Cars, jeeps, commercial/industrial vehicles, buses and mini-buses.	23.8	17.3	23.1	21.0	17.8	20.0	
(d) Steel Furnitures & Fixtures	Vaults, safes, steel cabinets.	-	-	-	5.3	6.0	5.5	
(e) Shipbuilding and Ship-repair	Construction and repair of vessels and of marine equipment.	24.8	19.6	24.1	10.0	3.3	8.0	
(f) Other End-Uses	Manufacture and fabrication of agricultural implements and equipment, miscellaneous fabrication.	<u>0.5</u>	<u>16.7</u>	<u>2.4</u>	<u>24.0</u>	<u>27.6</u>	<u>25.1</u>	
<u>Total</u>		<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	

/a The 1976 market classification was based on AISI market classification.

Sources: 1973 - Asia Research Organization, Demand Study on Iron and Steel Products, March 1974.  
1976 - Iron and Steel Authority Steel Demand Survey, 1977; Bureau of Customs import manifests, and Philippine Research Statistics Service.



Table 5F: ESTIMATED DISTRIBUTION OF STEEL PIPES AND TUBE DEMAND TO END-USING SECTOR, 1973, 1976 AND 1977

End-Using Sectors	Specific End-Application	Distribution in percent						1973 Total
		1977			1976 /a			
		Imports	Local production	Total	Imports	Local production	Total	
1. Private Residential Construction	Waterworks, drainage, sewerage, building components, electrical conduits.	-	28.0	17.9	-	26.5	17.0	38.0
2. Private Non-Residential Construction	Waterworks, drainage, sewerage, pipelines for oil and gas, chemicals, drill pipes, civil engineering steel tower, electrical conduit.	30.5	28.0	28.9	41.0	27.0	32.0	38.0
3. Public Construction		40.5	30.0	33.8	43.3	33.5	37.0	9.0
Subtotal		<u>71.0</u>	<u>86.0</u>	<u>80.6</u>	<u>84.3</u>	<u>87.0</u>	<u>86.0</u>	<u>85.0</u>
4. Manufacturing and Fabrication:								
(a) Food Containers		-	-	-	-	-	-	-
(b) Nonfood Containers		-	-	-	-	-	-	-
(c) Appliance & Related Products		3.9	-	1.4	-	-	-	-
(d) Automotive	Vehicle body parts, exhaust pipes, tubings, machine parts.	5.6	1.0	2.7	-	1.6	1.0	-
(e) Steel Furnitures & Fixtures		-	5.0	3.2	-	3.1	2.0	-
(f) Shipbuilding and Ship-repair		8.5	2.0	4.3	8.0	3.0	4.8	-
(g) Other End-Uses	Manufacture and fabrication of agricultural implements and equipment, miscellaneous fabrication and manufacturing.	11.0	6.0	7.8	7.7	5.4	6.2	15.0
Total		<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

/a The 1976 market classification is based on the AISI market classification.

Sources: 1973 - Asia Research Organization, Demand Study on Iron and Steel Products, March 1974.  
1976-77 - Bureau of Customs Import Manifest and Philippine Research Statistics Service.

Table 5G: ESTIMATED DISTRIBUTION OF STEEL BARS DEMAND TO END-USING SECTOR, 1973, 1976 AND 1977  
(In percent)

End-Using Sector	Specific End-Application	Distribution in percent						1973 Total
		1977			1976 /a			
		Imports	Local production	Total	Imports	Local production	Total	
1. Private Residential Construction	Reinforcing products, window frames and grills, fences and gates.	-	-	8.2	-	12.0	11.4	16.0
2. Private Non-Residential Construction	Reinforcing products, window frames and grills, fences and gates, other building components.	5.0	45.0	42.2	7.2	51.0	49.0	32.0
3. Public Construction		14.2	33.0	31.7	-	31.0	29.4	32.0
Subtotal		<u>19.2</u>	<u>86.8</u>	<u>82.1</u>	<u>7.2</u>	<u>94.0</u>	<u>89.8</u>	<u>80.0</u>
4. Manufacturing and Fabrication:								
(a) Appliance & Related Products	Angulars, flat bars and shafting for air- conditioners, refrigerators, and electric fans.	5.3	-	0.4	4.5	-	0.2	-
(b) Automotive	For body, chassis and engine parts as shafts, leaf springs, motor axles.	39.3	0.2	2.9	43.0	0.3	2.2	-
(c) Steel Furnitures & Fixtures	Chairs and tables, stands.	-	-	-	-	0.1	0.1	-
(d) Shipbuilding and Ship-repair	Construction and repair of vessels and marine equipment.	1.9	3.1	3.0	2.4	3.5	3.4	-
(e) Bolts, Nuts, Rivets and Screws	Bolts, nuts, rivets and screws.	22.7	3.0	4.4	24.8	1.1	2.3	-
(f) Other End-Uses	Fabrication of agricultural implements and equip- ment, miscellaneous fabrication and manufacturing as tools.	11.6	6.9	7.2	18.1	1.0	2.0	20.0
Total		<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>	<u>100.0</u>

/a The 1976 market classification is based on the AISI market classification.

Sources: 1973 - Asia Research Organization, Demand Study on Iron and Steel Products, March 1974.  
1976 - Iron and Steel Authority Steel Demand Survey, 1977.  
1977 - Bureau of Customs Import manifest and Philippine Research Statistics Service.

Table 5H: ESTIMATED DISTRIBUTION OF STRUCTURAL SHAPES AND SECTIONS DEMAND TO END-USING SECTOR, 1973, 1976 AND 1977

End-Using Sector	Specific End-Application	Distribution in percent						1973 Total
		1977			1976 /a			
		Imports	Local production	Total	Imports	Local production	Total	
1. Private Residential Construction	Angles, channels, and light gauge shapes.	3.9	-	3.9	7.2	-	7.2	36.0
2. Private Nonresidential Construction	Angles, channels, I-beams, light gauge shapes, wide flange shapes, sheet piling.	15.9	-	15.9	29.3	-	29.3	23.2
3. Public Construction	- do -	37.2	-	37.2	31.1	-	31.1	-
Subtotal		<u>57.0</u>	<u>-</u>	<u>57.0</u>	<u>67.6</u>	<u>-</u>	<u>67.6</u>	<u>59.2</u>
4. Manufacturing and Fabrication:								
(a) Appliance & Related Products		-	-	-	-	-	-	6.0
(b) Automotive	Vehicle chassis and body parts.	-	-	-	8.0	-	8.0	12.0
(c) Shipbuilding and Ship-repair	Construction and repair of vessels and marine equipment.	21.5	-	21.5	10.0	-	10.0	1.3
(f) Other End-Uses	Manufacture and fabrication of agricultural implements and equipments, miscellaneous fabrication.	21.5	-	21.5	14.4	-	14.4	21.5
<u>Total</u>		<u>100.0</u>	<u>-</u>	<u>100.0</u>	<u>100.0</u>	<u>-</u>	<u>100.0</u>	<u>100.0</u>

/a The 1976 market classification is based on the AISI market classification.

Sources: 1973 - Asia Research Organization, Demand Study on Iron and Steel Products, March 1974.  
 1976 - Iron and Steel Authority Steel Demand Survey, 1977.  
 1977 - Bureau of Customs Import manifest and Philippine Research Statistics Service.

The Market for Steel

Historical Trends

The total market for steel products in the Philippines in 1978 was about 1,050,000 tons (of finished steel product) or about 1.3 million tons, raw steel equivalent. This gives only about 31 kg annual per capita consumption (as compared to levels of 650 kg or more in highly developed countries).

Statistical data on local production, imports, and apparent demand for all major individual steel products is given in ANNEX V-1. Most of this data covers each year between 1968 to 1977./1 Later data developed recently for 1978 is presented in Annex V-I, Table 2.

In recent years the Philippine steel market has been characterized by relatively high portion of flat products in the overall product mix as indicated below:

<u>Year</u>	<u>Distribution of Products</u>	
	<u>Flats</u>	<u>Non Flats</u>
1974	52%	48%
1975	46%	54%
1976	49%	51%
1977	49%	51%
1978	<u>56%</u>	<u>44%</u>
<u>Simple Average</u>	50%	50%

The ratio of flat products to total consumption can be expected to increase as the Philippine economy becomes more developed. This factor will be taken into account in planning for additional hot strip mill capacity needed in the 1980's.

Projected Growth

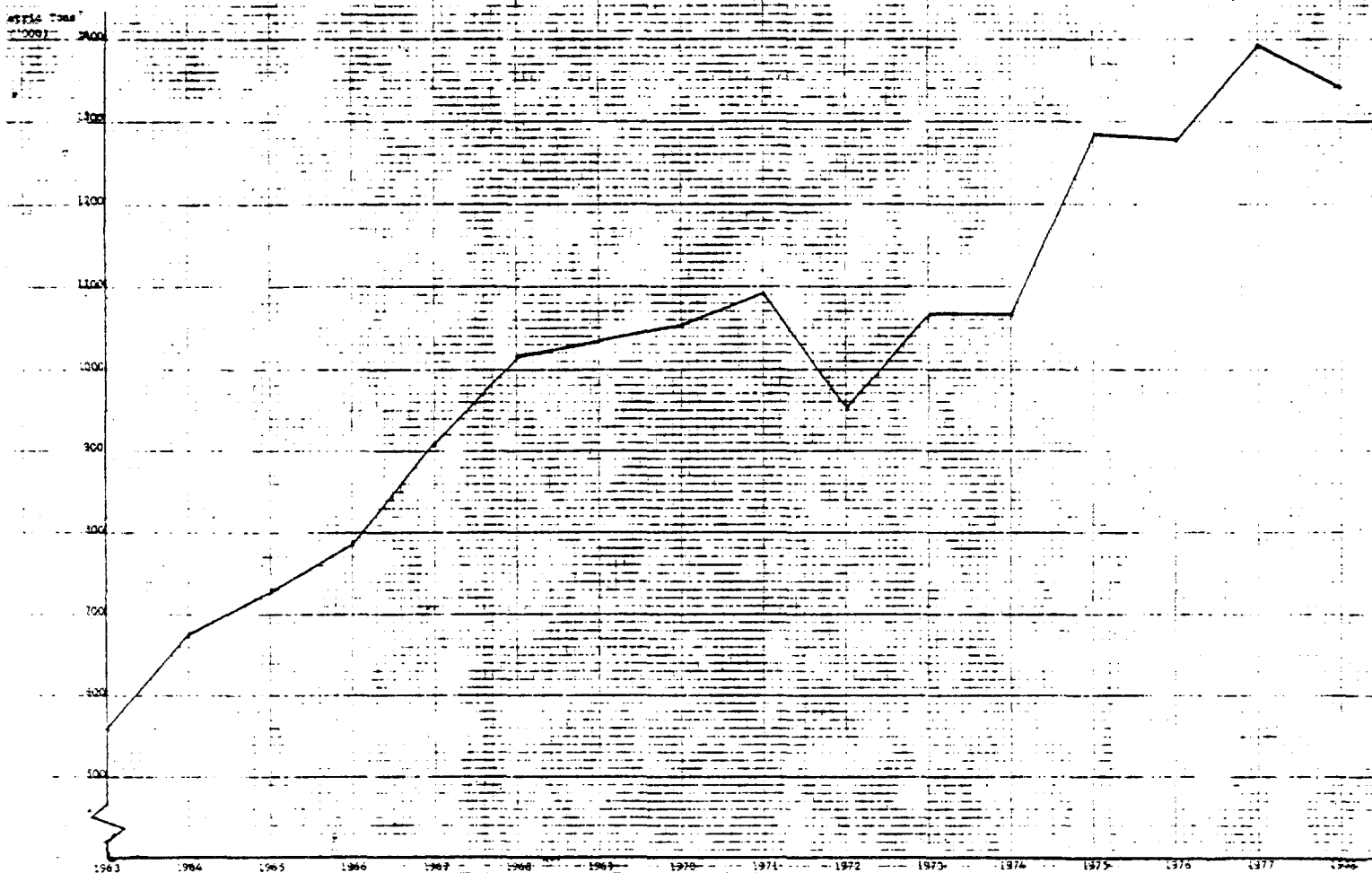
There have been several different approaches put forth with respect to future growth rates, steel intensity, etc. This report only attempts to illustrate the general magnitude of various plausible estimates.

Overall growth rates for steel consumption as estimated by NEDA and CRC range from 10.7% to 14.7% (for 1976 to 1982) and 12.2% to 16.0% (1983 to 1987). Other late estimates of growth rates for steel-related

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/1 Summary data for years 1962 - 1967 is also given.

HISTORICAL DEMAND - STEEL TONNAGE EQUIVALENT  
1963 - 1978



sectors of the economy provided by National Steel, indicate annual growth rates associated with the 5-year development plan, (1978-1982):

	<u>1978-1987</u>	<u>1978-1982</u>	<u>1982-1987</u>
1) Manufacturing	10.2%	9.2%	11.0%
2) Construction	12.4%	12.3%	12.5%
3) Total Industrial Sector	10.8%	10.0%	11.4%

Market estimates provided by MIRDC are based on an analysis of growth rates for 10 major products (such as reinforcing bar, wire rod, hot rolled sheet, plate, cold rolled sheet, tinplate, galvanized sheet, rails, structurals, etc.).

Their estimate for 1978 steel consumption was 1,040,999 tons or very close to an "actual" figure of 1,051,000.

Recent data supplied by the Bank mission indicates that growth in steel related sectors of the economy could be expected to be approximately 7% over the next 5 years. Data given in ANNEX V-1 indicate actual past growth rates of less than 3% in the last 10 years.

Assuming 7 to 8%/yr levels the 1978 actual indicated market we obtain a total steel market in 1984 /1 of about 1.9/2.1 million tons.

When relating this to the proposed new integrated steel plant we should deduct reasonable quantities for:

- (a) Part of the product mix which cannot be made economically with the proposed steel plant (sizes, types, steel grades, special requirements, etc.).
- (b) Products which could be expected to be supplied by existing steel plants, (or new/expanded plants).
- (c) Other - including some products which will probably continue to be imported for various reasons (i.e. used in free trade zone, etc.).

After making an adjustment for the factors mentioned above we reach a potential tonnage which would most likely be supplied by the proposed new integrated plant amounting to 1.5 to 1.6 million tons in 1984. About 65% of this tonnage is expected to be flat products./2

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/1 Proposed year of start-up for Integrated Plant.

/2 All of the existing melting capacity which will continue operating, or expand its output, is in non-flat products. This and other factors indicate the new plant could be more heavily involved in production of flat products than non-flat products.

### Raw Materials and Production Processes

The Philippines has a good resource base in many important minerals such as copper, nickel, manganese, titanium (lead, zinc), and limestone.

However, with respect to the basic steelmaking raw materials - especially iron ore and coal, or other energy equivalent such as natural gas, the situation is not so favorable.

There has been extensive work done on exploration, evaluation, and some development of iron mines in the Philippines.

#### Lump Iron Ore

There are 22 iron ore deposits scattered throughout the country which are classified by the Bureau of Mines as lump ore. As of 1978 the estimated total reserves are 35 million tons. One of the largest deposits - at Santa Ines Mining Company, Sta. Ines, Antipolo - is stated to contain 54% Fe but also contains high levels of sulphur - up to more than 4%. Other major deposits of Philippine Iron Mines Inc., Larap, Camarines Norte contain less Fe (10%) and have recently been taken out of production.

#### Magnetite Iron Sands

There are 15 sand/ore deposits widely distributed throughout the country. However, 7 of these have ceased operation since 1974, due in part to reasons of economics and ecology.

#### Coal

At present there are over 50 coal mining companies in operation. The grades of coal being mined are not considered to be "non-coking" grades and are used almost entirely for heating purposes mainly in the cement and sugar industries. There are some coal deposits of higher rank which are considered to include a small percentage of coking coal. Total potential reserves of these higher ranking coals is approximately 200 million tons. The mine with the highest potential for coking coals is the Lumbog Mine in Malangas, south-east of Mindanao. Another mine also under consideration for coking coal is the Panganiban Mine in Catanduanes. Exploration of these two mines, and evaluation of their economic potentials, is underway at this time.

#### Conclusion

The long term prospects for economic exploitation of Philippine iron ore and coal deposits appear uncertain. This is due to chemical/physical qualities of materials, geographic distribution, size of deposits, ecological impact, etc., which all tend to make the economics of mine development somewhat risky.

Although work still continues on mine exploration and development, major studies on the steel industry (i.e. especially the latest major JICA Study) are now proceeding under the assumption that any large new steel plant (utilizing the convention process route) would be based on 100% imported iron ore and coal.

### Recommendation

Based on limited information, it would appear that continuation of some ore/coal exploration efforts are justified and should be promoted by groups such as Bureau of Mines, and possibly MIRDC, in the expectation that some additional mine development will be economical.

In this light it would also appear reasonable to expand research in three areas:

(1) Coal Blending

Re-analyze the feasibility/economic evaluation of coal blending at present probable costs of energy; i.e. say 10% to 15% Philippine coal blended with imported coal for use in Coke Ovens. Pilot plant tests would give a good indication of how much Philippine coal could be utilized economically in coking coal blends, and physical/chemical quality of coke to be produced.

(2) Iron Ore Blending

Review feasibility/economic evaluation of blending Philippine iron ores (beneficiated ores) with imported ores for sinter plant or blast furnace feed.

(3) Direct Reduction

Utilization of the newer direct reduction processes now available has been discussed in the Philippine steel industry but (somewhat casually) discarded due to unavailability of natural gas. Since some direct reduction processes can be based on very low grade (but reactive) solid reductants (coal, lignite) it would appear that further study of direct reduction for the Philippines is warranted. Feasibility of utilizing Philippine low grade coals (now classified non-coking coals) in the direct reduction process (such as SL/RN process) should be further evaluated in order to explore possibilities of: a) replacing high cost imported scrap with sponge iron; and b) making sponge iron for steelmaking (or even making foundry iron with the ASEA, Swedish direct reduction process for example).



(Highly educated and reasonably low cost research personnel are very likely to be available in the Philippines to conduct the research indicated above, with only limited inputs required from highly specialized experts from the respective industries involved, i.e., Pittston Coal, U. S. Steel, C.V.R.D. - Brazil, Lurgi, Nippon Steel, Kaiser Steel, ASEA, etc.)

Effective Protection in the Steel Industry

	<u>Inputs</u>		<u>Value added</u>	<u>Finished product</u>
	<u>Imported billets</u>	<u>Domestic other</u>		<u>Rods and bars /a</u>
Cost breakdown (%)	75	10	15	100
Protection:				
nominal	110	100	383	150
actual	110	100	203	(123)
	<u>Domestic coils</u>	<u>Other</u>		<u>Galvanized sheets</u>
Cost breakdown (%)	82	8	10	100
Protection:				
actual	154 /b	114	250	100
	<u>Coils</u>	<u>Tin and other</u>		<u>Tinplate</u>
Cost breakdown (%)	57	30 /c	13	100
Protection:				
a) Made from domestic steel coil	150	107.5	77 /d	114
b) Made from duty free imported steel coil	100	107.5	192	114

/a Made from imported billets.

/b Price ratio for domestic coil.

/c Includes tin (imported).

/d i.e. negative effective protection of 23.

Note: "Protection" shows the domestic price, as an index with the international price = 100. Protection in the "Value added" column is Effective Protection. The Cost breakdown is based on international data.

Estimated Foreign Exchange Savings of a Proposed New Steel Project

Case I: With New Integrated Plant - (at 1.0 million tpy level)

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	<u>Annual Value of Imports</u>	
	<u>6</u>	<u>6</u>
	<u>\$10</u>	<u>\$10</u>
	<u>A</u>	<u>B /a</u>
1. Imports:		
2. Iron Ore - 1,608,000 tons at \$25/ton	40.2	to 36.2
3. Coking Coal - 798,000 ton/yr at \$55/ton	43.9	39.5
4. Other Import Fuels	8.0	8.0
5. Operating Supplies + misc./rolls, - alloy/additions/maintenance materials, and other costs	10.0	10.0
6. Technical Assistance - (contract basis)	1.0	1.0
7. Purchased Scrap - 161,000 tons at \$130/ton	<u>20.9</u>	<u>16.7</u>
Sub total	124.0	to 111.4
8. Interest and Debt Repayment - 6 \$813 x 10 at 10%	81.3	81.3
<u>Total in Full Operation</u>	<u>\$205.3/yr</u>	to <u>192.7/yr</u> (say 200 million per year)

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/a Alternative B assumes some success with blending local iron ore and coal for BF burden, and use of 20% local scrap.

Case II: Without Integrated Plant - 1.0 x 10<sup>6</sup> tpy Raw Steel Equivalent

1. Capital Cost: \$813 million
2. Flats Product - 800,000 (slab)
3. Non-flats - 200,000 (billet)

Annual Value of Imports

i. <u>Cost to Import Product Mix:</u>	6
	<u>\$10</u>
Slab 800,000 ton x \$245/ton =	196
Billet 200,000 ton x \$260/ton =	<u>52</u>
<u>Total</u>	<u>248</u> million/yr (Total cost to import product mix)

Recapitulation:

A. Without Plant:

Annual foreign exchange cost needed to import steel products - \$248 million

Annual foreign exchange cost to operate plant & service debt - \$200 million

C. Indicated Difference

- \$ 48 million

(Using plant parameters given in JICA Study -  
1.0 million ton/yr plant.)

(per year at full  
operation)

D. Adjusted for larger plant size:

(assume 1 1/2 million tpy)

- \$72 /a  
million/yr

E. Simple Payout Period

Say \$780 million (foreign capital cost)  
72 million/yr

about 11 yr  
(required to  
recover foreign  
Investment)

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/a The indicated foreign exchange savings would increase rapidly with increases in steel product selling prices, which could occur during periods of world steel shortages - as in 1974. During such shortages selling prices could increase the equivalent of 20% or more over the full year. Annual foreign exchange savings associated with the operation of the integrated steel plant could then easily double to about \$140 million per year. The estimates shown above were prepared in March, 1979. If increases in steel product selling prices - which have occurred in the interim period through October, 1979 - are taken into account, the annual foreign exchange savings for the integrated plant could be estimated to increase to a level of approximately \$100 million.

PROFILE OF SELECTED MECHANICAL ENGINEERING SUBSECTORS VISITED BY MISSION

<u>Product Line</u>	<u>Existing Capacity and Output</u>	<u>Plant Visited</u>	<u>Comments</u>
Sewing machine	1 large unit (Singer) plus several medium and small assemblers. Total output 85,000 units (1977)	Singer sewing machine division: Fixed investment P 250 million Number of workers 460 Company has about 50% share of market. Plant exports cabinets and stands.	<ul style="list-style-type: none"> <li>- Local industry makes only foot-operated household sewing machines, with about 50% local content.</li> <li>- There is no supplier of precision components in the country.</li> <li>- Import of sewing machines and parts fluctuated between P 50 million and P 250 million over past 5 years.</li> <li>- Industrial sewing machines are all imported. Local assembly and manufacture of industrial type machines of simple design might merit attention in linkage with promotion of garment-making in the small-scale sector.</li> </ul>
Metal containers (cans)	3 large units (Carnation, Oriental and SYS) plus estimated 20 medium and small units. Industry has 720 million can capacity on 1 shift. 1977 output P 320 million	Carnation (milk cans) and Oriental (food cans). They each have 6 fully automatic lines and employ between 250 and 300 workers.	<ul style="list-style-type: none"> <li>- Excepting milk cans, industry operating at substantially below 50% capacity.</li> <li>- Empty cans are imported by export food processor, for cost and quality reasons. Local can makers attribute their inability to supply food-grade cans to poor quality and high cost of domestic tin-plate.</li> <li>- A major new project (Philippine-US Joint Venture) to produce food-grade cans and beverage cans is under consideration by BOI.</li> <li>- There is some small export of general line cans to the regional market. However, importance of this industry lies less in direct export, but more in its being an essential component of food export.</li> </ul>

<u>Product Line</u>	<u>Existing Capacity and Output</u>	<u>Plant Visited</u>	<u>Comments</u>
Home appliance (air-conditioners, refrigerators and other kitchen items)	Philacor plus 30 odd other units. Total output P 485 million (1977).	Philacor refrigerator plant: Fixed investment P 27 million No. of workers 1,000 on 2 shifts Company has fully integrated manu- facturing facility and over 60% share of refrigerator market. Also, Perfect Bend, a small maker of stainless-steel kitchen items for commercial establishments.	<ul style="list-style-type: none"> <li>- Appliances are made with very high local content, over 90% in the case of refrigerators. Imported items include tubings, insulation, controls, relays and some hardware.</li> <li>- There are quality problems with domestic steel sheets (warpage) and such small items as screws (corrosion).</li> <li>- The industry is relatively well established, but products are not yet competitive cost-wise. Actions relating to future growth of this industry should probably emphasize export (regional market), through improvement in tooling and product designs.</li> </ul>
Hand tools	1 large unit (Elitool). Output P 10 million (1977).	Elitool: Fixed investment P 17 million No. of workers 350 Plant has 4 forging hammers.	<ul style="list-style-type: none"> <li>- Company is sole maker of hand tools, but while it operates at well below 50% capacity, import totalled P 70 million in 1977.</li> <li>- Domestic product cannot compete quality-wise against imports from advanced countries at the high end of market, and cost-wise against imports from low-wage countries at the low end of market. A reassessment of product and marketing strategy is indicated.</li> </ul>
Machine tools	1 unit in metalcutting tools (lathes) and 6 in metal- forming tools (mechanical presses) plus large number of rebuilding and service establishments. Total out- put P 60 million (1977). A large fraction of total is contributed by small jobbers specializing in tools, dies and molds	Matools - only lathe maker in country with capacity of 200 lathes/year. Plant layout and tooled more like a jobbing shop than for machine tool production.	<ul style="list-style-type: none"> <li>- Center lathes are locally made under Indian license (HMT), but market acceptance of product appears to be a problem.</li> <li>- Import of metalworking tools totalled P 155 million in 1977.</li> <li>- While industry is at infancy, there is a large and growing market for low-cost standard machine tools (vocational schools, training centers and small shops) that domestic manufacturers can potentially supply.</li> </ul>

<u>Product Line</u>	<u>Existing Capacity and Out put</u>	<u>Plant Visited</u>	<u>Comments</u>
Auto parts	4 major units - Engine (Delta), transmission (GM and Chrysler) and body stamping (Ford) plus about 100 machine shops and sheet metal shops producing brake drums, mufflers, radiators and misc. metal parts. Also, new projects planned for manufacture of diesel engines.	Delta engine plant (P 61 million a modern semi-automatic plant) Philparts (P 2 million) an independent maker of diesel engine replacement parts Celestial (P 6 million) a jobbing shop making misc. car parts - main line is small stampings.	- Basic constraint to development of ancillary sector is large number of car makes and models in a small market. Shops cannot justify costly tooling. - The two independent shops visited provide a study in contrast. Philparts impresses as a well-managed, quality conscious plant but it only makes replacement parts some of which are exported to the US. Its management does not feel prepared on tooling or know-how to enter OEM market. Celestial may be more typical of the many ancillary units in the country in its jobbing operation with old general purpose machines, supplying small simple parts to local car assemblers. - The country has all the manufacturing components to produce a complete car (engines, transmission and bodies), yet the local content of cars averages under 50%. The PCMP goal of horizontal manufacturing integration has yet to be achieved.
Heavy equipment	2 large units (EEI and AG & P) plus numerous small units. Total output of industrial machinery and plant equipment estimated in excess of P 500 million (1977), mostly replacement parts and structural items.	EEI Foundry and Fabrication plants Fixed Investment P 50 million No. of workers 1,500 Capacity fully utilized. Expansion of fabrication facility planned AG & P Foundry and Fabrication plants No. of workers 750 Foundry capacity about 50% utilized Antiquated tooling. Mackay. Major producer of sawmill equipment. Built a new P 14 million foundry to make transmission housing and industrial castings.	- EEI and AG & P supply 80% of market for replacement parts of mining and cement industries (mainly crusher parts). Their fabrication shops make barges, pressure vessels and various structural items. - There is no production of standard lines of capital goods. Mackay is main producer of manually operated sawmills, but business has declined and company does more repair work than manufacture. - Import of capital goods (plant equipment and industrial machinery) totalled over P 2 billion in 1977, and this total may well be depressed by lack of capital to finance modernization or expansion.



<u>Product Line</u>	<u>Existing Capacity and Output</u>	<u>Plant Visited</u>	<u>Comments</u>
			<ul style="list-style-type: none"><li>- In foundry area, there is excess capacity in the country on low-grade castings. Only a few foundries may have the capacity and know-how to produce machine-grade castings.</li><li>- There is a general need for actions and programs to upgrade operating practices covering product planning, process control and maintenance. Effective training programs also urgently needed, especially for shop supervisory personnel.</li></ul>

Comparative Advantage and Incentives

I. Overview

1. Mechanical engineering (ME)/1 products have played a key role in economic development of the Philippines: over the past ten years they have contributed about 45% of gross capital formation (Table 1-1) and have accounted for more than one-third of aggregate imports (Table 1-2). However, so far the incentive structure has not been very conducive to the exploitation of country's static comparative advantage in the ME sector. It has also failed to provide an infant industry protection for the selected capital good industries which are crucial in building technological capacity with the ultimate purpose of achieving country's dynamic comparative advantage. This annex focuses on the structure of incentives for rational development of the ME sector.

2. The ME sector of the Philippines is unique among the ME sectors of the leading developing countries which adapted import-substitution-oriented development strategies during the 60's in its low relative as well as absolute level of effective protection afforded to the capital goods /2 (compared to the other manufacturing industries) (Table 1-3). While the average effective protection rates for the capital goods sector and the whole manufacturing industries in Mexico, Argentina, India and Brazil in 1960s were 66% and 68%, respectively, those for the Philippines in 1965 were 8% and 34%, respectively. In other words, while the average relative effective protection rate for the capital good sector /3 of the former exceeded one, that for the Philippines was only one-fifth. This low relative and absolute level of effective protection in the capital good sector of the Philippines has tended to discourage import substitution in that sector, as shown in the last column of Table 1-3.

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/1 The ME sector comprises the following classes of ISIC classification:  
35: Manufacture of metal products, except machinery and transport equipment;  
36: Manufacture of machinery, except electrical machinery;  
37: Manufacture of electrical machinery, apparatus, appliances, and supplies; and  
38: Manufacture of transport equipment.

/2 In this Annex, the term "capital goods" means SITC7, excluding transport equipment and durable consumer goods.

/3 effective protection rate for capital good  
effective protection rate for manufacturing

Table 1-1. SHARE OF MECHANICAL ENGINEERING PRODUCTS IN  
GROSS DOMESTIC CAPITAL FORMATION OF THE PHILIPPINES

	(A) Gross Domestic Capital Formation (million pesos at constant 1972 prices)	(B) Mechanical Engineering Products <sup>a/</sup> (million pesos at constant 1972 prices)	Share of ME Products $= \frac{(B)}{(A)} \times 100$
1966	8,405	3,464	41.2(%)
1967	9,706	4,500	46.4
1968	10,691	5,125	47.9
1969	11,231	5,081	45.2
1970	10,835	4,830	44.6
1971	11,226	5,617	50.0
1972	11,573	5,266	45.5
1973	12,540	5,392	43.0
1974	15,651	7,380	47.2
1975	18,984	8,885	46.8
1976	20,231	8,305	41.1
1977	20,960	8,384	40.0
(Average)			(44.9)

<sup>a/</sup> ME Products = Durable Equipment.

Source: NEDA, 1978 Philippine Statistical Yearbook, Table 4.7 (pp. 152-3).

Table 1-2. SHARE OF CAPITAL GOODS IN TOTAL IMPORTS OF THE PHILIPPINES

	(A) Total Imports (f.o.b. value in million US dollars)	(B) Capital Goods Imports <sup>b/</sup> (f.o.b. in million US dollars)	(C) Share of Capital Goods Goods Imports $= \frac{(B)}{(A)} \times 100$
1966	852.8	325.1	38.1(%)
1967	1,062.2	441.7	41.6
1968	1,150.2	487.4	42.4
1969	1,131.5	489.4	43.3
1970	1,090.1	435.4	39.9
1971	1,186.0	482.3	40.7
1972	1,229.6	456.6	37.1
1973	1,596.6	538.7	33.7
1974	3,143.1	918.3	29.2
1975	3,459.2	1,166.3	33.7
1976	3,633.5	1,206.7	33.2
( Average )			(37.5)

b/ Includes manufactures of metals which are intermediate goods.

Source: NEDA, 1978 Philippine Statistical Yearbook, Table 12.7 (pp. 514-517).

Table 1-3

Relative Protection of Machinery Sector<sup>a/</sup> and Domestic Production  
Share of ME Products in the Countries Adapted the Import-Substitution Oriented Strategies

Country (Year)	Effective Protection Rate			Share of Domestic Production <sup>e/</sup> (1970) (as percent of domestic demand)
	(a) Manufacturing (%)	(b) Machinery (%)	(c) Relative Protection (= (b)/(a))	
Mexico <sup>b/</sup> (1960)	21	27	1.3	79
Argentine <sup>c/</sup> (1969)	89	108	1.2	86
India <sup>d/</sup> (1968-69)	84	78	0.9	86
Brazil <sup>b/</sup> (1966)	79	52	0.7	84
Philippines <sup>b/</sup> (1965)	34	8	0.2	23
Philippines <sup>f/</sup> (1974)	125	18	0.14	19

a/ Effective protection rates are for electrical and non-electrical machinery; Domestic production shares are for whole ME sector.

b/ Source of effective protection data: Balassa, Bela and Associates, The Structure of Protection in Developing Countries, 1971, the Johns Hopkins Press, p. 54 and p. 56.  
 Effective protection rates are based on free-trade input-output coefficients and the Corden formula, and adjusted for overvaluation of exchange rate.

c/ Source of effective protection data: The World Bank, Argentina: Structural Changes in the Industrial Sector, Vol. I: The Main Report, June 29, 1978, p. 13.  
 Effective protection rates are based on the Corden formula.

d/ Source of effective protection data: Bhagwati, Jagdish and T.N. Srinivasan, Foreign Trade Regimes & Economic Development: India, 1975, National Bureau of Economic Research, pp. 184-185.  
 Effective protection rate for machinery is the weighted average rate for the capital goods; effective protection rate for manufacturing is the simple average of the weighted average rates for the sector.

e/ Figures for Mexico, Argentine, and Brazil are from the World Bank, Mexico - Manufacturing Sector: Situation, Prospects and Policies, Vol. II, May 1, 1977, p. 6. Figure for Philippines is from Metals Industry Research and Development Center, Philippines, Metalworking Industry of the Philippines, 1974, p. 2. Figure for India is from UN, Yearbook of Industrial Statistics, 1974, Vol. 1, p. 232 and UN, Yearbook of International Trade Statistics, 1974, Vol. 1, pp. 734-738.

f/ Tan, Norma, "The Structure of Protection and Resource Flows in the Philippines," 1974, School of Economics, University of the Philippines, p. 38.

Table 1-4

An Example of High Relative Effective Incentive Rates for the Mechanical Engineering Products on Domestic Sales in a Country Adapted an Outward-Looking Development Strategy: Korean Case (1968)

	<u>On Domestic Sales</u>		<u>Effective Protection</u>		<u>Effective Subsidy</u>	
	<u>Legal Protection</u>	<u>Nominal Protection</u>	<u>Domestic Sales</u>	<u>Exports</u>	<u>Domestic Sales</u>	<u>Exports</u>
	(%)	(%)	(%)	(%)	(%)	(%)
(a) Capital good (machinery)	53	30	44	-13	32	5
(b) Consumer durables	98	39	64	-5	38	2
(c) Transport equipment	62	55	164	-53	159	-23
(d) Total manufacturing	68	12	-1	3	-9	12
<hr/>						
Difference in Protection Rate (Compared to total manufacturing)						
(a) - (d)	-15	18	45	-16	41	-7
(b) - (d)	30	27	65	-8	47	-10
(c) - (d)	-6	43	165	-56	168	-35

Source: Westphal, Larry, "The Republic of Korea's Experience with Export-Led Industrial Development," World Development 1978, Vol. 6, No. 3, p. 377.

While the average share of domestic production in meeting total domestic demand in the other countries exceeded 80%, the ME sector of the Philippines supplied less than one-quarter of total demand. Furthermore, as shown in the last row of Table 1-3, the relative position of the capital good sector of the Philippines in mid-70s does not show any improvement compared to the situation in mid-60s.

3. The infant industry argument for protection is especially valid for the capital good industries where the development of "technological capacity" is critical at a certain stage of development. Those leading developing countries which adapted the import-substitution-oriented development strategies during 60's (Table 1-3) had opportunities to build their own technological capacities even though the cost of protection might have been higher than the dynamic benefits stemming from the technological capacities.<sup>/1</sup> Because of the importance of building technological capacity for exploitation of dynamic comparative advantage in the ME sector, even countries like Korea which adapted an outward-looking development strategy with relatively liberal trade policy, provided high relative protection for the ME sector (Table 1-4). In Korea, effective subsidy rates for the domestic sales of the ME products exceeded that for the total manufacturing by more than 40%.

4. The growth of the ME sector fell behind that of manufacturing as a whole over 1967-77. As shown in Table 1-5, the ME sector's value-added

Table 1-5: GROSS VALUE ADDED IN THE ME INDUSTRIES IN MANUFACTURING  
BY INDUSTRY GROUP, CY1967-77  
(In million pesos at constant 1972 prices)

Industry group	1967	1970	1973	1976	1977
Metal products	324	372	414	389	465
Machinery except electrical	145	178	206	195	207
Electrical machinery	269	359	376	394	437
Transport equipment	501	492	561	854	923
(a) ME total	1,239	1,401	1,557	1,832	2,032
(b) Gross value added in manufacturing	9,846	11,823	15,252	17,501	18,793
(c) Share of ME value added in total manufacturing ([(a)/(b)] x 100%)	12.6	11.8	10.2	10.5	10.8

Source: Philippine Statistical Yearbook, 1978.

<sup>/1</sup> Technological capacity may well be reflected in country's technology export. Argentina, Brazil, India and Mexico are known to be important exporters of technology.

increase only 1.6 times, while the gross value-added in all manufacturing increased about two times, reducing the share of ME sector's value-added in manufacturing from about 13% to about 11%. In comparable periods, the share of ME sector's value-added in manufacturing in Korea increased from about 12% to 23% due to the rapid growth (12 times) of the ME sector's value-added. In contrast to the depressing state of ME sector's domestic production in the Philippines, its imports of producer goods (the majority of which are ME products and fuel) have grown 46 times (in current dollar value) over the last ten years (Table A1-1 at the end of this Annex). In turn, Philippine ME exports in 1976-77 were only \$24-53 million (as shown in Table A1-2) which is 2-3% of ME imports (Table 1 of Annex VI-3).

5. In 1974, 64,000 workers were employed in 1,300 ME firms with five or more workers, comprising about 12% of total employment in all industries. Firms with more than 50 workers provided only 10% of ME employment. As shown in Table A1-3, the ME subsectors have the larger share of small- and medium-scale firms than most of other sectors.

## II. Effective Protection

6. Table 2-1 presents a summary of the structure of protection in the ME sector of the Philippines. The average nominal and effective protection rates in Table 2-1 are based on the estimates in Table A2-1 extracted from a UP study.

7. As shown in Table 2-1, while the average nominal protection rate of the producer-type ME products is slightly lower than the one-half of that of the consumer-type ME products, the average effective protection rate of the former is only one-fifth of that of the latter. Clearly, the structure of protection in the ME sector is biased against producer goods and in favor of consumption goods, following the general pattern of protection for the whole economy.<sup>/1</sup> The big disparity in effective protection rates is caused by the fact that while the nominal rates for producer goods are lower than those on inputs, the reverse is the case for consumer goods (in addition to the fact that tariffs on finished goods are lower for producer goods).

8. Tariff rates for the major ME products (sketched in Table A2-2) can be classified into three groups:

- (a) 10-20% - Producer-type ME products (such as industrial machinery and agricultural machinery)
- (b) 30-50% - Intermediate-type ME products (such as tubes, pipes, and bolts)

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<sup>/1</sup> According to Tan's estimate (cited in Table A2-1), an effective protection rate for consumption goods (1974) is 247%, while those for intermediate goods, capital goods and exports are 23%, 18%, and -16%, respectively.



Table 2-1

Structure of Protection in the ME Sector (1974)

<u>Major Categories</u>	<u>Industry Groups</u>	<u>Input-Output Sector No.</u>	<u>Average Nominal Protection Rate<sup>1/</sup></u> <u>(%)</u>	<u>Average Effective Protection Rate<sup>1/</sup></u> <u>(%)</u>
a. Producer Goods			<u>29</u>	<u>18</u>
	(1) Agricultural and industrial machinery	129-131	18	8
	(2) Basic metal products	120-121	23	14
	(3) Motor vehicle components and other transport equipment	144-147	60	16
	(4) Shipbuilding & repairing	142	17	26
	(5) Electrical machinery and equipment	132-135	29	27
b. Consumer Durable Goods			<u>67</u>	<u>90</u>
	(1) Hand tools	123	39	34
	(2) Electrical products	136-138	45	50
	(3) Motorcycles & bicycles	146	50	52
	(4) Fabricated, structural and stamped metal products	122, 124 - 128	51	75
	(5) Motor vehicle assembled	143	93	127
	(6) Jewelry	148	91	133
	(7) Household electrical appliances	139-141	100	167

<sup>1/</sup> Unweighted average computed from the estimates in Table A. 2-1. Nominal rates are from the estimates of Medalla-Power; effective rates are from the estimates of Tan.

- (c) 70-100% - Consumer-type ME products (such as household electrical appliances)

The current tariff rates appear to be mainly based on the end-use and degree of necessity of commodities rather than the static or dynamic comparative advantage of producing them.

9. The actual level of protection may be lower than the estimate based on legal rates. First, many capital good imports are exempt from duty under the Investment Incentive Act or the Export Incentive Act.<sup>/1</sup> Secondly, for some key material inputs required for ME products (such as tin plate) are subject to quota restriction or licensing, the domestic price may be higher than the world market plus tariff, if prices are not controlled and demand at the tariff-inclusive price exceeds domestic production plus the permitted volume of imports. In this case, the legal tariff on an input understates the nominal degree of protection and hence overstates effective protection for ME products using them.

### III. Effective Subsidy

#### Tax Incentives

10. Tax incentives under Investment and Export Incentive Acts (R.A. 5186 & R.A. 6135) administered by the Board of Investments <sup>/2</sup> together

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<sup>/1</sup> There may be another case in which legal tariff overstates the actual degree of protection: when tariff is prohibitive, domestic production is sufficient to satisfy local demand at or below the world market price plus tariff. Since the tariffs for the capital goods are very low (except for some consumer durable goods), one can hardly see a prohibitive tariff in the Philippines ME industries.

<sup>/2</sup> Tax incentives for the shipbuilding industry are administered by the Maritime Industry Authority under Presidential Decree No. 666.

with custom duties are the backbone of the Philippine industrial incentive system.<sup>/1</sup> This section focuses attention on those tax incentives which are mostly closely related to the development of the ME sector, namely compensating tax <sup>/2</sup> and duty exemptions for imported capital equipment and tax credits for domestic capital equipment.

11. On the one hand, exemptions/reductions and/or deferments of tariff duties and compensating tax on importation of machinery, equipment and spare parts are granted to registered firms under R.A. 5186 or R.A. 6135. On the other hand, tax credits equivalent to 100% of the value of compensating tax and custom duties that would have been paid on machinery, equipment and spare parts (purchased from a domestic manufacturer), had these items been imported, are granted to BOI-registered domestic machine purchasers. In turn, tax credits equivalent to 50% of the aforementioned tax credits to domestic machine purchasers are allowed to domestic machine makers.

12. Firstly, tax credit allowed to domestic machine purchasers appears to be designed to prevent any pro-import bias which may stem from the incentives on the importation of machinery. Secondly, tax credit allowed to domestic machine sellers appear to be designed to provide additional protection to the ME sector. However, since domestic production of capital goods is small and tariff protection is low, the value of these tax credits is relatively small.

13. As shown in Table 3-1, the value of tax credit on domestically produced capital equipment afforded to the BOI-registered domestic machine

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<sup>/1</sup> The tax incentives availed of by BOI-registered firms can be classified into the following categories:

- (1) Tax exemptions -
  - (a) compensating tax and custom duties on imported capital equipment
  - (b) compensating tax and custom duties on raw material imports
  - (c) sales tax
  - (d) export tax
- (2) Tax deductions -
  - (a) net operating loss carryover
  - (b) expansion reinvestment allowance
  - (c) additional deduction of labor training expenses
  - (d) reduced income tax
  - (e) accelerated portion of organizational and preoperating expenses
- (3) Tax credits -
  - (a) tax credit on domestic capital equipment
  - (b) tax credit for withhold tax on interest
  - (c) special tax credit on raw materials

<sup>/2</sup> Goods imported for use by the importer himself under the condition that they are neither for sale nor for use in the production of other goods are subject to the "compensating tax" which is levied on the basis of total landed cost only without any mark up. Sales tax collected on other imports is called "advance sales tax."

Table 3-1

BOI Incentives Granted in Relation To Purchase of  
Capital Equipment (1977)

B.O.I. Incentive Act	(a) Tax exemption for imported capital equipment	(b) Tax credit on domestically produced capital equipment afforded to the purchasers		(c) Tax credit on domestically produced capital equipment afforded to the sellers		
	Value (1,000 pesos)	Value (1,000 pesos)	$\frac{(b)}{(a)} \times 100$	Value (1,000 pes.)	$\frac{(c)}{(b)} \times 100$	$\frac{(c)}{(a)} \times 100$
R.A. 5186	105,371 <sup>a/</sup>	5,635	5.3%			
R.A. 6135	16,582	422	2.5%			
Total	121,953	6,057	4.9%	2,260	37.3%	1.8%

<sup>a/</sup> Due to a missing page (Table 34(a)-1) in the following source, this figure was estimated by applying the ratio of the tax exemption for imported machinery to total tax exemption under RA 6135.

Source: Board of Investments Annual Statistics on Registered Projects, 1977.

purchasers was only 4.9% of value of tax exemption for imported capital equipment allowed to the BOI-registered imported machine purchasers (in 1977). There was a strong preference for importing capital equipment. Furthermore, the value of the tax credit on domestically produced capital equipment afforded to domestic machine producers is only 1.8% of value on tax exemption for imported capital equipment.<sup>/1</sup> The high value of tariff and compensating tax exemption allowed to imported capital equipment reduced the actual protection rates for the ME sector to less than the rates based on the legal tariff. The low value of tax credit granted to the domestic machine producers results in the effective subsidy rates <sup>/2</sup> for the ME sector not much different from the effective protection rates. Consequently, the relative position of the ME sector (compared to manufacturing as a whole) based on effective subsidy rates calculated using BOI tax incentives in addition to the legal tariff rates would be worse than that based on effective protection rates calculated using only the legal tariff rates.

14. In certain cases, the BOI rule imposing a ceiling on the rate of return of a firm in order to be eligible for the tax incentives <sup>/3</sup> may well penalize managerial efficiency. In the interest of efficient development of an industry, it would be better to reward efficient management rather than discourage it as long as the industry as a whole warrants BOI support. In other words, the purpose of deciding projects to be included in annual Investment Priorities Plan and Export Priorities Plan is to assure the necessary incentives for those projects which are expected to yield a social rate of return higher than expected private rate of return, according to the Government's estimates based on certain "norms" of production efficiency and technology parameters. Depending on the efficiency of management and labor, there are usually extremely wide variations around the norms. Any firm performing above the norms should be rewarded, as long as the norms are a reasonable representation of the industry. If norms are incorrect, the annual priority plans should be revised, rather than giving penalties to the firms with high efficiency.

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<sup>/1</sup> Note also that the benefit from tax credit of given value is not lower than that from tax exemption of the same value, only if the tax liability is higher than the estimated tax credit.

<sup>/2</sup> Effective subsidy rate is defined as effective protection rate plus subsidy rate, where the subsidy rate is the subsidy amount divided by world market value added and subsidy is calculated as the deviation from the mean tax and/or credit subsidy. A UP study (N. Tan) estimates that while BOI tax incentive - output ratio for whole industry is about 2%, that for agricultural and industrial machinery is 0.2%.

<sup>/3</sup> 20% rate of return ceiling is imposed on: (a) full tax exemption of machinery importation for expansion of pioneering projects approved for registration after June 1974 and expansion of non-pioneering projects approved after June 1972; (b) reduction of taxes for expansion of non-pioneering projects approved after June 19, 1974; (c) tax deferment for replacement of projects registered after June 19, 1974. 33.3% rate of return ceiling is imposed on whole incentives for export enterprises under R.A. 6135.

15. Under the criteria for reduction or deferment of duties and taxes, the higher incentives are offered to the industries with the lower imported equipment/labor ratio.<sup>/1</sup> Also for export projects an additional export requirement is imposed<sup>/2</sup> when the imported equipment/labor ratio exceeds the ceiling (\$4,000). The apparent objective of imposing constraints on the maximum capital/labor ratio may be employment generation and foreign exchange saving. In practice, the capital/labor has, however, limited value in judging social profitability since production technologies are not "homothetic" and there are no constant returns to scale, as explained in paragraph 29 and illustrated by Table 4-6 later.

Credit Incentives

16. In most developing countries, the credit incentive is one of a few important industrial incentives and is, therefore, normally included in effective subsidy calculations. In the Philippines, due to the paucity of well-organized data concerning credits by interest rate category and by industry, it is difficult to gauge precisely the variation of credit subsidy by sector. It was possible to obtain preferential industrial loan data by sector only from the Development Bank of the Philippines. According to 1977 data, the credit subsidy per value added afforded to the ME sector is about one-fifth of that provided to manufacturing as a whole: while manufacturing as a whole received P49 DBP loan per P 1,000 value added, the ME sector received P11 DBP loan per P 1,000 value added (Table 3-2). Consequently, the relative effective subsidy rate of the ME sector including credit subsidy as well as tax subsidy would be worse than the relative effective protection rate discussed earlier.

17. Even without duty exemption, the overall 30% cost-disability resulting from the protective system would imply that any capital good that has a 10-20% duty is imported at less than free trade prices. In addition, domestic machine producers face another difficulty in their effort to sell their products: the availability of low interest foreign loan tied

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<sup>/1</sup> The percentage of reduction of duties and taxes corresponding to the imported equipment/labor ratio of a particular industry shall be as follows:  
60% Enterprise with less than \$3,000 imported capital equipment per worker  
50% Over \$3,000-6,000  
40% Over \$6,000  
See Board of Investments, The Investment and Export Incentive Acts, 1978, p. 123.

<sup>/2</sup> One of the conditions attached to the allowance of tax exemption on imported capital equipment under R.A. 6135 is: "The registered export producer ... will bring into the country the proceeds of export sales equivalent to at least the cost of the imported machinery equipment and spare parts within five years after delivery of the same ... ." See BOI, The Investment and Export Incentive Acts, 1978, p. 114.

Table 3-2

Loan per Value Added in the ME Sector

<u>Industries</u>	(a) D.B.P. Industrial Loans Approved in 1977 (1,000 pesos)	(b) Value Added in 1977 (in current market price) (1,000 pesos)	DBP Loan (pesos) per 1,000 pesos value added = $\frac{(a)}{(b)} \times 1,000$
Metal industries	26,657.204	3,001,000	9
Manufacture of machineries, equipment, accessories and parts	13,969.500	393,000	36
Electrical machineries and apparatus, appliances and supplies	11,227.585	847,000	13
Manufacture of transportation equipment and repair	16,118.939	1,801,000	9
(a) <u>ME Sector Total</u>	<u>67,973.228</u>	<u>6,042,000</u>	<u>11</u>
(b) <u>Manufacturing Sector Total</u>	<u>1,847,845.574</u>	<u>37,834,000</u>	<u>49</u>
	$\left[\frac{(a)}{(b)}\right]$		[0.22]

Source: Development Bank of the Philippines, 1977 Annual Report, pp. 58-59.  
National Economic Development Authority, 1978 Philippine Statistical Yearbook, pp. 194-195.

with purchase of imported machinery. Since the availability of low interest loans is essential to both machinery purchasers and producers, the role of credit incentives is much more critical in the ME sector than in other industries. Particularly, increased export and local use of the domestically produced plant equipment or heavy machinery can hardly be expected, unless long-term capital fund with a low interest rate are available. The BOI incentive system should be integrated with the country's credit incentives in a coherent framework.

#### Export Incentives

18. The Philippine incentive system does not put all export production on a free trade basis. Currently, in order to be eligible for the export incentives, one of the following conditions must be met: (a) production must be in a free trade zone; (b) a firm must be registered with BOI under the Export Incentive Act and an export product must be included in annual Export Priorities Plan; and (c) a non-BOI-registered firm producing a product not included in the Export Priorities must export at least 50% of its total production with a prior clearance from the BOI. If one of these conditions is not met, an export firm is not entitled to import raw materials and/or capital equipment free of duties and taxes. These conditions, however, impose penalties on small- and medium-scale producers who, in certain industries, can contribute to foreign exchange earning not less than the large-scale firms.

19. To be fully effective, the incentive system should secure a complete free trade regime, as long as a given production activity contributes to the domestic value added of a good or service which earns foreign exchange.<sup>/1</sup> Under this rule, the export incentives would be available to (a) non-BOI-registered firms, (b) products not included in the Export Priority Plan, (c) firms exporting less than 50% of their products, or (d) firms generating value added for exportable products but not exporting directly.

#### Impact of Incentives

20. The prime targets for the Philippine policy of import-substitution have been final consumer goods, durable and nondurable. Their production often requires less technical sophistication than that of capital or intermediate goods industries. It might have been expected that this strategy would in time lead to the creation of the capital and intermediate goods industries through backward linkage of demand from the final consumer goods industries. However, it is evident that this has not happened to a significant extent. As shown in Table 3-3, while the consumer durable goods industries have supplied the major part of the domestic market under high effective protection, domestic demand for capital goods has been met almost

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<sup>/1</sup> It should not matter how far a given production activity is from the final production activity of an exporter, how big the volume of production is, and whether the production is done in a free trade zone or not.



Table 3-3

Average Share of Domestic Production of  
Selected ME Products in Total Domestic Demand

<u>Major Categories</u>	<u>Industry Groups</u>	<u>Average Share of Domestic Production in Total Domes- tic Demand (1969-1975) (%)</u>
a. <u>Producer Goods</u>		<u>8</u>
	Farm machinery	20
	Textile and shoemaking machinery	6
	Power engine and general indus- trial machinery	2
	Food-processing machinery	6
	Construction and mining machinery	20
	Chemical processing machinery	0
	Heavy machine building	0
	Electrical machinery	9
b. <u>Consumer Durable Goods</u>		<u>56</u>
	Metal manufactures <sup>a/</sup>	56
	Passenger car assembled <sup>b/</sup>	38
	Household appliances	74

a/ Includes structural iron and sheet metal works, wires & wire products, handtools, hardware, furniture & fixtures, and metal containers.

b/ Local content ratio of PCMP.

Source: Metals Industry Research and Development Center, Metalworking Industry of the Philippines, 1974 and unpublished MRDC Data Files.

entirely by imports. The incentive structure has failed to provide infant industry protection to the intermediate and capital goods industries.

21. The protection system induced resources into industries which are not necessarily efficient (as is evident from their high DRCs - see below). This is also evident from the "overcrowding" of ME industries (Table 3-4). More than one-third of total 36 overcrowded industries are in the ME sector, mainly in consumer durable goods. High protection has induced excessive entry of firms into these industries, aggravating the inefficiency already created by over-protection./1

Table 3-4: LIST OF OVERCROWDED ME INDUSTRIES

Categories	Industries
Intermediate products for other industries	1. Foundry
	2. Pipes (medium and large diameter - steel)
	3. Tin can manufacturing
Household appliances	4. Refrigerators
	5. Air conditioners (up to 2 HP)
	6. Electric fan manufacturing
	7. Electric/gas range and household oven manufacturing
	8. Electric/gas stove
	9. Household sewing machine
Vehicle assembly	10. Automotive assembly
	11. Truck assembly
	12. Tractor assembly (four-wheeled)

Source: Investment Coordinating Committee of the National Economic and Development Authority.

/1 According to Bautista's estimate, the average capacity utilization of the highly protected ME industries (ISIC 37 & 38) was higher than that of the low protected ME industries (ISIC 35 & 36) in 1969:

<u>ISIC</u>	<u>Industry</u>	<u>Capacity Utilization Rate</u>
35	Metal products	51%
36	Machinery except electrical	53%
37	Electrical machinery & appliance	83%
38	Transport equipment	77%

See Bautista, R., "On Excess Capacity in Philippine Manufacturing," July 28, 1972.

IV. Comparative Advantage

22. Private profitability of the selected ME firms surveyed by the mission is summarized in Table 4-1. Profitability of a firm depends crucially on the existing structure of protection in addition to industry specific status regarding its comparative advantage in the international market and a firm-specific status regarding its management efficiency. While there are wide variations in the estimated indicators of private profitability represented by the rate of return on total investment (before or after income tax) and financial status represented by debt-equity ratio among the firms surveyed, there appears to be a pattern related to the structure of protection. The average profitability of the firms producing the consumer-type ME products which are highly protected appears to be somewhat higher than that of the firms making producer-type ME products, which receive less protection. In turn, the average debt-equity ratio for consumer goods appear to be somewhat higher than that of producer goods, suggesting the better availability of foreign and domestic loans for the former. To what extent are these differences in profitability and financial availability between the two categories of the ME industries related to differences in their comparative advantage in their management and technological efficiency?

23. A compact measure of a country's comparative advantage in a product or process is domestic resource cost coefficient defined as the ratio of domestic resource cost and the shadow exchange rate. The domestic resource cost measure represents a social valuation of domestic resources used per unit of foreign exchange earned or saved from a production activity. Therefore, comparative advantage is reflected by a DRC coefficient which is less-than-one. Given an estimate of the effective protection rate for a representative product, based on the minimum required micro information, a firm level DRC coefficient can be approximated by using the following formula:

$$\text{DRC Coefficient} = \frac{\text{DRC}}{\text{WVA} - \text{Annualized cost of imported capital}}, \quad (1)$$

$$\text{where DRC} = W.L + r_D K_D + NT$$

$$\text{WVA} = \frac{\text{DVA}}{(1 + t_v) (1 + t_e) \left[ \frac{\text{OER}}{\text{SER}} \right]}$$

Table 4-1

## PRIVATE PROFITABILITY OF THE SELECTED MECHANICAL ENGINEERING FIRMS SURVEYED BY THE MISSION

(Unit: P million)

Product Category Firm	Producer-Type (including Intermediate-Type) ME Products							Consumer-Type ME Products				
	(A) Foundry, Fabrication and Construction	(B) Foundry and Fabrication	(C) Sewelli Equipment	(D) Diesel Engine Components	(E) Car Parts (small stamping)	(F) Tin Can Machine	(G) Machine Tool	Average (excluding Firm A) <sup>b/</sup>	(H) Household Sewing Machine	(I) Refrigerator	(J) Automobile Assembly	Average
(Year)	(1977)	(1977)	(1976)	(1977)	(1977)	(1976)	(1978)		(1977)	(1977)	(1977)	
(a) Total Asset	246.7	267.2	4.3	2.4	7.0	28.4	25.8		33.9	150.8	876.3	
(b) Owner's Equity	143.3	154.2	1.5	1.7	3.4	7.2	7.7		13.2	50.5	123.3	
(c) Total Liability	103.4	113.0	2.8	0.7	3.6	21.2	18.1		20.7	100.3	753.0	
(d) Net Sale	354.9	272.2	3.2	3.5	3.3	39.0	3.2 <sup>a/</sup>		48.7	177.0	750.3	
(e) Net Income Before Income Tax	68.9	17.8	0.3	0.22	0.6	0.8	-2.0 <sup>a/</sup>		3.4	20.8	15.5	
(f) Net Income After Income Tax	65.8	11.3	0.2	0.02	0.4	0.5	-2.0 <sup>a/</sup>		2.2	14.0	9.6	
(g) Interest Expense	1.3	4.0	-	-	0.1	1.4	1.6 <sup>a/</sup>		1.0	2.1	29.5	
(i) Rate of return on total investment (i) ( = $\frac{(e) + (g)}{(a)}$ )	28%	8%	7%	9%	10%	8%	-2%	7%	13%	15%	5%	11%
(ii) Rate of return on total investment (ii) ( = $\frac{(f) + (g)}{(a)}$ )	27%	6%	5%	1%	7%	7%	-2%	4%	9%	11%	4%	8%
(iii) Profit Margin ( = $\frac{(f)}{(d)}$ )	19%	4%	6%	1%	12%	1%	-63%	-39%	5%	8%	1%	5%
(iv) Debt/Equity Ratio ( = $\frac{(c)}{(b)}$ )	172%	73%	187%	41%	106%	294%	235%	156%	157%	199%	611%	322%

<sup>a/</sup> (For six months ended December 31, 1978) x 2.<sup>b/</sup> Firm A is excluded in the average, since the large part of the company's operation is construction as well as foundry and fabrication.

Source: Financial Statements of the Firms Surveyed.

$$DVA \frac{1/}{=} W'L + r'K + NT'$$

Annualized cost of imported capital =  $r_F K_F$

$$K = K_D + K_F$$

All variables are measured in a local currency unit.

$W$  = Shadow wage rate

$L$  = Labor hours employed

$r_D$  = Shadow gross rate of return on investment  
(including shadow interest and depreciation charges)

$K_D$  = Replacement cost of domestically produced machine

$NT$  = Nontradeable input cost evaluated at shadow prices

$t_v$  = value added tax rate

$t_e$  = effective protection rate <sup>2/</sup>

OER = Official exchange rate (peso per \$)

SER = Shadow exchange rate (peso per \$)

$W'$  = Market wage rate

$r'$  = market gross rate of return on replacement value of capital stock

$K$  = Replacement cost of capital

$NT'$  = Market value of non-tradeable input

$r_F$  = Shadow gross rate of return on foreign capital

$K_F$  = Replacement cost of foreign capital

Therefore, (1) can be rewritten as:

$$DRC = \left[ \left[ \frac{W}{W'} \right] \alpha_L + \left[ \frac{r_D}{r'} \right] \alpha_{K_D} + \left[ \frac{NT}{NT'} \right] \alpha_{NT} \right] \left[ (1 + t_v)(1 + t_e) \left( \frac{OER}{SER} \right) \right]. \quad (2)$$

where  $\alpha_L = \frac{W'L}{\text{Adjusted private domestic value added}}$

$$\alpha_{K_D} = \frac{r_D K_D}{\text{Adjusted private domestic value added}}$$

$$\alpha_{NT} = \frac{NT'}{\text{Adjusted private domestic value added}}$$

1/ Value added here is defined in gross terms by including the depreciation of the capital stock. The reason for using the gross concept rather than net concept is to be consistent with the aggregate effective protection rate estimates of the UP study which is based on the gross concept.

2/ Based on the Balassa method.

Adjusted private domestic value added =

$$W'L + r'K_D + NT' + [r' - r_F(1 + t_v)(1 + t_e) \frac{OER}{SER}]K_F,$$

where the last term may be considered as the private net gain in gross capital return stemming from foreign capital.

The expression (2) is useful, since DRC coefficient is expressed as a weighted average /1 of distortions in labor price  $\frac{W}{W'}$ , capital gross return  $\frac{r_D}{r'}$ , and non-tradeable input price  $\frac{NT}{NT'}$ , multiplied by a net protection factor  $(1 + t_v)(1 + t_e) \frac{OER}{SER} \cdot /2$

Based on (2), one can easily identify the major causes for a variation in DRC over the firms specializing the different products or processes.

24. Very rough estimates of the DRC coefficients for the selected ME firms surveyed by the mission are made based on the DRC coefficient formula (2) developed in the preceding para. /3 and presented in Table 4-2. Comparing the private profitability in Table 4-1 and the social profitability indicator (DRC coefficient) in Table 4-2, one may be able to see a positive correlation between the private return on total investment and the DRC coefficient. However, according to the above formula (2), other things being equal, the DRC coefficient is a decreasing function of private rate of return on investment represented by  $r'$ . As one can see from row (D) of Table 4-2,  $r'$  of the

/1 Here the weight does not add up to 1 so long as  $r' \neq r_F(1+t_v)(1+t_e) \frac{OER}{SER}$

/2 Note that if  $t_v = 0$ ,  $t_e = 0$ ,  $OER = SER$ ,  $W = W'$ ,  $r_D = r' = r_F$ , and  $NT = NT'$ , then  $DRC = 1$ .

/3 It is assumed that  $NT = NT'$ . To the extent that the tradeable inputs (contained in a nontradeable input) evaluated at the opportunity cost are higher than those evaluated at the market prices an estimate based on (2) would underestimate the true DRC. On the other hand, to the extent the primary factor input costs (associated with a nontradeable input) evaluated at the opportunity costs are lower than those at the market prices, it would overestimate the true DRC. Other key assumptions made are: (a) straightline depreciation of 5% p.a. (assuming 20-year lives) for both domestic and imported capital equipment; (b) 15% social opportunity cost of capital for domestically produced capital and 10% for imported capital (i.e.,  $r_D = 0.05 + 0.15 = 0.20$ ;  $r_F = 0.05 + 0.10 = 0.15$ ); (c)  $\frac{W}{W'} = 0.8$ ; (d)  $\frac{SER}{OER} = 1.32$ ; (e) working capital cost is assumed

to be proportional to the capital stock and wage bill, and small fraction of them.

Table 4-2

## Social Profitability of the Selected ME Firms Surveyed by the Mission

Product Category Major Products or Processes  (Year)	Producer-Type ME Products					Consumer-Type ME Products		
	Foundry & Fabrication (1977)	Saw Mill Equipment (1976)	Diesel Engine Components (1977)	Tin Can (1975)	Average	Refrigerator	Automobile Assembly & Key Component Production (1976 1977)	Average
	(1)	(2)	(3)	(4)		(5)		
(A) Undepreciated book value of total property, plant, & equipment (P 1,000)	125,724	2,643	1,582	9,267 <sup>e/</sup>		28,481		
(B) Gross return on investment <sup>a/</sup> (P 1,000)	32,993	361	242	3,131		21,723		
(C) Replacement cost of capital <sup>b/</sup> : K (P 1,000)	216,245	4,202	3,560	16,773		55,822		
(D) Gross rate of return on K ( $= r' = \frac{(B)}{(C)}$ )	0.15	0.09	0.07	0.19		0.39		
(E) Labor price distortion ratio ( $= \frac{W}{W'}$ )	0.80	0.80	0.80	0.80	0.80	0.80		
(F) Share of private labor income in adjusted private domestic value added (including non-tradeable input value) ( $= \alpha_L$ )	0.52	0.57	0.53	0.35	0.49	0.25		
(G) Distortion ratio of gross rate of return on capital ( $= \frac{r'_D}{r'}$ )	1.33	2.22	2.86	1.05	1.87	0.51		
(H) Share of private gross return on domestic capital in adjusted private domestic value added ( $= \alpha_{KD}$ )	0.21	0.15	0.06	0.03	0.11	0.11		
(I) Share of non-tradeable input value in adjusted private domestic value added ( $= \alpha_{NT}$ )	0.26	0.29	0.33	0.61	0.37	0.49		
(J) Net protection factor ( $= \left[ (1+t_v) (1+t_e) \right] \left[ \frac{OER}{SER} \right]$ )	0.96	0.81	0.97	0.80	0.89	2.19		
(K) DRC coefficient ( $= \left\{ (E) \times (F) + (C) \times (H) + (I) \right\} \times (J)$ )	0.92	0.87	0.89	0.74	0.86	1.64	4.01 <sup>e/</sup>	2.83

a/ Net income from production and sale before income tax + interest + payment rent + depreciation.

b/ Replacement cost of capital = purchase cost of domestic machine  $\left[ 1 + \text{price increase rate} \right]$  + peso cost of imported machine  $\times \left[ \frac{\text{Shadow exchange rate}}{\text{Official exchange rate}} \right] \times \left[ \frac{1}{1 + \text{Tariff rate}} \right] \times \left[ 1 + \text{price increase rate} \right]$ .

c/ Estimated using depreciation allowance for 1976.

d/ Aggregate DRC estimate for the 5 PCMP participants are made in Paragraph 5.09 of the next section.

e/ This estimate is the one based on the replacement cost of capital (AMIT Data).

Source: Financial Statements of the Firms Surveyed and UP Studies.

consumer-type ME firm is higher than the average  $r'$  of the producer-type ME firms. Nevertheless, the DRC coefficient of consumer goods is higher than one, and much higher than that of the producer goods for the following reasons:

- (i) While the shadow wage rate is lower than the market wage rate, the share of private labor income in the adjusted private domestic value added of producer goods is higher than that of consumer goods since producer goods use relatively more labor than consumer goods.
- (ii) The share of the sum of private gross return on domestic capital and nontradeable input in the adjusted private domestic value added of producer goods is small, and lower than that of consumer goods, reflecting the mirror image of the production technology indicated in (i).
- (iii) The net protection factor of producer goods is less than one, and much lower than that of consumer goods.

25. The apparent inverse relationship between the private and social rates of return on investment is possible, because the socially nonprofitable (profitable) product or technology is associated with the higher (lower) protection rate. Of course, it is by no means easy to identify how the choice of product or technology is influenced by the level of protection, even though one may speculate that while an excessive protection for certain products may have prevented competition required to assure an efficient choice of product or technology as well as an efficient operation, for some other negatively protected products to be produced at all the production process must have been very efficient.

26. The above estimates of DRC coefficients for the selected firms surveyed by the mission are comparable with the UP estimates based on the aggregate input-output data in Table 4-3. Except for the diesel engine components, the two estimates are consistent with each other in identifying the products in which the Philippines has a comparative advantage or disadvantage. The estimates indicate that the Philippines has a comparative advantage in selected foundry and fabrication processes. Plant equipment and machinery (such as sugar mill, mining and construction equipment) are being produced by the foundry and fabrication plants. The country also has a comparative advantage in selected nonelectrical industrial machinery (general as well as special). Saw mill equipment is an example. In spite of the controversy concerning the capacity and capability (of the local can makers) to produce exportable quality cans, the above estimates indicate that the country has a strong comparative advantage in can making. The mission estimate also suggests that the country has a comparative advantage in some auto parts (such as diesel engine components). The two major product groups - car assembly and major component manufacturing (body, engine, etc.) and electrical home appliance (such as refrigerator), which have taken the major share of the Philippine ME production - show that the cost of their foreign exchange saving is much higher than its opportunity cost. In turn, as confirmed by factory visits, hand tool production has a



Table 4-3

<sup>a/</sup>  
Domestic Resource Cost Coefficients for the Selected MR Products and Other Corresponding Items Included in the BOI Plans

Major Categories	b/ Aggregate Estimate		c/ Firm Level Estimate		Corresponding Selected Items Included in 7th Investment Priorities Plan (1978) <sup>h/</sup>	Corresponding Selected Items Included in 9th Export Priorities Plan (1978) <sup>h/</sup>
	I-O (1974) Industry Code	DRC Coefficient	Representative Product	DRC Coefficient		
A. Producer Goods		<sup>d/</sup> Less than 1		Less than 1		
(1) Iron and steel foundry products	<sup>e/</sup> 114	<sup>e/</sup> 0.93	Foundry and fabrication	0.92		Prefabricated and fabricated structural products made of iron and steel and cement
(2) Agricultural machinery and equipment	129	0.66			Grain dryers; disc plows, harrow and roto tillers	Agricultural equipment and components
(3) Other special industrial machinery and equipment	130	0.54	Sawmill equipment	0.87	Oil exploration and development equipment	Construction equipment and components; rice mills and parts; tractor parts; sewing machine
(4) General industrial machinery and equipment except electrical	131	0.67			Air compressors; overhead hoists and travelling cranes	Evaporators; hermetic compressors
(5) Metal cans, boxes, and containers	122	0.54	Tin can  Diesel engine component	0.74  0.89	  PCMP, PIMP and PMPM	Strong boxes; filing cabinets  Parts of trucks, automobiles and other commercial vehicles
B. Consumer Durable Goods		<sup>f/</sup> More than 1		More than 1		
(1) Cutlery, general hardware and handtools	123	<sup>g/</sup> 1.55				Interchangeable tools; hand-operated kitchen appliances and tools; cutlery; building hardware
(2) Refrigeration and airconditioning equipment	140	1.68	Refrigerator	1.64		Electrical appliances such as refrigerators, etc.
(3) Other household electrical appliances and wares	141	1.40				
(4) Motor vehicles, engines, body and parts	143 & 144	1.11	Car assembly and major components (5 PCMP production participants)	4.01	PCMP and PIMP (10 items) PMPM (5 items)	Transport equipment and components

<sup>a/</sup> DRC coefficient = DRC × shadow exchange rate.

<sup>b/</sup> Extracted from Table A.4-1.

<sup>c/</sup> Estimated based on the firm-level data collected by the Mission.

<sup>d/</sup> Unweighted average DRC coefficient = 0.67.

<sup>e/</sup> Estimated based on 1969 data.

<sup>f/</sup> Unweighted average DRC coefficient = 1.44.

<sup>g/</sup> 1969 estimate indicates negative saving of foreign exchange (i.e., negative value added in world market prices).

<sup>h/</sup> This is not a complete list of the products included in the Priorities Plan.

foreign exchange saving higher than its opportunity cost. For those three product groups, it may be difficult to identify precisely how much the apparent extra social cost is due to the X-inefficiency stemming from overprotection (in the case of automobile and electrical home appliances) or lack of good management and planning (in the case of hand tool), and how much it is due to the characteristics of product, process, scale economy, and technology. According to the UP study, the Philippines also has a comparative advantage in such areas as shipbuilding and manufacture of motorcycles and bicycles.

27. The above estimates confirm that while the country has a (static) comparative disadvantage in the selected consumer durable goods which have been highly protected, it has a comparative advantage in the selected producer goods which have received low protection. The strong positive correlation between the effective subsidy rates and the DRC coefficients observed in the selected ME industries suggests the following. Firstly, due to the incentive structure, the specialization in the ME sector (i.e., very heavy dependence on imports in the area of producer-type ME products and very high import substitution in the area of consumer-type ME products) has not been in accordance with the country's comparative advantage. Secondly, high protection may itself have contributed to the inefficiency in the consumer durable goods industries. In turn, as shown in a list of the corresponding products included in the Seventh Investment and the Ninth Export Priorities Plans (1978) of the BOI in Table 4-3 (the list shows only those products related to the items covered by the mission in its field survey and for which either mission's or UP's estimates of DRC are available), the Philippines envisions more active export promotion and import substitution for most of the ME items for which it has a comparative advantage. For those ME items for which the country does not have a comparative advantage now the priorities plans may want to develop a dynamic comparative advantage. For this latter product groups, more careful evaluation appears to be needed in order to assure the achievement of a comparative advantage in the near future. In any event, the preceding findings suggest that something more than the existing BOI incentives and priorities plans must be done for the development of the ME sector in accordance with the country's comparative advantage.

28. In spite of the structure of incentives which on average have discriminated against the ME sector, it appears that this sector has been more profitable socially (see Table 4-4). Even without an adjustment in market prices to reflect the true opportunity costs, the difference in gross rate of return marks the relative social position of the ME sector in the economy.

29. Except for motorcycles, all BOI projects appear to show a gross rate of return on investments below the average for all manufacturing derived by the mission (Table 4-5). In absence of more micro data and without an adjustment of the capital and other data, one should not infer that the above data suggests the relative inefficiency of the BOI projects compared to the non-BOI projects. However, it suggests the need for more refined analysis of the social profitability of BOI projects. As indicated

Table 4-4

Gross Rate of Return Estimation for Establishments with 5 or More Workers (1974):  
ME Sector vs. all Industries

	(1) Value Added (million pesos)	(2) Wage Bill <sup>2/</sup> (million pesos)	(3) Fixed Assets <sup>3/</sup> (million pesos)	(4) New Invest- ment (million pesos)	Gross Rate of Return	
					(a) = $\frac{(1)-(2)}{(3)} \times 100$ (%)	(b) = $\frac{(1)-(2)}{(3)+(4)} \times 100$ (%)
(i) ME Sector <sup>1/</sup>	1,598.4	349.2	739.4	211.4	169	121
(ii) All Industries	15,647.3	2,477.9	10,616.3	2,133.6	124	103
(i)/(ii)	0.10	0.14	0.07	0.10	1.36	1.17

<sup>1/</sup> Composed of metal products (NC & SO code: 35), machinery (36), electrical machinery (37), and transport equipment (38).

<sup>2/</sup> Obtained by [Total no. of employees X Average annual wage],  
where Average Annual Wage =  $\frac{\text{Total payrolls for paid employees}}{\text{No. of paid employees}}$

<sup>3/</sup> Book value in the Annual Survey of Manufactures: 1974.

Source: NEDA, 1978 Philippine Statistical Yearbook, pp. 322-323.

Table 4-5

Aggregate Rate of Return Estimation: B.O.I. Projects (1977) vs.  
Industry Average (1974) of the ME Sector

Board of Investment Project	Corresponding TSIC Number	B.O.I Preferred Projects				Annual Survey of Manufacturing (1974)			
		(1) $\frac{VA}{K}$	(2) $\frac{w}{(P 1,000)}$	(3) $\frac{K}{N}$ (P 1,000)	(4) $r$ (= (1) - (2) ÷ (3))	(1) $\frac{VA}{K}$	(2) $\frac{w}{(P 1,000)}$	(3) $\frac{K}{N}$ (P 1,000)	(4) $r$ (= (1) - (2) ÷ (3))
Barges & fishing vessels, interland oceangoing ships	3841	0.19	7.097	94.81	0.115	1.17	5.433	11.39	0.693
Kilowatt-hour meters, circuit breakers, electric motor, etc.	383	1.13	7.097	45.50	0.974	2.48	5.433	10.09	1.942
Automotive engine block with cylinder head, shock absorber	38432	0.49	7.097	220.84	0.458	0.83	5.433	17.94	0.527
Motorcycles	3844	2.90	7.097	29.37	<u>2.658</u>	2.82	5.433	14.55	<u>2.447</u>
Pipe fittings, globe and gate valves	3819	0.47	7.097	29.68	0.231	2.05	5.433	12.13	1.602
Oil exploration structures, boilers	3813	1.75	7.097	109.45	1.685	2.54	5.433	6.65	1.723
Water meter	3851	0.41	7.097	22.75	0.098	1.61	5.433	10.74	1.104
Gas welding & cutting equipments, drill press, lathe machines, saw blades	3823	0.18	7.097	71.32	0.081	1.83	5.433	9.75	1.273
Disc plows & harrows, agricultural pumps, power tillers, grain driers	38221	0.60	7.097	24.02	0.305	4.59	5.433	15.62	4.242
Cranes, pumps	3829	0.60	7.097	45.17	0.443	1.29	5.433	12.04	0.839
Diesel engines	382	0.26	7.097	74.66	0.165	2.54	5.433	11.95	2.085
(Average)					(0.656)				(1.680)

Note:  $r = \frac{VA - w \cdot N}{K}$

where

VA = Value added (in current price)

K = Fixed asset (in current price)

N = Total employment for the year

w = Average annual wage bill of P labor (in current price)

w for BOI Preferred Projects is obtained by  $\left[ \frac{\text{Total annual payroll in '77 for the Metal Based Sector's B.O.I. Project under RA 5186}}{\text{Total number of employees in '77 for the Metal Based Sector}} \right] \times \frac{P69,689,000}{9,820}$

[Total number of employees in '77 for the Metal Based Sector] = P7,097  
(9,820)

w for Annual Survey of Manufacturing is obtained by taking averages of annual average wages for metal products sector (P4,570), machinery sector (P5,362), electrical machinery sector (P5,582) and transport equipment sector (P6,216) in the 1974 Annual Survey of Manufactures.

r = Aggregate rate of return on capital (including depreciation charge)

Source: B.O.I, Updated Tables on B.O.I Fiscal Incentives From 1974 ILO Report, Jan. 1979, NEIA, 1978 Philippine Statistical Yearbook, pp. 322-323.

earlier, in an industry like ME in which the production technology is characterized by non-homothetic and non-constant returns to scale, a simple method of examining capital-labor ratio, output-capital ratio, or output-labor ratio would give a misleading picture of the industry. Table 4-6 provides such an example. In the case of export-oriented firms, the gross rate of return increases as the capital intensity and production scale increase. However, in the case of nonexport-oriented firms, after a certain scale, an increase in capital intensity and production scale is associated with a decrease in the gross rate or return. Therefore, neither production scale nor capital intensity alone provide sufficient information to evaluate the profitability of a project. Of course, from the above example one cannot infer any systematic pattern either. It is clear that social rate of return criteria must be used. In the ME sector, due to interdependence and scale economies, a mix of sectorwide and micro approach is needed for project appraisal. The ME sector planning suggested in this Report should adopt such a sectorwide approach.

V. Progressive Auto-Manufacturing Program

Progressive Car Manufacturing Program

30. The Progressive Car Manufacturing Program (PCMP) marked a new stage of required local production in the Philippine car industry in 1973, succeeding the previous two stages of importation of completely build-up units (CBU), from 1916 to 1950, and completely knocked down (CKD) components, from 1951 to 1972.<sup>/1</sup> There are five PCMP approved car assemblers supplying a domestic market of just over 30,000 units a year (Tables A5-1 and A5-3). Table 5-1 shows the progress of PCMP in terms of local content attainments.<sup>/2</sup> According to BOI data, foreign exchange savings increased from \$1.95 million in 1973 to \$18.4 million in 1977; employment increased from 4,350 men in 1973 to 8,037 in 1977; and the value of local components supplied increased from P 32 million in 1973 to P 192.4 million in 1977. However, the high domestic resource costs necessary to achieve these benefits should be recognized. This section focuses on the protection and domestic resource cost aspect of PCMP.

<sup>/1</sup> Total number of assembly plants in the country in 1964 was 35 which supplied the market with about 10,000 annual sales (Table A5-1). As of May 1968, there were 19 makers of cars and 36 models assembled by 19 companies which supplied less than 18,000 annual sales (Table A5-1).

<sup>/2</sup> Local content ratio = 
$$\frac{\text{Aggregate "deletion" of locally manufactured parts} + \text{Aggregate net export earnings}}{\text{Aggregate CBU value of cars manufactured}}$$

where all variables are measured in world market prices (f.o.b.). However, note that "deletion" allowances, i.e. import prices of parts and components domestically manufactured and used in local assembly are only accounting prices rather than actual prices.

Table 4-6

An Example of Non-Homothetic and Non-Constant Returns to  
Scale Production Function: Firms Registered Under B.O.I's Investment Incentive  
Act (1977)

Size (in million pesos)	Export Oriented Firm			Non-Export Oriented Firm		
	$\frac{VA}{K}$	$\frac{K}{N}$ (1,000 pesos)	$r = \frac{VA-wN}{K} \times 100$ (%)	$\frac{VA}{K}$	$\frac{K}{N}$ (1,000 pesos)	$r = \frac{VA-wN}{K} \times 100$ (%)
10.0 - 29.9	0.29	45.308	14.4	0.38	65.252	27.9
30.0 - 49.9	0.25	77.891	16.5	0.45	74.105	36.1
50.0 -	0.30	194.249	26.6	0.21	221.096	18.0

Note: VA = value added  
 K = fixed asset  
 N = total employment for the year  
 r = gross rate of return  
 w = average annual wage (in 1,000 pesos)  
 =  $\frac{\text{annual payroll (1,000 pesos)}}{\text{total number of employees}}$   
 =  $\frac{660,035}{100,013} = 6.599$

Source: Board of Investments, Updated Tables on B.O.I. Fiscal Incentives From  
1974 ILO Report, Jan. 1979 and other material.

Table 5-1

Progressive Car Manufacturing Program: Domestic  
Content Attainment

		<u>Domestic Content Prescribed</u>	<u>Domestic Content Attained</u>
1973	1st Semester	10%	15.9%
	2nd Semester	15%	23.6%
1974	1st Semester	20%	26.26%
	2nd Semester	25%	31.96%
1975	1st Semester	30%	33.07%
	2nd Semester	37.5%	37.50%
1976	1st Semester	50%	52.51%
	2nd Semester	52.5%	52.32%
1977	1st Semester	55%	55.02%
	2nd Semester	57.5%	65.4%
1978	1st Semester	60.0%	
	2nd Semester	62.5%	

Source: Automotive Manufacturers' Institute, Inc.,  
Progressive Car Manufacturing Program, 1976 and  
Board of Investments, "1976 & 1977 Local Content Audit."





Local Content

31. A detailed account of the domestic content attainments during 1976-77 are summarized in Table 5-2. As of the end of 1977, the value of locally produced parts and components was on average 52.77% of CBU car value the net foreign exchange earning through export was on average 12.63% of CBU car value. In less than five years after the initiation of the program the value of major components and parts locally manufactured and used in the assembly of PCMP cars exceeded 50% of the CBU car value. (See Table A5-2 for list of domestically produced parts and components.) However, it appears that the merits of PCMP may be found not from the compulsory aspect of domestic content but from a flexibility shown by the government and industry in increasing the local content. For example, in 1976 a proposal for stretch out of 62.5% of PCMP domestic content up to the end of 1978 was approved. In fact, it appears that the stretch out may be extended to beyond 1979 in the interest of PCMP. The reasoning behind this comment on the domestic content program is that domestic content alone should not be a major objective of the program; neither could it reflect the achievement of the stated objectives of the program, namely foreign exchange saving, technology transfer, development of ancillary sector and increased employment. The main objective of the program should be the development of automotive industry in accordance with the country's dynamic comparative advantage, and a yardstick to measure the achievement of this objective must be the domestic resource costs of saving or earning foreign exchange, not domestic content.

32. A careful examination of the local contents attained (including previous semester excesses) compared to the local contents prescribed for the past years in Table 5-2 leads one to infer that the local contents attained might be merely a reflection of import-substitution and export activities of the industry based on their profit motives, rather than the consequence of forced deletion. If the latter were the case, then one should not expect any PCMP participants to exceed substantially the prescribed local contents every year.

33. The net foreign exchange savings stemming from the local content attained must be lower than the local content attained through deletion, due to the foreign exchange costs associated with the imported material inputs used for the locally manufactured components. Summary information regarding net foreign exchange saving and earning is presented in Table 5-3. According to the AMII data, net foreign exchange earning is less than 50% of the domestic content (defined as a sum of deletion of local production and net export earning).<sup>/1</sup> The discrepancy between the estimate of net foreign exchange earning and saving based on the BOI data (Column D) and the AMII data (Column E) may be due to the loose definition of CBU and carryover

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<sup>/1</sup> Therefore, the net foreign exchange saving and earning as percentage of total production valued in world market price (i.e., total CBU value) is as follows:

1976:	12% - 22%
1977:	17% - 29%

Table 5-3

Net Foreign Exchange Saving and Earning  
as Percentage of Local Content

	(A) Total CBU Value <sup>a/</sup>	(B) Actual Deletion + Net Foreign Exchange Earning <sup>a/</sup>	(C) Total CKD Import Value <sup>b/</sup>	Net Foreign Exchange Saving & Earning			
				(D): BOI Data (= (A)-(C))	$\frac{(D)}{(B)} \times 100$	(E): AMII Data <sup>c/</sup>	$\frac{(E)}{(B)} \times 100$
1976	\$57.11 mil.	\$29.934 mil.	\$50.21 mil.	\$6.90 mil.	23%	\$12.32 mil.	41%
1977	\$63.16 mil.	\$38.22 mil.	\$52.59 mil.	\$10.57 mil.	28%	\$18.43 mil.	48%

<sup>a/</sup> Table 5-2.

<sup>b/</sup> Table 5-4.

<sup>c/</sup> AMII, 1977 Annual Report, p. 2.

Table 5-4

CBU Value vs. CKD Cost

<u>PCMP Participants</u>	<u>1976</u>		<u>1977</u>		<u>1976 &amp; 1977</u>		
	<u>Total CBU Value</u>	<u>Total CKD Cost</u>	<u>Total CBU Value</u>	<u>Total CKD Cost</u>	<u>(a) Total CBU Value</u>	<u>(b) Total CKD Cost</u>	<u>(b) (a) x 100 (%)</u>
CAR	\$14,537,410	14,501,700	20,954,335	14,506,407	35,527,745	29,008,107	81.65
Delta	18,443,838	16,103,307	23,505,914	20,857,766	41,949,752	36,961,073	88.11
DMG	6,032,767	7,562,001	4,386,174	6,595,365	10,418,941	14,157,366	135.88
Ford	10,722,287	6,889,397	9,624,117	6,523,377	20,346,404	13,412,774	65.92
GM	7,339,200	5,159,536	4,104,534	4,104,534	12,028,696	9,264,070	77.02
Total	\$57,111,501	50,214,941	63,160,036	52,587,449	120,271,537	102,802,390	85.48

Source: Board of Investments.

of CKD usage beyond the accounting year./1 The alternative estimates of net foreign exchange saving and earning will be used in estimating of domestic resource costs below.

Effective Protection

34. Two major incentives accorded to the participants of PCMP are:

- (a) Only assemblers registered with the Board of Investments under the program are allowed to import CKD packs. The tariff rate for CKD packs is 30% (Table A2-2), which is on average lower than tariff rates applied to parts and components imported as replacement parts./2
- (b) The five PCMP participants receive BOI incentives under R.A. 6135, R.A. 5186, or Export Processing Zone provisions for their production of major car components listed in Export or Investment Priorities Plans, as shown in Table 5-5.

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/1 Whereas the relationship that

$$\text{Average CBU value} > [\text{Average deletion value} + \text{Average CKD}], (1)$$

i.e.,  $\left[ \frac{\text{Average local content}}{100\% - \text{percent due to deletion}} \right] > \left[ \frac{\text{Average CKD cost as percentage of average CBU value}}{\text{CBU value}} \right] (1)'$

should hold, the aforementioned data indicates that:

- the left hand side of (1)' = 47.23%, while
- the right hand side of (1)' = 85.48%, reversing the inequality in (1)'. If 85.48% represents the total foreign exchange cost including non-CKD as well as CKD, and the imported CKD components are all used up within the accounting year, then we may speculate that the net foreign exchange saving and earning could be as low as 15% (= 52.77% - 38.25%). Or alternatively, the concepts of CBU value, local content due to deletion, and CKD costs may have been used in such a loose manner that the government agency supervising PCMP does not impose the relationship (1) strictly in their reporting of local contents.

/2 Tariff rates for replacement parts are 10-70%. A component imported as part of a CKD pack has a lower import price than the same component imported as a replacement part.

Table 5-5

Incentive Status of Major Component Manufacturing Plants  
of the Registered PCMP Participants

<u>PCMP Participants</u>	<u>Component Manufacturing Plants</u>	<u>Joint Venture or Technical Agreement with</u>	<u>Registered or Production Capacity (per annum)</u>	<u>Incentive Status Registration Under B.O.I or Other In- centive Act</u>	<u>Year of Registration</u>	<u>Type of Project</u>	<u>List</u>
(1) Canlubang Auto- motive Resources Corporation	Asian Transmission Corporation	Mitsubishi <sup>a/</sup>	40,000 transmission units	B.O.I. (R.A. 6135)	1973	<sup>c/</sup> P	<sup>e/</sup> B
(2) DMG, Inc.	DMG, Inc.	Volkswagen	Automotive parts (1975 capacity: 3,600 SKB Body; 1,500 Steel Tops)	B.O.I. (R.A. 6135)	1978	<sup>d/</sup> NP	<sup>f/</sup> A
(3) Delta Motor Corporation	Delta Motor Corporation	Toyota	18,000 automotive gasoline engine sets <sup>b/</sup>	B.O.I. (R.A. 5186)	1974	P	
(4) Ford Philippines, Inc.	Philippines Stamping Plant	Ford	Car body production (Annual consumption of steel: 30,180 ton under 3 shift operation)	Bataan Export Processing Zone	1972		
(5) General Motors Philippines, Inc.	GM Philippines Manufacturing Corporation	G.M.	72,000 transmission units	B.O.I. (R.A. 6135)	1973	P	B

<sup>a/</sup> Originally with Chrysler.

<sup>b/</sup> Approved capacity: 18,665 units for local demand  
2,935 units for export

<sup>c/</sup> P = Pioneer (usually for new capacity)

<sup>d/</sup> NP = Non-pioneer (usually for existing capacity).

<sup>e/</sup> List B consists of products of preferred projects which are intrinsically export-oriented.  
Enterprises registered under List B are required to export at least 80% the total production.

<sup>f/</sup> List A is a list of exportable products of existing firms. Firms registered under List A shall be entitled to all incentives granted under R.A. 6135 except tax exemption on imported capital equipment.

An additional key incentive afforded to the PCMP participants is to allow them to import CKD full-sized cars based on net export earning in excess of prescribed domestic content value.<sup>/1</sup>

35. The tariff rate for CBU cars (which can be imported only by duly licensed assemblers) is 100%. The sales tax rates for locally manufactured and imported cars before and after April 1, 1978 are shown in Table 5-6. Nominal protection coefficient (i.e. domestic market price ÷ world market price) based on legal tariff and sales tax rates can be defined as:<sup>/2</sup>

$$(1 + t)[1 + f_m (1 + g_m) - f(1 + g)],$$

where t = legal tariff rate  
f = indirect percentage tax on domestic product  
f<sub>m</sub> = indirect percentage tax on imported product  
g = percentage mark-up of base for tax on domestic product  
g<sub>m</sub> = percentage mark-up of base for tax on import

Therefore, we obtain the following estimates of nominal protection coefficients for the passenger cars based on the legal tariffs and sales taxes (Table 5-7).

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<sup>/1</sup> Cars covered by PCMP should have engines of 4 cylinders or less and with piston displacement not exceeding 2,000 cc. The only exception to this rule is when a particular assembler attains domestic content in excess of the prescribed ratio for a program year, and to the extent that such excess is due to domestic content credits resulting from exports of automotive components. In such a case, the assembler is permitted to import CKD packs with engines of more than 4 cylinders and 2,000 cc. engine displacement in the succeeding program year, with a value not more than the amount by which prescribed domestic content was exceeded or the domestic content credits resulting from exports of automotive components, whichever is less, divided by the prescribed ratio, for the Program year during which importation is made. Total import value of CKD full-sized cars was \$2.7 million (by Ford in 1978).

<sup>/2</sup> If the identical indirect taxes are levied on goods consumed domestically, irrespective of whether they are of domestic or foreign origin, and rebated on exports, then indirect taxes are not true incentives. In the case of Philippine automobiles, the sales tax rates for imports are higher than the corresponding rates for the domestic products. Therefore, the difference in the sales tax rate between import and domestic product must be added in an estimation of nominal protection.

**Table 5-6**

**Sales Tax (i.e. Percentage Tax) Rate on Sales of Automobiles**

**A. For locally manufactured automobiles -  
tax on gross selling prices.**

<b>Before April 1, 1978</b>						<b>After April 1, 1978</b>					
<u>Exceeding</u>	<u>Not Exceeding</u>	<u>Tax Rate</u>	<u>Amount of Tax</u>	<u>Plus</u>	<u>Of the Excess Over</u>	<u>Exceeding</u>	<u>Not Exceeding</u>	<u>Tax Rate</u>	<u>Amount of Tax</u>	<u>Plus</u>	<u>Of the Excess Over</u>
	P20,000	10%			P20,000	P35,000	P35,000	10%	P3,500	20%	P35,000
P20,000	25,000		P2,000	15%	25,000	40,000	45,000		4,500	30%	40,000
25,000	30,000		2,750	25%	30,000	45,000	50,000		6,000	40%	45,000
30,000	35,000		4,000	35%	35,000	50,000	55,000		8,000	50%	50,000
35,000	40,000		5,750	50%	50,000	55,000	60,000		10,500	60%	55,000
40,000			8,250	70%	50,000	60,000			13,500	70%	60,000

**B. For imported automobiles - If the landed cost plus mark-up as established by section 183(b) of National Internal Revenue Code does not exceed P20,000, the tax shall be 100% of such landed cost plus mark-up.**

P20,000	P25,000	P20,000	125%	P20,000
25,000	30,000	26,250	150%	25,000
30,000	35,000	33,750	175%	30,000
35,000	-	42,500	200%	35,000

**If the landed cost plus mark-up as established by section 193(b) of National Internal Revenue Code does not exceed P35,000 the tax shall be 100% of such landed cost plus mark-up.**

P35,000	P40,000	P35,000	125%	35,000
40,000	45,000	41,250	150%	40,000
45,000	50,000	48,750	175%	50,000
50,000	-	57,500	200%	50,000

Table 5-7: NOMINAL PROTECTION COEFFICIENT ESTIMATES FOR PASSENGER CARS

<u>Gross selling price of locally manufactured automobile</u>		Nominal protection coefficient
<u>Exceeding</u>	<u>Not exceeding</u>	
<u>Before April 1978</u>		
	P 20,000	2.0
P 20,000	25,000	2.4
25,000	30,000	2.7
30,000	35,000	3.0
35,000	40,000	3.2
40,000		2.8
	(Average)	(2.7)
<u>After April 1, 1978</u>		
	P 35,000	2.0
P 35,000	40,000	2.3
40,000	45,000	3.6
45,000	50,000	2.9
50,000	55,000	3.2
55,000	60,000	3.0
60,000		2.8
	(Average)	(2.7)

36. In view of the import ban imposed on the CBU cars and the high tariff rate and indirect tax differences between import and domestic production, the average nominal protection coefficient based on the legal tariffs and indirect taxes may not represent the true level of nominal protection. Therefore, the Mission attempted to estimate its own nominal protection coefficient based on a price comparison. Table 5-8 and 5-9 summarize such an estimate based on the information on the Ford passenger cars in 1976.



Table 5-8

Estimation of Nominal Protection Coefficient:  
Average Ford Passenger Car (1976)

<u>Ford Models (1976)</u>	<u>1976 (1) Production<sup>a/</sup> (units)</u>	<u>1976 (2) Retail Price<sup>b/</sup> (pesos)</u>	<u>Total Retail Value (= (1) x (2)) (pesos)</u>
Escort 4 Dr. Base	671	36,350	24,390,850
Escort 4 Dr. L	403	32,600	13,137,800
Escort 2 Dr. Sports	484	37,900	18,343,600
Escort 4 Dr. Ghia	294	36,350	10,686,900
Cortina 4 Dr. L	700	41,600	29,120,000
Cortina 4 Dr. XL	548	59,260	32,474,480
Cortina 4 Dr. E	644	66,600	42,890,400
<u>Total</u>	<u>3,744</u>	<u>45,685</u>	<u>171,044,030</u>

(A) Average Retail Price per Car =  $P171,044,030 \div 3,744 = P45,685$

(B) Average Dealer Price per Car = Average Retail Price + (1 + retail margin)  
 =  $P45,685 + 1.225^c/ = P44,680$

(C) Average Ex-factory Price Before Net Sale Tax <sup>d/</sup> = Average Dealer Price per Car + (1 + average net sales tax rate)  
 =  $P44,680 + 1.08 = P41,370$   
 = \$5,667

(D) Nominal Protection Coefficient = Domestic price before sale tax + World market price  
 = " + Average CBU value (Ford: 1976)  
 = \$5,667 + \$2,864<sup>e/</sup>  
 = 1.98

<sup>a/</sup> Table A.5-3.

<sup>b/</sup> Philippine Automotive Federation Handbook, pp. 62-70

<sup>c/</sup> ASEAN Automotive Federation

<sup>d/</sup> Net sale tax = sales tax - advanced sales tax; See Table for Sales Tax Rate. Advanced sale tax = 10% of imported material input cost.

<sup>e/</sup> Table 5-8.

Table 5-9

Average CBU Value per Car (1976 & 1977)

	1 9 7 6			1 9 7 7		
	(a) Total CBU Value	(b) Production (units)	Average CBU Value per Car (= $\frac{(a)}{(b)}$ )	(a) Total CBU Value	(b) Production (units)	Average CBU Value per Car (= $\frac{(a)}{(b)}$ )
CAR	\$14,573,410	7,898	\$1,845	\$20,954,335	8,733	\$2,399
Delta	18,443,838	9,845	1,873	23,505,914	12,454	1,887
DMG	6,032,767	4,517	1,336	4,386,174	2,941	1,491
Ford	10,722,287	3,744	2,864	9,624,117	3,778	2,547
GM	7,339,200	3,170	2,315	4,689,496	2,189	2,142
Total	\$57,111,501	29,174	1,958	63,160,036	30,095	2,078

Source: CBU values are from Board of Investments.  
Production figures are from Table A.5-2.

The resulting nominal protection coefficient is 1.98,<sup>/1</sup> which is lower than the above estimate based on the legal tax rates (2.7).

37. Effective protection rate <sup>/2</sup> can be defined as:

$$\frac{1 - \sum_i a_{ij}}{\frac{1}{1 + P_j} - \sum_i \frac{a_{ij}}{(1 + P_i)}} - 1 ,$$

where  $a_{ij}$  = actual (protected, money value) tradable input-output coefficient.

$1+P$  = nominal protection coefficient (for output based on the price-comparison; for input, estimated from  $[1 + \text{tariff rate}] \times [1 + \text{sales tax rate for imported input}]$ ).

38. Based on the input-output coefficient data in Table 5-10, which was estimated using the information collected by the Mission, a crude estimate for average effective protection rate for passenger car is 313%.<sup>/3</sup>

#### Domestic Resource Cost

39. A rough estimate of DRC coefficient for the production of passenger car assembly and the major components during 1976 and 1977 is based on the aggregate data obtained from the AMII <sup>/4</sup> and very crude assumptions on the other parameter values.

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<sup>/1</sup> This estimate does not deviate very much from the UP estimate based on the 1974 input-output aggregate data (1.93 for I-O Sector 143). See Table 2.1 of Annex VI-4.

<sup>/2</sup> Balassa formula.

<sup>/3</sup> This estimate appears to be higher than the aggregate estimate by UP (127%) in Table A 2-1.)

<sup>/4</sup> AMII, 1977 Annual Report, p. 2.

Table 5-10

Estimated Average Input-Output Coefficients for Passenger Car

(In domestic value (ex-factory price  
excluding indirect tax))

	CKD input	Assembler's local content input		Locally purchased input		Overhead input	
		Total	Tradable part	Total	Tradable part	Total	Tradable part
Average input-output coefficient <sup>a/</sup>	0.55	0.12	0.07	0.06	0.02	0.04	0.01
Average tariff rate	0.3		0.7 <sup>b/</sup>		0.7 <sup>b/</sup>		0.7 <sup>b/</sup>
Sales tax rate for imported input	0.1		0.1		0.1		0.1

<sup>a/</sup> Lower bound of the estimates for input-output coefficient is used in order to estimate the lower bound estimate for effective protection rate.

<sup>b/</sup> While the tariff rates for non-CKD parts (i.e. replacement part) are 10 ~ 70%, we take here the maximum rate in order to estimate the lower bound estimate for effective protection rate.

DRC /1 = Total wage bill of PCMP x  $\left[ \frac{\text{Shadow wage rate}}{\text{Market wage rate}} \right] / 2$

$$+ \left[ \text{Fixed investments of PCMP participants} \right] \times \left[ \text{Share of domestically produced capital equipment} \right] / 3 \times \left\{ \left[ \text{Annual depreciation rate} \right] + \left[ \text{Annual shadow interest rate} \right] \right\} / 4$$

= P 222.72 (million) x 0.8 + P 1,269.48 (mil.) x 0.376 x [0.1 + 0.15]

= P 298.51 (million)

Net Foreign Exchange Saving & Earning (A) = Net Foreign Exchange Saving and Earning (AMII Data) x Shadow Exchange Rate /5 - Fixed Investments x

$$\left[ \text{Share of imported capital equipment} \right] / 3 \times \left\{ \left[ \text{Annual depreciation rate} \right] + \left[ \text{Annual interest rate for foreign capital} \right] \right\}$$

= \$30.75 (million) x [P 9.77/per \$] - P 1,269.48 (mil.) x 0.624 x [0.05 + 1.10]

= P 186.18 (million).

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/1 This domestic resource cost includes only direct value added of domestic factors (excluding land) evaluated at opportunity cost, due to the lack of data. Therefore, as indicated later, it underestimates the true DRC.

/2 The shadow wage rate of unskilled labor was estimated to be 80% of the market wage rate in a UP study (Technical Note No. 1: Procedure for DRC calculation using I-0 data).

/3 Obtained from the capital stock data of one PCMP firms.

/4 For simplicity, straight line depreciation is assumed; and the life of domestically produced machine is assumed to be 10 years, while that of imported machine is assumed to be 20 years. Shadow interest rate is obtained from a UP study (Technical Note No. 1).

/5 Shadow exchange rate is estimated by applying 32% premium to the official exchange rate. See a UP Study (E. Medalla, "Estimating the Shadow Exchange Rate under Alternative Policy Assumptions," 1979).

Net Foreign Exchange Saving (B) = Net Foreign Exchange Saving and Earning

(BOI Data) /1 x Shadow Exchange Rate - Fixed Investments x

$$[\text{Share of imported capital equipment}] \times \left\{ \begin{array}{l} [\text{Annual depreciation rate}] \\ + \end{array} \right. \left. \begin{array}{l} [\text{Annual interest rate for foreign capital}] \end{array} \right\}$$

$$= \$ 17.47 \text{ (mil.)} \times [P 9.77/\text{per } \$] - P 1,269.48 \text{ (mil.)} \times 0.624 \times [0.05 + 0.10]$$

$$= P 56.43 \text{ (mil.)}$$

Therefore, we obtain: DRC coefficient (A) =  $\frac{298.51}{186.18} = 1.60$

DRC coefficient (B) =  $\frac{298.51}{56.43} = 5.29$

40. There are several reasons to speculate that the roughly estimated DRC coefficients, ranging from 1.60 to 5.29,<sup>/2</sup> may be the lower-bound to the true coefficient. Firstly, by using the shadow wage rate of the unskilled labor, the true opportunity cost of skilled labor (which is believed to be close to the market wage) is underestimated, and therefore the resulting DRC is underestimated. Secondly, by neglecting the domestic resource costs associated with the non-tradable inputs, the DRC is underestimated. Thirdly, by not adjusting the capital stock based on the social replacement cost, the foreign exchange cost associated with imported capital equipment is underestimated <sup>/3</sup> and the resulting net foreign exchange earnings is over-estimated.

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<sup>/1</sup> Total CBU value - Total CKD cost. See Table 5-4.

<sup>/2</sup> This estimate is comparable to an U.P. estimate on aggregate DRC coefficient (1.11). See Table 4-1 of ANNEX VI-4.

<sup>/3</sup> An adjustment in the value of the domestically produced capital equipment by incorporating the price increase (in implicit price index of durable equipment in NEDA, 1978 Philippine Statistical Yearbook) and an adjustment in the value of the imported capital equipment by correcting the over-valuation of exchange rate as well as the price increase result in the following (since the tariffs were exempted for the importation of capital equipment by the PCMP participants, no adjustment is needed for duty payments). DRC coefficient (A) = 4.01  
DRC coefficient (B) = - 7.52

(Scale Economies and X-Efficiency)

41. The major reasons for the estimated high DRC coefficient for the automotive assembly and major component production in the Philippines may not be much different from those in the most developing countries: (a) failure to exploit scale economies due to many producers producing many different models for a small local market; (b) inefficiency stemming from very slow learning-by-doing and poor management. Under these circumstances, the only justification for providing very high protection is the "infant industry" argument, i.e., as learning progresses and production scale increases, a dynamic comparative advantage could be realized (by reducing a DRC coefficient below unity eventually). Therefore, a test for success or failure of the industry must be based on the dynamics associated with scale economies and X-efficiency. /1 The major part of the local contents of the PCMP participants consists of the major components produced by own factories shown in Table 5-11./2 Several important facts related to the scale economies and efficiency can be noted from Table 5-11: (a) five different manufactures are producing the major components for their own car models only; (b) due to a small domestic market and a low level of exports, the capacity utilization rate is low; (c) the wide variation in the techniques chosen (as well as the scale economies associated with the techniques) in certain process stages (for example, material handling for which very labor-intensive technique could be mixed with highly automated other production stages). This overall situation leading to the inability to exploit scale economies inherent in an automobile industry and the apparent inefficiency which may stem from the high protection appear to be responsible for not only the high DRC coefficient but also the negative aggregate profits of the PCMP participants, as shown in Table A 5-5.

42. The other justification for the high protection for the PCMP items might be found from the utilization of cross-subsidization in developing the related local ancillary industries. While procurement from ancillary industries appeared to be one of the main strategies of PCMP, the initial conditions of the local ancillary sectors and the incentive structure favoring direct production by the PCMP participants has encouraged the vertical integration rather than the horizontal integration. Also, the PCMP guideline based on the local content rather than net foreign exchange earning and saving favored the in-house production based on a high portion of imported inputs. The lower protection rate afforded to the ancillary component producers has

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/1 For example, in the case of the Korean automobile industry, as shown in Table A 5-4, a steady increase in the average domestic content ratio (annually 12%) was possible without an increase in cost due to the exploitation of scale economies through the rapid increase in production (annually 28%) and export (annually 40%) and efficient management over the last 10 years.

/2 It is estimated that more than 3/4 (money value) of the locally produced item is in-house products of the PCMP participants. (Source: AMII).

Table 5.11: CAPITAL INTENSITY, CAPACITY UTILIZATION AND EXPORT SHARE OF MAJOR COMPONENT MANUFACTURING PLANTS OF THE PCMP PARTICIPANTS (1976)

Component Manufacturing (Plants of PCMP)	CAPITAL INTENSITY			CAPACITY UTILIZATION			MARKET		
	(A) Fixed Investment (P1,000)	(B) Employment (1976)	(C) Fixed Investment per Labor (= (A) ÷ (B); P1,000)	(D) Registered Capacity	(E) Production (1976) (Car Model)	(F) Capacity Utilization Rate (= (E) ÷ (D))	(G) Export Requirement (BOI)	(H) Export (1976)	(I) Export Share (= (H) ÷ (E))
(1) Asian Transmission Corp. (CAR Co.)	44,860	210	214	40,000 transmission units	Transmission assembly: 14,000 units Transmission case: 7,180 pcs. Extension housing: 9,000 pcs. Fork lever: 9,000 pcs. (Mitsubishi)	25%	more than 50% of total production	14,000 units of transmission assembly (\$1.9 million)	100%
(2) DMG Inc. <sup>g/</sup>	8,547	144	59	automotive parts (3,600 SKB body; 1,500 steel tops; 900 fiberglass component)	SKB; 705 units Steel tops; 85 units Fiberglass components; 617 units (Volkswagen)	20%		0	0%
(3) Delta Motor Corp.	65,700	701	94	18,000 automotive gasoline engine sets	6,800 engine assemblies (Toyota)	38%		0	0%
(4) Philippines Stamping Plant (Ford)	175,576	382	460	Car body (annual consump- tion of steel; 30,180 ton under 3 shift)	\$6.7 million worth of Cortina body stamping; steel usage = 11,098 tons	37%	(Batasan Export pro- cessing zone)	Various Cortina body stampings valued at \$5.4 million	80%
(5) GM Philippines Manufacturing Corp.	126,688	278	456	72,000 transmis- sion units	6,381 transmission assemblies (GM)	9%	more than 50% of total production	5,618 transmission assemblies valued at \$1.2 million	90%
TOTAL	421,371	1,715	246			26% (Average)		(\$8.4 million)	54% (Average)

<sup>g/</sup> 1975 figure.

<sup>h/</sup> This estimate may be considered as a lower bound, since the other joint production activities (such as jobbing or production of non-passenger car components) done in the plants are not included.

Source: Automotive Manufacturers' Institute, Inc., Progressive Car Manufacturing Program, 1976.



failed to provide an opportunity to build technological capacity. On the other hand, the high protection available to the PCMP participants (in terms of tariff and tax exemption) has favored the in-house production rather than sub-contracting. Consequently, the idea of developing ancillary industries based on the cross-subsidization scheme of the PCMP firms did not work as well as expected.

#### Progressive Motorcycle Manufacturing Programs

43. The Progressive Motorcycle Manufacturing Program (PMMP) was started in 1974 in order to achieve objectives similar to those of the PCMP. In 1977 the program achieved \$3.2 million annual foreign exchange saving and a 46% domestic content ratio (Table A 5-6). The performance of PMMP appears to be comparable to that of PCMP in exploiting a comparative advantage of the country. The DRC coefficient of the motorcycle manufacturing is less than one (Paragraph 26 and Table A 4-1), while its effective protection rate is 52% (Table A 2-1). Also the capacity utilization rate (defined as production volume as a percentage of registered capacity) appears to be more than 100%. Unlike the PCMP, the tariff rate on CKD packs for the PMMP is identical to that applied to replacement parts items (30%), while a CBU pays the higher tariff rate of 70%. Therefore, the gap in the effective subsidy rates between the PMMP participants and the parts manufacturers would not be so high as those between the PCMP participants and the car components producers. In implementing the Investment Priorities Plan, the government took a careful step by deferring the acceptance of applications for the BOI registration of the capacity expansion for the production of bicycle and motorcycle components such as rims, spokes and nipples, sprockets, and roller chains in order to see the possibility of including these items in the ASEAN Complementation Program./1

#### Progressive Truck Manufacturing Program

44. The Progressive Truck Manufacturing Program (PTMP) was implemented in 1977, and the actual local content attainment by the PTMP participants were not available as of February 1979 (the prescribed local contents of PTMP and the sales volume of trucks are shown in Table A 5-8 and A 5-9, respectively). In February 1979, the BOI announced the selection of two foreign firms for the diesel engine manufacturing project under PTMP./2 As shown in Table A 5-10, the fact that 30,000 units out of total 36,000 units of commercial vehicles (20,000 units out of total 21,000 units of total ASEAN Utility vehicle) were produced (in 1978) by the five PCMP participants appears to suggest some capacity sharing between PCMP and PTMP activities. However, it was not possible to obtain detailed information regarding the extent of capacity sharing in the key component production facilities of the PCMP participants. In the area of product standardization and appropriate product design, the achievements of the Asian Utility Vehicle must be recognized.

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/1 BOI, 1978 Eleventh Investment Priorities Plan, pp. 6-7.

/2 Perkins Diesel Ltd. was chosen to make the lower horse-power engines, and MANN diesel was selected to produce the higher hp range.

45. In 1975 and 1976 more than half of the annual increase in the domestic demand for trucks in the 20,000 lb GVW and above category was met by imported used trucks (Table A 5-11 and A 5-9). According to a report, prices of new locally assembled Isuzu diesel trucks were at least 60% higher than equivalent reconditioned imported units.<sup>/1</sup> Unlike many developing countries, the Philippines has allowed the importation of most of the second-hand ME products.<sup>/2</sup> Such a policy has contributed very favorably to providing the alternative choice of capital intensities (to the highly capital-intensive imported capital goods, in the absence of domestically produced alternatives) to the local machine users. In other words, the importation of the second-hand machinery may have contributed to some reduction of the overall capital intensities of the economy resulting from the excessive dependence on the imported new capital equipment. Now as a part of the government's policy to promote the local ME industries, an import ban on the second-hand ME products has been either imposed or contemplated for such items as trucks and ships. Starting July 1, 1978 (as the PTMP coverage included trucks in the 20,000 to 30,000 lbs GVW range) importations of used trucks were limited to 40,000 lb GVW and above. In turn, the importation of used trucks above 40,000 lb GVW will be allowed up to June 30, 1980 when this policy is going to be reviewed. However, the purpose of protecting the domestic truck industry may be sufficiently achieved by import duties only without eliminating the alternative choices associated with imported second-hand trucks. Any uncertainty regarding a proper performance or safety of a used ME product could be substantially reduced by imposing such requirements as the forced reconditioning of imported used trucks by accredited reconditioning centers implemented since July 1, 1978.

#### VI. ASEAN Industrial Complementation

46. The Association of Southeast Asian Nations (ASEAN), comprising of Indonesia, Malaysia, Philippines, Singapore and Thailand, has been gradually taking steps toward regional economic cooperation. Since 1976 the longer term view has been one of regional integration. The ME sector plays a key role in an industrial complementation which has to be the cornerstone of ASEAN economic integration. Discussions among the ASEAN countries concerning industrial complementation have been held at two levels simultaneously - government and private sectors.

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<sup>/1</sup> In 1976, a new Isuzu six-wheeler dump truck was being sold for P 211,000 compared with about P 75,000 for an imported reconditioned unit; a new six-wheeler cargo truck cost P 195,000 as against from P 75,000 to P 100,000 for the imported unit. Source: "Status of ASEAN Motor Vehicle Assembly Industry and Market," Asean Business Quarterly, Third Quarter, 1978.

<sup>/2</sup> The Mission confirmed the substantial importation of such second-hand ME products as second-hand ships and machine tools in addition to second-hand trucks.

ASEAN industrial Projects

47. The first five ASEAN industrial projects being considered at the government level as showcase projects /1 are:

Ammonia - Urea Plant	Indonesia
Ammonia - Urea Plant	Malaysia
Super-phosphatic Fertilizer Plant	Philippines
Diesel Engine Plant	Singapore
Rock Salt-soda Ash Plant	Thailand

The ASEAN summit meeting of August 1977 noted that pre-feasibility studies would also be undertaken on other possible ASEAN industrial projects namely, heavy duty rubber tires, metal working machine tools, newsprint, electrolytic tin plating, TV picture tubes, fisheries and potash. The ASEAN Chamber of Commerce and Industry (CCI) has played a leading role in initiating the private sectors' involvement for the achievement of greater regional cooperation since 1975 by spawning the formation of about a dozen regional industry

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/1 It was agreed (initially in February 1976 and reaffirmed in August 1977) that after review and confirmation of the feasibility of each of these projects steps should be taken to establish project as a joint venture of the member countries. Only in the case of the two ammonia-urea plants for Indonesia and Malaysia have the full feasibility studies been completed, and agreement reached - at the Economic Ministers Meeting in Jakarta in June 1978 - to proceed with them. The Thai project has been formally accepted; the two others look doubtful. If it is decided not to proceed with phosphatic fertilizer as an ASEAN project, the Philippines is likely to push for a newsprint plant. (Source: Asian Wall Street Journal, The ASEAN Report, May 1979). The products of the ASEAN industrial projects will be assured preferential access to markets of the member countries through the various instruments of preferential trading arrangements. ASEAN Committee on Industry, Minerals and Energy (COIME) is the main inter-governmental organization dealing with regional industrial complementation.

clubs./<sup>1</sup> These industry clubs are the grass roots private organizations which would play a key role in implementing any agreement on future ASEAN industrial complementation and greater intra-regional trade. The fact that more than one-third of these industry clubs are M.E. related indicates the importance of the ME sector in promoting ASEAN industrial complementation.

ASEAN Automotive Complementation Scheme

48. There are at least two major reasons why the ASEAN Automotive Complementation Scheme (ACS) deserves attention. Firstly, the ASEAN Automotive Federation (AAF) is the first industry club organized to further the objectives of the ASEAN industrial complementation. Success or failure of AAF and ACS would set an example for the other complementation attempts. Secondly, the future development of the PCMP of the Philippines would be very much influenced by the development of the ASEAN ACS. One of the reasons why the government is not attempting to increase the local content requirements of PCMP immediately beyond the level of 1978 (62.5%), is that the government wants to wait for the development of ASEAN ACS. This seems prudent since the Philippines has currently the highest local content within ASEAN.

49. As shown in Table A 6-1, the total ASEAN vehicle population at the end of 1976 was 2.8 million units: 4 countries (excluding Singapore) possess roughly the same quantity of vehicles, 630,000 to 690,000 units. In 1976 the annual sales of passenger cars and light/heavy trucks in the ASEAN region were about 124,000 units and 127,000 units respectively. A volume of from 60,000 to 180,000 units per annum is considered optimum production scale for assembly activity. However, the optimum scale for manufacture of major motor components such as engines and body panels is several times that for assembly./<sup>2</sup> Background of the need for ASEAN ACS is simple: Too many different makes and models produced by many producers in the ASEAN countries are competing in very limited domestic markets without any coordinated effort to produce certain components in common to share the common facilities, or to specialize in selected product lines. In the case of passenger cars, some 44 makes with a total of 110 models were assembled and manufactured to supply a market of only 124,000 units in 1976. For example, as shown in Table A 6-2, ASEAN countries import 31 engine components which are currently manufactured in other countries in the region.

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/1 The following industries are covered in the regional industry clubs.  
(1) Automotive industry; (2) Electrical, electronic and allied industries; (3) Food processing industries; (4) Agricultural machinery industry; (5) Iron and steel industry; (6) Rubber-based industry; (7) Glass manufacturers; (8) Cement manufacturers; (9) Chemical industries; (10) Pulp and paper industry. ASEAN-CCI Working Groups on Industrial Complementation (WGIC) and on Preferential Trade Agreements (WGPTA) work closely with the industry clubs.

/2 See, for example, Rose, W., Development Options in the New Zealand Motor Car Assembly Industry. Research Paper No. 16 of the N. Z. Institute of Economic Research, 1971, p. 101 and 128.

50. The Technical Committee of AAF and the Experts Group for each product group held preliminary discussions concerning a list of automotive components/parts for possible ASEAN complementation and commonization over the last 2-3 years (See Table A 6-3). The Third AAF Council Meeting (Nov. 28-29, 1978) approved the following package of components to test the workability of the tentative draft guidelines on ASEAN ACS.

Indonesia	Deutz diesel engines (80 HP - 135 HP)
Malaysia	Spokes, nipples and drive chains for motorcycles and timing chains for cars
Philippines	Body panels for Ford Cortina
Singapore	Universal joints
Thailand	Body panels for commercial vehicles of one ton and above

The AAF Council also authorized the carburetor and headlight projects (at the cost of about \$50 million) as ASEAN projects with equity participation from the private sectors of the five ASEAN countries and a small minority equity from the non-ASEAN coporations that will provide the technology and access to the export market.

51. Despite frequent meetings of councils and committees of AAF, the Mission is not aware of any careful study or report analyzing the potential alternative complementation schemes. Thus, the ASEAN ACS appears to be at a stage of data gathering. It appears that even data gathering efforts have been neither based on a comprehensive analytic scheme nor very systematic and intensive.

52. In any event, in view of the complex engineering, economic, institutional, and other variables involved, discussion will be helped by presenting specific alternative schemes for consideration. Clearly, such schemes require an in-depth study carried out by independent experts with substantial research resources. Therefore, the highest priority should be given to a detailed and careful study on which alternative complementation scheme can be based together with the desired policy harmonization within the region including evaluation of alternative gains and losses of the member countries.

53. Given the fact that the first order of business in an attempt to exploit scale economies in a given market (i.e., either within an ASEAN country or region) must be a reduction of number of car makes and models, serious consideration should also be given to the idea of ASEAN Car. In this regard, it might be useful to know that in the automotive complementation agreement in the Andean region, the most important concept would be an attempt to limit the number of basic models. Passenger cars are divided into four categories, while there are six categories of trucks and one for four-wheel drive vehicles. In each case, a country that is assigned vehicle to produce on an exclusive or shared basis, must select a basic model, which will be used for the manufacture of all sub-regional vehicles.

#### ME Sector Planning and Regional Complementation

54. The fact that the ME sector has the greater potential for regional complementation than any other sectors is also evident from the experience of the industry complementary agreements in the Latin American Free Trade Association. As shown in Table A 6-4, the majority of the complementarity agreements in the region was in the ME industries. According to a recent study by Bela Balasa, intra-industry specialization assumes the greatest importance in countries that intensively participate in complementarity agreements. In turn, the extent of intra-industry specialization is generally greater than the average in the machinery industries, where the number of complementary agreements is the largest.<sup>/1</sup> The study also notes that the liberalization of trade among developing countries that have industrialized behind high protection encounters difficulties even if these countries are at a similar income level. Finally the study points to the desirability of regional integration among countries at lower levels of development for the sake of efficient industrialization through increased specialization and greater competition.<sup>/2</sup> The last two points appear to be particularly important for the future development of the ME sector of the Philippines as an ASEAN industry. As has been examined at the beginning of this Annex, the ME sector is still in its early stage of development partly due to the relatively low level of protection it has received. Consequently, the need for designing an ASEAN complementation scheme for future development cannot be over-stressed as far as the ME sector of the Philippines and the region is concerned. In turn, industrial complementation should be one of the key aspects to be considered in any serious planning effort for the ME sector of the Philippines as well as the ASEAN region.

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<sup>/1</sup> By contrast, inter-industry specialization predominates in textiles, leather and leather products, and primary metals, where there are no complementarity agreements.

<sup>/2</sup> Balassa, Bela, Intra-Industry Trade and the Integration of Developing Countries in the World Economy, World Bank staff working paper No. 312, January 1979.

Table A.1-1

Imports of the Philippines, By Category: 1967-1977

(F.O.B. Value in Million U.S. dollars)

Category	1977		1976		1975		1972		1967	
	Value	Percent Share	Value	Percent Share	Value	Percent Share	Value	Percent Share	Value	Percent Share
<u>Total</u>	<u>3,914.8</u>	<u>100.00</u>	<u>3,633.5</u>	<u>100.00</u>	<u>3,459.2</u>	<u>100.0</u>	<u>1,229.6</u>	<u>100.0</u>	<u>1,062.2</u>	<u>100.0</u>
Producer Goods	<u>3,706.5</u>	<u>94.68</u>	<u>3,412.7</u>	<u>93.92</u>	<u>3,208.7</u>	<u>92.76</u>	<u>1,113.3</u>	<u>90.54</u>	<u>855.8</u>	<u>80.57</u>
Essential producer	2,922.0	74.64	2,729.6	75.12	2,594.1	74.99	917.7	74.64	686.2	64.60
Semi-essential producer	156.6	4.00	127.8	3.52	124.8	3.61	63.9	5.20	81.9	7.71
Non-essential producer	213.4	5.45	217.4	5.98	211.3	6.11	94.1	7.65	87.7	8.26
Semi-unclassified prod.	37.8	0.97	24.8	0.68	49.2	1.42	8.9	0.72	-	-
Unclassified producer	376.7	9.62	313.1	8.62	229.3	6.63	28.7	2.33	-	-
Consumer Goods	<u>208.3</u>	<u>5.32</u>	<u>220.8</u>	<u>6.08</u>	<u>250.5</u>	<u>7.24</u>	<u>116.3</u>	<u>9.46</u>	<u>206.4</u>	<u>19.43</u>
Essential consumer	67.7	1.73	86.1	2.37	118.0	3.41	90.6	7.37	110.1	10.37
Semi-essential consumer	16.0	0.41	20.8	0.57	14.4	0.42	4.5	0.36	4.3	0.40
Non-essential consumer	23.6	0.60	19.5	0.54	17.7	0.51	7.1	0.58	26.3	2.48
Semi-unclassified consum.	101.0	2.58	-	-	-	-	-	-	65.7	6.18
Unclassified consumer	-	-	94.4	2.60	100.4	2.90	14.1	1.15	-	-

Source: National Census & Statistics Office, 1977 Foreign Trade Statistics of the Philippines, p. 23.

Table A. 1-2

Value of Philippine Exports: 1977 & 1976

<u>Code</u> /1	<u>Commodity</u>	<u>FOB Value Dollars</u>	
		<u>1977</u>	<u>1976</u>
71	Power generating machinery and equipment	331,464	401,006
713	Internal combustion piston engines, and parts, n.e.s.	321,113	393,447
714	Engines and motors, non-electric, parts, n.e.s.	9,530	1,551
716	Rotating electric plant machinery and apparatus and parts, n.e.s.	821	6,008
72	Machinery specialized for particular industries	5,289,598	3,866,089
721	Agricultural machinery (excluding tractors), and parts, n.e.s.	14,868	35,330
723	Civil engineering and contractor's plant and equipment and parts, n.e.s.	2,061,252	195
724	Textile and leather machinery, and parts, n.e.s.	2,254,919	1,630,483
726	Printing and bookbinding machinery, and parts, n.e.s.	3,974	735
727	Food processing machines (excluding domestic) and parts, n.e.s.	114,011	431,160
728	Other machinery and equipment specialized for particular industries, and parts, n.e.s.	840,574	1,768,136
73	Metalworking machinery	25,355	27,902
736	Machine tool for working metal or metal carbides, and parts and accessories, n.e.s.	24,750	27,902
737	Metalworking machinery (other than machine tools) and parts, n.e.s.	785	-
74	General industrial machinery & equipment and machine parts, n.e.s.	6,624,910	3,308,073

/1 1979 Philippine Standard Commodity Classification. This scheme follows a similar coding scheme as UN's SITC Rev. No.2 up to the subgroup level (4 digits).



Table A.1-2

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<u>Code</u>	<u>Commodity</u>	<u>Fob Value Dollars</u>	
		<u>1977</u>	<u>1976</u>
741	Heating and cooling equipment and parts, n.e.s.	6,479	29,432
742	Pumps for liquids, fitted or not with measuring devices, liquid elevators or bucket chain, n.e.s.	21,467	12,207
743	Pumps (excl. for liquids) and compressors: fans and blowers; centrifuges; filtering & purifying apparatus; parts, n.e.s.	10,340	58,996
744	Mechanical handling equipment, and parts, n.e.s.	292,400	243,330
745	Other non-electrical machinery, tools and mechanical apparatus, and parts, n.e.s.	93,607	25,976
749	Non-electrical parts and accessories of machinery, n.e.s.	6,200,617	2,938,132
75	Office machines and automatic data processing equipment	19,432	1,000
751	Office machines	17,932	-
759	Parts, n.e.s. of accessories (other than covers)	1,500	1,000
76	Telecommunications and sound recording and reproducing apparatus & equipment	8,186,903	4,467,215
761	Television receivers (incl. receivers incorporating radiobroadcast receivers or sound recorders or reproducers)	37,788	201,536
762	Radiobroadcast receivers (incl. receivers incorporating sound recorders or reproducers)	4,888,791	2,488,258
763	Gramophones (phonographs), dictating machines & other sound recorders & reproducers; television image & sound recorders, magnetic	1,117,691	1,607,321
764	Telecom Equipt., n.e.s. and parts, n.e.s. of & accessories for the apparatus & equipt. within division 76.	2,142,633	190,100

ANNEX VI-2

Table A.1-2

Page 3

<u>Code</u>	<u>Commodity</u>	<u>Fob Value Dollars</u>	
		<u>1977</u>	<u>1976</u>
77	Elect. mach., n.e.s. & elect. parts (incl. non-elec. counterparts of elect. hald. type)	18,756,702	3,488,475
771	Electric power machinery (other than the rotating electric plant of group 716), and arts, n.e.s.	17,095	-
772	Elect. apparatus for making breaking, protecting & connecting to or in elect. circuits switchboards, control panels, n.e.s, parts	374,890	163,061
773	Equipment for distributing electri- city	84,285	144,359
774	Electric apparatus for medical pur- poses and radiological apparatus	6,500	-
775	Household type, electrical and non- electrical equipment, n.e.s.	26,894	1,045
776	Thermionic, cold cathode and photo- cathode valves; photocells; mounted piezoelectric crystals, etc. and parts, n.e.s.	8,154,242	28,971
778	Electrical machinery and apparatus, n.e.s.	10,092,756	3,151,039
78	Road vehicles (including air-cushion vehicles)	11,967,591	8,069,747
781	Passenger motor cars (other than public service type), incl. vehicles designed for the transport of both passenger & goods	15,066	-
782	Motor vehicles for the transport of goods or materials and special purpose motor vehicles	4,292	-
783	Road motor vehicles, n.e.s.	-	7,785
784	Parts and accessories, n.e.s. of the motor vehicles falling within group 722, 781, 782 or 783	11,147,976	7,724,424

ANNEX VI-2

Table A.1-2

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<u>Code</u>	<u>Commodity</u>	<u>Fob Value Dollars</u>	
		<u>1977</u>	<u>1976</u>
785	Motorcycles, motor scooters and other cycles, motorized and non-motorized; invalid carriages	358,558	337,538
786	Trailers and other vehicles, not motorized, n.e.s. and specially designed and equipped transport containers	441,699	-
79	Other transport equipment	1,859,028	438,846
792	Aircraft and associated equipment, and parts, n.e.s.	637,018	-
793	Ships, boats (including hovercraft) and floating structures	1,222,010	438,846
7	Machinery and transport equipment	53,060,983	24,068,303

Source: 1977 Foreign Trade Statistics of the Philippines, NEDA.  
NCSO (national Census & Statistics Office)

Table A.1-3

An Overview of the Size Distribution of Establishment:  
ME Sector vs. All Industry

	(a) Total Number of Industries/ <u>1</u>	(b) Total Number of ME Industries	Share of ME Sector = $\frac{(b)}{(a)} \times 100$ %
100% of total establishments are in small medium scale <u>/2</u>	38	17	44.7
90 - 99% of total establish- ments are in small & medium scale	43	11	25.6
60 - 89% of total establish- ments are in small & medium scale	60	14	23.3
100% of total establishments are in large scale	11	0	0.0
Over 50% of total establish- ments are in larges scale	30	6	20.0

/1 Four or five digits industry code level of 1974 Annual Survey of Establish-  
ments of the National Census and Statistics Office.

/2 Small & medium scale firm is defined as a firm with replacement value of  
fixed assets less than P4 million in 1974 Annual Survey of Establishment

Source: Hife, E., Factor Productivities and Intensities in Philippine  
Manufacturing with Emphasis on Establishment size, 1974, IPPP Working  
Paper No. 10, June 1978, School of Economics, University of the  
Philippines.

Table A.2-1

Estimates of the Nominal & Effective Rates of Protection for the Mechanical Engineering Products (1974) By The School of Economics, University of The Philippines

Input-Output Sector No. (1974, 157 Sector Classification)	Estimates By Medalla-Power		Estimates By N. Tan	
	Implicit- <sup>1/</sup> Tariff(%)	Nominal Rate of <sup>2/</sup> Protection(%)	Nominal Tariffs & Indirect Taxes(%) <sup>1/</sup>	Effective Rate of <sup>3/</sup> Protection (%)
120 Basic ferrous metal products	36	35	35	27
121 Basic non-ferrous metal industries	15	10	10	0
122 Metal cans, boxes & containers	60	57	57	110
123 Cutlery, handtools & general hardware	43	39	39	34
124 Structural metal products	67	65	65	95
125 Stamped, coated & engraved metal products	41	37	37	38
126 Fabricated wire products	30	28	28	14
127 Heating apparatus, lighting, etc.	62	59	59	85
128 Other fabricated metal products	63	62	62	79
129 Agricultural machinery & equipment	26	22	29	14
130 Other special industry machinery & equipment	18	13	13	4
131 General industry machinery & equipment	21	18	18	7
132 Office computing & accounting machines	36	29	29	27
133 Electrical distribution & control apparatus	29	25	25	18
134 Other electrical industrial machinery, & eqpt.	37	33	33	30
135 Communication equipment	38	31	31	31
136 Batteries	63	56	56	73
137 Electrical lamps & fixtures	40	38	38	27
138 Electrical wires & wiring devices	43	40	40	51
139 Household radio, TV sets, phonos & supplies	167	164	164	204
140 Refrigeration & air-conditioning equipment	147	142	142	195
141 Other household electrical appliances & wares	119	95	95	103
142 Shipbuilding and repairing	22	17	17	26
143 Motor vehicles, manufactured/assembled	134	93	93	127
144 Motor vehicles engines bodies & parts	34	29	29	23
146 Motorcycles, bicycles & parts	53	50	50	52
147 Other transport equipment, n.e.c.	11	6	6	9
148 Jewelry, silverware & related articles	203	91	91	133

<sup>1/</sup> Estimated based on  $T = (1+t)[1+f(1+m)]-1$  for competing imports  
 $T = (1-t_x)[1+dv(1-x)] - 1$  for exportables.

where T = implicit tariff rate  
t = average tariff rate  
f = advance sales tax rate  
m = percentage mark-up (applied to the base before the sales tax is assessed)  
 $t_x$  = ad. valorem export tax  
d = percentage sales tax on domestic sales  
v = proportion of sales value not previously taxed  
x = proportion exported

(Note that since sales tax for export = 0, T for export =  $-t_x$ )

<sup>2/</sup> Estimated based on:

$$\frac{T}{1 + dv(1-x)} - 1$$

<sup>3/</sup> Estimated based on:

$$E_j = \frac{\frac{1}{1 + d_j v_j (1-x_j)} - \sum_i a_{ij}}{\frac{1}{1+T_j} - \sum_i \frac{a_{ij}}{1+T_i}} - 1$$

where  $E_j$  = effective protection rate for sector j  
 $a_{ij}$  = actual (protected) input-output coefficient.

Source: Medalla, E. and J. Power, "Estimating Implicit Tariffs and Nominal Rates of Protection." IPPP Working Paper No. 14, Sept. 1978, School of Economics, University of the Philippines.  
Tan, N., "The Structure of Protection & Resource Flows in the Philippines, 1974", Feb. 1979, School of Economics, University of the Philippines.

Table A.2-2

Import Duty Rates for the Mechanical Engineering Products

(Section Code = 7: Machinery or Transport Equipment)

<u>Commodity Classification of the Central Bank of the Philippines</u>	<u>Rate of Duty</u>	<u>Frequency in NEDA Volume</u>
(Division Code)		
71	<u>Power Generating Machinery and Equipment</u>	<u>44</u>
	(Boilers; engines, motors)	
	Exceptions: (motors, DC over 30 hp; generators, DC)	( 30%) (12)
	(motors, DC below 30 hp; generators, AC; cylinder engine or sleeves of engines)	( 50%) (13)
	Engines for sports or racing cars)	(100%) ( 1)
72	<u>Machinery Specialized for Particular Industries</u>	<u>124</u>
	(Agricultural machinery, harvesting, and threshing machinery; dairy machinery; tractors; road rollers; bulldozers; textile machinery; machinery for washing, cleaning and drying; machinery for tanning; shoe and boot making machinery; paper mill machinery, etc.)	
	Exceptions: (Golf course equipment and parts)	( 20%) ( 6)
	Animal drawn agriculture machinery; walking tractors; printing machinery; rice huller; machinery for preparing food items; machinery for crushing; concrete mixer, etc; machinery for rubber, tobacco, etc.)	(30%) (69)
	(Lawn mowers and parts)	(50%) ( 2)
	(Household or industrial sewing machines)	(70%) ( 8)
73	<u>Metal Working Machinery</u>	<u>28</u>
	(machine tools)	
	Exceptions: (Gas operated welding, brazing, cutting and surface-tempering equipment)	(30%) ( 4)
74	<u>General Industrial Machinery and Equipment, n.e.s. and Machinery Parts, n.e.s.</u>	<u>124</u>
	(Heating and cooling equipment; pumps for liquids; air or vacuum pumps and air or gas compressors, etc.; mechanical handling equipment; work trucks; transmission shafts, cranker, etc; molding boxes for metal foundry)	

Commodity Classification  
of the Central Bank  
of the Philippines

(Division Code)

Rate of Duty Frequency in NEDA Volume

	Exceptions: (parts of air conditioning machines, n.e.s.; heating and cooling plant and machinery, etc.; scales)	(20%)	(19)
	(Electric industrial refrigerators; commercial freezers, etc.; refrigerators, freezers and beverage coolers (other than household refrigerators), n.e.s.; air compressors and vacuum pumps, n.e.s. etc.)	(30%)	(36)
	(Open type compressors, n.e.s.; Fans and blowers; oil seals and grease retainers)	(50%)	( 7)
	(Vending machines; hand-operated sprayers; fire extinguisher parts)	(70%)	( 3)
	(Bodies or shells, doors, food compartments, liners, back and bottom plate assemblies, fabricated for refrigerators, electric and non-electric; or freezers; Completely knocked-down freezers; air conditioning machines)	(100%)	( 7)
75	<u>Office Machines and Automatic Data Processing Equipment</u>	<u>20%</u>	<u>29</u>
	Exceptions: (parts and accessories for office machines)	(10%)	(17)
	(Numbering machines; stapling machines; dating/duster machines; hand-operated paper perforators; mechanical pencil sharpeners, etc.)	(50%)	( 6)
76	<u>Telecommunications and Sound Recording and Reproducing Apparatus and Equipment</u>	<u>(100%)</u>	<u>(31)</u>
	(Television receivers; radio-broadcast receivers; gramophones, dictating machines and other sound recorders and reproducers, etc., television transmitters, etc.; television or radio cabinets, chassis, etc.)		
	Exceptions: (telephone apparatus; telephone network; television transmitter or radio receiver parts, etc.)	(30%)	(20)
	Gramophone needles; parts of tape recorders, etc.)	(50%)	( 6)
	(Record players or changers; tape recorders, etc.; loudspeakers, etc.)	(70%)	(15)
77	<u>Electrical Machinery, Apparatus and Appliances, n.e.s., and Electrical Parts thereof (Including Non-electrical Counterparts, n.e.s., of Electrical Household Type Equipment)</u>	<u>50%</u>	<u>95</u>
	Exceptions: (component parts of magnetic starters and circuit breakers imported with prior authorization of the Board of Investments under a progressive manufacturing program; electrocardiographs, etc.; electric traffic control equipment, etc.)	(10%)	(29)
	(Transformers; static converters, etc.; electric insulators; radio receiving and transmitting tubes; TV camera tubes, etc)	(30%)	(59)
	(Domestic electric floor polisher and vacuum cleaners; electric fans; food grinders, mixers, and fruit-juice extractors)	(70%)	(14)
	(Household compression type or absorption type refrigerators; home freezers; storage batteries for motorcycles)	(100%)	(18)

Commodity Classification  
of the Central Bank  
of the Philippines

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Rate of Duty Frequency in NEDA Volume

(Division Code)

78

Road Vehicles (Including Air-cushion Vehicles)

(30%)

(38)

(Passenger cars (excluding buses) e.g., automobiles, diesel or semi-diesel, unassembled; CKD and especially fabricated for assembly (may be imported only by duly licensed assemblers of passenger cars; passenger cars (excluding buses) other than diesel or semi-diesel, unassembled, with no more than 4 cylinders, CKD and especially fabricated for local assembly (may be imported only by duly licensed assemblers); components, parts and/or accessories, imported from one or more countries for assembly of passenger cars by participants in the progressive car manufacturing program upon prior authorization and certification of the Board of Investments; motor vehicles for the transport of goods or materials; buses and coaches, CKD, and especially fabricated for assembly (may be imported only by licensed assemblers); motor cycles, CKD, trailers).

Exceptions: (fire engines; special purpose motor lorries; road tractors for semi-trailers)

(10%)

(10)

(motor vehicle chassis; CKD components when imported from one or more countries for assembly of trucks upon prior authorization and certification of the Board of Investments)

(20%)

(6)

(passenger cars excluding buses, other than diesel or semi-diesel, unassembled; with 6-cylinders, CKD and especially fabricated for local assembly (may be imported only by duly licensed assemblers); motorcycles and side cars, assembled; animal-drawn vehicles, n.e.s.

(70%)

(12)

(passenger cars, excluding buses, other than diesel or semi-diesel, unassembled, with more than 6 cylinders, CKD and especially fabricated for local assembly (may be imported only by duly licensed assemblers); passenger cars (excluding buses), e.g., automobiles, diesel or semi-diesel, assembled, new; passenger cars (excluding buses) other than diesel or semi-diesel, assembled; used passenger cars; station wagon, new or used; ambulances; passenger road motor vehicles

(100%)

(17)

79

Other Transport Equipment

(Railway vehicles; aircraft and associated equipment; ships, boats, and floating structures)

10%

34

Exceptions: (floating structures other than vessels, n.e.s.)

(20%)

(2)

(Yachts and other vessels for pleasure or sports; new or used barges of all kinds; trailers and other fishing vessels)

(30%)

(5)

Source: National Economic Development Authority. Philippine Standard Commodity Classification, 1977. pp. 473-613.



Table A.4-1

Estimates of Domestic Resource Cost Coefficients for the Mechanical Engineering Products  
By The School of Economics, University of The Philippines

<u>Input-Output Code</u>		<u>Industry</u>	<u>DRC</u> <sup>a/</sup>	
<u>1969</u>	<u>1974</u>		<u>Shadow Exchange Rate</u>	<u>1974</u>
113	120	Iron and steel basic industries	0.78	
114		Iron and steel foundry products	0.93	1.47
115	121	Basic non-ferrous metal products	0.65	0.57
116	122	Metal cans, boxes, and containers	0.80	0.54
117, 118	123	Cutlery and general hardware, handtools	*	1.55
119	124	Structural metal products	0.93	1.12
120	125	Stamped, coated, and engraved products	0.99	0.62
121	126	Fabricated wire products	0.85	0.93
122	127	Heating apparatus, lighting and plumbing	1.33	1.10
123	128	Other fabricated metal products, n.e.c.	1.05	2.88
124	129	Agricultural machinery and equipment	0.72	0.66
125	130	Other special industrial machinery and equipment	0.75	0.54
126	131	General industry, machinery and equipment except electrical	0.81	0.67
128	133, 134	Manufacture of electrical distribution and control apparatus and other electrical industrial machinery and apparatus	0.36	0.61
129	135	Manufacture of communication equipment	-	1.64
130	136	Batteries	0.40	0.62
131	137	Electrical lamps and fixtures	0.82	0.94
132	138	Electrical wires and wiring devices	0.74	*
133	139	Household electrical appliances and wires	0.98	-
134		Household radio, television receiving sets, phonographs and accessories	0.73	-
135	140	Refrigeration and air-conditioning equipment	-	1.68
	141	Other household electrical appliances and wares	-	1.40
136	142	Shipbuilding and repair	1.21	0.73
	143	Motor vehicles	0.73	1.11
	144	Motor vehicle engines, body and parts	-	
138	145	Rebuilding, repair of vehicles and engines	0.49	-
	146	Manufacture of motorcycles, bicycles and parts	-	0.82

\* Negative net earning or saving of foreign exchange

- Data on capital or labor cost not available from the ASM/ASE or Economic Census.

a/ The weighted average of sectoral DRC is used as an approximation of the shadow exchange rate.

These estimates for 1969 and 1974 were 6.48 and 3.88 respectively.

Source: Bautista, R. and G. Tecson, "Domestic Resource Costs in Philippine Manufacturing: 1969 and 1974" IPP Working Paper No. 13, Sept. 1978, School of Economics, University of the Philippines.

Table A,5-1

Growth of Passenger Car Population and New Passenger Cars Sold

<u>Year</u>	<u>Registrations</u>	<u>Increase Over Previous Year</u>		<u>New Car Sales</u>	<u>Increase Over Previous Year</u>	
		<u>Units</u>	<u>Percent</u>		<u>Units</u>	<u>Percent</u>
1964	138,933	11,458	9.0	10,238	-	-
1965	150,345	11,412	8.0	11,528	1,290	12.6
1966	174,394	24,049	16.0	12,166	638	5.5
1967	219,957	45,563	26.1	14,641	2,475	20.3
1968	248,328	28,371	12.9	17,509	2,686	16.4
1969	272,183	23,855	9.6	17,149	(360)	(2.1)
1970	279,172	6,989	2.6	7,375	(9,774)	(57.0)
1971	285,063	5,890	2.1	9,651	2,276	30.9
1972	301,496	16,433	5.8	11,974	2,323	24.1
1973	332,233	30,737	10.2	16,737	4,763	39.8
1974	397,603	65,370	19.7	21,844	5,100	30.5
1975	399,571	1,968	0.5	27,497	5,653	2.7
1976	402,328	2,757	0.7	31,319	3,822	13.9
1977	440,466	38,138	0.5	32,269	950	3.0

Source: Automotive Manufacturers' Institute, Inc., 1977 Annual Report.

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Table A.5-2

Major Components and Parts Locally Manufactured and  
Used in the Assembly of PCMP Cars in 1977

*Batteries	Leaf springs
*Body panels	*Mats and carpets
Body stampings	*Plastic molded parts
*Brake linings	*Radiators
*Brake pedal pads	Roof headlining
*Brake tubings	*Rubber pads and tubings
*Bumpers	*Safety glass
Bumper stays	*Seat assembly
Clutch facings	Slide adjusters
Clutch pedal pads	*Silencer pads
Cover rails	Speedometer cable
Cowl, cross panel	Sound absorbers
Disc wheels	*Sunvisor assembly
*Door panels	Transmission assembly
*Door trims	Trim baggage shelf
Engine assembly	*Tires and tubes
*Exhaust system	Tool sets
*Formed sheet, tubes and plates	Vinyl roof
Front seat spring	*Weatherstrips
*Fuel tank assembly	Wheelhousings
Garnish assembly	Windshield bracket, seal frame
Grommets	*Wires and cables
Hand brake assembly	*Wiring harness
*Instrument panel	
Jack assembly	

\* Components which have been produced since 1973. Additionally, such items as brake drum, disc brakes, headlight assemblies, headlinings, roof linings, vinyl roof, and tool kits, jacks, have been produced since 1973.

Source: Automotive Manufacturers' Institute, Inc., 1973 and 1977 Annual Report.

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Table A.5-3

PCMP Car Production, 1973-1977 (Units)

PCMP Participant	PCMP Car Models	P.D. cm <sup>3</sup>	1973	1974	1975	1976	1977	1978 <sup>1/</sup>	
C.A.R.	Minica Standard A100 ASL	359	555	4					
	Minica de Luxe A101 AEL	359	782	1					
	Minica Van A100 VSL	359	130						
	Dodge Cold 4Dr. Sedan A53 FUL	1,597	1,371	550					
	Dodge Cold 2Dr. H.T. A53 HUL	1,597	578	264					
	Minica F4 103 AUL	359		2,009	1,410	540	411	601	
	Colt Galant 4Dr. Sedan A112 FEL	1,597		1,368	2,240	2,253	649		
	Colt Galant 2Dr. H.T. A112 HUL	1,597		720	1,440	1,175	217		
	Colt Galant S.W. A112 VPEL	1,597		120	288	532	398		
	Colt Lancer 4Dr. Sedan A72 ASEEL	1,439				2,327	2,015	3,341	
	Colt Lancer 2Dr. Sedan A72 ADSEEL	1,439				1,049	1,263		
	Colt Calesta 2Dr. H.T. A73 MFL	1,597					1,440	748	
	Galant Sigma 4Dr. A121 AUL	1,597					1,414	4,478	
	Galant Sigma 4Dr. A122 AUL	1,553					1,128		
	(Total)			(3,566)	(5,136)	(5,378)	(7,898)	(8,733)	(9,766)
	Delta	Corona 4Dr. Standard RT91 LKS	1,587	1,307	137				
Corona 4Dr. de Luxe RT91 LKKS		1,587	240						
Corolla 4Dr. de Luxe KE 20 LFD		1,166	500	560					
Corolla 2Dr. Coupe KE25 LS		1,166	340	420					
Crown 4Dr. Sedan KE60 LKS		1,994	320						
Corona 4Dr. Sedan RT100 LKRFM		1,587		3,541	1,619	5,106	5,294	3,399	
Corona 4Dr. Sedan RT100 LKRF		1,587		179					
Corona 2Dr. H.T. RT110 LKOF		1,387		240	1,300	939	1		
Corona S.W. RT116 LKRF		1,387		240	320	220	260	370	
Crown 4Dr. Sedan KE30 LKS		1,990		620	360	320	1,100	1,118	
Corolla 4Dr. de Luxe FE30 LKDF		1,166			1,720	1,540	1,369	2,725	
Corolla 2Dr. SR KE35 LKSB		1,166				220	1,740	1,912	
Corona 2Dr. H.T. RT116 LKSD		1,368					1,100	704	
Corona KE30 LKSD								116	
(Total)			(3,507)	(6,037)	(7,419)	(9,945)	(12,454)	(12,445)	
D.M.G.	VW Beetle 1200	1,167	738	8					
	VW Beetle 1300	1,297	452	2					
	VW Beetle 1300 de Luxe	1,297	119		1,859		1,611	1,792	
	VW Beetle 1500 de Luxe	1,584	408						
	VW Beetle 1600 super	1,584	499	499	350	7		229	
	VW Saksbayan 816 H.T.	1,493	620	39	340				
	VW Saksbayan 816 FK	1,493		341					
	VW Saksbayan 816 ST	1,493		95	162		485	536	
	VW Saksbayan Sare	1,493			3				
	VW Brasilia 102	1,584			1,691	1,028	403	517	
	VW Brasilia 104	1,584				70	283	478	
	VW Beetle 1500	1,493		2,325	3,201	1,175			
	VW Passat 323	1,471					159	329	
	(Total)			(2,836)	(2,959)	(6,449)	(4,517)	(2,341)	(3,381)
Ford	Escort 4Dr. Base	1,297	300		200	671	372	182	
	Escort 4Dr. L	1,297	650	1,100	1,152	403	249	371	
	Escort 2Dr. GT	1,298	301		333			241	
	Escort 2Dr. Sport	1,598	27	491	467	284	104	166	
	Escort 4Dr. Ghia	1,598				294	425	362	
	Cortina 4Dr. L	1,993	700	1,297	902	700	651	556	
	Cortina 4Dr. GT	1,998	571						
	Cortina 4Dr. XL	1,998		750	549	548	103		
	Cortina 4Dr. GXL	1,998	269	596					
	Cortina 4Dr. E	1,998			453	644	7		
	Cortina 4Dr. GL	1,993					363	184	
	Cortina 2Dr. Sport	1,993					548	547	
	Cortina 4Dr. Ghia (M)	1,993					397	625	
	Cortina 4Dr. Ghia (A)	1,993					158	336	
(Total)			(2,818)	(4,334)	(4,056)	(3,744)	(3,778)	(3,970)	
G.M.	Torana 2Dr. 82311	1,897	552	114	48				
	Torana 2Dr. 82311 SL	1,897	48	24	155				
	Torana 2Dr. 82311 GTS	1,897		70	97				
	Torana 2Dr. 82311 R-PAK	1,897	970	663	60				
	Torana 4Dr. 82569 S	1,897	732	300	407				
	Torana 4Dr. 82569	1,897	50	60	120				
	Torana 4Dr. 82569 SL	1,897		120	139				
	Torana 4Dr. 82569 GTR	1,897		384	101				
	Holden 4Dr. 8UH69 SL	1,397		24	397	514			
	Holden 4Dr. 8UH69	1,397		104	347	31	176	37	
	Holden 4Dr. 8UG69 S	1,397			48	48			
	Isuzu Gemini 2Dr. SL PF 50ZLK	1,584				999	551	468	
	Isuzu Gemini 4Dr. SL PF 50 LK	1,584				1,528	391	547	
	Isuzu Gemini 4Dr. S PF 50 LK	1,584					471	327	
Ascona							139		
Monte							120		
Rekord							628		
(Total)			(2,362)	(1,863)	(1,919)	(3,170)	(2,139)	(2,264)	
<u>Grand Total</u>			<u>(15,409)</u>	<u>(20,329)</u>	<u>(26,221)</u>	<u>(29,174)</u>	<u>(30,393)</u>	<u>(32,316)</u>	

<sup>1/</sup> 1978 figures are sales quantity.

Source: Automotive Manufacturers' Institute, Inc. and Board of Investments.

Table A.5-4

A Summary of the Performance of Korea's Automobile Industry

	<u>1966</u>	<u>1968</u>	<u>1970</u>	<u>1973</u>	<u>1975</u>	<u>1977</u>	<u>Average (compound) Annual Growth Rate (1966-1977)</u>
a. Average domestic content ratio (%) <u>1/</u>	21	25	45	59	68	73 <sup>2/</sup>	12.0%
b. Motor vehicle production (unit) <u>3/</u>	5,483	19,070	30,358	26,363	34,867	83,513	28.1%
c. Export of automotive components (\$1,000) <u>4/</u>	747	519	479	5,038	10,184	( <sup>'76</sup> ) 21,122	39.7%
d. $\left[ \frac{\text{WPI of complete cars}}{\text{WPI of all commodities}} \right]$ <u>5/</u>	1.34	1.23	1.06	1.00	0.78	( <sup>'76</sup> ) 0.74	-5.8%
e. $\left[ \frac{\text{WPI of automotive parts}}{\text{WPI of all commodities}} \right]$	1.01	1.04	1.25	1.00	0.85	( <sup>'76</sup> ) 0.81	-2.2%

1/ Average (unweighted) domestic content ratio for: KIA's Brisa, Brisa II, 0.5 ton pick-up, 2.5 ton truck, and 4.5 ton truck; Hyun Dai's Cortina, Bus, 7 ton truck, Pony, HD-1 ton truck, and HD-1 ton mini bus; Shin Jin's Corona.

2/ Average domestic content ratio for 1978 = 82%

3/ Includes passenger cars, three- and four wheel trucks, and buses.

4/ Includes piston rings, springs, tire chains, auto bulbs, piston w/pins, cylinder liners, metal bearings, axle shafts, safety glass, wheel discs, and radiators.

5/ Base year for the price index = 1973.

Source: Kim, Chuk Kyo and Chul Hee Lee, "The Growth of the Automotive Industry in Korea," KDI Working Paper 7809, August 1978, Korea Development Institute.

Table A.5-5

Private Profit of the PCMP Assemblers

(Unit: million pesos)

	<u>1 9 7 6</u>			<u>1 9 7 7</u>		
	<u>Profits</u>	<u>Profits</u>	<u>Net Sales</u>	<u>Profits</u>	<u>Profits</u>	<u>Net Sales</u>
<u>Before Tax</u>	<u>After Tax</u>	<u>Before Tax</u>		<u>After Tax</u>		
CAR	8.6	4.4	352.6	1.0	1.2	460.2
DMG	6.7	4.3	205.8	-2.1	-2.1	180.3
Delta	6.0	3.9	525.0	15.5	9.6	750.3
Ford	-16.7	-16.7	343.9	-30.7	-30.7	386.9
GM	-52.4	-52.4	258.1	-31.4	-31.4	306.8
Total	-31.1	-39.8	1,341.5	-46.8	-53.4	2,084.5

Source: Financial Statements of PCMP participants.

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Table A.5-6

Performance of Progressive Motorcycle  
Manufacturing Program

	<u>1975</u>	<u>1976</u>	<u>1977</u>
Production (units)			42,582
Sales (units)	29,220	31,028	40,879
Local Content Required (%)	30.00	40.00	50.00
Local Content Attained (%)	32.97	44.84	46.00

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Source: Board of Investments

Table A.5-7

Production & Sales of Motorcycle  
in the Philippines (1977)

<u>PMMP Participant</u>	<u>(a)Registered Capacity (units)</u>	<u>(b)Production (units)</u>	<u>(<math>\frac{(b)}{(a)}</math>)x100)</u>	<u>(c)Sales (units)</u>
ASC	5,895	7,525	(128%)	6,100
DIC	7,350	9,231	(126%)	8,945
MHI	5,460	9,020	(165%)	8,862
NTC	14,578	16,806	(115%)	16,972
<u>Total</u>	<u>33,283</u>	<u>42,582</u>	<u>(128%)</u>	<u>40,879</u>

ANNEX VI-2

Table A.5-8

Prescribed Local Content of  
Progressive Truck Manufacturing Program

	<u>1st Program Year (1977)</u>	<u>2nd Program Year (1978)</u>	<u>3rd Program Year (1979 )</u>
	(%)	(%)	(%)
1st Truck Group <sup>1/</sup>	60	65	70
2nd " "	30	35	40
3rd " "	25	30	35
4th " "	20	25	30

<sup>1/</sup> For classification of the truck groups, see Table A.5-9.

Source: Board of Investments

Table A.5-9

Sales Volume of Trucks

	1970	1971	1972	1973	1974	1975	1976	<u>Projected</u>			
								1977	1978	1979	1980
1st Truck Group	2,416	3,843	3,302	8,740	13,710	14,425	14,703	17,000	19,500	22,000	25,164
2nd " "	2,422	3,364	2,922	2,927	3,208	3,157	2,032	4,200	5,500	5,900	8,750
3rd " "	3,545	3,452	2,871	3,245	4,551	4,438	3,820	8,800	10,510	11,500	17,600
4th " "	435	449	431	609	843	1,772	911	7,100	7,668	8,280	9,000
<b>Total</b>	<b>8,818</b>	<b>11,108</b>	<b>9,526</b>	<b>15,521</b>	<b>22,303</b>	<b>23,792</b>	<b>21,546</b>	<b>37,100</b>	<b>43,178</b>	<b>47,680</b>	<b>60,514</b>

Note: 1st Truck Group - up to 4,500 lbs (Asian utility vehicles (AUV) falls under this group)  
 2nd " " - 4,501 lbs to 10,000 lbs  
 3rd " " - 10,001 lbs to 30,000 lbs  
 4th " " - 30,001 lbs to 40,000 lbs.

Source: Board of Investments.



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Table A.5-10

Production of ASEAN Utility Vehicle (1978)

<u>PTMP Participants</u>	<u>Commercial Vehicles</u> <u>(including A.U.V)</u>	<u>ASEAN Utility Vehicle</u>
(PCMP Participants)	(units)	(units)
CAR	4,592	3,242
Delta	13,052	8,921
DMG	86	11
Ford	8,254	7,297
GM	4,066	498
<u>Total</u>	<u>30,050</u>	<u>19,969</u>
(Non-PCMP Participant)		
Francisco-Motor Co.	3,909	980
Others (6 producers)	1,376	
<u>Total</u>	<u>5,528</u>	<u>980</u>
<u>Grand Total</u>	<u>35,578</u>	<u>21,447</u>

Source: Board of Investments.

Table A.5-11  
Sales of Used Trucks

(Unit: Number of trucks)

GVW	1973	1974	1975	1976	P r o j e c t e d			
					1977	1978	1979	1980
20,000 lbs. to 40,000 lbs. GVW	3,203	4,206	6,247	5,201	6,293	7,615	9,213	11,148
40,000 lbs. GVW and above	448	799	2,498	1,352	1,573	1,903	2,303	2,787
Special Purpose Vehicles	-	-	-	-	1,481*	691*	322	-
<b>Total</b>	<b>3,651</b>	<b>5,005</b>	<b>8,745</b>	<b>6,553</b>	<b>9,347</b>	<b>10,209</b>	<b>11,838</b>	<b>13,935</b>

\* actual figure

Source: Board of Investments.

Table A.6-1

ASEAN Motor Vehicle Population (1974-1980)  
(Estimated and Projected by Chrysler Philippines Corporation in 1977)

<u>Country</u>	<u>Vehicle Population</u> (1,000 units)			<u>Projected Vehicle Population</u> (1,000 units)			
	<u>1974</u>	<u>1975</u>	<u>1976</u>	<u>1977</u>	<u>1978</u>	<u>1979</u>	<u>1980</u>
Indonesia	533.0	587.0	644.7	703.0	755.2	801.2	862.8
Malaysia	549.7	586.1	625.3	667.8	713.1	761.9	814.1
Philippines	670.2	671.8	692.9	753.6	819.7	891.5	969.8
Singapore	192.0	198.4	204.8	212.9	221.7	231.0	240.5
Thailand	529.9	599.3	643.5	690.4	740.1	783.3	830.2
<u>Total</u>	<u>2,474.8</u>	<u>2,642.6</u>	<u>2,811.2</u>	<u>3,027.7</u>	<u>3,249.8</u>	<u>3,468.9</u>	<u>3,717.4</u>
<u>Annual Changes in Unit Volume (1,000 units)</u>							
Indonesia	76.3	54.0	57.7	58.3	52.2	46.0	61.6
Malaysia	56.5	36.4	39.2	42.5	45.3	48.8	52.2
Philippines	98.8	1.6	21.1	60.7	66.1	71.8	78.3
Singapore	16.0	6.4	6.4	8.1	8.8	9.3	9.5
Thailand	63.2	69.4	44.2	46.9	49.7	43.2	46.9
<u>Total</u>	<u>310.8</u>	<u>167.8</u>	<u>168.6</u>	<u>216.5</u>	<u>222.1</u>	<u>219.1</u>	<u>248.5</u>
<u>Annual Changes in Percentage (%)</u>							
Indonesia	16.7	10.1	9.8	9.0	7.4	6.1	7.7
Malaysia	11.5	6.6	6.7	6.8	6.8	6.8	6.9
Philippines	17.3	0.2	3.1	8.8	8.8	8.8	9.8
Singapore	9.1	3.3	3.2	4.0	4.1	4.2	4.1
Thailand	13.5	13.1	7.4	7.3	7.2	5.8	6.0
<u>Average</u>	<u>14.4</u>	<u>6.8</u>	<u>6.4</u>	<u>7.7</u>	<u>7.3</u>	<u>6.7</u>	<u>7.2</u>

Source: Philippine Automotive Federation.

Table A.6-2

Engine Components, Parts and Products Currently  
Manufactured in the ASEAN But Being Imported  
(for Original Equipment or Replacement)  
From Non-ASEAN Countries

Components	C o u n t r y				
	Indonesia	Malaysia	Philippines	Singapore	Thailand
1. Timing chain		X		X	
2. Piston	X	X	X		X
3. Piston ring	X	X	X		X
4. Piston pin	X	X	X		X
5. Cylinder lines	X	X	X	X	X
6. Circlypse					
7. Gaskets	X	X	X	X	X
8. Crankshaft bearing		X	X	X	X
9. Connecting rod					X
10. Connecting rod bearing			X	X	
11. Oil filter					
12. Oil screen	X	X	X	X	X
13. Oil pressure gauge	X	X	X	X	X
14. Oil temperature gauge	X		X		
15. Air cleaner - housing					X
16. Air cleaner - filter	X	X	X	X	X
17. Fuel lines	X	X	X	X	X
18. Fuel hose	X	X	X	X	X
19. Fuel tank	X	X	X	X	X
20. Thermostat	X		X		
21. Water temperature gauge	X		X		
22. Fan	X	X	X	X	X
23. Fan belt	X	X	X	X	X
24. Radiator assembly	X	X	X	X	X
25. Radiator clamp			X		X
26. Radiator hose	X	X	X	X	X
27. Exhaust system	X	X	X	X	X
28. Oil seals	X	X	X	X	X
29. Clutch disc	X	X	X		X
30. Engine mounting support	X		X	X	X
31. Cable - Chok	X		X	X	X

Source: ASEAN Automotive Federation.

ANNEX VI-2

Table A.6-3

The First List of Components/Parts for Possible  
Regional Complementation or Commonization for ACS Discussed  
By The Expert Group

<u>Product Group</u>	<u>Convenor</u>	<u>No. of Components/Parts for Possible Regional Complementation</u>	<u>No. of Components/ Parts for possible Commonization</u>
Group 1 - Suspension system	Indonesia	Front suspension: 7 Rear suspension: 2	
Group 2 - Steering system	Indonesia	4	
Group 3 - Power train system	Malaysia	6	4
Group 4 - Electrical system	Malaysia	Priority 1 (Existing Capacity): 14 Priority 2 (New Capacity): 11	16
Group 5 - Engine and parts	Philippines	Priority 1: 25 Priority 2: 15	
Group 6 - Rubber, Glass and Misc. items	Philippines	7	6
Group 7 - Brake system	Singapore	17	
Group 8 - Body parts	Thailand	6	
<u>Total</u>		<u>114</u>	<u>26</u>

Table A.6-4

## Complementarity Agreements in the Latin American Free Trade Association, 1976

Complementarity Agreement	Year		Industrial Classification	Participating Countries
1 Statistical Calculators and Software	1962	11	Nonelectrical Machinery	Ar., Br., Ch., <sup>1/</sup> Ur.
2 Electronic Valves	1964	12	Electrical Machinery and Equipment	Ar., Br., Ch., <sup>1/</sup> Me., Ur.
3 Domestic Electrical, Mechanical and Heating Apparatus	1966	12	- " -	Br., Ur.
4 Electronic and Electrical Communication Products	1966	12	- " -	Br., Ur.
5 Chemical Industry	1968	5	Chemical and Allied Products	Ar., Br., Co., Ch., Me., Pe., Ur., Ve.
6 Petrochemical Industry	1968	5	- " -	Bo., Co., Ch., Pe.
7 Building Materials	1963	8	Stone, Clay and Glass Products	Ar., Ur.
8 Glass Industry	1969	8	- " -	Ar., Me.
9 Electrical Generation, Transmission and Distribution Equipment	1969	12	Electrical Machinery and Equipment	Br., Me.
10 Office Machinery	1970	11	Nonelectrical Machinery	Ar., Br., Me.
11 Office Machinery	1970	11	- " -	Ar., Br., Me.
12 Electronic and Electrical Communications Products	1970	12	Electrical Machinery and Equipment	Br., Me.
13 Sound Speakers and Reproducers	1970	15	Miscellaneous Manufactured Products	Ar., Br., Me., Ur., Ve.
14 Domestic Refrigerators, Air Conditioning, Electrical, Mechanical and Heating Apparatus	1970	12	Electrical Machinery and Equipment	Br., Me.
15 Pharmaceutical Products	1970	5	Chemical and Allied Products	Ar., Br., Me. <sup>2/</sup>
16 Petroleum Derivatives	1970	5	- " -	Ar., Br., Ch., <sup>2/</sup> Me., Ve.
17 Domestic Refrigerators, Air Conditioning, Electrical, Mechanical and Technical Apparatus	1971	12	Electrical Machinery and Equipment	Ar., Br.
18 Photographical Products	1972	14	Instruments and Related Products	Ar., Br., Me., Ur.
19 Electronic and Electrical Communication Industry	1972	12	Electrical Machinery and Equipment	Ar., Br., Me., Ur.
20 Dyes and Pigment Industries	1972	5	Chemicals and Allied Products	Ar., Br., Ch., Me., Ur.
21 Chemical Products	1975	5	Chemicals and Allied Products	Ar., Br., Ch., Me., Ur., Ve.

Abbreviations: Ar: Argentina; Br: Brazil; Ch: Chile; Co: Colombia; Me: Mexico; Pe: Peru; Ur: Uruguay; Ve: Venezuela.

1/ Chile left the agreement on August 26, 1971.

2/ Chile signed the agreement on June 12, 1972.

Source: Balassa, B., Intra-Industry Trade and the Integration of Developing Countries in the World Economy. World Bank Staff Working Paper No. 312, p. 13.

Subsector Profiles and Development Strategy

A. Field Survey

1. The following subsectors were covered by the mission: auto ancillary and foundry industries; and heavy equipment manufactures. In addition, the state of the machine tool, the hand tool, the metal container (food cans) and the consumer goods (sewing machine and home appliance) industries were examined. Summary comments on each are given in Annex VI-1. In addition to plant visits, meetings were held with a number of government departments and industrial organizations including the Philippine Foundry Society, Metalworking Industry Association of the Philippines, Automotive Manufacturers Institute, Consolidated Auto Parts Producers Association, and the Philippine Shipbuilders Association. The plants were selected with the help of BOI and MIRDC. While they constituted a reasonable cross-section of the ME sector, there was probably a bias in sampling in that the larger and more efficient plants were observed.

B. Data Compilation

2. Aggregate performance statistics of the mechanical industries are usually reported under the headings of primary metal products, nonelectrical machinery, electrical machinery and transport equipment. While such compilation may be useful in analyzing overall performance of the sector, it does not provide adequate information for an assessment of the sector development potential. In consumer durable products, notably motor vehicles and home appliances, there are regular production activities and the statistics on electrical machinery and transport equipment would be properly indicative of these activities. However, in the large category of nonelectrical machinery, "production" by and large consists of service-related activities including the supply of repair and replacement parts for imported machinery and equipment used by the diverse industries.

3. In the Report, the term capital goods is used in the limited sense of machinery and equipment whose manufacture requires large facilities for fabrication and machining, as well as foundry and forge shops capable of supplying heavy pieces. Specifically, they include all types of plant equipment, metalworking machinery and industrial machinery.

C. ME Subsector Performance

4. Table 1 gives sector performance in terms of production and import values, broken down by major subsectors. In 1977, household appliances and transport equipment accounted for 36% of total output,

Production and Import of Mechanical Products

(in million pesos at current prices)

Industry Group	1969				1973				1977			
	Production		Import		Production		Import		Production		Import	
	Value	%	Value	%	Value	%	Value	%	Value	%	Value	%
I. Farm machinery	22.8	4.6	115.5	6.8	70.8	5.4	144.7	4.3	239.5	7.3	132.8	1.7
Machine tools	4.9	1.0	41.1	2.4	24.7	1.9	63.2	2.0	60.2	1.8	212.8	2.8
Textile & shoemaking machinery	0.6	0.2	19.7	1.2	3.0	0.2	24.9	0.8	9.0	0.2	422.1	5.5
Mining & construction machinery	24.2	4.9	168.1	9.9	141.6	10.9	374.2	11.2	411.6	12.5	528.0	6.9
Chemical plant equipment	-	-	51.7	3.0	-	-	215.3	6.5	-	-	195.1	2.6
Heavy plant equipment	-	-	88.5	5.2	-	-	40.2	1.2	-	-	206.6	2.7
Power machinery	0.3	0.1	28.1	1.6	13.5	1.0	391.0	11.7	39.9	1.2	1,221.0	16.0
Food processing machinery	2.8	0.6	51.7	3.0	4.6	0.4	137.2	4.1	11.3	0.3	224.6	2.9
Misc. machinery & parts, n.e.s.	-	-	44.7	2.7	-	-	216.6	6.5	-	-	341.4	4.5
II. Electrical machinery & supplies	13.2	2.7	231.5	13.6	58.1	4.5	488.2	14.6	131.7	4.0	1,646.6	21.6
Household appliances	90.2	18.4	122.1	7.2	237.0	18.2	41.3	1.2	485.5	14.8	-	-
III. Transport equipment	51.6	10.5	547.2	32.1	150.6	11.5	753.6	22.6	700.3	21.3	1,924.4	25.0
IV. Manufacture of metals	254.6	51.9	192.1	11.3	535.5	41.0	444.2	13.3	1,052.5	32.0	569.3	7.5
V. Service	24.9	5.1	-	-	65.6	5.0	-	-	146.2	4.4	-	-
<u>Total</u>	<u>490.2</u>	<u>100.0</u>	<u>1,702.1</u>	<u>100.0</u>	<u>1,304.9</u>	<u>100.0</u>	<u>3,334.7</u>	<u>100.0</u>	<u>3,287.7</u>	<u>100.0</u>	<u>7,624.7</u>	<u>100.0</u>

Source: MIRDC.



and the miscellaneous category of "manufacture of metals," an additional 32%. The manufacture of metals includes such diverse products as sheet-metal products, small tools, hardware, metal containers, vessels and tanks, kitchenware, ornamentals, etc. Thus, roughly speaking, the consumer durable goods subsectors contributed almost 70% of the total ME production.

5. The nonelectrical machinery subsector produced somewhat in excess of \$100 million or over 20% of total sector output. However, a too literal interpretation of this performance can be misleading because the values cover repair services, machine rebuilding activities, supply of replacement parts as well as some limited manufacture of machinery and equipment. Because of the jobbing nature of many establishments, it is not always possible to separate the different activities. It is estimated that the manufacture of repair and replacement parts comprise the bulk of the activities of this subsector:

- Farm machinery: Production limited to agricultural implements, IRRRI tillers and tractor parts, mostly by small and medium enterprises.
- Machine tools: A small number of general-purpose lathes and mechanical presses are produced, but most of the production total is contributed by small jobbers supplying tools, dies and molds.
- Textile and shoemaking machinery: The user industries import all their machinery. Local production covers only replacement parts and accessories.
- Mining and construction machinery: Complete machines are almost all imported. In mining machinery, some replacement parts and material handling equipment are made. In construction equipment, local production is limited to small concrete mixers, tractor parts and other replacement items.
- Chemical plant equipment: No significant local production.
- Heavy plant equipment: No significant local production.
- Power machinery: Almost all are imported. Some industrial pumps are made, but otherwise, local manufacture covers mainly repair and replacement parts.
- Food processing machinery: There is some small production on a jobbing basis, notably bakery equipment and parts, but mostly, local production is limited to replacement items.

It might be pertinent to note here that, while the above activities do provide an experience base for any future program in the country to establish capital goods manufacture, the largely service-related activities are very different

from machinery production activities in plant layout and tooling requirements, in skill and know-how requirements, as well as institutional support requirements.

Table 2: IMPORT OF CAPITAL GOODS, 1977  
(in million pesos)

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<u>Machine Tools</u>		<u>212.8</u>
Metalworking machinery	155.2	
Woodworking machinery	40.2	
Other machinery & parts	17.4	
<u>Textile &amp; Shoemaking Machinery</u>		<u>422.1</u>
Textile machinery & parts	415.9	
Shoemaking machinery & parts	6.2	
<u>Mining &amp; Construction Machinery</u>		<u>528.0</u>
Mining machinery	66.1	
Construction machinery	337.4	
Miscellaneous machinery & parts	124.5	
<u>Chemical Plant Equipment</u>		<u>195.1</u>
<u>Heavy Plant Equipment</u>		<u>206.6</u>
Foundry equipment	6.5	
Rolling mill, rolls	40.9	
Industrial furnaces	16.7	
Other plant equipment & parts	142.4	
<u>Power Machinery</u>		<u>1,221.0</u>
Pumps & compressors	254.2	
Steam & other boilers	61.1	
Steam engines	48.0	
Oil & gas engines	735.7	
Bearings	122.0	
<u>Food Processing Machinery</u>		<u>224.6</u>

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6. Import of mechanical products totalled over \$1 billion in 1977, of which about 50% was in nonelectrical machinery and other metal products, about 20% in electrical machinery and 25% in transport equipment. Table 2 gives a further breakdown of nonelectrical machinery imports that year. Since there is very little domestic production of these machines, the small import values, especially of foundry equipment, suggest low capital intensity of the machinery establishments, as was also observed during the plant visits.

7. Exports totalled over \$50 million in 1977 (Table A1-2 of Annex VI-2), much of it was in vehicle parts exported under the Progressive Car Manufacturing Program (\$12 million) and small electrical items and electronic products (\$27 million). The latter products have very little in common with machinery manufacture, and they come under "mechanical industries" only by an accident of classification. Also, the car parts export under the PCMP might be viewed as a special case. Outside these items then, there has been very little export by the machinery establishments.

#### Consumer Durable Goods

8. The appliance industry is relatively well-established, with output more than doubling from \$30 million in 1973 to about \$70 million in 1977. It is also among the most developed in SE Asia. This industry is characterized by a high (direct) local content of its products (average of over 80% for its major lines of refrigerators, air conditioners and home sewing machines) achieved through vertically integrated manufacturing operations.

9. With improvements in production structure and facilities, the appliance industry has a potential to export, and this factor should probably be a central consideration in its development planning. In this connection, the product strategy can be crucial. Present products are older US models that should be difficult to export in competition against the products of the multinational corporations. As opposed to moving up to more advanced or sophisticated models, the industry might consider moving down to a more basic low-cost line of products not made in the industrialized countries, but a demand for which may be presumed to exist in the poorer countries.

10. The ancillary industries in the Philippines would appear on the surface to be relatively well-established based on the number of establishments and the variety of items made, but most are in the service market. On original equipment parts, there are several establishments producing simple fabricated and pressed parts, but none capable in terms of tooling and skills to make sophisticated mechanical parts. As a result, end-producers either are assembly-oriented as in car production, or make in-house almost all items they do not import, as in appliance manufacture. Since the requirements for parts are typically varied and in small quantities, their operations would hardly be optimal from a cost standpoint. Moreover, uniform standards cannot be set for the industry. Each plant may work from its own set of specifications or may be constrained to follow its licensor's designs or specifications. The lack of standards in turn complicates the substitution of domestic parts for imports. Since the ancillary industries are the ultimate key to the rationalization of machinery manufacture, their development should be given priority attention.

11. Typical of products now made in the Philippines that have special export implications are food cans, hand tools and sewing machines. On cans, there has been some small export of general-line cans to the regional market, but the importance of the can-making industry lies less in direct export but more in its being an essential component of food export. Production of metal cans, mainly food cans, exceeded \$40 million in 1977. Excepting milk cans, whose production is integrated with milk processing, food can fabricators are operating at substantially below 50% capacity because of an apparent inability to supply products of acceptable quality and cost to the canning industry. In fact, some export food processors import empty cans.

12. The production of items such as hand tools and cutlery tends to favor low-wage countries because they are labor-intensive and the technology is relatively simple. At the moment, hand tools in the country are made by one large unit, but while it operates at well below capacity, import totalled about \$10 million (1977).

#### Producer Goods

13. With reference to the sector performance, while growth has largely occurred in consumer goods manufacture, it would appear that, in terms of national needs, greater developmental emphasis might be given to a systematic buildup of capacity in producer goods, and especially to the modernization of the foundry industry.

14. The foundry industry is suggested for priority development attention because there is already a considerable experience in the country in this type of activity, and because foundry products can be a source of significant comparative advantage for the nation's machinery makers. If raw material supply of proper price and quality can be assured, the country should be able to produce machine-grade castings at substantially below the cost in the industrially advanced countries. This industry is not only crucial to the advancement of machinery manufacture, but also offers opportunities for export. This industry will be discussed in greater details in Section E.

15. Capital goods manufacture in the country today is largely confined to jobbing operations supplying repair and replacement parts for the mining and other industries, the production of a few lines of fabricated items and an infant machine tool industry. Their production does not require complex production processes nor particularly high precision engineering.

16. In all the developing countries, the capital goods sector has been slow to develop.

- Unlike such "stream processes" as the petrochemical industry, turnkey production is not possible.
- Each machine literally requires hundreds of bought-out items, from nuts and bolts to finished parts and attachments. Every

item must be brought up to standard and property integrated into the final product.

There are no "standard" plants. The tooling and layout of each plant depends upon make-or-buy decisions on components that make up the product, and the decisions will vary with the circumstances of each locality and the development stage of each country.

17. Based upon the experience of making machinery spares and given proper stimulation and support, the capital goods industry of the Philippines can accomplish economic import substitution of simpler capital items that probably comprise a substantial proportion of the import bill, for example, material handling equipment, road rollers, food processing equipment, heat exchangers, among others.

#### D. Ancillary Industries

18. In the Philippines, since there is very little machinery manufacture, the development of the ancillary industries has depended largely on car and appliance production. However, with the automotive industry assembly-oriented and the appliance manufacture vertically integrated, there has not been much opportunity for ancillary operations to become established. Most ancillary units are small scale, technically unsophisticated and operate with general-purpose machines that give them the flexibility to serve the automotive as well as the nonautomotive markets.

#### Automotive Ancillary Industry

19. The PCMP created four key ancillary units within the automotive industry:

	<u>Capacity</u>	<u>Remarks</u>
Body stamping plant (Ford)	100,000 units	90% of output is exported
Engine plant (Toyota)	50,000 "	Production at about 18,000 engines; no export
Transmission plant (GM)	70,000 "	90% of output is exported
Transmission plant (Chrysler)	40,000 "	50% of output is exported

Each of the above ancillary units is now linked only to its parent firm production, local and abroad. In addition, there are a number of independent suppliers of simple fabricated and pressed metal parts, mainly radiators,

mufflers, leaf springs and fuel tanks plus such minor items as jacks, tool sets, trims and brackets.

20. In the industrialized countries, car production is a high volume activity that supports an extensive network of original equipment parts producers. There is a close link between the parts suppliers and the final assemblers, with mutual reliance in know-how and skills. In the Philippines, total new car sales was around 32,000 units in 1977, and there are 5 major firms and about 15 different models of cars. In this small market, individual car makers find it difficult to develop local supplier networks and the suppliers often cannot justify investing in special tooling to serve the varied and changing requirements of the car assemblers. Further, the structure of protection discourages production by ancillary industries (see Annex VI-2).

21. It might also be noted that the present auto parts industry is composed largely of makers of nonmetal parts such as rubber, glass and plastic items and includes relatively a small number of makers of mechanical items. Common production of some of these items will enlarge the market for their suppliers and help make their operations more efficient, but its overall impact on local content increase or mechanical ancillary development will not be very great unless these efforts are extended into the more sophisticated mechanical components. It would appear that the only way this will be possible is to carry the PCMP-initiated reform of the motor vehicle industry further towards the original program goal of horizontal integration of the car assembly operations.

#### Development Strategy

22. Ancillary industries are by definition dependent upon end-product makers, and in the Philippines, their development has been constrained by the lack of opportunities in the end-product industries. In these circumstances, a development strategy that focuses separate development efforts on the ancillary industries has several merits:

- Buildup of the ancillary industries is necessary to accomplish structural rationalization of the mechanical industries.
- Export of complete machinery will be difficult, but export of machinery parts is possible.
- Foreign machinery makers can be attracted to the Philippines by the presence of local producers of parts of acceptable quality (unlike many other industries, machinery makers are not influenced to establish manufacturing operations in the developing countries by the labor factor).
- Technologies and skills will be accumulated at the basic level of components and sub-assemblies.

23. In world trade, the manufacture and supply of parts and accessories have developed into separate production and marketing activities of their own, quite independent of firms manufacturing the end-products. One of the

factories visited by the mission appears to have successfully applied this strategy to accomplish a small but significant export of diesel engine replacement parts to the United States. It is, therefore, suggested that rather than tying the development of ancillary industries to end-product manufacture, such as the PCMP, a separate assistance program be designed to serve their special needs and opportunities. The program will likely have many of the features of the SMI program since many of the mechanical ancillary establishments fall under the latter classification. The Government role in the program will be crucial, since the normally expected process of end-product makers promoting their ancillary units does not operate effectively.

24. The mechanical ancillary industries are very diverse in products and methods of operations. An in-depth study of capacities and capabilities should be undertaken of these industries as part of overall sector development planning. The purpose will be twofold:

- (a) Long-range coordination of development of ancillary industries with that of major end-product industries.
- (b) Formulation of actions to promote parts export.

#### E. Foundry Industry

25. The country has a comparatively large foundry industry, and in fact, the industry has been classified as "overcrowded." There are an estimated 180 foundries, with an effective melting capacity of about 150,000 tons of castings - 60% iron, 35% steel and 5% nonferrous. The majority of the foundries are small, with output well below 1,000 tons per year. Typically, they employ between 20 to 50 workers and are capitalized at less than P 1 million. This works out to a fixed investment of around \$100 to \$200 per ton of melting capacity, compared with \$1,000 per ton typical of modern foundries in the industrialized countries.

26. Iron Foundries. Iron foundry capacity is estimated at 90,000 tons. About half of this total is in small units and another 30% is in civil construction items (pipes and fittings and construction hardware). The balance of 15,000-20,000 tons are distributed among 6 or 7 "large" units producing industrial and automotive castings. With the exception of the automotive foundries, they produce only rough industrial castings with large tolerances for defects and dimensional accuracy.

27. Steel Foundries. Of the estimated 50,000 tons of steel foundry capacity in the country, 50% is accounted for by one captive foundry producing grinding balls and mining machinery replacement parts. The other 50% is distributed among four large jobbing foundries and a dozen or more small units. They produce a variety of industrial castings, but because of limitations in plant installations and process control, they do not yet appear to have the capability to produce technically demanding castings of consistent grade and specification.

Performance

28. Industry performance is summarized in the following table:

	<u>P r o d u c t i o n</u>				Import	Export
	Iron	Steel	Nonferrous	Total		
	----- (metric tons) -----					
1973	42,520	22,090	4,620	69,230	25,500	280
1976	58,260	34,890	6,050	99,200	25,180	2,070

The capacity utilization, industry-wide, averaged about 60% in the iron foundries and 70% in the steel foundries in 1976. However, because there are many small and jobbing units as well as captive foundries that only supply in-house manufacture, capacity utilization for this industry is not believed to be a very significant measure. In fact, a low average capacity utilization will not necessarily mean that additional capacities are not needed, but rather that there could be excessive capacity fragmentation and competition (overcrowding) in a few popular markets such as low-value construction castings and machinery spares for the mining industry.

29. Import of castings totalled around 25,000 tons with roughly one-third each going to the transport equipment industry, the construction and mining industries, and the various other industries. Most of the imports were high-value castings from Japan and the United States. There was also a small and growing export. The average import value at a landed price of \$4,600 per ton in 1976 was over twice the average export value of about \$2,000 per ton.

Market

30. The following table gives a breakdown of the major local markets for cast products:

Mining	30%	Mostly grinding balls and machinery spares such as crusher liners and mine car wheels; over 90% is supplied by captive foundry units.
Construction	25%	Fast-growing market for construction items, such as pipes, fittings, manhole covers and hardware; also some construction equipment parts.
Transport equipment	15%	Motor vehicle parts such as engine blocks, transmission housing and brake drums and some ship engine replacement parts; local foundries supply about 50% of this market.



Other industries	30%	Machinery parts for agriculture, food processing, cement, paper, glass, metalworking industries among others; except agriculture, local foundries supply less than 50% of the demand for cast parts from these industries.
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Problems and Prospects

31. Low-wage countries should be able to produce ordinary castings at a substantial cost advantage over the industrialized countries, but prices of foundry products in the Philippines are about as high as those in Japan or the United States. Industrial castings cost up to P 10/kg for iron castings and P 15/kg for steel castings. Some of the high cost is attributable to the high cost of raw materials that typically comprise 50% or more of the production cost, but the more basic reasons are poor operating practices as reflected in low yields and high rejection rates as well as low-productivity.

32. There is a considerable scope for improving operating practices in the foundries visited by the mission:

- (a) Few foundries are properly equipped for pattern-making and there is an apparent scarcity of experienced pattern makers.
- (b) There is a general laxity in process control, especially the control of melt.
- (c) There is a need for better management of materials. For example, sand mixtures are seldom tested, and there are few facilities for recycling of sand.
- (d) Training of foundry personnel would need to be greatly expanded, especially at shop supervisory levels.

33. The principal raw material used by the foundry industry is scrap. Price of scrap in the country increased sharply in recent years (steel scrap was quoted at P 1,000 to P 1,200 per ton). While there has been an increase in world scrap prices, there is a suggestion that reserves of local scrap is dwindling. It is not known to what extent the scrap supply situation is affected by the use of scrap to make steel billets in electric furnaces, but if the quantity is substantial, some of the pressure on domestic scrap could be relieved if and when the proposed integrated steelmaking project is implemented. It is suggested that, as part of the mechanical sector planning, a study of the long-range supply and demand of scrap be undertaken to assure its stable supply for the foundry industry.

34. The efficient operation of cupolas in iron foundries also require pig iron of proper foundry grades. Excessive casting defects and consumption of inputs may be traced to the widespread use of pig iron or inconsistent quality as well as excessive use of iron scrap. In conjunction with the proposed scrap supply study, a study of pig iron demand should also be undertaken with regards to a projected production pattern of the iron foundries and the corresponding requirements for various grades of pig iron. The present level of demand does not appear to justify a separate conventional foundry pig iron plant. However, the inclusion of such a plant could eventually be considered in the planning of the integrated steel project. This plant will receive the hot metal from the steel plant and treat it in a holding furnace for the required chemical composition for foundry use.

35. Almost all foundries use the conventional sand moulding process, but very few have the installations to optimize the sand mixes. Most use ungraded and apparently impure sands, which would explain in part some of the defects and poor surface quality of castings seen. The feasibility of supplying graded foundry sand through regional sand plants might be explored. A small in-house sand reclaiming installation would probably cost under \$10,000, but most foundries in the Philippines, because of their small scale of operation, would not be able to undertake this activity in an economic way.

36. While machinery manufacture in the country is presently limited and there is excessive foundry capacity in certain markets, there are still good prospects for further expansion of the foundry industry. Import of foundry products totalled about 25,000 tons annually in recent years and the total presumably does not include imports as part of finished goods. This is a potential new market for the local industry. Additionally, foundry products can be exported. There is a definite trend away from domestic production of castings in the highly industrialized countries, and machinery makers in these countries seek low-cost and reliable sources of foundry items.

#### F. Planning of Sector

37. The development of the mechanical industries will require actions beyond the solution of existing problems. A comprehensive sector plan is suggested, covering at least the following points:

- (a) Identification of priority areas of development based on factors of comparative advantage in manufacturing cost, projected domestic demand, export potential, employment generation potential, and compatibility with present skills and technical know-how in the country.
- (b) In each area so identified, determination of remedial programs or new investments that will be required.
- (c) Analysis of policies and incentive schemes as they pertain to machinery industry promotion, with particular attention to measures for promotion of training and technology development.

Economies of Specialization

The critical factor in efficient mill operation is not size but degree of variety within a mill. Detailed studies have shown that, in both spinning and weaving, the actual cost of variety of production is very much greater than can be accounted for by the identifiable costs incurred in the changes necessary for the achievement of variety. The reasons for this are complex and outside the scope of this report, but two typical examples of the magnitude of the effect will serve to put the matter into a useful perspective.

First a spinning mill. A well equipped modern unit of 40,000 spindles was operating with five different "mixes" of fiber and a yarn fineness range of 2.5 to 1 (from 16s to 40s count) and in a typical year the number of yarn sorts produced was a little over 200. As a measure of rationalization, the number of mixes was reduced to two, the fineness range reduced to 1.5 to 1 (24s to 36s count) and, most important, the number of yarn sorts produced in a year was reduced to about 40. The average yarn fineness remained unchanged. Actual production per spindle was increased by 24% and the production per worker (direct, indirect, ancillary and supervisory) increased by 64%. Avoidance of undue variety is equally important in weaving. Even in situations where the number of fabrics is already small, surprisingly large economies can result from further simplification of the product mix. A very well organized weaving establishment of 360 looms producing only nine basic varieties of man-made continuous-filament cloth reduced the number to two. On these two cloths, both of which had been in continuous production in the unit for several years, the loom stoppage rate was reduced to less than one third of its former value and the labor productivity of the establishment as a whole was raised by 52%.

These examples are typical of experience in many countries but it must be emphasized that the key variable is fewness of sorts in one mill. A 1,000 loom establishment making 20 sorts would not achieve the efficiency of 400 loom establishment making 8 sorts.

Effect of Tariff Reduction on Viability

The following table is taken from the actual cost breakdown of a weaving firm visited by the Mission, and compares the current cost and profit structure to that which would result (a) following removal of all protection, and (b) given a 25% tariff on cloth and a 20% tariff on yarn.

	With protection	No protection	25% tariff on cloth and 20% on yarn
<u>Raw materials</u>			
Imported	32	21	25
Domestic	20	15	18
<u>Other costs</u>	15	15	15
Labor	7	7	7
Profit	26	1	9
<u>Total</u>	<u>100</u>	<u>59</u>	<u>74</u>

The company is making good profits under the current regime, but would be in trouble if all tariffs were removed. This would mean that output prices would have to be reduced by 41% to compete with c.i.f. import prices and this would be too much even with a corresponding abolition of the tariff on yarn inputs. With a 25% tariff on output and 20% on inputs, the company would be able to make a profit of 12% of sales, with possible further gains from increased efficiency.

Small-Scale Power-Loom Weaving

Textile manufacture, from raw material through to finished fabric, is generally very capital-intensive. A modern spinning mill to produce 4,000 tons of 32s Ne cotton yarn (a medium fine yarn suitable for middle weight woven shirtings) in a year of 7,200 working hours will have about 25,000 spindles and the fixed capital investment needed will be about \$7.5 million. A working capital requirement of about \$1.5 million makes the total \$9 million. As such a plant in the Philippines would employ 300 workers in all if efficiently run (in the US 125 workers), the total investment required per worker is \$30,000.

In spinning there is no viable alternative to the use of modern machinery except, possibly, the purchase of second-hand machinery less than ten years old. In weaving, however the most modern machinery, developed to meet the needs of the very high-wage-cost countries of the west, is not the only or necessarily the best option for a low wage-cost country. An installation of high precision, ultra wide shuttleless looms to produce 20 million meters of 110 cm wide shirting in a 7,200 hour year requires a total capital investment of about \$20 million. Operated efficiently, it would employ about 400 workers in the Philippines (150 in the US). This is an investment of \$50,000 per worker.

Partly because of the low cost of labor in the Philippines and partly because of the maintenance requirements of these high precision machines, it is generally judged to be better to use simpler machinery. Under Philippine conditions today the most economic weaving machine for mill production of most fabrics is not the ultra-wide shuttleless loom. It is the long-established fly-shuttle loom with automatic pirn renewal and automatic stop motions - in other words, the common pirn-change automatic loom which has been in use now for 80 years. To achieve the same productive capacity as with the \$50 million shuttleless plant above, an installation of about 600 pirn-change automatics would be needed, involving a total capital investment of about \$16 million. This less sophisticated plant would employ about 600 workers (about 180 in the US), an investment requirement of \$27,000 per worker. Although there is a small quality advantage in the use of the more sophisticated machinery, the difference is not great and the simpler machines are probably still the "best buy" for mill operation in low wage-cost countries. Even so, \$27,000 per worker is still a very considerable investment requirement and any possibilities which exist for further reduction should be explored. A strong possibility is the use of non-automatic looms.

The term "non-automatic" is misleading to the layman. The type of loom to which it is applied is also known as the Lancashire loom. Developed in Lancashire, England during the 19th Century it is completely automatic in its weaving action and is only non-automatic in that it does not automatically renew the weft supply package (the pirn) carried by the shuttle when it is

exhausted. This task must be done manually. The length of time for which the loom will run before again requiring renewal of the pirn depends on a number of factors, the most important being the fineness of the yarn. It is generally in the range 5 to 15 minutes. For the medium-weight shirting we are considering, a typical time would be 10 minutes and the time taken to renew a pirn would be in the range 10 to 15 seconds. Thus the effect on rate of production is not great. When weaving this type of fabric, the production efficiency of common automatic looms is typically around 90% and the time lost in stoppages for pirn renewal on non-automatics brings the efficiency down to about 85%. Non-automatics are very much cheaper than are automatics but, unfortunately, it is difficult to deploy them really effectively in large installations for logistic and personnel management reasons. They can however be used very efficiently in small units. It would be quite feasible to use them in small units of from 10 to 40 looms in either urban or rural areas of the Philippines. It would be desirable to have the units organized in area groups of about 50 units with a total of between 500 and 1,000 looms. A pre-requisite for each group would be a reliable source of yarn, with the warp yarn available on a standard beam, and access to a commission finishing facility.

A group of the same productive capacity as the mill-scale weaving unit of 600 conventional automatics considered above would need a total of about 800 non-automatic looms. The total investment required, including the cost of a common warp preparation unit but excluding the cost of the associated spinning capacity, would be about \$2.4 million and the group would directly employ about 1,200 workers. This gives an investment requirement per worker of \$2,000 against \$27,000 for mill-scale automatic loom weaving. A full analysis of the operating economics involves consideration of a number of factors, such as transport costs, power costs, shadow wage-rate, etc. which depend on the precise location of each group and the infrastructure available, but a rough appraisal based on likely labor costs in relation to capital requirements is very encouraging.

If we assume the employment costs to be \$2.5 per day for a worker in a mill and \$1.5 per day for a worker in a dispersed small-scale unit, we get

	Mill operation	Dispersed small-scale operation
Investment needed	\$16 million	\$2.4 million
Number employed	600	1,200
Investment per worker	\$27,000	\$2,000
Employment cost per worker day	\$2.5	\$1.5
<u>Total employment cost</u>	<u>\$450,000 p.a.</u>	<u>\$540,000 p.a.</u>

for the weaving of 20 million meters of 110 cm wide shirting per year.

Superficially, this shows small-scale weaving to be a very attractive investment in that for the same productive capacity the total investment requirement is reduced by \$13.6 million at the expense of an increase in the employment cost of only \$90,000 - that is at an annual cost of 0.66% of the saving. It is of course necessary to ensure adequate yarn supplies and this cannot be done satisfactorily by taking marginal quantities from a number of integrated mills as, naturally in that situation, the integrated mills will tend to regard small-scale weavers as second claim customers. It is preferable to set up spinning capacity specially to serve small-scale weavers as, regarded nationally, this does not constitute an additional investment expense. The great difficulty is to finance this spinning capacity in such a way that the needs of the small-scale weavers will be adequately met. It may be possible to do this using private equity and allowing market forces to operate to determine yarn prices and, more particularly, the degree of variety of yarn specifications which will be made. This latter point is extremely important as it is in the nature of small-scale industry to ask for a greater degree of variety than is strictly economic. Where small-scale weaving is effectively practiced, the yarn is spun by spinning mills in which a small-scale weavers cooperative has a controlling interest. With good leadership this arrangement can work very well, the cooperative being able to rationalize a range of yarns, standardize the beams on which warp yarn is supplied and, in many small ways, ensure that the mill serves the weavers as cheaply and efficiently as possible.

To give the small-scale weavers a degree of marketing independence a commission finishing facility should also be available to them. This could be provided by one or more of the fully-integrated mills of the country. Capitalwise this is a very economical solution as, almost always, a fully integrated mill necessarily has excess finishing capacity. Difficulties are likely to arise with this arrangement because of a conflict of interests between the mills concerned and the weavers they must serve. For this reason the best solution is, again, to have commission finishing set up by a weavers cooperative.

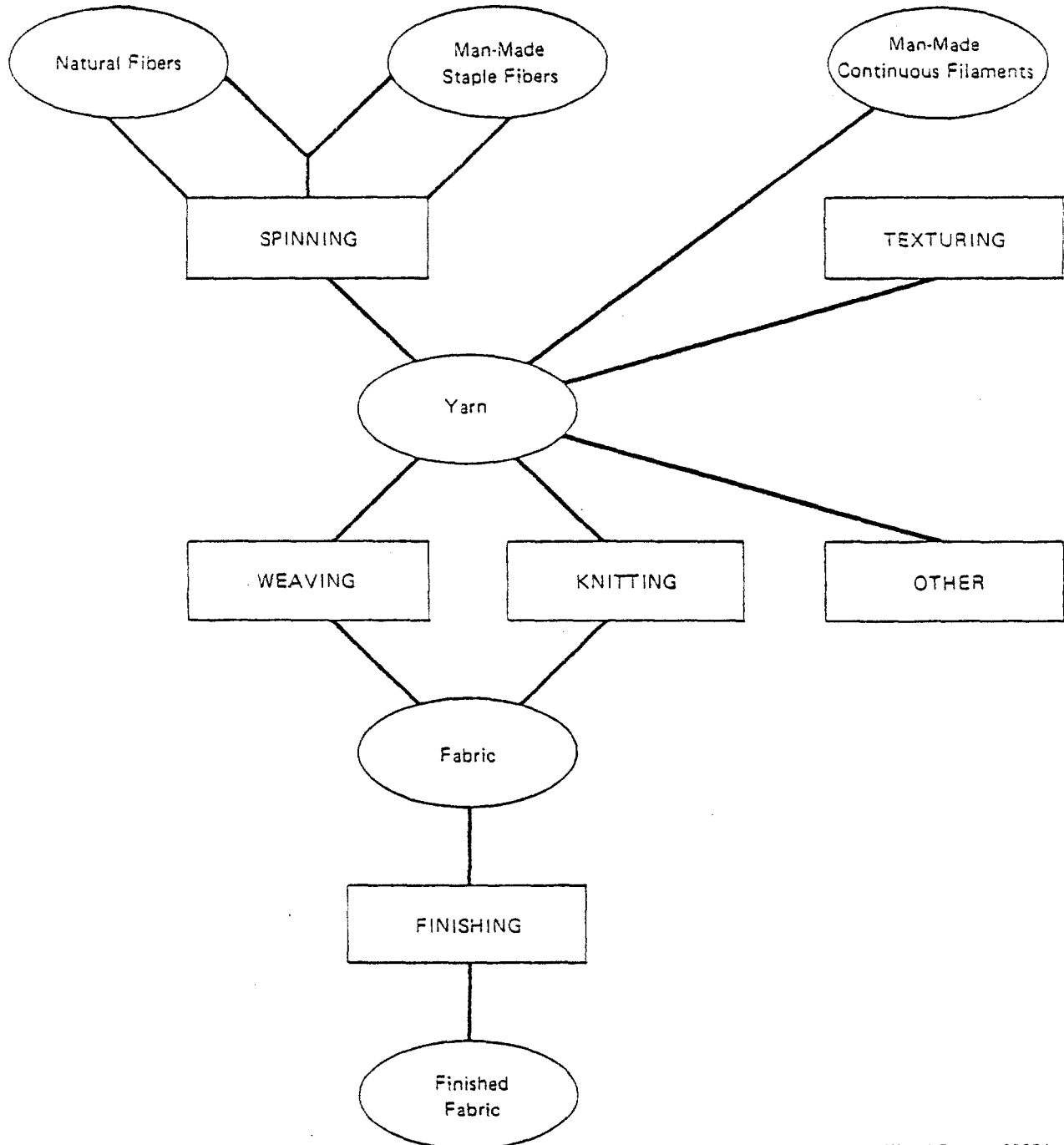
Potentially, small-scale weaving could provide a very substantial fraction (up to, say, 40%) of the home trade and garment maker fabric needs but this cannot be done overnight. Initially, there will be a lack of people with the experience and understanding to be able to provide management and leadership in the many small units involved. Without this, many expensive mistakes could be made and little of the potential saving realized. Small scale weavers cooperatives have been part of the Indian textile industry for many years now and much can be learned from the experiences there. Groups of small-scale weavers, officially and generally referred to simply as power loom weavers, act as cooperatives and are organized within regional power loom weavers associations. Each of these publishes annual reports concerning employment, productivity and profitability of its member cooperatives. Before the Government of the Philippines enters into any commitment, it would be a

good plan for appropriate officers of the ministries involved to visit some of the Indian cooperatives, study their performance records and discuss their problems. By this means, many pitfalls may be avoided and a pilot project launched with a good understanding of the potential and difficulties of small-scale weaving.

When this understanding has been gained a tentative experimental approach should be made by setting up a cooperative with about 50 members and a total of not more than 1,000 looms. A great deal will depend on the motivation, managerial ability and degree of commitment of the founding members of the cooperative. In the wrong hands the outcome of the project could be very disappointing indeed. If successfully implemented a small-scale power-loom industry would become an entirely viable, low capital-cost producer of good quality fabrics. It would permit a considerable degree of regional dispersal of industry and, by reason of the greater flexibility inherent in small-scale working, be able to provide small to medium scale garment makers with their individual fabric needs more satisfactorily than a mill-based industry can. In the event of failure of the pilot scheme the fixed capital investment could be largely recovered by bringing the looms together in two or three large groups and operating them under mill conditions. Although not ideal they can be operated reasonably efficiently in this way as evidenced by the fact that a number of the older mills are currently using their installations of Toyoda shuttle-change automatics effectively as non-automatics because of the non-availability of spares for the shuttle-change mechanisms.



PROCESSES OF THE TEXTILE INDUSTRY



Agencies and Institutions Contacted /1

Ministry of Agriculture  
Bureau of Fisheries and Aquatic Resources  
Food and Drug Administration, Ministry of Health  
Food and Nutrition Research Institute, National Science Development Board  
Technology Resource Center, Ministry of Human Settlements  
Philippine Export Council  
Price Stabilization Council  
Maritime Industry Authority  
Food Terminal Inc.  
Philippine Chamber of Food Manufacturers, Inc.  
Philippine Fish Cannery Association  
Philippine Fruit Processors Association  
Philippine Tuna Producers and Exporters Association  
National Federation of Fishing Associations  
Fishmeal Manufacturers Association of the Philippines  
Tin Can Manufacturers Association of the Philippines, Inc.

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/1 The 21 processing establishments contacted are not listed because some firms enjoined strict confidentiality for their information and opinions.

The Open Top (Sanitary) Can Situation

1. The supply of open top cans is subject to serious difficulties and suffers from poor quality, and high prices.
2. Domestic production of both black plate and, in turn, electrolytic plate is insufficient for domestic needs. According to the Tin Can Manufacturers Association, as much as two thirds of fabricators' input is being imported. Although flood of stocks exacerbated the domestic shortfall in 1978, mal-operation and performance of the existing production facilities are mainly responsible rather than a lack of productive capacity.
3. Quality of domestic black plate and tin plate is reported to vary considerably as to gauge, temper, thickness of tin coating and porosity. Furthermore, the grading of tin plate as "prime" or "seconds" is stated to be quite arbitrary. One fabricator mentioned that plate variations resulted in a manufacturing rate of 250 cans per minute instead of 350 as would be attained with consistently good grade tin plate; moreover, with some deliveries, high wastage was experienced due to unusable portions of the sheets.
4. Examination of filled and stored cans fabricated with domestic plate revealed: (a) an unacceptable incidence of external rusting; (b) an abnormal degree of internal de-tinning; (c) indications of lacquer unsuitability and/or its faulty application; (d) generally satisfactory side and end seams - although lip-downs were noted which could have permitted contamination via cooling water. Apparently in recognition of such deficiencies, some food canners advised that, for export business, fabricated cans are imported under a tax exemption arrangement.
5. Among the various factors affecting can prices are: (a) the diversity of can sizes in use in the Philippines which therefore involves frequent changeovers of production lines and small runs except for the most common sizes; (b) governmental policy requiring a two tier pricing system whereby milk can prices are subsidized by cans for other uses; (c) the fact that domestically produced tin plate is priced some 28% above the c.i.f. value of the imported material; for example: ruling prices of domestic and imported plate per MT, 0.75 lb coating, were reported for February 1979 as being the equivalent of about US\$800 and US\$650 (c.i.f.) respectively; (d) for plate imported by fabricators (who state that licenses are virtually confined to seconds) ad valorem duty is 50% plus the Home Consumption Value of 10%, plus sales tax of 10% - all resulting in a total tax of 80.42% on the second plate's c and f value; (e) a sales tax of 10% is levied on the price of the fabricated cans.

6. No uniform pricing arrangement appears to operate among fabricators - rather does it seem that the smaller-scale can makers sell a less consistent product at prices below those of the more quality conscious fabricators. Ex-factory prices applicable in February 1979 for one of the larger fabricators are listed in Annex VIII-2, Table 7, along with comparative prices for cans of USA manufacture. While it must be recognized that factors such as different standards for tin plate and lacquer, effect of quantity discounts, an imminent increase of Philippine plate prices, etc., all render any precise comparison somewhat theoretical, it does appear that the overall price differential between domestically fabricated cans and those made in USA are often quite small.

7. Some nine fabricators produce open top cans. Three only, so it was reported, operate fully automatic continuous lines. According to the Tin Can Manufacturers Association, the industry as a whole - that is: firms manufacturing tin cans of whatever type - is functioning below 50% capacity - and fabricators of open-top cans are operating at about 70% of capacity. Consequently, tin can manufacture is now classed as an "overcrowded" industry.

8. In summary: production, quality, cost and supply problems are being experienced in the domestic production of black plate and tin plate. Can manufacture is fragmented among several fabricators of which the smaller are ill-equipped to achieve a consistent standard - even given suitable raw material. Actually, much second grade tin plate is used and some processors find the resultant cans unsuitable for the export market. However, cans from seconds are used in the home market because expansion in demand of canned foods calls for extremely keen prices of which the can constitutes a major cost element.

9. Development of food canning is largely dependent upon an assured can supply of consistent quality, appropriate to the product and market, and at keenest possible prices. These requirements demand availability of suitable tin plate and the fabrication of cans by continuous automatic lines; to achieve this domestic fabricators should increase their throughput, improve their quality and capacity utilization. They may then be able to meet a larger share of domestic demand. (Some 300 million cans of sardines and mackerel were imported in 1978.) Assuming these improvements can be made, there would be less of a case for permitting entry of a well-placed international fabricator, except to the extent he would introduce new techniques of revising costs and improving quality.

10. Improvements in domestic black plate and tin plate production as well as can fabrication require adoption of better operating practices and techniques, discussed in part in Chapter IV. Fabricators should be encouraged to increase their output and be able to import the necessary raw materials - at a zero or low protection - until such time that domestic plate supply is economic and adequate. Export firms would have access to cans at international prices and quality.

Project to Utilize Echinoderms (Sea Cucumbers)  
as Source of Low-Cost Protein

Description and Status

In the course of the Mission's investigations in Metro-Manila, contact was established with a business partnership currently seeking to develop the commercial utilization of echinoderms (sea cucumbers) which are stated to abound in the coastal waters of the Southern Philippines. One of the partners requested advice in advancing the project and authorized the mission to reveal the following description:

"Analysis /1 of two common varieties gives:

<u>Constituent</u>	<u>% w/w</u>
Crude protein	73
Ether soluble material	nil
Ash	7
Moisture	20

Potential uses are considered to be:

1. Low-cost protein for human nutrition

In concentrate form, low-cost protein from marine sources can be produced mainly from sea cucumbers and will be invaluable in the management of protein deficiencies especially in underdeveloped countries.

2. Low-fat protein source for dietary purposes

3. Feed ingredients

As a low-cost animal protein source for poultry and livestock feeds, dog and cat foods and fish feeds. It can substitute for main ingredients of these feeds like white fish meal, shrimp meal, colloteen, kelp, meat and beef bone meal.

4. Other uses in various industries like:

- (a) Food industry: As thickener for the manufacture of mayonnaise, jams and jellies; as stabilizer in the manufacture of ice-cream and soup bouillon; as filler in the manufacture of sausages.

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/1 The analytical procedures followed were not stated.

- (b) Pharmaceutical industry: As emulsifier and stabilizer in the manufacture of syrups and emulsions, shampoos and lotions.
- (c) Biological research: As culture media in microbiological research.
- (d) Mining industry: As a thickener in the flotation process for mineral concentrate recovery.
- (e) Paper and textile: As sizing substance in the manufacture of kraft paper, newsprint and dry cloth.
- (f) Paints and ink: As thickener, stabilizer and extender-filler in the manufacture of paint and ink.

Problems encountered are both technical and financial:

1. The development of a machine that can pulverize dried sea cucumbers has proved expensive. To date, no workable model has been found to suit our needs. Furthermore, there are technical difficulties in the drying and separation of sea cucumber component-substances.
2. The financing of this venture has also proved strenuous. So far, the Partnership has spent over \$7,000 in research and development; from plotting geographical sources of sea cucumbers in the Philippines, to actual simulation of experimental production process.

An estimated \$400,000 is yet to be spent on factory and logistics, machineries and working capital to initiate commercial production of, at least, high protein meal for animal feed and higher grade protein concentrate for human consumption.

Expected volume of production for the first few months of protein concentrate feed-meal manufacture is 120 tons per month, growing at the monthly rate of 10% and stabilizing to about 300 tons per month after a year.

Expected profits at 300 tons per month output comes up to \$13,600 per month or \$163,200 per year, since sea cucumbers are available year-round.

Monthly Sales: at \$520/ton 65% protein (\$8 per ton per unit protein)	\$ 156,000
Raw Materials: 2,500 tons at \$53/ton sea cucumber (12% recovery)	\$ 132,500
Production Cost: \$33/ton output	<u>9,900</u>
Total Cost	<u>142,400</u>
Gross Profit Per Month	<u>13,600</u>
Per Year	<u>163,200</u> "

Advice given

A representative sample should be fully analyzed, including determination of the amino acid constituents, by a competent authority. To this end, it was arranged that the Food and Nutrition Research Institute would contact the partnership. Given favorable results, that Institute could provide pointers on indicated pilot plant investigations with a view to establishing production techniques, hence enabling a definitive project to be elaborated.

Additional sources of potential information and technical counsel were suggested, namely: FAO and UNICEF, contactable via the Manila office of UNDP; the Tropical Products Institute of London with reference to aspects of process engineering; and a consulting food technologist based in Manila.

Profits on Domestic and Export Markets

1. Some indication of the additional profits from the domestic market can be obtained from the example below which gives details of costs and profits for a manufacturer selling trousers on both the export and domestic markets.

	Export market	Domestic market
Material	0.66	1.14
Other costs	0.10	0.10
Labor	0.10	0.10
Profit	0.14	0.55
<u>Total cost</u>	<u>1.00</u>	<u>1.89</u>

## Notes:

1. The figures are expressed in proportions with the base 1.00 for total cost of an export item.

2. The material is identical with export material imported under bond, and domestic supplied from local mills.

2. Profits are substantially higher on the domestic market (40% gross compared to 16% for export). However, the domestic profits include some marketing margin, since the trousers are sold within the Philippines at a higher level in the marketing chain. The effective rate of protection implied by the above figures is a high 170%.





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