THE DEVELOPMENT OF LABOUR INTENSIVE INDUSTRY IN ASEAN COUNTRIES

Edited by

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PREFACE

In the past two and a half years, ARTEP has undertaken work on three important aspects of the relationship between industrialisation and employment. First a set of studies have been completed on *Export-led Industrialisation*[1] in Asia. These studies, based on the experience of four Asian countries, focussed on the factors behind the widely differing performances in the growth of labour intensive manufactured exports as well as on the consequential differences in rates of industrialisation and employment generation. Secondly, a set of studies are underway on a related theme – the role of *Export Processing Zones* as a vehicle for increasing manufactured exports, industrialisation and employment generation. Thirdly, a set of comparative studies on the *Development of Labour Intensive Industries in ASEAN Countries,* the subject matter of this volume, were completed and a tripartite seminar to discuss the conclusions and recommendations of these studies was held in October 1980.

The case studies presented in this volume contain a general survey of the policy issues relevant to the development of labour intensive industries by analysing current and past promotional policies in ASEAN countries and also examine the technological and other economic features of small scale and labour intensive industries so as to be able to recommend policy measures which will make it possible for them to play a more important role in industrial development. Case studies of specific industries which should be promoted are separately available as ARTEP Working Papers and will be published in a subsequent volume.

Special thanks are due to Prof. K.N. Raj, Chief of the Asian Employment Programme in 1978, who conceived and organised the present studies and several colleagues at ARTEP especially Dr. E.L.H. Lee for his useful suggestions in finalising the manuscript and Greg Ekström for preparing the proceedings of the Seminar. Finally, we are exceedingly grateful to Miss Sumalee Angsutham for the conscientious and labourious work put in for preparing the typescript for the printer.

December, 1981 Rashid Amjad

[1] E. Lee (ed.), *Export-led Industrialisation and Development* (Bangkok: ARTEP, 1981).

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The Development of Labour Intensive Industry in ASEAN Countries - An Overview

Rashid Amjad*

1.1 Introduction

Till recently the process of industrialisation was identified by most developing countries as a pre-requisite for their economic development and rapid economic growth. It was seen as an essential process in the restructuring of their economies in most cases heavily dependent on agricultural production and on imports of manufactured goods. Especially during the fifties and early sixties the goal of industrialisation became almost synonomous with economic development.

In most cases this was sought to be achieved through import substitution. Although this strategy was initially successful in achieving rapid industrial growth, it contained certain inherent difficulties. In most cases import substituting industrialisation was promoted by a policy of heavy protection, low interest rates and overvalued currency and fiscal concessions. This led to a marked bias in favour of capital intensive large scale industries with the excessive use of scarce capital and inadequate participation of small scale industries. There was hence little expansion in the demand for labour and the strategy did little to solve the pressing problems of unemployment and underemployment with which most developing economies were faced. Also the pro-industrial policies that were implemented were mainly at the expense of the agricultural sector which in many cases was also squeezed (through adverse terms of trade) to finance industrial development. This neglect of the agricultural sector led to the

* The author would like to thank Akbar Noman, Eddy Lee, A.V. Jose and other colleagues at the ARTEP for their helpful comments.

gradual exhaustion of the domestic market for the easy import substitutes and resulted in a slowing down in industrial growth. These two factors together with the rural sectors inability to provide increased employment (a situation in many cases worsened by adoption of labour displacing technology) became crucial factors in a large number of developing countries in causing underemployment, real wage stagnation and inequality of income distribution.

The birth of the so called 'new orthodoxy' in development literature was mainly in response to these criticisms and it emphasized rural development as the cornerstone of the growth strategy for the Third World as distinguished from growth through industrialisation. As regards to what exactly would be the role of the industrial sector or the industrialisation path that the developing economies should follow in this strategy, the position of the 'new orthodoxy' has never been clearly defined. Increasingly it has become identified with a bias in favour of labour intensive industries, the creation of an economic environment which reflects factor scarcities and greater reliance on the medium and small firms as the production unit.

It was with the aim of contributing to the evolution of a policy framework for labour intensive industrial development that the studies presented in this volume were undertaken for ASEAN countries, especially since it was becoming increasingly recognised that if industry as a whole was to play an enhanced role in the employment strategies of ASEAN countries much more of the employment growth will have to come from small, medium sized and labour intensive firms.

The objectives of the study were threefold. The first was to analyse the current and past promotional policies in ASEAN countries especially to see to what extent industrial growth had helped solve the problem of an expanding labour force. The second was to examine the technological and other economic features of small scale and labour intensive industries so as to be able to identify the major problems with which they were currently faced and recommend policy measures which could help make it possible for them to play a far more important role in industrial development especially through increased linkages between the large and small scale industries. The third was to identify the most promising labour intensive industries in individual countries and to advise what policies might be most effective in furthering their development. It is the analysis and results of the first two aspects that are reported in this volume. Case studies of specific industries which should be promoted are separately available[1] and will be published in a subsequent volume.

1 These studies are Soejatman, "The Growth and Employment Potential of the Leather Industry in Indonesia"; Chee Peng Lim, "The Tin Mining, Rubber Processing Machinery and Foundry Industries in Malaysia"; Gonzalo M. Jurado & Loreli R. Cataylo, "Case Studies: The Food Processing and Wood Working Industries in the Philippines"; Pang Eng Fong & Augustine Tan, "Employment in the Singapore Electronics Industry"; Chesada Loohawenchit, "The Farm Machinery Industry: A Case Study of a Small Home Grown Industry in Thailand"; and Nipon Poapongsakorn, "The Animal Feed Industry in Thailand, " (Bangkok: ARTEP, 1980). Mimeo.

1.2. Some Preliminary Issues

Before going on to report some of the major findings of the study it might be appropriate to first present a brief overview of some important issues involved. These can be divided broadly into two different sets of questions. The first is an explanation of what is meant by labour intensive industry in the context of the studies undertaken and, because of the emphasis placed on the development of small scale firms in these studies, an examination of the nature of the relationship between labour intensity and firm size. The second set of questions touch upon the fundamental issue of whether the promotion of labour intensive industries means an abandonment of a number of other economic goals which developing countries had set for themselves to be achieved through industrialisation. Also broadly within the same context, is the question of the extent to which the creation of economic conditions for the promotion of labour intensive industries mean a return to a position much nearer 'free trade' and resulting specialisation according to the dictates of 'comparative cost' – a situation which a large number of developing countries had earlier strongly opposed.

Despite the long debate in development literature on the question of the choice of technique both the concept as well as the measurement of labour intensity still pose considerable problems[1] and resulting confusion mainly because there is no such thing as a 'true' or 'pure' index of labour intensity. The correct definition in most cases is very dependent on the purpose for which it is being used and different definitions capture only parts of the overall picture. There are also serious problems with the use of macro *industry average* data as an indication of labour intensity for in most cases it conceals very useful information about labour intensity of projects and techniques.

In the present study we are mainly concerned with the implications of industrialisation for the employment of semi-skilled and unskilled labour. In this case the most commonly used measure of the degree of labour intensity of production is the reciprocal of the stock of capital (fixed and working) per worker (i.e. L/K). However, this measure by itself is not a sufficient criterion for the choice of technique both because it uses a two factor model and ignores other constraining factors (such as managerial capacity, foreign exchange) and also because the objective cannot be simply to maximise employment without taking into consideration some aspects of 'efficiency' and 'cost' of technique chosen. The latter, i.e. efficiency aspects are best indicated by examining the input-output coefficients, i.e. the labour-output or capital-output (or value added) ratio's. Therefore in examining the question of the choice of technique we must concern ourselves both with the employment generation as well as the efficiency criteria.

1 For a review of some of the issues involved and problems of definition see A.S. Bhalla, 'The Concept and Measurement of Labour Intensity' in A.S. Bhalla (ed.), *Technology and Employment in Industry* (Geneva: ILO, 1975).

Besides the difficulty in finding an appropriate definition of labour intensity two important problems of measurement still remain. The first is the use of market prices in the valuation of both labour and capital. This problem is especially acute in the use of market prices for the measurement of capital in situations where, because of government economic policies (such as overvalued exchange rate and low interest rates), prices of imported as well as domestic capital goods are grossly underestimated in relation to their scarcity prices. The other major problem with the valuation of capital is that in most cases data are available at historical costs and net of depreciation so that, especially during periods of inflation and in the existence of accelerated depreciation allowances, the use of such data as an indicator of capital stock becomes extremely limited and difficult to interpret.

Finally there are serious limitations in the use of industry average data on labour intensity either for the industrial sector as a whole or for specific industries. This is because there can be a wide range of techniques employed by different firms in an industry and the aggregate measure can be quite misleading in evaluating the set of techniques in use at a moment of time.

The studies presented in this volume use different indicators of labour intensity and these suffer from a number of shortcomings to which we have drawn attention. Although wherever possible more than one indicator is given and in certain cases attempts are made to make corrections to existing market prices especially in the valuation of capital, the indicators used generally underestimate the value of capital. In interpreting the findings of the studies these conceptual and data limitations should be kept in mind.

From problems of defintions and measurement we move to explore the relationship between choice of technique and firm size.

A priori, there is no reason why in the selection of techniques smaller sized firms should choose the more labour intensive techniques of production. In traditional neo-classical theory, given a continuous production function, an entrepreneur selects that technique of production (i.e. combination of capital and labour) for his product which maximises profits given relative factor prices of the factors of production. The technique selected at the point of maximum profits could be one which employs a large number of workers and still be labour intensive in terms of capital per worker or employ a small number of workers and still be capital intensive in terms of a high ratio of capital per worker.

The main reason why smaller firms may tend to select a more labour intensive technique of production is that they face factor prices which more closely reflect scarcity prices of capital and labour. Smaller sized firms in most cases do not qualify for government concessions such as tax holidays or accelerated depreciation allowances nor do they have the same access to the institutionalised credit market which would make it possible for them to obtain loans at low interest rates and they are not affected to the same extent as the larger firms by minimum wage legislation or trade union activity. The larger

firms, both domestic as well as the subsidiaries of multinational corporations, in many cases have access to funds at lower rates of interest. Larger scale firms also have much greater access to the forces that control government machinery in developing countries so that they can influence government policy to adopt or continue with economic measures more favourable towards them and which favour the adoption of capital intensive techniques of production. In addition, tied foreign loans from advanced countries for the development of the large scale industrial sector in many cases carry with it the condition that the loan can only be utilised for the purchase of machinery in the donor country which means that capital intensive techniques of production are selected. The result of these factors is that, even given a limited choice, the larger firms will tend to select newer and more capital intensive techniques than is strictly warranted.

To what extent is there evidence to show that small scale firms are less capital intensive than the large sized ones? A number of studies carried out for India, Pakistan, Kenya, Columbia have come up with results to show that size and capital intensity are positively related.[1] However, as we shall see in Section 1.4 the results presented in these studies for the ASEAN countries do not point to any clear cut evidence that small sized firms are less capital intensive.

In interpreting these results, however, it is exceedingly important to point out that the *observed* measurements may not be the right guide for measuring the potential inherent in small sized firms for lower capital intensity as compared to the large sized ones. One important reason for this is that, because of a number of constraints (especially lack of working capital), the small firms may be working far below capacity and higher utilisation rates would bring down the observed capital labour ratios substantially. Another important factor is that the machinery used by the small scale sector is more often than not domestically produced and, to the extent that this sector is heavily protected, the costs of this machinery is far greater, especially as compared to the large scale sector which in most cases is privileged to buy machinery from foreign markets at even cheaper than 'market prices' because of an overvalued exchange rate.

Let us now turn to the second set of questions which we raised earlier. Does the emphasis on labour intensive industrial development and employment generation and an implied bias towards small scale mean an abandonment of a number of other important objectives which developing countries had earlier set for themselves in their pursuit of industrialisation? Does the choice of 'appropriate' technology for employment promotion in developing countries mean a perpetuation of technological backwardness since the more recent or so called 'modern' technology is generally capital intensive in nature? Finally is the choice between capital intensive and labour intensive in some sense one of reconciling modernisation with distributive justice?

There are of course no simple answers to these questions since the role of industrialisation in the process of economic development and more specifically

1 See Chapter 6, p. 274.

the choice of industry and within it the choice of technology have been the subject of intense controversy and discussion in development literature.[1] It might therefore be considered presumptuous to briefly raise the issues here. However, the set of studies presented in this volume focus primarily on the question of the choice of technology and critically evaluate government policy in ASEAN countries in influencing the process of industrialisation and technology adopted and more importantly suggests guidelines for future policy. It is perhaps therefore not out of place to look at some of the broad positions taken in the more recent debates on these important issues specifically as regards to the broad set of economic policies which should be pursued to help implement the adopted strategy. In doing so we fully realise that undertaking such a task is always a very hazardous one both because it tends to oversimplify the positions taken by the different 'schools' in the debate as well as portray their stands in more 'rigid' and 'extreme' terms than the proponents would themselves have ever advocated. These shortcomings are more than readily admitted and must be kept in mind in the discussion that follows. However, such an exercise is still useful if only for it gives us a clearer idea of at least the 'emphasis' placed by the different 'schools' as regards the policy measures to be adopted and the guidelines to be followed in developing countries as regards future industrialisation path and choice of technology within it.

The first set of arguments we can equate at a very general level with the 'basic needs – employment generation' approach which comes closest to a strategy emphasizing small scale labour intensive industrial development.[2] It basically argues that the interpretation of the employment problem is now fundamentally different from that which existed in development literature till the mid-sixties. Until then growth of output was seen as the principal objective of economic development, the benefits of which would 'automatically' trickle down to the poor, and the employment problem was mainly interpreted in terms of transferring population from the labour surplus rural sectors to the urban areas where they were assumed to be absorbed in the industrial sector. With the widespread criticism of this strategy, mainly because of its lack of impact on reducing poverty levels, there has been a fundamental change in emphasis. Employment generation is now to be given a dramatically enhanced priority in the scale of economic objectives and unemployment (of various types) is to be

1 This has been especially true as regards the question of choice of technology and conflicts between the employment objective and the output or growth objective. See A. Sen, *Choice of Techniques* (Oxford: Basil Blackwell, 1968) and F. Stewart and P. Streeten, "Conflicts between Output and Employment Objectives in Developing Countries", *Oxford Economic Papers*, Vol. 23, July 1971.

2 This strategy has in more recent years been epoused by the International Labour Organisation (ILO). See for example ILO: *Employment, Growth and Basic Needs: A One World Problem* (Geneva, 1976) and ILO country mission reports especially ILO: *Sharing in Development: A Programme of Employment, Equity and Growth for the Philippines* (Geneva, 1974); ILO: *Matching Employment Opportunities and Expectations: A Programme of Action for Ceylon* (Geneva, 1971).

treated as a basic symptom of a country's failure to achieve "development".[1] It therefore follows that with employment generation as one of the major goals of economic development the industrial strategy should also give considerable weight to the criteria of employment generation and measures should be undertaken which encourage the growth of industries which employ labour intensive techniques of production. The way this is to be achieved is through changes in the economy's demand pattern as well as in the selection of technology. First, there is to be a shift in demand through income re-distribution measures towards those products which are consumed mainly by the lower income groups and which in many cases either require or can be as easily produced with labour intensive techniques. Secondly, there is to be a far greater emphasis on the selection of a more 'appropriate' technology which reflects factor scarcities in the economy. This is to be achieved amongst others by encouraging the adoption of more 'appropriate intermediate' technology and there is a strong assumption in the argument that such a technology does exist or can be easily developed. Moreover, government policies which subsidise the price of capital are to be discontinued and conditions created such that factor prices reflect factor scarcities. Finally, considerable encouragement is to be provided to smaller sized firms which tend to use more labour intensive techniques of production and against which present government policy measures greatly discriminate.

The second set of arguments broadly represents the re-emergence in the seventies of the 'free trade' position and principally reiterates the stand that it had taken earlier that the pursuit of industrialisation behind protective barriers with the goal of self-sufficiency was fundamentally a mistake which most developing countries made in the earlier phase of their development. Industrialisation it is argued should mainly be on the basis of 'comparative advantage', i.e. one nearest reflecting a free trade position and, especially for labour surplus economies, the development of so called modern capital intensive sectors should in general be avoided at all costs.[2] This school cites the example of the success of certain countries and city states (e.g. Korea, Singapore and Hong Kong) who through the pursuit of economic policies with emphasis on export led growth[3]

1 See ILO: *Strategies for Employment Promotion: An Evaluation of Four Inter Agency Employment Missions,* (Geneva, 1973, p. 22).

2 That capital intensive sectors should not be developed is argued by Little in the volume on Export-led Industrialisation. He states that some critics have used the pejorative term "shallow" to describe the development of countries like Korea and another East Asian country by which is meant that there is little backward linkage from exports. "In that case, development in depth must be declared the enemy of employment and equality. All labour-intensive sectors have their K/L ratios raised by backward linkages, because all the intermediates, petro chemicals, artificial fibres, steel, non-ferrous metals, etc., are highly capital-intensive. These intermediates are the *curse* of developing countries." (emphasis added) I.M.D. Little, Chapter 2, in Eddy Lee (ed.), *Export-led Industrialisation and Development* (Bangkok: ARTEP, 1981), p. 41.

3 For a detailed account of the experience with export-led growth of these countries see Lee, *op. cit.*

have been able to achieve both a very high rate of industrial growth as well as solve substantially the problem of unemployment by absorbing a large proportion of the labour force in the industrial sector through the adoption of labour intensive technologies.

The third set of arguments cover a very wide spectrum but all emphasize the role of industrialisation as a historical necessity to bridge the gap between the developed and the developing countries and argue for the adoption and acquisition of modern technology and, in cases where the size of the market permits, the importance of developing basic capital intensive industries. It is argued that a major goal of developing countries should be to create their own industrial capacities and capabilities so that industry contributes a significant proportion to total output (30 to 40 per cent as compared to the present average of about 20 per cent) and also to gain access to modern technology embodying latest knowledge.[1] The reason for this is both to reduce the technological dependence on industrial countries and achieve genuine self-reliance as well as to reap the gains of sustained productivity growth over time, the so called 'dynamic economies of scale' found principally in the modern industrial sector.[2]

The broad premises of this 'school' is the rejection of the 'free-trade' argument not just within the past historical context of perpetuating underdevelopment in Third World countries but also in terms of simplified "grand solutions" to solve the complex problems of developing countries. It for example interprets the experience of those developing countries which have been able to successfully industrialise (e.g. Korea, Singapore and others) within the peculiar set of conditions and circumstances which have made this possible and views with considerable suspicion the argument that their success story can be easily duplicated by following simple 'free trade' policies and reliance on 'market forces'. It emphasizes the creation of certain domestic conditions (e.g. suppression of trade unions, guarantees for foreign capital and even particular forms of political governments) which encouraged collaboration between domestic and foreign capital and greatly contributed to the 'success' of these countries as well as external factors like those which have led foreign capital to seek new markets and places for investment (e.g. the use of 'cheap' labour) in these countries.

The above discussion represents a highly 'simplified' and 'extreme' form of the 'free-trade' and what we may term as the 'structuralists' position in the industrialisation debate. It would be of course unfair to portray the 'free trade' argument as being against any form of government intervention in the form of

1 This argument is most strongly advanced in A. Singh, "The 'Basic Needs' Approach to Development vs the New Industrial Economic Order: The Significance of Third World Industrialisation", *World Development*, June 1979.

2 For the argument that in industry are to be found not only increasing returns but also the dynamic economies of scale see N. Kaldor, *Causes of the Slow Rate of Economic Growth of the United Kingdom* (Cambridge: Cambridge University Press, 1966) and by the same author, *Strategic Factors in Economic Development* (Ithaca: Cornell University Press, 1967).

import substitution or other measures in the industrial sector to encourage employment generation or improve income distribution. Similarly, it would be rare to find the 'structuralist' argument being taken to mean industrialisation at all 'costs' especially setting up of industries without any consideration to international competitiveness. Also both the 'free-trade' arguments as well as 'structuralists' could be seen to give support to labour intensive industrial development. The former would argue that the pursuit of economic policies which lead to a situation where factor prices reflect factor scarcities and emphasis on the export sector in a labour surplus economy encourages labour intensive industrial development. The 'structuralists' give considerable importance to the role of small sized firms employing labour intensive technology for employment generation in both the rural and urban areas.

However, even after modifying their extreme positions a very wide divergence and significant differences between the 'schools' still remain. This, in terms of specific policy recommendations, is especially true as regards to the opening up of the economy once an industrial structure has emerged as a result of import-substitution policies and the extent to which import substitution policies should be further pursued as regards to basic and intermediate goods industries.

In this regard the distinction between the 'free trade' and 'basic needs employment' position though marginal is still significant. Whereas the 'free trade' position would more often than not take a more neutral stance as regards choice of industry, bias in technology and size of firms to be encouraged,[1] the 'basic needs-employment' position is clearly in favour of 'outside forces' especially the government to help evolve a labour intensive technology where none exists and government support policies to help the small firms play an important role in the industrial strategy to be pursued. However, as regards economic policy measures to be adopted both emphasize a far greater reliance on 'market forces' to determine domestic prices and far less emphasis on government intervention to encourage inward industrialisation (although perhaps less so in the 'basic needs-employment' than the 'free trade' position).

It is in fact the role of international trade and the extent of 'autarky' which a country should practice in its industrialisation strategy which forms the crucial distinction between the 'basic needs-employment' and what we have called the 'structuralists' arguments. The former gives far greater weightage to 'efficiency' considerations especially international competitiveness in the pursuit of industrialisation, while the latter gives considerable importance to the goal of 'self-reliance' especially in the setting up of basic and intermediate goods industries which in many cases are capital-intensive and which might find little justification on the basis of 'comparative advantage' and on the grounds of 'efficiency' at world prices.

1 This position is broadly taken by Little in Lee (ed.), *op. cit.*, p. 38.

In the end it may be stated that while it is difficult to draw any broad conclusions from the above discussion given the wide divergence of views which exist, an important point which does emerge is that in order to meaningfully evaluate the case for labour intensive industrial development and a bias in favour of small sized firms it must be done within the framework of an overall industrial strategy. To that extent the present studies on ASEAN countries and a review of the industrialisation strategies pursued does provide a good opportunity of evaluating the positions taken in the debate on industrialisation both in terms of the strategies, goals and objectives as well as in terms of the major criticisms which are levelled against it.

1.3. Industrialisation and Employment Generation

The economic record of the industrialisation experience of the ASEAN countries is given in Table 1.1 to Table 1.4 and brings out the important differences in their performance. What is striking is not only the wide variations in the rate of growth of output in the manufacturing sector but also the very significant differences in the growth rate of employment[1] in this sector. As regards labour absorption in the manufacturing sector there are two features which merit special attention. The first is that despite the impressive performance of most countries in achieving high rates of growth of manufacturing output the share of the manufacturing sector in total employment, with the exception of Singapore, still remains exceedingly low – from about 11 per cent in Malaysia in 1975 to 6.7 per cent in Thailand in 1978. Secondly, there are wide variations between the growth rate of output and the corresponding growth rate of employment in manufacturing not only across countries but more interestingly in the same country over different time periods. In our broad overview of the industrialisation experience of these five countries we will try to focus attention and find possible explanations for both these factors, i.e. why the overall level of labour absorption has been generally low in the manufacturing sector and what are the possible explanations for the variations in labour absorption across countries and over time in the same country.

From amongst the five ASEAN countries, three, i.e., Singapore, Thailand and Malaysia were able to achieve high rates of growth of output in the manufacturing sector of more than 10 per cent, both during the period of the sixties and seventies. In the case of Indonesia the growth rate in manufacturing output was significantly lower in the sixties at 5.1 per cent (although it began to pick up in the last two years) as compared to the seventies when it almost more than doubled to 13.2 per cent and gave it the highest growth rate from amongst all the five countries during the period between 1970-78. As compared to the other four countries Philippines stands out as a relatively 'poor' performer in that

1 Data on employment in the manufacturing sector especially for Philippines and Thailand is not very reliable. Estimates for growth rates over different time periods should be treated as broad indicators of trends during these periods.

Table 1.1

Share of Manufacturing Sector in Gross Domestic Product in ASEAN Countries
(Per cent)

	1960	1965	1970	1975	1978
Philippines[a]	17.2[b]	17.2	18.7	20.1[d]	19.4[e]
Indonesia	7.4	7.6	8.2	11.1	12.3
Singapore	13.2	15.6	19.7	20.7	22.5
Thailand	11.7	14.1	15.5	18.2	21.3
Malaysia	8.1[b]	11.0[c]	12.2	14.4[d]	17.4

Note: a per cent of N.D.P.
b for 1961
c for 1966
d for 1974
e for 1977

Source: For Philippines (Table 2.1), Indonesia (Table 3.1), Singapore (Table 4.1), Thailand (Table 5.1) and Malaysia (Table 6.1).

Table 1.2

Growth Rate of the Manufacturing Sector in ASEAN Countries
(Per cent)

	1960-65	1965-70	1960-70	1970-78
Philippines	3.9[a]	6.2	5.5[b]	6.4[c]
Indonesia	3.4	6.9	5.1	13.2
Singapore	–	–	13.0	9.0
Thailand	11.0	10.7	10.9	11.3
Malaysia	–	–	13.8[b]	12.9

Note: a 1961-65
b 1961-70
c 1970-77

Sources: For Philippines (based on Table 2.1), Indonesia (Table 3.1), Singapore (based on Table 4.1), Thailand (Table 5.2) and Malaysia (Table 6.2).

Table 1.3

Share of Manufacturing Sector in Total Employment in ASEAN Countries
(Per cent)

	1960	1970	1977
Philippines	11.7[a]	11.7[b]	10.4[c]
Indonesia	5.7[a]	6.5[b]	8.6
Singapore	14.3[d]	22.0	28.8[e]
Thailand	3.4	4.0[b]	6.7[f]
Malaysia	6.4[d]	9.7	11.8[g]

Note: a for 1961
b for 1971
c for 1974
d for 1957
e for 1979
f for 1978
g for 1975

Source: For Philippines (Table 2.2A), Indonesia (Appendix Table III-1), Singapore (based on Table 4.4), Thailand (Table 5.3) and Malaysia (Table 6.8).

growth in manufacturing output was less than 7 per cent in both the sixties as well as in the seventies.

Despite the high growth rates of output achieved in the manufacturing sector, which significantly increased the share of manufacturing in total output by the end seventies, the share of this sector in total employment was still extremely low. The only exception was Singapore where the share of manufacturing employment increased from 14.3 per cent in 1957 to 28.8 per cent in 1979 while the share of output in GDP increased from 13.2 to 22.5 per cent in the same period. On the other extreme was Philippines where there was a decline in manufacturing sectors share of employment from 11.7 per cent in 1961 to 10.4 per cent in 1974[1] and, although it is true that the growth of manufacturing output was low in this period, by 1977 it still contributed almost 20 per cent to net domestic output. In the case of Indonesia the share of the manufacturing sector in total employment increased from 5.7 per cent in 1961 to 8.6 per cent in 1977 whereas the share of manufacturing output in GDP increased significantly from 7.4 to 12.3 per cent. Malaysia and Thailand's

1 This is based on Census data (Table 2.2A). However, according to the Central Bank data total employment increased by 32 per cent between 1972 and 1977 (Table 2.2B).

Table 1.4

Growth Rate of Employment in the Manufacturing Sector in ASEAN Countries
(Per cent)

	1960-71	1971-74[a]	1972-77[b]
Philipppines	2.8	1.0	5.7
	1961-71	1971-77	
Indonesia	3.7	7.6	
	1957-70	1970-79	
Singapore	6.4	8.2	
	1960-70	1971-78	
Thailand	4.1	11.5	
	1957-70	1970-75	
Malaysia	4.9	7.6	

Note: a Based on Census Data (see Table 2.2A)
b Based on Central Bank Data (see Table 2.2B)

Sources: For Philippines (Table 2.2A and Table 2.2B), Indonesia (Appendix Table III-1), Singapore (estimated from Table 4.4), Thailand (Table 5.4) and Malaysia (Table

position stands mid-way between Singapore on the one hand and Indonesia and Philippines on the other. In Malaysia's case the share of manufacturing in total employment increased from 6.4 per cent in 1957 to 11 per cent in 1975 but the share of manufacturing output in total output more than doubled from 8.1 to 17.4 per cent in the same period. In Thailand the share of manufacturing employment increased from 3.4 per cent in 1960 to 6.7 per cent in 1978 but over the same years share of manufacturing output increased from 11.7 to 21.3 per cent.

The above set of figures point to a very low labour absorption in the manufacturing sector in most ASEAN countries but the other point of interest is the wide divergence in the growth rates of employment in the manufacturing sector as compared to the growth rate of output not just across countries but in different sub-periods for the same country. One indicator which can be used to illustrate this relationship (although it suffers from many weaknesses and its results must be interpreted with caution) is the employment elasticity (labour absorption coefficient) which is shown in Table 1.5 for the sub-periods for

Table 1.5

Employment Elasticity[a] in Manufacturing in ASEAN Countries

	1960-70	1970-77[b]
Philippines	0.45	0.32
	1960-70	1970-78
Indonesia	0.68	0.44
	1960-70[c]	1970-79
Singapore	0.36	0.69
	1960-70	1970-79
Thailand	0.27	0.97
	1961-70	1970-75
Malaysia	0.30	0.65

Note: a Defined as a ratio of the percentage change in employment and the percentage change in value-added over the time period.

b Based on Census Data on employment for the period 1970-74 and Central Bank data for the period 1974-77. (See Table 2.2A and 2.2B).

c Estimates for employment for 1960 based on 1957-70 growth rate. Also employment elasticity was significantly higher in the second half of the sixties as compared to the first half.

Sources: Same as Table 1.2 and Table 1.4.

which data are available.[1] In the case of Singapore the labour absorption coefficient was high in the seventies and also much higher than in the sixties. The growth rate of employment was between 1970 and 1979, 8.2 per cent as compared to 6.4 per cent between 1957 and 1970 while the corresponding growth rates of output were 9 per cent (1970-78) and 13 per cent (1960-70) respectively. In the case of Malaysia and Thailand there are very significant differences in the growth rate of employment in the manufacturing sector despite the fact that the growth rate of output were fairly similar in the two periods and this change is also glaringly reflected in the labour absorption coefficient. For Malaysia the

1 There are two major problems with using this indicator as the only criteria for judging labour absorption. The first that it takes no account of the *total* number of jobs created and secondly it ignores the investment side, i.e. the cost of creating jobs and therefore does not differentiate between the more 'efficient' and 'inefficient' users of capital in creating employment. It is therefore advisable to use this indicator together with figures on total employment generated and where possible the ratio of the growth of investment in relation to the growth of employment, i.e. an investment-employment ratio.

growth rate of employment increases from 4.9 per cent during 1957-70 to 7.6 per cent for 1970-75 with growth rates of manufacturing of 13.8 per cent (1960-70) and 12.9 per cent (1970-78); this increased labour absorption is reflected in almost a doubling of the employment elasticity coefficient. The change is more dramatic in the case of Thailand where there is an almost three fold increase in growth rate of employment from 4.1 per cent (1960-70) to 11.5 per cent (1971-78) while growth rate of outputs are 10.9 and 11.3 per cent for the same period and the labour absorption coefficient increases from 0.27 to 0.97.[1] In the case of Indonesia there is an acceleration during the seventies in the growth rate of employment to 7.6 per cent (1971-77) as compared to 3.7 per cent (1961-71) but this is not as significant as the increase in the growth rates of output from 5 per cent in the sixties to approximately 13 per cent in the seventies and this is reflected in the decline in the labour absorption ratios between the two periods. Philippines performance in the growth rate of output and employment was poor in the sixties. Because of conflicting results from different data sources as regards employment growth it is not possible to say with confidence what happened in the seventies. If one source of official statistics are used they point to a continuation of the poor employment performance in the seventies but the Central Bank data on employment suggests a much higher rate of growth of employment and this seems more in line with what seems to have happened during this period as more labour intensive industries (because of growth in the export market) had faster rates of growth in this period.

Of the set of factors which have been responsible for the low labour absorption in the manufacturing sector in the ASEAN countries (with the exception of Singapore) and which have significantly contributed to the unemployment problem in especially the more populous economies of Thailand, Indonesia and Philippines, there is generally far greater agreement than disagreement. In all these four economies the governments have opted for policy measures which have subsidised the use of capital through very generous subsidies and concessions in the form of tax holidays, accelerated depreciation allowances, low or no duties on import of industrial machinery and raw materials. In the case of Thailand since 1959 the Board of Investment provides incentives in the form of exemptions of import duties on machinery and capital equipment and exemption from corporate income tax for a certain length of time. Similarly in Philippines the Board of Investment provides exemptions on imported capital equipment, accelerated depreciation allowances and preferences in grant of government loans. According to one study[2] on the Philippines it is estimated that the effect of these measures is to increase the rate of return on total investment by 7 to 14 per cent and to decrease the users cost of

1 Data on employment is not very reliable and based on different sources but is indicative of the significant change during the two periods (see p. 180).

2 See Chapter 2, p. 44.

capital by 39 to 42 per cent. In Indonesia fiscal incentives given to favoured industries consist of exemptions of import duties, tax holidays and other tax concessions including accelerated depreciation allowances. In the case of Malaysia the major fiscal incentive was the granting of 'pioneer status' to investors whose projects were approved by the government which made it exempt from company tax for a period between 2 to 5 years depending upon the amount invested and which under certain conditions could also be extended.

The evidence from these countries also shows that in almost all cases these firms (and these are mainly the larger sized ones) which were beneficiaries of government fiscal and other concessions were also more capital intensive as compared to those firms which were not given the same benefits.

Besides the important question of the set of factors which favoured the adoption of more capital intensive techniques of production what is perhpas of equal interest is to investigate the set of policies and circumstances which led to certain countries being able to achieve a higher labour absorptive capacity in the manufacturing sector and also the set of factors which made it possible for some countries to increase their labour absorptive capacities over time and what led to other countries not being able to achieve this despite efforts made in this direction. Singapore certainly provides the best example of the first, Malaysia and Thailand are extremely good examples of the second and Philippines and Indonesia examples of the third.

Let us start by presenting a very brief overview of policies adopted and important changes in policy in the period under review in the ASEAN countries.

Singapore's success story is by now well known. In 1959 when the country gained independence the economy mainly functioned as an entrepot and was facing serious problems especially with high unemployment amongst its labour force. Although realising that the overall industrialisation strategy to be pursued must be different from that of countries endowed with natural resources and a sizeable domestic market it still opted in these earlier years for an import substitution policy behind tariff protection. Since a major part of the capital required for the implementation of this policy had to be raised through foreign investment it provided for generous tax holidays and tax concessions. During the period 1960-65 its overall economic achievements were modest and political uncertainty and labour unrest both contributed towards this situation. The significant change in industrial policy came after 1965 when Singapore after separating from the Federation of Malaysia opted for an export led growth strategy and dismantled the tariff barriers and quota restrictions which had earlier been introduced. It provided more generous concessions and incentives to foreign capital and came harshly on industrial labour mainly by passing legislation which greatly strengthened the powers of management and ensured industrial peace and wage stability. These incentives to foreign capital were provided at an opportune time as the world economy was booming and multinationals were seeking offshore production sites. In the ensuing success of achieving high rates of growth of output and employment foreign investment played a

dominant part. Between 1963 and 1976 the share of wholly foreign-owned and joint venture firms in manufacturing sector increased from 32.8 per cent of total employment to 68.7 per cent, from 53.6 per cent of output value to 82.9 per cent and from 57.4 per cent of export sales to 91.4 per cent. As regards the sources of foreign investment it came mainly from the industrialised economies of the United States, Japan and the EEC and the major part of such investments were undertaken by multinational corporations.[1]

Malaysia's industrial policies through the period of the sixties follows the classical pattern of an import substitution strategy behind tariff barriers and fiscal incentives to industrial investment together with strong anti-trade union measures which resulted in strike activity being minimal and kept industrial wages low. After the initial period of import substitution in the consumer goods industry there was a successful shift towards capital goods (basic metals and electrical machinery) and intermediate goods sector in the late sixties and early seventies and a movement towards the export sector in certain other industries. The major factor which explains the higher growth rate of employment after 1968 has been this growth rate of exports in labour intensive industries especially electrical machinery, footwear, wearing apparel and textiles. The bulk of the expansion of exports has, however, been from free trade zone where the multinational corporations pre-dominated. Malaysia thus appears to have evolved by the early seventies a dualistic industrial strategy – a rapidly growing enclave export sector largely situated in Free Trade Zones which had been grafted on to the usual import substitution sector.[1]

What is important to observe in the case of Malaysia's experience is not only the measures that were taken to attract foreign investment such as the Investment Incentives Act of 1968 (and other steps such as guarantees against expropriation, currency inconvertibility and discrimination of foreign firms, avoidance of double taxation with several countries and the elimination of cumbersome procedural formalities by the establishment of Federal Industrial

1 The percentage distribution of foreign owned gross fixed assets by country of ownership in the manufacturing sector in 1970 and 1977 was as follows:

	1970	*Mid-1977*
United States	34.5	32.5
Japan	6.8	15.2
U.K.	20.0	14.0
Netherlands	18.4	14.0
Others	30.3	24.3

Source: Chian S. Yue, 'Foreign Investment in Singapore', in N. Akrasanee and V. Vichit-Vadakhan, *ASEAN Cooperation in Foreign Investment and Transnational Corportations,* Vol. 1 (Bangkok: United Nations and Pacific Development Institute, 1979), p. 245.

2 See Lee (ed.), *op. cit.*, p. 19.

Development Authority[1]) but also the fiscal incentives which were provided to firms on the basis of their export orientation. Whereas in the sixties much greater emphasis was given to import substitution and relatively more capital intensive industries, after 1968 import substituting projects received approval in far more cases without obtaining incentives whereas the export-oriented projects received approval with fiscal incentives (in the form of 'pioneer status')[2]. One of the important results which emerge in the Malaysian study in this volume is that this shift in fiscal incentives toward export industries led to a greater development of labour intensive industries in the period after 1968.

In Thailand as in Malaysia during the sixties the major thrust of industrial policy was towards import substitution behind tariff barriers, generous fiscal incentives and exemptions on import duties on industrial machinery and other raw materials and intermediate inputs. These measures led to the adoption of capital-intensive techniques mainly by large scale firms as in many cases a minimum size was specified for firms which could qualify for the incentives provided. Between 1967 and 1971 the government made some changes in industrial policy so as to provide support for industries which utilised domestic raw materials and employed more labour. It was in 1972, however, that economic policies were shifted in favour of the export sector and measures were taken to remove some of the biases in the tariff structure against export industries. These included rebates on import duties and business taxes on imported inputs which were used in the production of export commodities together with preferential interest rates and short term loans to exporters. In 1977 the investment promotion law was changed and the new law gave more incentives to investors and more discretionary powers to the Board of Investment. Although special incentives were still provided to export industries large scale import substitution industries were also given promotional privileges with the result that average protection to import competing industries increased in recent years.

As in Malaysia foreign investment has played a major role in the development of Thailands manufacturing sector and although reliable statistics are not available on the share of foreign investment it is estimated that nearly one half of the firms receiving 'official' promotion in large scale manufacturing sector had by the end seventies varying degrees of foreign investment. The role of foreign investment in the growth of the export market is also not clearly defined. Because of the high rate of growth of exports during the 1970s the share of manufactured exports in total exports rose from 4 per cent in the 1960s

1 Recently re-named Malaysian Industrial Development Authority.

2 By end of 1976 in 'pioneer industries' foreign capital accounted for more than 45 per cent of total capital investment. Foreign investment was concentrated mainly in electrical and electronics, textiles, food manufacturing, chemical industries and petroleum industries which jointly accounted for two-third of the foreign investment in 'pioneer industries'. See M. Ariff, 'Foreign Investment in Malaysia – Incentives, Inflows and Issues' in Akrasanee & Vichit-Vadahan, *op. cit.*

to over 20 per cent in the 1970s. In 1976 the largest contributors to Thai manufactured exports were processed food (47.22 per cent), textiles (14.3 per cent), clothing (9.7 per cent) and electrical machinery (4.2 per cent) and these during 1972-76 registered growth rates of 47.2 per cent, 48 per cent, 59.4 per cent and 238.4 per cent, respectively. The high growth rates achieved in these sectors significantly contributed to the increase in labour absorption in the manufacturing sector during this period.

Indonesia's case differs significantly from Malaysia and Thailand in that there has been no major shifts towards the export sector in the seventies and the major source of industrial growth in both the sixties and seventies was import substitution. Also Indonesia as distinct from Singapore and Malaysia has been able to attract little foreign investment in labour intensive manufactures for exports such as textiles, garments and electronics. Most of the foreign investment has come in oil, minerals, timber and development of land and water resources. In manufacturing it was confined mainly to final consumer goods for the domestic market (such as textiles, cigarettes, food and beverages, vehicles, electrical and electronic and in intermediate goods like cement, fertilizer, glass, steel bars, etc.). Why foreign ventures have not engaged in exports is mainly blamed on administrative and economic obstacles, such as complicated and slow duties draw back procedures and high ocean transport costs[1] and as long as the domestic market is unsaturated it is considered much easier to serve it.

In Indonesia till 1965 the government had followed an import substitution strategy mainly through the public sector with emphasis on basic industries such as steel, fertilizer, aluminium, cement as well as paper and textiles. There was also considerable government intervention in the pricing and distribution of products. A number of factors, principally amongst them a foreign exchange constraint and labour problems contributed to the slow growth of output. In 1968 certain fundamental changes were introduced and measures were taken to bolster up the private sector as well as to make it more attractive for foreign investment. More liberal import policies were adopted which made it easier to gain access to raw materials and capital goods. These measures all led to a picking up of industrial growth. In 1971 major revisions were made to decrease protection but between 1971-75 nominal rates again increased. Since the mid-seventies a number of problems have re-emerged especially the strong exchange rate as a result of the oil exports. This has made it difficult for domestic manufacturers to compete with imports inspite of the high levels of protection and acted as a disincentive to the growth of exports. Although the devaluation in 1978 (from Rs. 418 to Rs. 625 to the US dollar) had favourable effects in terms of increase in exports of manufactures especially for labour intensive industries this could not be maintained mainly because of problems of maintaining a realistic exchange rate for exports.

1 See M. Sadli, "Foreign Investment in Indonesia" in Akrasanee and Vichit-Vadahan, *op. cit.*

Philippine is an example of an economy which after following a successful import substitution strategy finds itself later faced with all the major problems inherent in such a strategy and despite attempts to break into the export market has achieved only limited success in doing so. The period of the fifties was one of rapid industrial growth behind tariff barriers and import controls but once the market in the easy import substitute industries exhausted themselves the industrial sector had a sharp slowing down in growth in the sixties. The government tried to increase profitability by further providing fiscal incentives as well as to break into the export market by the floating of the domestic currency in 1970 which led to a *de facto* devaluation from 3.9 to 6.4 pesos per dollar. This led to increase in export profitability and improved performance of labour intensive manufacturing exports with favourable effects on employment generation in this sector. However, between 1974-77 there were significant reductions in the adjusted rate for exports as the favourable effects of devaluation were eroded due to domestic inflation. Also the tariff reforms introduced did not significantly alter the bias against exportables and in 1974 the Effective Rate of Protection for exporting industries was 4 per cent as compared to 61 per cent for non-exporting industries.

Let us now try to draw some conclusions from this broad overview of the industrialisation experience of the ASEAN countries especially as regards the role played by the manufacturing sector in generating employment. Despite the considerable problems inherent in trying to generalise from cross country experiences two obvious sets of conclusion emerge that are difficult to ignore. The first is that the set of incentives provided to the industrial sector have favoured the adoption of capital intensive technology. Secondly that movements away from the narrow path of import substitution industrialisation and towards the export sector have led to the development of more labour intensive industries with a favourable impact on employment generation.

The first conclusion points to a strong case for shifting the present emphasis on subsidising the use of capital in the industrialisation process towards a more realistic set of incentives which more closely reflect scarcity prices of capital goods. It might have been argued that in the earlier process of industrialisation these incentives could be justified in order to attract investment into manufacturing either from other sectors or in providing incentives for the creation of a new entrepreneurical class. However, the persistence of these incentives can no longer be justified as most countries have now a long history of industrialisation and the problems associated with early 'shyness' of industrial capital are therefore no longer relevant.

As regards the second major conclusion, the evidence that we have presented clearly points to the fact that the adoption of a narrow import substitution industrialisation strategy had led to far lower growth rates of employment especially as compared either to a general adoption of an export-led strategy or to periods of shift in policies towards the development of industries catering for the export market. An important factor contributing towards this situation

has been the fact that a shift in policy in favour of the export sector has resulted in a price structure more closely reflecting factor scarcities as compared to a more distorted set of prices resulting from an import substitution strategy.

As regards the adoption of one strategy as compared to another as well as the case of shifting there seems considerable controversy, some major points of which have already been discussed in the earlier section and a more detailed analysis of the factors contributing to the success of export-led growth in some countries and the chances of emulating their experience are available in another ARTEP study which deals specifically with this subject.[1]

It is important, however, to emphasize that in the case of a number of countries the choice is not simply one between either following an import-substitution strategy or an export-led one. Following an import substitution strategy where a domestic market exists and where the industry will become internationally competitive after a brief period may be fully justified. Also in many cases a successful break into the export market may only be possible after a phase of import substitution if for no other reason but to gain the experience and know-how in running an industry efficiently in the earlier stages. There is also the important role which foreign investment (mainly through multinationals) has played in the successful implementation of export-led growth strategy (Singapore and Malaysia) especially as regards to the general set of policy measures for attracting it. Also our study shows that the two ASEAN countries which have been relatively unsuccessful in developing an export market for manufactures (Indonesia and Philippines) were also those which were not able to attract foreign investment.

To conclude, while there is a lot to be said for the circumstances which make cases like Singapore 'unique' in some sense, there is also no doubt that the blind following of an import substitution strategy based on 'fear' and 'suspicion' of the export market may not be well founded. Even in the case of Philippines and Indonesia, countries which had followed rigid import substitution strategies, when measures were taken to promote manufactured exports these were initially successful and this led to a favourable impact on growth of labour intensive industries and employment generation. The lack of their continued success in the export market can be traced to adverse government policies or adverse movements of the exchange rate which discriminated against the future growth of the export market. What is therefore needed is a more realistic set of policies and incentives to be adopted which allows at least an equal chance to industries catering for the export market as they do for the domestic one, especially so in the cases of those countries where serious problems of unemployment and underemployment exists.

1 Lee (ed.), *op. cit.*

1.4 Small Scale Sector – Its Importance and Recommended Policy Measures to Promote Its Development

Our overall review of the industrialisation process as it has unfolded in the ASEAN countries (and this is true for most developing countries) shows that government policy and support measures have been heavily biased in favour of the large scale sector and strongly discriminated against the small scale sector despite the fact that it is now generally recognised that the development of this sector can play a very significant role in employment generation within the larger process of industrialisation in a labour surplus economy. What is perhaps of great concern in this situation is that despite the fact that over the last many years there has been considerable emphasis placed on the development of the small scale sector in development literature and government plans and documents and detailed suggestions and policy prescriptions have been recommended, very few of these measures have been implemented and the small scale sector continues to operate in an economic environment which strongly discriminates against it.

A number of factors are of course responsible for this situation and its continuing existence. The first and perhaps most important is that the large scale sector exerts much greater influence over the decision making authorities which leads to adoption of policies or their continuation which favours its development and which in most cases leads to situation which discriminates against the small sector. In certain cases it is also true that there are serious inherent problems of the small scale sector which makes it difficult for the government to implement policies in its favour especially as regards the provision of credit facilities although there is no doubt that these difficulties in many cases tend to be exaggerated and institutional arrangements could be developed to overcome some of the obstacles in their implementation. However, an extremely important factor which has contributed towards this situation is that not enough is known about this sector especially its economic and technological characteristics so as to be able to form a clear idea of the role the small scale sector can play in the overall industrialisation process and development of the economy.

A major aim of the studies presented in this volume was an attempt to fill in this gap both as regards the way the macro environment discriminates against the small scale sector as well as to identify the basic features and potential of this sector so that it can contribute substantially to overall industrial development and employment generation in the economy. Another important objective of these studies was to discover the necessary if not sufficient conditions for small scale enterprises to develop both *competitively* and *complementarily* with the large scale sector in the context of overall industrial development in the ASEAN countries.[1]

1 The positive role that can be played by the small scale sector in creating employment

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opportunities and contributing to the process of industrialisation in a labour surplus economy is perhaps best illustrated by the Japanese experience. In the earlier phase of the Japanese industrial revolution the small scale sector played an important part in the 'rearing' of 'modern' industry as it went through the phase of import-substitution both as an export sector (using cheap labour) to earn foreign exchange for the setting up of 'modern' industry as well as its ability to absorb the growth of the labour force. As distinct from the path followed by other western countries Japanese industrial experience shows that there has been no polarisation towards the large scale sector. Between 1909 and 1953 for example the share of the small scale (defined as employing less than 50 persons) had not materially declined. (see table below).

This happened despite the considerable change in the industrial structure with shifts from consumer towards capital and intermediate goods industries. This is because employment distribution by scale in each industrial group has been far more flexible than is generally considered to be the case and the share of small firms in total employment remained fairly constant as a combined result of changes within each group and the changes of the weight in each group.

Table: Employment Distribution by Scale

	Small (<50)	*Medium (50–499)*	*Large (%) (>500)*
1909	45.7	33.6	20.7
1931	37.6	36.7	25.7
1953	43.4	30.8	25.8
1961	37.6	35.2	27.2

Source: K. Ohkawa and M. Tajima, "Small-Medium Scale Manufacturing Industry: A Comparable Study of Japan and Developing Nations", *IDCJ Working Paper* Series No. A-20 (Tokyo: International Development Center of Japan), Appendix 1.

Japanese industrial experience is also very illustrative of how the small sector can coexist with the large scale sector. In certain industries both sectors have developed independently, side by side, since they are not directly related to each other in terms of either the market for the products or techniques (e.g. candy manufacturing and sugar refining in the food group). In certain cases of capital or intermedaite goods industries such as chemicals and fertilizers only the large scale exists. But in other traditionally known large scale industries the small scale sector has played an important part through the sub-contracting system especially in the case of the automobile and electronics industry. Sub-contracting takes place at different levels with sub-contractors, secondary sub-contractors and tertiary sub-contractors, with demand at each process becoming lower in capital intensity as sub-contractors become smaller in scale. For further details see IDCJ, *Japan's Development Experience and the Development Strategy for the Contemporary Developing Countries* (Tokyo: International Development Center of Japan, March 1980), Ohkawa & Tajima, *op. cit.;* M. Tajima, "Small-Medium Scale Manufacturing Industry: Further Discussion in a comparative study of Japan and Developing Nations", *IDCJ Working Paper Series* No. A-08 (Tokyo: IDCJ, 1978) and *Evolution of Policy for Changing Conditions of Small and Medium Enterprises in Japan – In view of its possible application to developing countries* (Osaka International Training Center: Japan International Co-operation Agency, 1978).

Employment in the Small Scale Sector

If for no other reason then just on the grounds of share of people employed in manufacturing the small scale sector presents a very strong case for measures to be taken for its promotion. Despite the considerable problems in estimating its overall size the evidence is extremely clear that in most of the ASEAN countries the small scale sector including cottage industry in both the urban and rural areas is still the dominant employer in the manufacturing sector. In the case of Philippines in 1974 the share of employment of the unorganised sector (defined as those employing less than 5 persons) in manufacturing was 63.1 per cent and if we include those firms employing between 5-19 workers the share increases to 68.5 per cent. In Indonesia in 1974/75 the share of employment of firms employing less than 5 persons was 67.8 per cent although this includes a substantial share of cottage industry in rural areas. In the case of Malaysia, the informal sector (i.e. those firms not covered by the industrial census) contributed in 1970 almost 40 per cent of total employment in the manufacturing sector and in the 'organised' sector firms employing less than 50 persons in 1973 employed 25 per cent of full time, 78.1 per cent of part time and 27.1 per cent of all workers. In Thailand data are available only for registered factories and here 90 per cent of total employment in manufacturing was accounted for by firms employing less than 50 workers. If rice mills are excluded then firms employing less than 10 workers contributed 63.5 per cent of total employment and if we include size class of firms employing between 10-49 workers the figure increases to 93.2 per cent. Only in the case of Singapore the results seem distinctly different although it is not possible to get detailed break downs for firm sizes between 10-99 workers. Available estimates indicate that firms employing less than 10 workers in 1978 contributed 9.5 per cent of total employment and firms between 10-99 workers contributed 29.2 per cent of total employment in firms employing more than 10 persons in the manufacturing sector.

Unfortunately reliable statistics are not available as regards the share in value added for the small scale sector but the figures that are available (or derived from indirect estimates) clearly show that despite the large proportion of total employment it accounts for a very small percentage of value added, indicating a very low productivity per worker in this sector. In Indonesia for example in 1974/75, firms employing less than 20 workers although contributing 77.2 per cent of total employment contributed 22.1 per cent of total value added. For Philippines indirect estimates show that firms employing less than 20 workers while contributing 68.5 per cent of total employment only contributed 37.8 per cent of total value added.

Economic Characteristics of the Small Scale Sector

The study presented in this volume provide statistical analysis on key economic variables for the small scale sector in ASEAN countries especially as regards productivity, capital intensity, profitability, capital efficiency and wage

rates. The results are based either on census data or surveys carried out by the authors themselves or by some other agency. Unfortunately detailed breakdown by size classes of firms are not available for all countries to make a comparison for all the important variables. However, to illustrate some of the important features of the small scale sector we have drawn upon the data provided in these studies on Malaysia and Thailand and supplemented it with Census data for the Philippines. The movement of some of the key variables like productivity, capital intensity, profitability and wages by size classes of firms are shown in Table 1.6 to Table 1.9 and a comparison is made with Japan to bring out some of the important differences which exist.

As regards productivity per worker (measured as value added per worker) in all three countries Malaysia, Thailand and the Philippines it is exceedingly low for the smaller size firms and there are significant increases in productivity as we move from the smaller to the larger sized firms. That these productivity differences cannot be explained by differences in the capital employed per worker alone can be seen by the evidence that the differences in capital intensity are not as significant as that of productivity. In fact the evidence presented except for the case of the Philippines shows that capital intensity (measured as the capital labour ratio) does not vary significantly between different size classes of firms as is generally believed to be the case.[1] In the case of Malaysia for example when capital intensity is measured as the ratio of total capital (i.e. including working capital) employed per worker the results of the survey showed very little difference between various size classes of firms and in fact capital intensity for size class of 20-29 workers turned out to be the highest. However, when the ratio of fixed capital per worker is used there is a general increase in capital intensity with firm size showing that small firms tend to use far more working capital as compared to the large sized firms. In the case of Thailand also the survey comes out with the surprising result that firms employing less than 10 workers are more capital intensive as compared to firms employing between 10-49 and 50-99 workers and only very slightly less than those employing between 100-199 workers. However, there is a sharp break in capital intensity with those firms employing more than 200 workers and capital intensity for these firms is almost double that of the smaller sized firms.

The extremely low levels of productivity per worker reflect themselves in very low capital efficiency (measured as the ratio of value added to capital employed) and very low profitability of the smaller size firms and it is in regards to these variables that there are extremely significant differences with the Japanese data on the small scale sector where firms employing between 20-49 workers have the highest capital efficiency and profitability ratios.

1 There are of course serious problems with the data on measurement of the capital stock and as discussed earlier (p. 5) because of low capacity utilisation as well as higher price of machinery paid in most cases by the small sized firms as compared to the large ones the *observed* capital intensity of the small scale sector need not be a good measure of its potential or the basis of comparison with the large scale sector.

Table 1.6

Selected Economic Indicators by Firm Size Malaysia (1973)

Indicators \ Paid Full-time Employment Size-Group	0-4	0-5	10-19	20-29	30-49	>50
Productivity (VA/L) ('000 Malaysian $)	2.5	3.5	4.1	5.1	4.2	7.5
Capital Intensity ('000 Malaysian $)						
(Total Capital/L)	8.5	8.5	10.6	13.3	9.4	11.6
(Fixed Capital/L)						
Survey	5.4	5.8	5.9	6.0	6.2	7.3
Census	3.2	3.3	3.7	4.4	6.7	9.3
Profitability (Rate on return on total capital)	17.1	21.7	19.8	21.3	23.6	41.1
Capital Efficiency (VA/K)						
Survey	0.28	0.41	0.39	0.39	0.44	0.65
Census	1.35	1.64	1.47	1.37	1.00	0.97

Note: VA = Value Added
L = Worker

Source: Table 6.20.

In fact what the Japanese example really shows is that for the small scale sector to be able to compete with the large scale sector it must be an efficient user of capital and this is precisely the problem with the small scale sector in the ASEAN (as well as in other developing) countries. As regards the factors which are responsible for the differences between Japan and other developing countries the results of a survey of small firms carried out in Japan and a group of Asian countries may be illustrative. The survey showed that the equipment used by small firms was not widely different in terms of efficiency in Japan and the other Asian countries. Also wage rates were 50 to 33 per cent lower in Japan as compared to the Asian countries. However, as regards productivity it was 50 per cent lower in Asia as compared to the Japanese counterpart. This study identified a large number of reasons for the vast differences in productivity especially the narrow domestic market, wide range of goods pro-

Table 1.7

Selected Economic Indicators by Firm Size Thailand, 1977

Indicators \ Number of Workers	Less than 10	10-49	50-99	100-199	>200
Productivity (VA/L) ('000 Baht)	22.5	29.2	46.6	51.9	80.1
Capital Intensity (K/L) ('000 Baht)	85.6	67.7	77.6	87.6	216.1
Capital Efficiency (V/K)	0.28	0.46	0.66	0.61	0.43
Wages[a] (Baht)	835.0	848.3	1,034.2	1,123.3	1,125.7
Salaries[a] (including bonuses & fringe benefits) (Baht)	1,074.1	1,059.2	1,275.0	1,309.1	1,281.7

Note: a Average monthly.

Source: Table 5.17 and Table 5.20.

Table 1.8

Selected Economic Indicators by Firm Size Philippines (1974)

Indicators \ Number of Workers	5-19	20-49	50-99	100-199	>200
Productivity (VA/L) ('000 Pesos)	4.5	15.2	21.5	29.0	38.5
Capital Intensity (K/L) ('000 Pesos)	4.7	8.7	15.2	19.7	25.8
Wage Rates ('000 Pesos)	1.6	3.3	4.1	4.7	5.4
Profitability (P/K)	0.61	1.37	1.14	1.24	1.28
Capital Efficiency (V/K)	0.96	1.75	1.42	1.47	1.69

Source: National Census and Statistics Office, given in I.D.C.J., *Japan's Development Experience, op. cit.*, p. 118.

duced in small quantities, extra workers employed and poor arrangements of machines, management and transport of materials and products.[1]

Of course there are a large number of other factors to which we have already drawn attention which are responsible for the very poor economic per-

1 See *Evolution of Policy for Changing Conditions of Small and Medium Enterprises in Japan, op. cit.*, pp. 31-32.

Table 1.9

Selected Economic Indicators by Firm Size Japan (1966)

Indicators \ Number of Workers	5-19	20-49	50-99	100-199	>200
Productivity (VA/L) ('000 Yen)	650	851	921	1,022	1,618
Capital Intensity (K/L) ('000 Yen)	420	430	507	607	1,445
Wage Rates ('000 Yen)	349	375	389	405	500
Profitability (P/K)	0.72	1.11	1.05	1.02	0.77
Capital Efficiency (V/K)	1.55	1.98	1.82	1.68	1.12

Source: MITI, Chusho Kigyo, Kihon Chosa, 1966, given in I.D.C.J., *Japan's Development Experience, op. cit.*, p. 137.

formance of the small scale firms as compared to the larger ones. We have already provided evidence of such policies as tariffs, import controls and fiscal incentives which all favour the larger sized firms. This also leads to the small scale sector having to buy inputs from domestic firms at higher than 'world' prices hence making it extremely difficult for the small sector to compete in the export market. The smaller size firms also face considerable problems in access to institutionalised credit sources. The survey for Malaysia showed that 92 per cent of the capital invested by firms employing less than 50 workers was based on savings of family, relations or friends and the survey results reported for Thailand showed that again for firms employing less than 50 workers only 12.3 per cent of the initial capital came from the organised financial market.

Measures for the Promotion of the Small Scale Sector

We may conclude by summarising the main recommendations suggested in the different country studies presented in this volume. Firstly, there is considerable need to bring about significant changes in the overall macro-economic environment and present industrial promotional policies which discriminate against the small sector and lead to a capital using bias. Secondly, special promotional effects are needed to develop financial institutions and increase the access of small enterprises to finance, up-grade technology, improve product quality and develop managerial and other skills. Thirdly, marketing channels should be developed including special measures to promote exports from small scale enterprises. Finally, new institutional arrangements to increase the linkages between small enterprises and large ones should be developed and sub-contracting of labour intensive processes and assigning the production of components to small firms should be encouraged.

two

The Development of Labour Intensive Industry in the Philippines

Romeo M. Bautista

2.1 Introduction

There has long been a substantial public awareness in the Philippines of the severity of the employment problem. The necessity of "reducing the country's high unemployment rate" never fails to be mentioned in past and present national development plans.[1] As early as 1962, the national government had recognized the need to make it a "continuing policy and responsibility to utilize every possible means to create maximum employment opportunities for all who are able, willing, and seeking to work but cannot find employment.[2]

A natural accompaniment to the increasing number of unemployed and underemployed has been the growing incidence of poverty in the midst of an already low income economy. In view of such a direct link between poverty and labour force utilization, it hardly needs justification to assume that the generation of productive employment would be an effective measure in raising the economic condition of the affected households and in improving income distribution.

1 Average open unemployment rate in the Philippines was 7.4 per cent of the labour force during 1956-73, while average full-time equivalent unemployment (adjusting for underemployment) was 25.9 per cent; see R.L. Tidalgo, "Labour Absorption in the Philippines, 1956-1973", *Philippine Economic Journal*, XV (Nos. 1 & 2, 1976). Employing a labour utilization framework which takes into account open and "passive" unemployment, loss of productivity and mismatch of occupation and education, it was calculated that about one-half (50.4 per cent) of the Philippine labour force was utilized inadequately in 1968; see P. Hauser, "The Measurement of Labour Utilization", *Malayan Economic Review*, XIX (April 1974).

2 Quoted from Republic Act, No. 3466, better known as the Emergency Employment Act of 1962.

One potentially significant avenue for increasing the utilization of the labour force is the development of labour intensive industry. This would entail an improvement (in terms of both quality and quantity) in the participation of small enterprises in economic activities, wider adoption of labour intensive technologies and, for small open economies like the Philippines, greater exploitation of comparative advantage in the production for export of labour intensive manufactured goods.

In Section 2.2 of this paper, the relative importance of the manufacturing sector in the Philippine economy is examined in terms of its share in the net domestic product and total employment. Special attention is given to the potential output and employment contribution of small scale manufacturing. Section 2.3 goes on to discuss and evaluate the important economic policy measures affecting the industrial sector in the Philippines since the early 1960s and reveals certain biases in the overall development strategy.

Section 2.4 provides an analysis of "organized manufacturing" (consisting of establishments with 5 or more workers) utilizing data from the Annual Surveys of Manufacturers/Establishments (ASM/SE) conducted by the National Census and Statistics Office (NCSO).[1] Industrial structure, growth rates, capital-labour ratios, factor productivities, and export performance are some of the economic characteristics examined disaggregatively.

In Section 2.5 specific information on "unorganized" manufacturing enterprises and small scale establishments is provided, relating to their contributions to value added and employment, production specialization, links with large industry, and the nature of financing and marketing assistance recently extended to them by government agencies.

The paper concludes by indicating the broad directions for policy improvements in the manufacturing sector.

2.2 Manufacturing in the Philippine Economy

(a) *Share of Manufacturing in Output and Employment*

A common aspiration among developing countries throughout most of the postwar period has been to industrialise rapidly. In the Philippines the encouragement of manufacturing has been the thrust of economic policy incentives since 1949 when controls on imports and foreign exchange were imposed as an *ad hoc* response to a severe balance of payments problem.[2] Even after the lifting of controls in the early 1960s, the existing tariff system and indirect tax structure served to maintain the favoured position of manufacturing vis-a-vis other sectors producing tradable goods; this was strengthened in the 1970s by the fiscal incentives accorded by the Board of Investments to preferred areas of

1 Formerly, the Bureau of Census and Statistics (BCS).

2 See F.H. Golay, *The Philippines: Public Policy and National Economic Development* (Ithaca: Cornel University Press, 1971).

industrial production. Representing an overall measure of the net subsidy from policy incentives, the average effective protection rate (EPR) for manufacturing in 1974 has been estimated at 44 per cent [1], which is considerably higher than the EPR estimate of 9 per cent for agriculture and other primary sectors (including mining). As will be evident below, it is in the effective biases of the protection structure within the manufacturing sector heavily favouring import substitution at the finishing stages to the detriment of backward integration and exports that the basic problem of Philippines industrial promotion policies lay.

The consequence is that, while the postwar growth of manufacturing output had been fairly satisfactory on the whole, the industrial structure that had evolved could not provide an efficient basis for sustained manufacturing growth. Moreover, industrial labour absorption had been disappointingly low, attributable in part to the structure of incentives biased towards the use of capital and effectively discriminating against the growth of small scale industries and labour intensive manufactured exports. Lastly, it would appear that postwar industrial development in the Philippines had not contributed positively to the solution of the country's income distribution problem[2] and the main beneficiaries of past industrialisation policies had been the owners and managers of the large enterprises in manufacturing.[3]

According to the data presented in Table 2.1, the contribution of manufacturing to the country's net domestic product (NDP) has ranged since the early 1960s from 17.2 per cent to 19.4 per cent. Some stability of this share is discernible, especially during the first half of the 1960s which preceded the gradual increase (of about 3 percentage points) to a peak level of 20.8 per cent in 1974.

The contribution of manufacturing to total employment has remained fairly constant of about 11-12 per cent in the 1960s, as shown in Table 2.2A; however, there appears to have been a reduction of more than one percentage point from 1971 to 1974; an absolute decline in manufacturing employment during 1971-1973 can also be observed. Somewhat different information is provided by the Central Bank manufacturing employment index[4] shown in Table 2.2B, which indicates continuous upward movements annually from 1972 to 1977.

1 See N.A. Tan, 'The Structure of Protection and Resource Flows in the Philippines', unpublished Ph.D. dissertation, University of the Philippines, 1979.

2 From 1956 to 1971, the Gini coefficient had remained at around .50; moreover, the income share of the bottom 40 per cent families had fallen slightly from 12.6 per cent in 1956 to 12.1 per cent in 1961 to 11.9 per cent in 1971.

3 As pointed out by R.E. Baldwin, *Foreign Trade Regimes and Economic Development: The Philippines (New York: NEBR, Inc., 1975), p. 149.*

4 This index is derived from survey data gathered from 416 industrial establishments, presumably reflecting organized (but not household, informal, unorganized) manufacturing activities.

Table 2.1

Gross National Product and Net Domestic Product by Important Sectors

1961-1977

(Million Pesos at constant 1972 prices)

	1961	1965	1970	1974	1977
Agriculture	9,886	11,786	14,013	15,876	19,171
	(34.7)	(34.3)	(32.9)	(30.7)	(30.4)
Mining	362	402	819	1,038	1,256
	(1.3)	(1.2)	(1.9)	(2.0)	(2.0)
Manufacturing	4,904	5,914	7,954	10,532	12,210
	(17.2)	(17.2)	(18.7)	(20.4)	(19.4)
Construction	1,217	1,807	1,543	2,195	4,388
	(4.3)	(5.2)	(3.6)	(4.2)	(7.0)
Utilities	169	189	255	322	516
	(0.6)	(0.6)	(0.6)	(0.6)	(0.8)
Services[a]	11,952	14,283	18,052	21,700	25,527
	(42.0)	(41.5)	(42.3)	(42.0)	(40.5)
NDP	28,490	34,381	42,636	51,663	63,078
	(100.0)	(100.0)	(100.0)	(100.0)	(100.0)
GNP	32,242	39,520	50,035	64,663	77,628

Note: Figures in parentheses are percentage shares.

[a] consisting of transport, communication and storage, commerce and services.

Source: National Economic and Development Authority, *Philippine Statistical Yearbook*, 1978.

(b) *Inter-Industry Linkages*

The above discussion does not capture fully the importance of the manufacturing in the Philippine economy. No mention has been made thus far of the strong inter-industry linkages that this sector has with the other production sectors of the economy. Table 2.3 contains estimates of sectoral backward linkages (as measured by the gross output effects of a unit change in sectoral final demand) derived from a 13-sector breakdown of the Philippine economy in 1965. A very striking observation from the table is that the three manufacturing sectors (modern consumer goods, traditional consumer goods and other manufacturing) have greater backward linkages than the remaining sectors, excepting only construction. Estimates of total (direct and indirect) employment effects of an increase of 1 million pesos in sectoral final demand are also

Table 2.2A
Employed Person by Major Sectors
May 1961 - May 1974[a]

('000)

	1961	1965	1971	1973	1974
Agriculture	5,617 (59.2)	6,052 (59.9)	6,440 (51.2)	7,016 (52.9)	8,245 (56.9)
Mining	34 (0.4)	28 (0.3)	56 (0.4)	62 (0.5)	44 (0.3)
Manufacturing	1,113 (11.7)	1,221 (12.1)	1,472 (11.7)	1,418 (10.7)	1,508 (10.4)
Construction	251 (2.6)	299 (3.0)	4.67 (3.7)	522 (3.9)	403 (2.8)
Utilities	30 (0.3)	22 (0.2)	58 (0.5)	37 (0.3)	44 (0.3)
Services[b]	2,320 (24.4)	2,470 (24.4)	4,033 (32.3)	4,178 (31.5)	4,216 (29.2)
Others	122 (1.3)	9 (0.1)	29 (0.2)	29 (0.2)	19 (0.1)
Total	9,487 (100.0)	10,101 (100.0)	12,584 (100.0)	13,262 (100.0)	14,479 (100.0)

Note: Figures in parentheses are percentages.

[a] Excluding 1970 when no surveys were done in May.

[b] Includes commerce, transport, storage and communication, government community, business and recreational services, domestic services and personal services other than domestic.

Source: National Census and Statistics Office, *National Sample Survey of Households Bulletin* (various issues).

presented in Table 2.3. These would reflect the overall employment-generating capacity of the various production sectors. As might be expected, the agricultural sectors are generally the ones in which the most employment would be generated by a given increase in final demand, perhaps reflecting the low labour productivity in these sectors. It is worth noting, however, that the traditional (manufactured) consumer goods sectors has the second highest total employment effects. The lower values for modern consumer goods and other manufacturing would seem to indicate higher degrees of capital use relative to the other sectors.

Table 2.2B

Employment Indices for Manufacturing, 1972-1977

Year	Manufacturing
1972	100.0
1973	110.6
1974	119.0
1975	122.3
1976	126.1
1977	132.0

Source: Central Bank of the Philippines, *Statistical Bulletin* (December 1977).

Table 2.3

Estimates of Sectoral Backward Linkages and Employment Effects, 1965

Sector	Backward Linkages	Direct and Indirect Employment Effects[a] (in man- years)
1. Domestic food crops	1.150	1,322.6
2. Export crops	1.156	537.1
3. Livestock and fishing	1.381	761.4
4. Forestry	1.255	353.6
5. Mining and fuel	1.634	155.9
6. Modern consumer goods	1.928	276.0
7. Traditional consumer goods	2.027	948.0
8. Other manufacturing	1.959	262.1
9. Construction	1.970	293.1
10. Transportation and public utilities	1.704	336.2
11. Modern services and wholesale trade	1.316	115.2
12. Traditional services and retail trade	1.479	563.7
13. Government	1.025	265.0

[a] Estimates of total (direct and indirect) employment effects of an increase of 1 million pesos in sectoral final demand.

Source: Tables 173 and 174 in ILO: *Sharing in Development: A Programme of Employment, Equity and Growth for the Philippines* (Geneva, 1974).

In assessing the employment-generating potential of the manufacturing sector based on the foregoing discussion, it is necessary to take into account the distortions in the industrial structure and relative factor use created by the biases in the incentive system which, as indicated above (and to be further discussed below), favoured large scale, capital intensive industries. Removal of such distortions by appropriate policy actions would undoubtedly raise the labour-absorptive capacity of the sector.

(c) *Size Structure*

Appreciation of the potential significance of the manufacturing sector in labour absorption requires an understanding of its existing size structure. In terms of employment, the contribution of the "unorganized" manufacturing enterprises (with less than 5 workers) appears dominant (70 per cent). Large enterprises account for about 20 per cent of total manufacturing employment, the remaining 10 per cent being contributed by the small and medium sized enterprises. Thus, by international standards, there is a relative absence in the Philippines of a "normal" share of small and medium scale industrial activity.[1]

Table 2.4

Shares in Employment in Manufacturing by Establishment Size, 1969-71

Size of Establishment (employment)	Employment (percentage)
1 – 4	70.0
5 – 19	5.2
20 – 49	2.2
50 – 99	2.3
100 – 199	2.8
200 +	17.5

Source: Table 24 in ILO, *op. cit.*

The comparative growth of manufacturing employment by size of establishment is also quite revealing. As shown in Table 2.5 employment in unorganized manufacturing had grown only minimally (1.6 per cent per year on the average) during 1960-1971, small establishments had expanded employment at an annual rate of 2.8 per cent, while the "large establishments" (with 20 or more workers, using the NCSO definition) had employment gains of 5.4 per

1 See ILO, *op. cit.*, p. 539.

Table 2.5

Rates of Employment Growth in Manufacturing by Establishment Size, 1960-71

Size (employment)	Employment (thousands)		Annual Growth Rate (percentage)
	1960	1971	
Organised			
5 – 19	50	68	2.8
20 +	199	354	5.4
Sub-total	249	422	4.9
Unorganised			
1 – 4	859	1,021	1.6
Total	1,108	1,443	2.4

Source: Table 24 in ILO, *op. cit.*

cent annually. The much higher employment growth rate in the latter is due to the rapid expansion of large industry fostered by past industrialisation policies; however, it did not represent a significant contribution to industrial labour absorption because of the very low share of large establishments in total manufacturing employment as noted above.

There is every reason to expect that the employment-generating capacity of the large scale manufacturing subsector is even more limited at this time. The ILO Report, for example, has concluded that large industry in the Philippines is already fully developed for a country with such low per capita income.[1] At best it could expand output at rates comparable to past growth; even so, the present highly capital-using character of large scale industry would seem to preclude a very substantial amount of labour absoption. The brunt of industrial employment generation has to be placed, therefore, on the small and medium-scale industries, as yet an untapped source in the Philippine context. Their successful development would mean a significant reduction in underemployment among already employed workers in the unorganized subsector and small scale manufacturing as well as increases in the number of persons employed, thus improving the income prospects of the bulk of the work force in the manufacturing sector.

Would the expansion of small and medium scale industries for employment creation entail a sacrifice in potential manufacturing output? In answering

[1] ILO, *op. cit.*, pp. 539-541.

this question, one has to make an evaluation of the comparative efficiencies in the use of scarce resources in manufacturing by size structure. The ILO Report has done something along this line, measuring average capital productivities of 51 ISIC manufacturing industries at the 4-digit level by the ratio of value of capital. The interesting finding is that industries easily identified as small or medium scale and highly labour intensive show much higher values of capital productivity relative to the average value for all industry.[1] One may reasonably argue therefore that their active promotion at this time would induce rather than prevent a higher rate of growth of industrial output.

(d) *Export*

For a small, open economy saddled with heavy unemployment and underemployment, economic prospects should be made favourable for industrial exports to provide the long-run basis for output growth and labour absorption. On both counts, however, export-oriented manufacturing industries in the Philippines had not performed very well through the 1960s. The average growth rate of manufactured exports during 1954-1969 was 7.6 per cent,[2] which is low compared to the export performance of developing countries in general which, according to one source, showed an average annual rate of increase of at least 11 per cent during 1953-1965.[3] It is extremely low when compared say to the phenomenal rates of export expansion in the 1960s experienced by South Korea (38.9 per cent).

Employment generation in Philippine export industries was hindered not only by the relative stagnation of output but also by the low labour absorptive capacity generally exhibited by these industries in the past. One would have thought that the labour-surplus character of the Philippine economy will make it comparatively advantageous to export labour intensive goods. There is empirical evidence, however, that the relatively more labour-using industries have had lower rates of export growth from 1954 to 1969.[4]

The concetration of Philippine exports in a few principal commodities is evident from the data contained in Table 2.6. In the 1960s, for example, fully three-quarters of the country's export earnings were contributed by five primary commodities (sugar, logs and lumber, copra, coconut oil and copper concentrates). In the 1970s a marked expansion occurred in non-traditional manufactured exports (Table 2.7), as well as in some non-principal primary exports (e.g. nickel, gold fish, coffee and oil seeds), which partly explains the significant decline in the contribution of the principal export commodities. It is particularly

1 ILO, *op. cit.*

2 See R.M. Bautista, "Employment Effect of Export Expansion in the Philippines", *Malayan Economic Review*, XX (April 1975).

3 H.B. Lary, *Imports of Manufactures from Developing Countries* (New York: NBER, Inc., 1968).

4 Bautista, (1975), *op. cit.*

remarkable that there was export expansion of manufactures at an annual rate of well over 30 per cent after 1974 when export prices were increasing only minimally, if not actually decreasing.[1] This occurred even in the face of recessionary conditions and growing protectionist policies (directed specifically against labour intensive manufactured exports of developing countries) in developed country markets.[2]

One reason for the much improved performance of non-traditional manufactured exports in the 1970s compared to the preceding decade has been the increased profitability of export production due to the various policy measures adopted in the early 1970s aimed directly at stimulating industrial exports. This will be taken up in greater detail in the next section.

Table 2.6

Principal Exports of the Philippines, 1961-1977
(per cent of total exports)

Commodity	1961	1965	1969	1973	1977
Logs and lumber	18.4	21.0	26.4	18.0	6.4
Copra	17.6	22.1	10.2	8.8	6.4
Sugar	28.2	17.7	17.5	14.6	16.2
Coconut oil	8.2	8.8	5.9	8.0	13.1
Copper concentrates	5.4	6.0	15.5	14.6	8.5
Copra cake and meal	0.8	1.5	1.0	1.1	1.8
Bananas	0.0	0.0	0.1	1.5	2.3
Total principal exports					
per cent	76.5	79.7	78.4	68.3	57.6
$ million	382.1	612.4	670.0	1,288.3	1,814.9
Total exports					
per cent	100.0	100.0	100.0	100.0	100.0
$ million	499.5	768.4	854.6	1,886.3	3,150.9

Source: Central Bank of the Philippines, *Statistical Bulletin* (various issues).

While the recent growth of Philippine exports of labour intensive manufactures has been impressive, the impact on total manufacturing value added and employment could not have been very significant on account of the small share of non-traditional manufactured exports to total manufacturing output (9.1 per cent in 1974). However, if the sharply rising trend continues through the next decade, Philippine exports of labour intensive manufactured goods will increasingly become a major contributor to the solution of the country's employment problem.

1 The export price index declined by 20.4 per cent in 1975 and by 12.4 per cent in 1976, rising by 1.5 per cent in 1977. This would not, however, accurately reflect export price changes in non-traditional manufactured goods in view of their small share (about 12 per cent) in the export commodity basket.

2 World Bank, *World Development Report, 1978* (New York: Oxford University Press, 1978), pp. 13-19.

Table 2.7
Non-traditional Manufactured Exports, 1970-1977
(in million US dollars)

Item	1970	1971	1972	1973	1974	1975	1976	1977
Building elements and fixtures	1.0	0.7	1.6	0.5	1.3	1.9	3.4	5.6
Cement and other non-metallic mineral products	3.3	10.3	7.9	24.9	36.5	32.4	27.8	38.4
Chemicals and products	5.2	6.2	6.2	10.0	15.2	21.2	26.3	51.8
Clothing	0.4	0.7	2.4	11.4	23.7	33.1	80.6	113.7
Electric machinery and appliances	0.03	0.4	1.8	0.9	2.1	2.7	7.1	18.8
Footwear	0.4	0.7	1.2	2.1	3.7	3.0	5.2	10.2
Furniture and fixtures	1.4	1.4	1.7	3.3	6.1	5.2	9.8	21.8
Machinery and parts (exc. electrical)	0.6	1.8	3.0	2.3	4.2	6.8	7.0	21.3
Metal products	1.0	0.9	1.4	2.4	3.2	3.4	3.8	6.3
Oil products	17.3	24.2	19.3	16.0	17.3	37.4	22.4	18.9
Paper and products	0.3	0.4	1.9	9.1	5.0	0.7	0.4	0.4
Textile products (exc. clothing)	5.4	6.9	8.5	24.3	20.1	22.0	28.2	33.9
Transport equipment	0.1	0.3	0.2	1.4	1.3	2.7	8.4	14.2
Travel goods, handbags, etc.	0.9	0.8	1.7	4.5	7.6	10.2	22.8	6.0
Miscellaneous	4.3	5.3	8.4	20.0	23.3	46.3	51.5	60.1
Total	41.6	61.0	67.2	148.8	170.6	229.0	304.7	421.4
(Annual percentage change)	(27.6)	(46.6)	(10.2)	(21.4)	(14.7)	(34.2)	(33.1)	(38.3)

Source: Central Bank of the Philippines, *Statistical Bulletin* (December 1977).

2.3 Economic Policies Affecting Industries

(a) *Exchange rate and tariff policies*

Throughout most of the 1960s the overvaluation of the domestic currency and restrictive tariff policy had dominated the economic policy climate under which industrial decisions were made. This created differential incentives to different production activities. Since non-tradables were effectively favoured by the undervaluation of foreign exchange and import substituting industries received heavy protection from the tariff system, export industries were doubly discriminated against. Effective tariff protection was, moreover, strongly biased toward consumer goods production at the finishing stages due to the "cascading" tariff structure (i.e., having higher rates on import commodities with higher degrees of processing), discouraging therefore backward integration of manufacturing industries.

The floating of the domestic currency in February 1970 which resulted in the *de facto* devaluation from 3.9 to 6.4 pesos per U.S. dollar at the end of the year raised export profitability, particularly in the non-traditional export products.[1] This would seem to account in large measure to the much improved performance of labour intensive manufactured exports in the 1970s compared to the preceding decade as noted above.

Based on estimates of the "effective exchange rate" (EER), representing the number of pesos actually paid or recieved per dollar, for various trade transactions, the export EERs increased by 32 per cent for traditional exports and 57 per cent for non-traditional exports, and then moved up further in 1971 by roughly 11 per cent for either export category.[2] An even better measure of exchange rate as it relates to the profitability of export production can be achieved by multiplying the EER by the ratio of the unit export value index (in dollar terms) to the domestic wholesale price index. This is the "purchasing power parity (PPP)-EER" for which estimates[3] for 1970-1971 were higher by 40 per cent for traditional exports and 65 per cent for new exports relative to the corresponding average PPP-EERs during 1967-1969. There can be no doubt, therefore, that the policy measures adopted in the early 1970s had considerably enhanced the attractiveness of export production vis-a-vis domestic sale.

Table 2.8 contains basic data showing annual values from 1970 to 1977 of the average (floating) exchange rate, export price (unit value) index wholesale price index and industrial wage rate index for common labourers. An adjusted exchange rate was calculated (labelled I in the table) for each year by multiplying the average exchange rate by the export price index and dividing by the wholesale price index. It is seen from the fourth line of the table that significant

1 As part of the 1970 devaluation package, export taxes ranging from 4 to 10 per cent *ad valorem* were imposed on traditional export commodities.

2 See Baldwin, *op. cit.*

3 Baldwin, *op. cit.*

Table 2.8

Adjustment of Export Exchange Rates, 1970-1977

	1970	1971	1972	1973	1974	1975	1976	1977
1. Average exchange rate (pesos/U.S. dollar)	5.91	6.43	6.67	6.67	6.79	7.25	7.44	7.40
2. Export price index (in dollar terms)	100.0	95.0	90.0	131.3	218.1	173.5	151.9	154.2
3. Wholesale price index (in peso terms)	100.0	115.7	127.4	158.6	245.9	252.1	270.4	293.5
4. Adjusted exchange rate I = (1) x (2) ÷ (3)	5.91	5.30	4.71	5.60	6.02	4.99	4.18	3.89
5. Industrial wage rate index for common labourers	100.0	106.8	113.1	116.1	125.3	135.8	142.9	150.3
6. Production cost index = .8 x (3) + .2 x (5)	100.0	114.0	124.5	150.1	221.8	228.9	244.9	264.9
7. Adjusted exchange rate II = (1) x (2) ÷ (6)	5.91	5.36	4.82	5.91	6.68	5.49	4.61	4.31

Source: Central Bank of the Philippines, *Statistical Bulletin* (December 1977).

reductions in the adjusted rate for exports had occured since 1974; over the subsequent three-year period it fell from 6.02 to 3.89, representing a 35 per cent decline.

The last line of Table 2.8 shows an alternative set of estimates of the adjusted exchange rate (labelled II) using a production cost index as adjustor instead of the wholesale price index.[1] Again a continuous decline is indicated after 1974. While the 1977 level is now higher (4.31 vs. 3.89), the extent of reduction from the computed value in 1974 (6.68) has been also 35 per cent.

The foregoing findings broadly suggest that, while the profitability of exporting relative to domestic sale had increased (especially for labour intensive manufactured goods) after the *de facto* peso devaluation in 1970, there has been a sustained erosion in the more recent years. Unless offsetting policy measures are adopted, this might serve to break the momentum of the generally impressive growth of the country's new industrial exports achieved in the 1970s.

The latest reform in the Philippines tariff code took effect on 1st January 1973, which simplified the previously very complicated tariff schedule by reducing the number of tariff rates to only six (a "basic revenue rate" of 10 per cent and a "five-level schedule of protection rates"). It raised import duties on 796 items in the old tariff code, reduced them on 451 items and left unchanged the tariff rates in 392 cases.[2] Except for occasional revisions of tariff rates on specific import commodities through Executive Orders as recommended by the tariff commission, no important tariff changes have since been implemented.

A recent study[3] on effective protection in the Philippines reports that the pattern of EPRs based on the existing tariffs and indirect taxes[4] in 1974 had remained essentially the same as that in 1965. Three elements of bias are shown to have persisted: "First, the bias in favour of manufacturing over other sectors; second, the penalty given to exports, both within manufacturing as well as in non-manufacturing industries; and third, the bias in favour of the finishing stages of producing consumption goods over intermediate goods, and especially, over capital goods".[5] The following average EPR values for the three industry categories have been obtained; consumer goods 77 per cent, intermediate goods – 23 per cent and capital goods – 18 per cent.

Are the highly protected industries relatively efficient in the use of domestic resources? A relevant measure in this regard is the domestic resource cost (DRC), which is essentially a cost-benefit ratio representing the soical valuation of domestic resources used per unit of net foreign exchange earned (or

1 The calculation of "adjusted exchange rate II" is also based on the assumption, suggested by ASE data, that the ratio of payrolls to cost of materials for export-oriented industries is ¼.

2 See ILO, *op. cit.*, p. 113.

3 Tan, *op. cit.*

4 Indirect taxes have tended to generally strengthen, but not to dominate, the nominal proection due to tariffs alone.

5 Tan, *op. cit.*, p. 62.

saved) by the production of an export (or import-substituting) commodity.[1] Positive rank correlation between EPR and DRC estimates for corresponding input-output sectors has been established for both 1969 and 1974,[2] implying that high cost industries were generally receiving heavy protection while others efficient in saving or earning foreign exchanged were effectively being penalized. Another interesting finding is the negative relationship between DRC and export orientation: this indicates that exporting industries (which had an average EPR of 4 per cent, vs. 61 per cent for nonexporting sectors in 1974) were on balance relatively efficient in the use of domestic resources. The underlying reason might be that competition in export markets forces firms to be cost conscious, while the highly protected domestic market induces complacency in domestic resource use among inward-oriented industries.

(b) *Fiscal incentives*

The sluggish growth of manufacturing in the 1960s increasingly made clear to Philippine policy makers the need to intensify industrial promotion efforts. This found initial expression in the enactment of the Industrial Incentives Act of 1967, which created the Board of Investment (BOI) empowered to determined preferred areas of investment and to administer the granting of fiscal incentives to BOI-registered enterprises. Three years later, more fiscal incentives were offered to exporters with the enactment of the Export Incentives Act of 1970 which made more explicit and comprehensive government efforts to stimulate nontraditional manufactured exports.

Five items in the package of BOI incentives can be judged to have a capital-cheapening effect. These are:

(1) Tax exemption on imported capital equipment within seven years from the date of registration of the enterprise. This reduces the cost of acquiring imported capital, given present tariff rates and compensating tax, from 10 to 20 per cent depending on the type of capital good.

(2) Tax credit on domestic capital equipment equivalent to 100 per cent of customs duties and compensating tax that would have been paid on imports of such items.

(3) Accelerated depreciation allowances, as a deduction from taxable income. This permits fixed assets to be depreciated up to twice as fast as the

1 For two seminal contributions to the DRC literature, see M. Bruno, *Interdependence, Resource Use and Structural Change in Israel* (Jerusalem: Bank of Israel, 1963) and A.O. Krueger, "Some Economic Costs of Exchange Control: The Turkish Experience", *Journal of Political Economy*, LXXIV (October 1966).

2 R.M. Bautista and G.R. Tecson, "Domestic Resource Costs in Philippine Manufacturing: 1969 and 1974", Special Paper No. 5, in R.M. Bautista, J.H. Power and Associates, *Industrial Promotional Policies in the Philippines* (Makati: Philippines Institute for Development Studies, 1979).

normal rate if expected life is 10 years or less or depreciated over at least 5 years if expected life is more than 10 years.

(4) Tax deduction of expansion reinvestment to the extent of 25 to 50 per cent in the case of non-pioneer projects and 50 to 100 per cent in the case of pioneer projects.

(5) Preference in grant of government loans. This permits BOI-registered firms to have preferential access to low interest credit.

There is one incentive provision that appears to favour labour employment, namely, the deduction from taxable income one-half of the expenses of labour training (not exceeding 10 per cent of direct labour wage). But this would be true only in cases where the labour skill acquired can substitute for, rather than be complementary to, capital services. Exporting firms, moreover, are provided a wage subsidy equal to the direct labour cost in the manufacture of export products but not to exceed 25 per cent of the export revenue.

Other benefits afforded to registered enterprises relate less directly to the relative costing of factors. The following incentives seem neutral with respect to factor use: (1) deduction from taxable income all organizational and pre-operating expenses; (2) deduction of net operating loss incurred in any of the first 10 years of operations; (3) exemption from all internal taxes, except income tax, to a diminishing extent over time; (4) for pioneer enterprises, post-operative tariff protection up to 50 per cent of the dutiable value of imported items similar to those being produced; and (5) for exporting enterprises, tax credit equivalent to the sales, compensating and specific taxes and duties on supplies and materials used in the manufacture of the export products. It should be noted, however, that the distribution of benefits obtained from BOI registration is highly skewed toward large-sized firms, which are inherently the more capital-using. Thus, indirectly, such subsidies to favoured industries also tend to accentuate the existing bias against labour use.

BOI data indicate that, as of December 1977, there were 249 Investment Priority Plan (IPP) – registered firms with fixed assets worth 17.1 billion pesos, value added of 2.5 billion pesos and employment of 119 thousand workers; on the other hand, the 310 Export Priority Plan (EPP) – registered firms had fixed assets worth 7.5 billion pesos, value added of 4.9 billion pesos and employment of 110 thousand workers. For the entire manufacturing sector, value added and employment in 1977 were 37.8 billion pesos and 1,680 thousand, respectively. Therefore, BOI-registered firms made up less than 20 per cent of value added and less than 15 per cent of employment in Philippine manufacturing. These percentages necessarily overstate the actual contributions of BOI-registered enterprises to manufacturing value added and employment in view of the inclusion of some mining activities (of undetermined magnitude) among firms receiving BOI incentives.

It has been shown that BOI incentives have significant effects on the rate of return (increasing by 7-14 percentage points), user cost of capital (decreasing by 39-42 per cent) and labour employment (decreasing by about 22 per cent) of

enterprises receiving such incentives.[1] The calculations are however based on "other things remaining the same," including total investment which might have increased as a result of the availment of BOI incentives. In such a case the estimated employment loss of 22 per cent would be an overestimate since it considers only the adverse substitution effect on employment from more investment. On the other hand, available investment funds might well have been the same due to an effective supply constraint. Moreover, if the comparison is between actual BOI incentives and incentives which are neutral with respect to factor use (instead of no incentives whatsoever), then only the substitution effect is relevant in the calculation of employment foregone due to the granting of BOI incentives.

Making use of the actual availability of BOI incentives in 1974, the quantitative effects on effective protection involving 74 input-output sectors which received effective subsidies totalling ₱378 million have been calculated.[2] While some BOI-registered firms have received a large subsidy in relation to the individual firms' value of output, the study would seem to indicate an insubstantial subsidy rate for the industry (i.e., input-output sector) as a whole, the tariff equivalent of tax subsidies averaging less than 5 per cent. Thus the ranking of sectoral EPRs and patterns of effective protection distinguished by commodity group as indicated above have remained basically unchanged even after the inclusion of BOI subsidies to favoured industries.

The conclusion seems clear from the foregoing discussion that the fiscal incentives accorded to BOI-registered enterprises do not constitute a significant offset to the biases of the existing incentive structure. What is warranted from a policy viewpoint would be a direct attack on the sources of the distortions, namely, the tariff system and the indirect tax structure. This would avoid not only the high cost and limited effectiveness of compensatory policy action through bureaucratic promotion of specific industries but also the undesirable side effects noted above on relative factor use and size structure that BOI incentives appear to have caused (which on balance had tended to encourage large-scale capital-intensive industries). It is certainly consistent with the general proposition that the most efficient policy measures are those which have their direct impact as close as possible to the source of the distortions that they are designed to correct.

(c) *Price and wage policies*

Following the sharp price increase induced by the *de facto* peso devaluation in February 1970, the Price Control Law in the Philippines was enacted in April and was extended, reflecting the perceived need to contain the inflationary

1 R.G. Gregorio, 'An Economic Analysis of the Effects of Philippine Fiscal Incentives for Industrial Promotion', unpublished Ph.D. dissertation, University of the Philippines, 1979.

2 Tan, *op. cit.*

pressure in more recent years, by Congress in 1971 and by presidential decrees in 1973 and 1975. It established the Price Control Council, which was empowered to fix maximum selling price of several basic commodities[1] representing in principle the cost of production (or landed cost, if the commodity is imported) plus specified markups for the producer (or importer), wholesaler and retailer. Enforcement of these price ceilings was through legal penalities, i.e., imprisonment and/or fines. For certain commodities like rice and fertilizer, price control was also sustained by government subsidies and, under conditions of severe shortages, rationing had been resorted to – as in the recent past for rice, gasoline and diesel fuel. The practice of 'socialized pricing' served to provide low ceiling prices for certain types of goods consumed by poor families at the same time that more expensive grades were left uncontrolled. In the same spirit, rents on dwellings not above ₱ 300 per month were frozen in 1972.

The protection of low-income groups has been the principal motive not only of government price control but also of wage regulation. In 1970 the minimum daily wage rates[2] were adjusted significantly upward to: ₱ 8 for nonagricultural employees (from the previous level of ₱ 6): ₱ 6 for sales and service employees in "small" establishments (of not more than 5 workers): P 5 for local government employees; and ₱ 4.75 for agricultural workers. The pressure to raise wages was also felt during the more recent inflationary period. In 1974 the national government found it necessary to initiate the granting of an emergency allowance of ₱ 50 per month for every employee with a monthly income of ₱ 600 or less; this was made mandatory for all employers eventually. A 10 per cent increase followed for all national government employees effective July 1, 1975, while private employers were required to give an extra one month's pay annually. The Wage Commission had also issued orders for several industries to adopt specific minimum wage rates higher than the national level.[3]

These wage adjustments have not been adequate to match the erosion of purchasing power during the inflationary period of the 1970s,[4] which proved the ineffectiveness of the price control. Petitions of local producers and importers for price increases of commodities subject to price regulation would be

[1] The commodity list has included rice, corn, fresh meat, canned fish, sugar, flour, milk, cooking oil, plywood, common drugs, galvanized iron sheets, laundry soap, writing pads and notebooks, antibiotics and kerosene, among others.

[2] Statutory minimum wages are applicable to all employees except tenant farmers, unpaid family workers and persons working in their respective houses in any cottage industry registered under special legislation.

[3] Namely, ₱12 for jeepney transport in Metro Manila, ₱9.20 for copra, ₱9.25 for coconut oil products, and ₱6.80 and ₱11.00 for agricultural and processing activities in the sugar industry.

[4] Skilled industrial workers suffered a loss in real purchasing power (wage rate deflated by the CPI) by 30 per cent, unskilled workers by slightly less, during 1970-1977, see R.M. Bautista, "Structural Change in the Philippines", Chap. VII in L. Krause and S. Sekiguchi (eds.), *Economic Interaction in the Pacific Basin: The United States and Japan with Australia, Korea, the Philippines and Thailand* (Washington, D.C.: The Brooking Institution, 1980).

submitted and invariably approved by the Price Control Council. Indeed it appears doubtful whether the free market price could have been different from the imposed ceiling price, which tended to be revised frequently.

The most recent episode of substantial domestic price rises occurred in March-April 1979 in the wake of the oil price increases posted by the OPEC. [1] The Central Bank's CPI for Metro Manila climbed up by 4.9 per cent in April to a level higher by 17 per cent than that in April 1978, representing the highest month-to-month increase since July 1974, the year when the annual inflation rate accelerated to an unprecedented 34 per cent. Government-controlled prices on such commodities as rice, sugar, canned milk, gasoline and cement were allowed to rise by 15-50 per cent. On the other hand, minimum wage rates were adjusted by roughly 25 per cent.

The differential effects on demand for the products of large and small scale industries of the relative shift in purchasing power away from low-income households is not easy to evaluate. But it seems probable, in view of the fact that large industry is oriented to the consumption pattern of high-income groups, that small industry production has been effectively constrained from the demand side as a result of the reduced real earnings of low-income wage earners.

(d) *Regional dispersal of industries*

One consequence of industrialisation policies in the 1950s and 1960s has been the severe geographic concentration of manufacturing industries. The favoured industries relied heavily on imported raw materials and equipment, so there was a strong inducement to locate plants near the source of supply, i.e., Manila, the principal port. Tax and credit favours were moreover obtainable from the financial and government institutions in Metro Manila hence even resource-based producers in the outlying regions had to maintain large offices there.

In 1974, 62 per cent of manufacturing value added was contributed by the Metro Manila area and the adjacent Southern Tagalog region; two other regions (Western Visayas and Central Luzon) accounted for about 20 per cent, while at the opposite extreme Bicol, Cagayan. Eastern Visayas and Western Mindanao jointly contributed only 1.7 per cent. A similar pattern of geographic concentration is also revealed by the distribution of manufacturing establishments and employment, Metro Manila and Southern Tagalog accounting for 67 per cent of the total number of either establishment of workers.

Such concentration of manufacturing activity, which persisted over the postwar period, has contributed to the uneven economic growth among the regions of the country, creating a wide gap in industrial employment and income opportunities across regions. This is reflected in the pattern of average regional

[1] The Philippines relies heavily on imported oil as energy source, which supplies about 95 per cent of current energy requirements.

family incomes[1] and of gross regional domestic products per capita[2], indicating that the levels for the six poorest regions are each less than one-third of that for Metro Manila and Southern Tagalog.

The first explicit policy measure promoting regional dispersal of industries took the form of two incentives accorded export producers, under the Export Incentives Act of 1970, whose plant is located in an area designated by the BOI as necessary for proper dispersal of industries or deficient in infrastructure, public utilities and other facilities. The incentives are: (1) tax deduction of an amount equivalent to the cost and maintenance of necessary infrastructure works undertaken by the export producer; and (2) deduction from taxable income for five years of an amount equivalent to double its direct labour cost. Apparently, these incentives have not been well appreciated: As of December 1977, about 79 per cent of the total number of BOI-registered firms under the Act located themselves in Metro Manila and Southern Tagalog.

In December 1973 a presidential memorandum circular ordered the Human Settlements Commission (HSC) "to see to it that there shall be no more factories, plants, industries and the like to be established within a 50-kilometer radius of Manila. In the implementation of this requirement, however, the BSC has allowed wide scope for exemptions, including an arrangement with the BOI to grant exemptions to firms if, among other things: (1) production cost would increase by at least 15 per cent if the plant were located outside Metro Manila; (2) it is crucial for the firm's operations to be near an international port and (3) the firm's location is a resettlment area within the 50-kilometer radius of Manila.[3] The fact that a substantial number of manufacturing plants continue to be located within the prohibited area would imply the ease of securing exemptions and that the 50-kilometer radius ban has been ineffective in fostering industrial dispersal.[4]

Other measures are promotional in nature, such as the experimental regional development programme in Northern Mindanao, the establishment of the Bataan Export Processing Zone and plans to create other areas of industrial concentration outside Metro Manila. While they may have had a positive impact, no significant change in the regional distribution of industrial investments and employment have come about. It is perhaps not far-fetched to hypothesize that regional balance in industry would result only from a shift in the industrial structure away from very large, capital intensive industries to the

1 See R.M. Bautista, "Industrialisation and Public Works for Labour Absorption", *Philippine Review of Business and Economics*, X.(December 1973).

2 See P.B. Moran, 'A Policy Evaluation of Regional Dispersal of Manufacturing in the Philippines', unpublished M.A. Thesis, University of the Philippines, 1979.

3 Moran, *op. cit.*, p. 68.

4 There have also been location limitations imposed by the BOI on specific industries, e.g., the registration requirement that new textile mills be located outside Metro Manila, which "appear not to have had a strong influence on plant location choices", *Ibid.*, p. 68.

small scale, labour intensive enterprises producing goods for mass consumption and export.

(e) *Establishment of specific industries*

Under the Investment Incentives Act of 1967 and the Export Incentives Act of 1970 the BOI designates preferred areas of industrial investments and grants incentive to enterprises registered under its Investment Priorities Plan (IPP) and the Export Priorities Plan (EPP). The eight IPP and sixth EPP, applicable to the investment programme during 1976-1979, list 130 and 61 priority areas, respectively. In view of the above discussion concerning the large scale, capital intensive orientation of BOI incentives, it is not surprising that one study has found the programme to be heavily biased against labour intensive projects. "The capital labour ratio of ₱ 500,000 (US$71,000) per worker (at 1974 prices) for the programme as a whole is one rarely found in countries at a similar stage of development". [1] What is surprising is that the average capital worker ratio is found much higher than in previous years (₱ 200,000 in 1968-1972 at 1974 prices), which is explained by the shift from agro-processing and engineering goods to highly capital intensive mineral-based and chemical industries.

The large capital intensive projects included in the investment programme are shown in Table 2.9. The total cost is about ₱ 30 billion (US$ 4.3 billion), the three largest projects (integrated steel plant, petrochemical complex and the commonwealth Aluminum Company) accounting" already for about two-third of the total cost. A breakdown of the estimated total investment requirement of ₱ 46.3 billion indicates that about 53 per cent will go to large import-substituting projects (steel plants, fertilizers, petrochemicals, pulp and paper, and shipbuilding), 32 per cent to mineral exporting industries (mainly, alumina, nickel and copper), and the remaining 15 per cent to other exporting industries (wood processing, sugar, coconut oil and other agro-based products).

Philippine participation in ASEAN industrial co-operation will entail also investment in large scale, highly capital intensive industries. The phosphate fertilizer project, the first ASEAN region project allocated to the Philippines, is still being evaluated for commercial feasibility. It would use as principal raw materials sulfuric acid from the proposed national copper smelter and imported phosphat rock. Two cases are being studied: (1) a 410-metric ton per day (mtpd) phosphoric acid plant, at an estimated investment cost of US$ 44.1 million; and (2) a 225-mtpd phosphoric acid plant with 60 mtpd nitrophosphatic fertilizer granulation plant costing $ 65.2 million. Increasingly becoming the Philippine choice for its first ASEAN regional project (in place of the phosphat project), a newsprint plant is envisaged with a capacity of 350 thousand metric tons per year at an investment cost of $ 354 million. This is four times the

[1] World Bank, *The Philippines Priorities and Prospects for Development* (Washington, D.C., 1976).

Table 2.9

Major Industrial Projects (Approved or under Consideration)

Industry	Annual capacity (thousand metric tons)	Estimated cost (millions of pesos)
Mining export		
Rio Tuba Nickel (mining)	500.0	148
Atlas (copper smelting, refining)	131.0	1,673
Marinduque Mining Industrial Corporation-Lepanto (copper smelting, refining)	84.0	1,218
Apex (magnetite iron sand mining)	300.0	n.a.
Mindanao Alloy Corporation (ferrosilicon plant)	28.0	130
Commonwealth Aluminum Company	1,300.0	4,648
Agro-based export		
Wood-processing programme	1,800[a]	2,435
Sugar mills (4)	n.a.	1,120
Import substitution		
Integrated steel plant	2,000.0	7,700
Aluminum Corporation of the Philippines	20.0	208
Atlas Fertilizer (expansion of complex fertilizer production)	n.a.	350
Urea fertilizer	1.5 a day	1,400
Philipping National Oil Company	n.a.	7,000
Agusan Pulp and Paper Corporation	0.5	609
Shipbuilding programme	71 units	779

Notes: n.a. = not available

[a] = cubic meters of logs.

Source: Table 8.6 in World Bank, *op. cit.*, p. 198.

capacity of the existing newsprint plant which supplies about 95 per cent of the country's newsprints consumption.

Despite the avowed primary objective of industrial growth "for employment generation", the *Five-Year Philippine Development Plan, 1978-1982* has allocated the bulk (about two-thirds) of total investment funds in the industry sector to large-scale, capital-intensive projects. One would hope that the growth-enhancing effects on the national economy of these projects would at least compensate for their low labour-absorptive capacity.

2.4 The Organised Manufacturing Sector

(a) *Industrial Structure*

Table 2.10 contains selected economic data for 1974 (the latest year for which NCSO survey data are available) among organized manufacturing industries in the Philippines at the 2-digit ISIC level. The dominance of the food group is evident in each of the data sets. In sales and value added three industries stand out after the food group, namely, textiles, chemicals and petroleum products, among which the petroleum industry has the lowest level of employment (indeed, among all the manufacturing branches distinguished in the table).

Textile manufacturing is also seen to employ the second largest number of workers in 1974, having about three times the employment level in the chemical industry, by size of fixed assets held it ranks third behind food and nonmetallic mineral products (mainly cement). The smallest contributors to fixed capital are the well-known labour intensive industries, namely, leather and leather products, furniture and fixtures, and footwear and other wearing apparel; the last mentioned of these three industries constitutes the fourth largest source of manufacturing employment.

That working capital is an important consideration in manufacturing activity is suggested by the observation that the ratio of inventories to the book value of fixed assets is .64 on the average. The textile industry follows the food group in the ranking by value of inventories held. Not far behind is chemicals, and further down are the basic metal industries and transport equipment. Values of the inventory-fixed equipment ratio greater than unity are observed for the three aforementioned industries as well as for electrical machinery. While the ratio of inventories to sales is .16 for the entire sector, certain industries have markedly higher values, e.g., textile manufactures, electrical machinery and transport equipment which have a ratio higher than .27; on the other side the food group is seen to have the lowest ratio of only .11.

As is evident from Table 2.11, the relative importance of individual industry groups in total organized manufacturing value added had remained essentially the same since the mid-1950s. For instance, food manufactures, beverages and tobacco products are seen to account for slightly more than 40 per cent consistently from 1956 to 1974. It would appear that the period 1948-1956 witnessed the major changes in the industrial structures the food

Table 2.10

Value of Shipments, Value Added, Value of Fixed Assets, Value of Inventories and Employment for Organised Manufacturing by Industry Group, 1974

Industry	Value of Shipments (₱ million)	Value Added (₱ million)	Book Value of Fixed Assets (₱ million)	Value of Inventories (₱ million)	Employment (1,000)
Food manufactures, beverages and tobacco products	17,555.3	6,700.7	3,178.3	1,817.8	152.6
Textile manufactures	3,023.3	1,186.6	1,143.3	898.1	86.9
Footwear and other wearing apparel	297.7	174.6	98.8	77.2	42.2
Wood and cork products	1,116.7	485.1	507.1	197.5	42.7
Furniture and fixtures	171.5	75.3	49.5	31.7	11.5
Paper and paper products	1;462.8	549.6	701.1	272.0	12.1
Publishing and printing	530.7	263.1	161.0	79.0	14.6
Leather and leather products	57.8	17.8	14.7	11.6	2.3
Rubber products	693.5	320.6	174.2	156.5	13.0
Chemicals and chemical products	3,493.6	1,567.6	684.6	786.5	28.8
Products of petroleum and coal	5,892.3	1,280.8	802.6	358.7	1.3
Non-metallic mineral products	1,500.4	640.0	1,793.1	320.2	25.5
Basic metal industries	2,021.7	548.0	394.7	585.5	16.6
Metal products	1,160.3	338.8	184.5	221.8	17.7
Machinery except electrical	436.7	323.1	131.2	85.8	12.0
Electrical machinery	1,091.1	475.4	193.7	301.3	19.3
Transport equipment	1,512.1	461.1	230.0	417.2	15.3
Miscellaneous manufactures	619.0	239.2	174.0	125.3	17.7
Total	42,636.5	15,647.4	10,616.3	6,743.5	532.0

Source: NCSO, *Annual Survey of Establishments: Manufacturing, 1974.*

Table 2.11

Distribution of Value Added in Organised Manufacturing by Industry Group, 1948-1974

(in per cent)

Industry	1948	1956	1960	1965	1969	1974
Food manufactures, beverages, and tobacco products	60.6	43.8	41.2	40.1	40.9	42.8
Textile products	2.6	3.7	4.6	4.7	6.3	7.6
Footwear and other wearing apparel	6.6	5.1	3.0	7.0	1.6	1.1
Wood and cork products	9.7	5.0	4.0	4.6	4.5	3.1
Furniture and fixtures	1.8	1.3	0.9	1.4	0.4	0.5
Paper and paper products	0.0	1.7	2.3	2.1	2.6	3.5
Printing and printed products	3.7	3.1	3.2	4.1	2.5	1.7
Leather products	0.0	0.2	0.3	0.3	0.2	0.1
Rubber products	0.6	0.9	3.2	2.9	2.7	2.0
Chemical and chemical products	2.9	9.9	10.0	9.1	11.3	10.0
Non-metallic mineral products[a]	2.1	4.7	3.7	4.4	4.9	4.1
Basic metal and metal products	1.9	4.7	8.0	8.5	7.4	5.7
Machinery	0.5	2.1	4.2	4.8	3.9	5.1
Transportation equipment	1.0	2.2	2.2	2.8	3.1	3.0
Miscellaneous manufactures	5.7	11.2	8.2	5.2	7.7	9.7
Total	100.0	100.0	100.0	100.0	100.0	100.0

[a] Including products of coal and petroleum.

Source: For 1948-65, Table 6-2 in Baldwin, *op. cit.*, p.124; BCS, *Annual Survey of Manufactures, 1969;* NCSO, *Annual Survey of Establishments, Manufacturing: 1974.*

group experienced a sharp reduction of its share in manufacturing value added from 60 per cent at the start of the period while offsetting changes took place in the contributions of textiles, non-metallic mineral products, basic metal and metal products and miscellaneous manufactures. Although the process of diversification in the industrial structure seems to have continued over the year, it became much less pronounced after 1956.

The explanation for such pattern of changes in the industrial composition lies in the strong inward orientation of postwar industrialisation strategy adopted in the Philippines especially prior to the 1970s. It induced a vigorous expansion in import-replacing consumer goods production, mainly during the so-called exuberant stage of the import substitution period associated with the sudden profitability of investment in the first half of the 1950s. After 1965, the declining opportunities of consumer goods production began to surface (due to the limited size of the protected domestic market) which was accompanied by a drastic reduction of the average annual increase in manufacturing value added (in real terms, from 15.8 per cent in the period 1949-1956 to 6.3 per cent in 1956-1960). Thus the ratio of imported manufactured goods to the value of manufacturing production was reduced from 1.13 to .55 over the period 1948-1956 and then declined slightly to .42 by 1968.[1] Rapid growth occurred in the production of non-essential consumer goods until 1956 in response to the heavy protection accorded these products by the operation of the import and exchange controls. Thus the share of consumer goods in total imports decreased sharply from 37.3 per cent in 1949 to 16.8 per cent in 1957. In food and related manufactures, however, there was little scope for import substitution, especially since many essential consumer goods (of which importation was made relatively liberal) are included in this industry group.

Table 2.12 brings out, rather imprecisely due to the high level of aggregation underlying the industries classification, the differential changes in value added shares from 1956 to 1974 among manufacturing industries classified by end use, factor intensity and market orientation. Some import substitution in intermediate goods after 1956 is suggested by the rising contribution of this industry group to manufacturing output through the 1960s. In the 1970s the share of consumer goods is seen to have increased significantly from the 1968 level on account of the high rates of such export-oriented industries as wearing apparel, footwear, furniture and food manufactures. Durable and capital goods appear to have maintained their value added share at 7-10 per cent over the years. Also from Table 2.12, relatively capital intensive industries increased in importance within the organized manufacturing sector until 1972, at which time the impact of the rapid expansion of labour-intensive manufactured exports began to be felt. Relatedly, the value added share of export-oriented industries is also seen to have higher values in 1972 and 1974 relative to that in 1968, while inward-oriented industries show increasing shares from 1956 to 1968.

[1] Baldwin, *op. cit.*, p. 123.

Table 2.12

Structural Changes in Organized Manufacturing, 1956-1974

Industrial Characteristics	Percentage shares in value added (at constant 1967 prices)					
	1956	1960	1964	1968	1972	1974
End Use						
Consumer goods[a]	65	58	55	52	59	58
Intermediate goods[b]	27	34	35	40	34	34
Durable and capital goods[c]	8	8	10	8	7	8
Factor Intensity						
Capital intensive[d]	49	51	54	54	55	53
Labour intensive[e]	51	49	46	46	45	47
Market Orientation						
Domestic-market oriented[f]	41	41	42	47	45	44
With export potential[g]	59	59	58	53	55	56

Notes: a Food, beverages, tobacco textiles, apparel, furniture, printing, leather, miscellaneous.

b Wood, paper, rubber, chemicals, petroleum, non-metallic mineral products basic metals, metal products.

c Machinery, electrical machinery, transport equipment.

d Food, paper, rubber, chemicals, petroleum, non-metallic mineral products, basic metals.

e Beverages, tobacco, textiles, apparel, wood, furniture, printing, leather metal products, machinery, electrical machinery, transport equipment, miscellaneous.

f Beverages, tobacco, printing, chemicals, petroleum, basic metals, metal products, machinery transport equipment.

g Food, textiles, apparel, wood, furniture, paper, leather, rubber, non-metallic mineral products electrical machinery, miscellaneous.

Source: Table 8.3 in World Bank (1976), *op. cit.*, p. 194.

(b) *Capital intensity and productivity*

The capital intensive bias in the industrial structure that developed over the postwar years can be documented not only in terms of the temporal changes in the relative share in value added of industry groups qualitatively considered capital-intensive as done above, but also from an examination of trend in the capital-labour ratio for the organized manufacturing sector. Table 2.13 reproduces part of the aggregate indices concerning capital intensity and capital

Table 2.13

Indices of Capital Intensity and Productivity in Organized Manufacturing, 1950-1968

Year	Capital-labour ratio	Output-capital ratio
1950	61	106
1951	76	103
1952	87	100
1953	96	97
1954	99	100
1955	100	100
1956	97	108
1957	92	117
1958	103	120
1959	106	124
1960	118	114
1961	121	113
1962	118	117
1963	124	119
1964	127	112
1965	126	109
1966	132	108
1967	139	106
1968	142	107

Notes: Output is measured in value-added terms at constant prices. Capital consists of fixed assets and inventories and is also measured in constant prices.

Source: Table 12 in Hicks and McNicoll, *op. cit.*, p. 68.

productivity in organized manufacturing from 1950 to 1968.[1] A significantly rising trend throughout the period in the capital - labour ratio is evident from the table, the more substantial upward movements occurring in the early 1950s and the second half of the 1960s. The ratio of manufacturing value added to capital (which may be considered a partial index of efficiency in the use of capital) apparently declined in the first half of the 1950s, but then increased significantly until 1959 before gradually falling to about the 1950 value by 1967-68.

At a disaggregative level but including only "large" establishments (which 20 or more workers), estimates of capital per worker and average capital productivity for 1970 are shown in Table 2.14 distinguishing among 2-digit ISIC

[1] From G.L. Hicks and G. McNicoll, *Trade and Growth in the Philippines* (Ithaca: Cornell University Press, 1971).

industries and, in each industry, four different size groups of manufacturing establishments. The estimation procedure employed in the ILO Report makes adjustments to convert book values of fixed assets to replacement values and to express value added in international prices, i.e., deflating by an estimate of effective protection for each industry. Several observations can be made relating to the differences in the capital per worker and capital productivity among industries and establishment size groups. The first is that there are wide variations in the degree of capital intensity (1) across industries within the manufacturing sector (from less than 10 thousand pesos average capital per worker in footwear to more than 100 thousand pesos per worker in petroleum products), and (2) across various employment size groups of establishments within an industry, e.g., in tobacco manufactures, from 4 thousand pesos in the 20-49 workers category to 82 thousand pesos in the 100-199 workers category. This is in part a reflection of the technological dualism that commonly exists in the manufacturing sector of developing countries.

The same general observation can be made about the differences in average capital productivity estimates contained in Table 2.14. Moreover, a mixed pattern is seen with respect to the size structure: small scale appears more efficient in some industries, while in others, large scale seems more efficient. No empirical basis is provided, therefore, for a blanket endorsement of either large or small scale in the promotion of manufacturing industries. What is needed are "policies that encourage the development of the most efficient industries, and the most efficient firms, regardless of size. Blunt polices that are strongly biased toward one size or another are not capable of doing this". [1] It bears emphasis, however, that the policy biases in the Philippines have favoured the large enterprises to the detriment of small industry development. Therefore, removal of such policy biases would enable small scale production to be efficiently carried out in many lines which have not been developed as yet.

(c) *Skill and import intensities*

In addition to capital, skilled labour and imported intermediate inputs are, for most developing countries, scarce resources whose use in the manufacturing industries over time needs to be given some attention. Considering that Philippine industrial development had acquired a capital intensive bias over the postwar period, it is of some interest to indicate whether it was accompanied by increasing labour skill requirements and dependence on imported material inputs.

The measure of skill (or human capital) intensity used here is the index of the average annual wage received by paid employees in organized manufacturing deflated by the wage rate index of unskilled workers, based on NCSO and Central Bank data. As shown in Table 2.15, no distinct trend is evident over the period from 1956 to 1974. Relatively low values of the aggregate skill intensity

[1] ILO, *op. cit.*, p. 146.

Table 2.14

Capital Intensity and Productivity in Manufacturing by Industry Group and Employment Size, 1970
(in pesos)

Industry	Kr/N				VA/Kr			
	20–49 workers	50–99 workers	100–199 workers	200 + workers	20–49 workers	50–99 workers	100–199 workers	200 + workers
Food	24,611	19,339	50,990	32,913	0.118	0.343	0.205	0.347
Beverages	14,303	45,994	20,613	25,448	0.311	0.401	1.406	1.234
Tobacco	3,923	18,005	81,818	17,066	0.578	0.301	0.053	0.655
Textiles	23,650	30.127	17,014	4,665	0.090	0.060	0.145	0.501
Footwear	9,157	8,875	10,789	16,439	0.329	0.495	0.316	0.208
Wood products	10,104	7,690	12,765	5,014	0.464	0.921	0.494	1.210
Furniture	7,559	5,970	22,521	–	0.355	0.484	0.158	–
Paper	51,747	36,711	45,488	87,209	0.097	0.177	0.192	0.118
Printing	21,745	15,224	12,781	–	0.362	0.740	0.701	–
Leather products	17,443	15,161	36,534	–	0.061	0.072	0.039	–
Rubber products	21,903	24,554	33,449	39,934	0.489	0.187	0.195	0.498
Chemicals	50,800	43,847	53,224	55,009	0.333	0.492	0.408	0.603
Petroleum products	109,650	–	–	–	0.454	–	–	–
Non-metallic products	55,924	157,975	21,729	46,201	0.049	0.002	0.229	0.253
Basic metals	6,831	30,772	29,833	96,586	0.655	0.289	0.280	0.147
Metal products	19,992	26,439	–	–	0.138	0.177	–	–
Machinery	19,240	–	18,739	–	0.277	–	0.517	–
Electrical machinery	29,987	35,717	30,930	30,175	0.107	0.081	0.127	0.220
Transport equipment	16,694	20,876	14,422	49,554	0.164	0.129	0.112	0.154
Miscellaneous	19,399	27,835	14,945	–	0.102	0.156	0.207	–

Notes: VA = value added; N = employment; Kr = replacement value of fixed and inventory capital.

Source: Table 26 in ILO, *op. cit.*, p. 145.

Table 2.15

Calculation of Skill Intensity in Organized Manufacturing, 1956-1974

Year	Total payroll (₱ million)	Paid employees (1,000)	Wage rate index of unskilled labour (1965 = 100)	Index of annual payroll per employee (1965 = 100)
1956	331.1	196.0	82.9	83.3
1957	369.3	213.7	82.0	86.2
1958	375.5	218.4	82.4	85.3
1959	443.6	229.1	83.1	95.3
1960	471.1	239.6	83.2	96.6
1962	548.8	266.9	87.8	95.8
1963	622.8	288.1	92.6	95.5
1964	696.0	305.2	93.4	99.9
1965	765.8	313.2	100.0	100.0
1966	847.3	316.4	107.3	102.1
1968	1,076.0	380.1	125.0	92.6
1969	1,147.1	386.1	130.9	92.8
1970	1,296.4	389.1	145.2	93.8
1971	1,551.6	406.6	155.0	100.7
1973	2,091.1	522.1	168.7	97.1
1974	2,398.0	514.8	182.1	104.6

Source: NEDA, *Philippine Statistical Yearbook, 1978;* Central Bank of the Philippines, *Statistical Bulletin,* (December 1975).

measures are however observed for the subperiod 1956-1958, coinciding with the low values of the capital-labour ratio as presented earlier. Table 2.16 gives the pattern of skill intensity across manufacturing branches in 1974. The highly labour intensive industries — footwear, leather products and furniture — are seen to have the lowest skill intensity, while such capital intensive industries as petroleum, chemicals, paper and basic metal industries exhibit higher values than the average for all manufacturing industries. On balance, therefore one may infer some association (by no means absolute) between capital and skill intensities in Philippines manufacturing.

A well-known feature of postwar industrial development in the Philippines is the heavy dependence on imports of producer goods, which has increased over the years, particularly through the end of the 1960s. According to one earlier estimate, the ratio of imported intermediate goods to industrial value added (defined as the sum of the value added in manufacturing, mining, construction and transportation) increased from 0.36 in 1949 to 0.46 in 1953 and 0.60 in

Table 2.16

Skill Intensity in Organized Manufacturing by Industry Group, 1974

Industry	Total payrolls (₱ million)	Paid employees (1,000)	Annual payroll per employee (₱ 1,000)
Food manufactures, beverages and tobacco products	691.6	145.9	4.7
Textile manufactures	313.8	86.4	3.6
Footwear and other wearing apparel	77.0	36.1	2.1
Wood and cork products	151.8	41.9	3.6
Furniture and fixtures	32.8	10.6	3.1
Paper and paper products	70.6	12.1	5.8
Publishing and printing	71.1	14.3	5.0
Leather and leather products	6.2	2.2	2.8
Rubber products	60.7	12.9	4.7
Chemical and chemical products	265.6	28.8	9.2
Products of petroleum and coal	25.5	1.3	19.6
Non-metallic mineral products	126.0	25.0	5.0
Basic metal industries	94.6	16.5	5.7
Metal products	78.0	17.1	4.6
Machinery except electrical	63.2	11.8	5.4
Electrical machinery	107.5	19.3	5.6
Transport equipment	94.3	15.2	6.2
Miscellaneous manufactures	67.7	17.5	3.9
Total	2,398.0	514.8	4.7

Source: NCSO, *Annual Survey of Establishments: Manufacturing, 1974.*

1960.[1] For the manufacturing sector alone, comparable input-output data for 1961, 1969 and 1974 also indicate a significant increase in the ratio of imported intermediate goods to the gross value of output in the 1960s, followed by a slight rise from 1969 to 1974 (Table 2.17). At the 2-digit ISIC level, a decline in import dependency from 1969 to 1974 is observed for 13 out of the 20 sectors, indicating use of domestically produced intermediate goods, perhaps due to the sharp rise in import cost occasioned by the substantial peso devaluation of February 1970 – assuming greater than unitary elasticity of substitution between domestic and imported intermediate goods in these sectors. This assumption is undoubtedly not valid for imported oil, which may explain the higher import ratio for total manufacturing in 1974 to 1969.

[1] D.S. Paauw and J.L. Tryon, "Agriculture-Industry Interrelationships in an Open Dualistic Economy: The Philippines 1949-1964", paper presented at the IRRI Conference on Growth of Output in the Philippines, Los Banos, Laguna, December 9-10, 1966.

Table 2.17
Import Intensity in Manufacturing by Industry Group, 1961-1974
(in per cent)

Industry	Ratio of imported intermediate inputs to gross value of output		
	1961	1969	1974
Food manufactures	2.83	5.64	1.17
Beverages	1.45	9.68	3.92
Tobacco products	4.96	10.48	8.64
Textile manufactures	6.34	37.38	38.99
Wearing apparel	6.68	16.04	10.06
Wood products	3.42	2.69	5.31
Furniture and fixtures	15.61	11.07	5.13
Paper and paper products	14.09	22.86	21.36
Printing and publishing	10.63	19.86	13.86
Leather and leather products	9.20	13.99	11.16
Rubber products	5.13	18.28	30.57
Chemical products	12.70	21.08	28.56
Petroleum products	5.40	47.52	51.32
Non-metallic mineral products	11.62	10.67	9.65
Basic metals	38.80	26.74	51.22
Metal products	20.68	30.64	25.28
Machinery except electrical	15.49	24.12	17.38
Electrical machinery	21.55	17.42	14.48
Transport machinery	14.53	29.96	8.08
Miscellaneous manufactures	13.02	11.19	31.49
Total manufacturing	6.93	14.64	15.83

Source: Bureau of Census and Statistics: *Statistical Reporter, 1968, Journal of Philippine Statistics,* 1971-1972 series, NEDA, *1969 Input-Output Tables of the Philippines;* unpublished NCSO input-output data for 1974.

The increasing reliance of Philippine manufacturing on imported inputs over the postwar period, particularly in the 1950s and 1960s, may be explained by the prevailing system of incentives biased in favour of the finishing stages of producing consumer goods relative to intermediate goods, discouraging therefore backward integration. The effective subsidies to imports of raw materials, together with the protection to the final output of non-essential consumer goods, served to attract resources in the production of import-dependent industries. This impaired the ability of the manufacturing sector to contribute to the solution of the country's chronic balance of payments problem. Another

adverse consequence has been that industrial activity tended to concentrate in areas close to the principal port (Manila), exacerbating the uneven regional distribution of income and employment opportunities in the country.

(d) *Export orientation*

Even among the less developed countries in Asia, the Philippines is a relative latecomer in adopting an official policy stance favouring the expansion of new industrial exports. Thus, up to 1969, four primary commodites were contributing at least 70 per cent of the country's total export earnings. [1] Recognition of the need to actively promote exports of non-traditional manufactured goods did not come about until the late 1960s when the Philippines was once again faced with a severe balance of payments problem (repeating the episodes in the late 1940s and early 1960s). But even as more visible policy support was being provided to export-oriented industrial enterprises, it would still appear that more recent economic policies tended to effectively discriminate against the export sector.

Table 2.18 provides information on the relative extent to which manufacturing industries exported their products in 1961, 1969 and 1974. Overall export orientation of the manufacturing sector appears to have improved but little during the 1960s, the proportion of output exported rising by only 2.3 percentage points from 1961 to 1969. A more substantial increase (nearly 6 percentage points) is observed over the five-year period 1969-1974, reflecting the impressive growth of non-traditional manufacturing goods in the 1970s as indicated above. Thus, textile manufactures, furniture and fixtures, leather and leather products, and non-metallic mineral products show sharp increases in their degree of export orientation from 1969 to 1974. Some industry groups retain high values of the proportion of output exported because they include some of the country's traditional export products (e.g., sugar in food manufactures and lumber in wood products) which however do not undergo much domestic processing.

The principal trade partners of the Philippines have been the United States and Japan. Due to colonial ties dating back to the turn of the century, the Philippines has historically been highly dependent on the United States as a market for exports and as a supplier of imports. Since the granting of political independence in 1946, however, a gradual reduction of the U.S. share in Philippine foreign trade has taken place, particularly in the 1950s and 1960s, accompanied by an increasing level of trade flows with Japan. By 1970 Japan was contributing about the same proportion to total Philippine trade (30 per cent of imports and 40 per cent of exports) as the United States. With the recent drastic increase in the relative importance of crude oil to the total import bill, the combined share of the United States and Japan in Philippine imports has

[1] See table 2.6.

Table 2.18
Export Orientation in Manufacturing by Industry Group, 1961-1974
(in per cent)

Industry	Ratio of the Value of Exports to Gross Value of Output		
	1961	1969	1974
Food manufactures	10.95	11.92	25.35
Beverages	0.20	1.17	1.29
Tobacco products	4.45	5.45	1.02
Textile manufactures	1.95	1.49	6.11
Wearing apparel	0.05	18.71	9.31
Wood products	13.02	31.75	21.45
Furniture and fixtures	0.90	3.92	33.98
Paper and paper products	–	1.65	2.82
Printing and publishing	0.03	1.87	0.66
Leather and leather products	–	0.01	11.11
Rubber products	1.01	1.37	0.99
Chemical products	7.18	2.52	2.06
Petroleum products	–	7.07	1.19
Non-metallic mineral products	0.02	1.36	14.84
Basic metals	0.01	8.31	6.67
Metal products	0.19	0.64	0.56
Machinery except electrical	0.05	1.79	4.04
Electrical machinery	–	2.54	1.68
Transport equipment	–	2.12	0.35
Miscellaneous manufactures	2.17	15.23	7.62
Total Manufacturing	6.20	8.50	14.25

Source: Bureau of Census and Statistics: *Statistical Reporter, 1968; Journal of the Philippine Statistics, 1971-1972 series;* NEDA, *1969 Input-Output Tables of the Philippines;* unpublished NCSO input-output data for 1974.

dropped to about 50 per cent; similarly, the export share of these two countries has been reduced to a total of about 60 per cent after 1974.

Western European countries, particularly West Germany, United Kingdom and Netherlands, would account for the bulk of the country's remaining trade flows, although there has been a dramatic increase in merchandise trade with Socialist countries, notably Russia and China, from negligibly small base in 1973. As shown in Table 2.19, Philippine trade with ASEAN countries has been insubstantial, accounting for less than 5 per cent of total import and export flows: Singapore has been the principal export market while Indonesia, Malaysia and Thailand have been the principal import suppliers. The major exports to

Table 2.19

Philippine Trade with ASEAN Countries, 1960-1977

(million U.S. dollars)

Year	ASEAN		Indonesia		Malaysia		Singapore		Thailand	
	M	X	M	X	M	X	M	X	M	X
1960	44 (7.3)	1 (0.2)	29 (4.8)	* (0.4)	8 (1.3)	*	7 (1.2)	*	*	*
1965	47 (5.8)	2 (0.3)	18 (2.3)	*	12 (1.5)	*	2 (0.2)	1 (0.2)	15 (1.8)	* (0.6)
1970	57 (5.2)	13 (1.2)	26 (2.4)	2 (0.2)	26 (2.4)	*	4 (0.4)	7 (0.7)	*	3 (0.3)
1971	82 (6.9)	23 (2.0)	29 (2.5)	3 (0.3)	29 (2.4)	1	9 (0.7)	16 (1.4)	15 (1.3)	2 (0.2)
1972	58 (4.8)	15 (1.4)	9 (0.7)	4 (0.4)	18 (1.4)	*	7 (0.6)	8 (0.7)	25 (2.0)	2 (0.2)
1973	35 (2.2)	39 (2.1)	2 (0.1)	14 (0.8)	15 (0.9)	6 (0.3)	8 (0.5)	15 (0.8)	10 (0.6)	4 (0.2)
1974	75 (2.4)	36 (1.3)	4 (0.1)	10 (0.3)	28 (0.9)	5 (0.2)	27 (0.9)	18 (0.7)	16 (0.5)	3 (0.1)
1975	173 (5.0)	61 (2.6)	63 (1.8)	20 (0.9)	54 (1.6)	5 (0.2)	21 (0.6)	32 (1.4)	34 (1.0)	4 (0.2)
1976	244 (6.7)	75 (2.9)	112 (3.1)	12 (0.5)	86 (2.4)	–	20 (0.6)	56 (2.2)	26 (0.7)	7 (0.3)
1977	261 (6.7)	106 (3.4)	153 (3.9)	22 (0.7)	61 (1.6)	30 (1.0)	33 (0.8)	65 (2.0)	13 (0.3)	9 (0.3)

Notes: M = imports, c.i.f. ; X = exports, f.o.b.
Asterisk (*) denotes value less than $ 1 million.
Numbers in parentheses are percentages of total Philippine exports or imports.

ASEAN countries in recent years have consisted of manufactured goods, *viz.*, vegetable oil (SITC 412), clothing (841), petroleum products (313), cement and fabricated building materials (661), special textile fabrices (655), miscellaneous chemical products (599) and industrial machinery (716). While they account for less than 25 per cent of total value of the very diversified intra-ASEAN exports of the Philippines, it is likely that regional trade liberalization efforts, if successful, would enhance the importance of the ASEAN countries as an export market for Philippine manufactured products since increased competition among regional suppliers is likely to result in greater division of labour and expanded intra-industry trade.

2.5 Unorganized and Small Scale Manufacturing

(a) *Overview*

Published economic statistics in the Philippines do not provide direct estimates of the contribution of unorganized production enterprises to total manufacturing activity. [1] It is possible however, to derive residually employment and value added in unorganized manufacturing from available labour force, national income and organized manufacturing data, as shown in Table 2.20. Thus, in 1974, 63.1 per cent of manufacturing workers were apparently in the unorganized sector. The small scale establishments (which are part of organized manufacturing), on the other hand, employed only 5.4 per cent. In value added, unorganized and small scale manufacturing accounted for 36.4 per cent and 1.4 per cent, respectively.[2]

Also from Table 2.20 it would appear that, in earlier years, the unorganized sector was contributing a higher percentage of manufacturing employment (70 per cent in 1968) and a lower share of value added (33 per cent in 1968). One surprising implication is that, based on official data, average labour productivity in unorganized manufacturing would seem to have sharply increased from 1968 to 1974 to the point of even exceeding that in small scale establishments, as shown in the last part of Table 2.19 [3] While one can try to

[1] See R.M. Bautista, "Employment and Labour Productivity in Small Scale Manufacturing in the Philippines", *NEDA Journal of Development,* I (First Semester 1974) for a recent study of the "informal" manufacturing sector, which as part of an ILO-sponsored research on various aspects of urban informal economic activities has examined only the Greater Manila subsector. It is to be noted that informal enterprises are defined in that study to be those employing at most 10 workers. D.B. Canlas, "The Informal Manufacturing Sector", Chapter III in G.M. Jurado *et. al.*, *The Informal Sector in the Greater Manila Area, 1976,* U.P. School of Economics (draft volume, 1978).

[2] Defining small scale manufacturing alternatively, the coresponding figures would be as follows: (1) establishments with 5 to 49 workers – 8.2 per cent employment share, 3.9 per cent value added share; (2) establishments with 5 to 99 workers – 11.2 per cent employment share, 7.7 per cent value added share.

[3] Average labour productivities in unorganized and small scale manufacturing are seen to be much lower than that in large industry, which is not surprising in view of the widespread underemployment and limited use of capital equipment in the former. See Bautista (1974), *op. cit.*

Table 2.20

Derivation of Employment and Value Added in Small Scale and Unorganized Manufacturing, 1968-1974

		(1) Organized (5 or more workers)	(2) Large Scale (20 or more workers)	(3) = (1) - (2) Small Scale (5-19 workers)	(4) All manufacturing	(5) = (4) - (1) Unorganized manufacturing
Employment (thousands)	1974	532	454	78	1,442	910
	1973	583	456	82	1,406	868
	1971	421	353	68	1,443	1,022
	1968	394	325	69	1,311	917
Value added (million pesos, at current prices)	1974	15,647	15,296	351	24,608	8,961
	1973	11,226	10,872	354	17,715	6,489
	1971	7,438	7,124	314	11,417	3,979
	1968	4,490	4,237	253	6,722	2,232
Labour productivity (thousand pesos, at current prices)	1974	29.4	33.7	4.5	17.1	9.8
	1973	20.9	23.8	4.3	12.6	7.5
	1971	17.7	20.2	4.6	7.9	3.9
	1968	11.4	13.0	3.7	5.1	2.4

Source: (1) and (2); BCS/NCSO, *Annual Surveys of Manufactures/Establishments.*
(4) BCS/NCSO, *Labour Force Surveys;* for employment data, NEDA, *National Income Accounts,* for value added data.

explain such implausible result in many ways, [1] the important point for present purposes is that the available statistics do not lend themselves to a quantitatively precise representation of the small scale and unorganized manufacturing sectors. This does not detract, however, from these sectors' potentially significant contribution to the solution of the country's employment and income distribution problems. What is called for would be an improved allocation of statistical resources to make the quantitative description of unorganized and small scale manufacturing enterprises and the assessment of their economic performance more reliable.

Taking published statistics for small manufacturing estblishments at face value, we find their total book value of fixed assets at ₱365 million in 1974, representing only 3.6 per cent of large-scale manufacturing. On the other hand the value of inventories held by small establishments totalled ₱136 million in 1974, compared to P 6,607 billion for large establishments.

(b) *Production Specialisation*

The two distinguishable types of unorganized manufacturing activities are: (1) the small workshops providing repair services and engaging in some minor fabrications: and (2) home industries manufacturing traditional products. A further distinction between the two is that repair shops serve only the local needs while home industries cater to both domestic and export markets.

A large number of the repair shops would deal with consumer durables (such as electrical appliances) and capital goods (agricultural implements, transport equipment and electrical machinery), so that the expansion of their activities is largely determined by the availability and use of such equipments and machineries, whether imported or domestically produced. They "serve the very useful purpose of increasing the economic life of capital goods and can also provide the facilities for the economic adaptation of the design and operation of equipment and machinery to suit local conditions". [2] Thus the benefits from the promotion of these workshops extend beyond the direct effects of employment generations and simple acquisition of labour skills. Their transformation into modern small factories producing capital goods based on appropriate technology and indigenous materials can be expected to contribute significantly to socially-oriented economic growth.

Home (or cottage) industries have received much more attention and direct assistance from the government than the repair workshops. Certain privileges are granted to household enterprises registered with the National Cottage Industry Development Authority (NACIDA), [3] which has provided

[1] With reference, for example, to the probable underestimation (in a relative sense) of unorganized manufacturing value added in earlier years or of value added in small establishments in 1973 and 1974.

[2] ILO, *op. cit.*, p. 564.

[3] Including exemption from minimum wage legislation, reduced tax payment on imports of capital equipment, exemption from percentage and sales taxes, and access to institutional credit.

assistance to more than 50 thousand enterprises since starting operation in 1963. The products of NACIDA-registered manufacturing enterprises are dominated by woodcrafts, ceramics, embroideries, rattan furniture and abaca products. Although exact figures are not available, foreign exchange receipts from exports of these products, as well as from domestic sale to foreign tourists, have increased significantly since the 1970s.

The pattern of production specialization among the 402 randomly selected informal manufacturing enterprises in a study [1] for Greater Manila in 1976 shows a heavy concentration in the following industry groups: textile, wearing apparel and leather industries (273), food beverages and tobacco (44); fabricated metal products, machinery and equipment (32) and wood products (23). More disaggregatively, wearing apparel, bakery products, furniture and fixtures, and fabricated metal products are found to contribute more than four-fifths of the total number of informal manufacturing enterprises.

Within the organized manufacturing sector a study [2] has examined unpublished data at the 5-digit ISIC level from the NCSO's 1974 survey of establishments, listing manufacturing activities in which "small and medium scale" (SMS) establishments dominate. Unfortunately, his SMS definition is based on the value of fixed assets, i.e., establishments with fixed assets worth less than 4 million are considered SMS, which has no exact correspondence with the classification of establishments by employment size used by the NCSO and adopted in the present study. Nevertheless, it is instructive to indicate here the following industries found to have *all* establishments belonging to the SMS category.

1. Meat Processing
2. Cigar
3. Chewing & Smoking Tobacco
4. Processing of Tobacco
5. Narrow Fabrics
6. Miscellenous Spinning
7. House Furnishing
8. Mats & Mattings
9. Luggage, Handbags, Wallets
10. Slippers and Sandals
11. Rough Lumber
12. Wood and Cork Products
13. Wood Furniture
15. Electrotyping, Photoengraving
16. Molded Rubber Products

[1] Canlas, *op. cit.*

[2] E.A. Hife, "Factor Productivities and Intensities in Philippine Manufacturing with Emphasis on Establishment Size, 1974", *IPPP Working Paper No. 10,* U.P. School of Economics (June 1978).

17. Non-Ferrous Foundry
18. Hand Tools
19. General Hardware
20. Razor Blades
21. Cutlery
22. Household Metal Furniture
23. Furniture & Fixture of Metal
24. Architectural Metal Works
25. Heating, Cooking Equipment
26. Manufacture of Rice Mills
27. Manufacture of Assembly of Special Industrial Machinery
28. Water Pumps
29. Tape Recorders, Sound Equipment
30. Eyeglasses & Spectacles
31. Manufacture of Pianos
32. Umbrellas & Canes
33. Brooms, Brushes, Fans
34. Needles, Pins, Fasteners
35. Signs & Advertising Displays
36. Miscellaneous Manufactures

The interesting observation was that all but one of these industries (molded rubber products) have values of capital productivity (represented by the ratio of value added to the replacement cost of fixed capital) higher than the average for all manufacturing industries. It would appear therefore that, based on this measure (admittedly only a partial indicator or efficiency) SMS industries individually and as a group are relatively efficient users of fixed capital.

(c) *Linkages with large scale enterprises*

Developing and strengthening the linkages of small scale and unorganized manufacturing with large scale enterprises would seem an obvious and efficient way of assisting small industry development. In the Philippines, the empirical evidence indicates that such linkage is very weak, at least for manufacturing enterprises employing ten workers or less. The Greater Manila informal sector survey [1] reveals that, among the manufacturing enterprises included in the sample, only 12.2% and 7.2% obtained goods and services, respectively, from large commercial and government enterprises, the major sources of their input purchases being households and/or small establishments (84.4% for goods and 42.3% for services). More importantly, products of these small manufacturing enterprises were being sold entirely to households and/or other small establishments. Therefore, in such existing state, both forward and backward linkages

[1] G.M. Jurado and J.S. Castro, "The Informal Sector in the Greater Manila Area: An Overview", Chapter 1 in Jurado et. al., *op. cit.*

with large scale enterprises cannot be said to provide an effective mechanism for promoting the development of the informal manufacturing sector in the Philippines.

The "existing state" can of course be modified through appropriate policy measures. Thus small scale enterprises could be encouraged to fabricate parts and components of products of large industry for their mutual benefit. The so-called "ancillary firm development" might be pursued as an intermediate policy objective, the further repercussions of which are expected to contribute positively to the more fundamental objectives of national development relating to output growth, employment generation and income redistribution.

In the Philippines a deliberate policy of promoting ancillary firm development in a particular industry was started in 1973 when the Progressive Car Manufacturing Programme (PCMP) was launched to rationalize the automobile industry. [1] A basic feature of the program is a schedule of increasing minimum domestic content ratios required of the limited number of participating firms which became beneficiaries of various tax subsidies and protective tariff measures. Horizontal integration is preferred to vertical integration under the programme. In order to generate "new manufacturing activities in related small- and medium-scale industries through subcontracting schemes and the dispersal of technological know-how to this sector". [2]

There were five PCMP-approved car assemblers allowed to supply the domestic market (which had an estimated absorptive capacity of 30 thousand units a year). The prescribed minimum *local content ratio,* defined to include not only the use of domestically manufactured components but also exports of such components attributed to the assemblers, was scheduled to increase gradually from 15.0 per cent in 1973 to 62.5 per cent in 1978, which targets were generally met.

The five major PCMP participants have received protection of nearly 100 per cent on final products through tariff privileges and tax exemptions, the calculated effective protection rate being above 300%. [3] Despite this, however, negative aggregate profits have apparently characterized the industry in recent years. This is related to the failure to exploit scale economies due to the production of several different models for the limited domestic market (which is contrary to the original intentions of the programme) and the inability to expand exports of components and parts significantly (since domestic sales are more remunerative). The "domestic resource cost" of automotive assembly and major component production under the PCMP has also been found to be quite

1 Similar programmes of domestic content protection have been introduced more recently for the electronics, motorcycles and truck industries.

2 L.L. Sta. Romana, "The Philippine Car Manufacturing Industry: A Domestic Resource Cost Analysis", *UPSE-IPPP Working Paper No. 18,* (September 1978).

3 An additional incentive is the privilege of importing CKD full-sized cars (with engines of more than 4 cyliners and 2,000 cc. displacement volume) for sale in the restricted domestic market.

high (16 to 52 pesos per dollar) relative to other manufacturing activities, implying a net social loss due to allocative inefficiency in a static sense.

Apart from the infant industry argument, an important rationale for the heavy protection to PCMP participants has been the expected expansion of ancillary industries which were to contribute substantially to the domestic component requirements of the assembly firms. A "significant degree of sub-contracting relationship" resulting from the PCMP [1] has also been noted. By contrast a recent World Bank study finds that the underdeveloped condition of the local ancillary sector and incentive structure favoring in-house production of automotive components by the car assemblers have not promoted horizontal integration to the degree expected by the planning authorities.

Some important questions remain: Would a shift in relative incentives toward the ancillary firms have improved the overall performance of the automotive industry? In what ways and to what extent should technological assistance be provided to the ancillary firms? What would have been the economic effects of limiting the number of car models (to say, one or two per assembler) produced under the programme? Are there inherent political difficulties in implementing any rational programme of domestic content protection? These and other related questions need to be given careful study in considering whether it is appropriate to replicate the PMCP in other industries.

(d) *Provision of institutional credit*

Prior to 1973 both private and government financial institutions had little to show by way of accommodating loan applications from the small manufacturing enterprises. The findings of the Small Industry Survey in Greater Manila for 1972 reveal,[2] for example, the difficulties faced by the small-scale producers of garments, furniture and metal working in obtaining both short-term and long-term loans. This would seem like a natural disadvantage in view of the higher cost of processing smaller loans and the greater risk attached to them by banks. Thus the allocation of credit from institutional sources had favoured large industry and "systemmatically discriminated against the small-scale, labour intensive enterprise and against the low-income family".[3]

The government's lending policy toward small and medium scale industries (SMSIs) became more liberal with the restructuring of the Industrial Guarantee and Loan Fund (IGLF) programme in July 1973, which was greatly reinforced in January 1974 when the Development Bank of the Philippines (DBP) was called upon to set aside an initial amount of ₱ 500 million for financ-

1 After three years of programme implementation, the number of ancillary firms supplying automotive components had increased to about 280 (as compared with an estimated 50 firms existing before the programme started). See M.B. Albarracin and A.L. Tolentino, "Ancillary Firm Development in Asia: Philippines Sub-Project First Year Report", *CAMS Discussion Paper Series*, No. 78-11 (June 1978).

2 ILO, *op. cit.*, pp. 541-549.

3 *Ibid.*, p. 235.

ing SMSIs. A few private banks have also recently set up small business loan programme requiring less collateral.

The DBP, through its Industrial Projects Department II, has become the government's chief financing arm for small industry development. From January 1974 to June 1977 DBP loan approvals amounted to ₱ 482 million involving 3,563 borrowers. On the other hand the IGLF, which is financed through foreign assistance (in the form of World Bank and USAID loans) and government counterpart funds, has been catering to the credit requirements of SMSIs since 1973 via direct lending and guarantee operations with the Central Bank as administrator. The IGLF programme operates through accreditation and sponsorship of private banks and other financial institutions. From July 1973 to December 1976, about ₱ 110 million had been loaned out through the programme to 611 small industry borrowers.

The effective interest rate (inclusive of service fees) paid by borrowers of DBP and IGLF funds is about 14-15 per cent, much lower than prevailing commercial rates which can go up to 19 per cent. Collateral requirements under both programmes are also more liberal, increasing the attractiveness of such loans for SMSIs.

Two problems can be discerned relating to the provision of institutional credit to small industries in the Philippines. One is the relatively limited reach of the DBP and IGLF loan programmes, i.e. in comparison to the number of potential clients and credit requirements for fixed and working capital in the SMSIs. The other problem concerns the geographical distribution of credit availment. While industrial regional dispersal has been a declared objective of the small industry programmes of DBP and IGLF, lending has been highly concentrated in the Metro Manila area, which account for more than 40 per cent of the total loans. [1]

Even in Metro Manila, it would appear from the findings of the Survey of Informal Mamufacturing Enterprises for 1976 [2] that there exists a substantial unfilled demand for credit among small-scale producers. Thus, to the question of whether they would like to expand production from current levels if credit were made available "on easy and favourable terms," 75.1 per cent of the respondents replied in the affirmative.

(e) *Marketing assistance*

Since 1973 several programmes of marketing assistance to SMSIs have been established within the Ministry of Trade. These include: (1) establishment of display and distribution centers; (2) marketing information and direct assistance service; (3) promotion of exposition and mini-trade fairs; (4) organized

1 See Table IX in U.P. Institute for Small-scale Industries, 'International Research Project on Industry Development: A Comparative Regional Study'. Phase 1, Vol. 1, (October 1977). Mimeo.

2 Canlas, *op. cit.*

marketing programme; (5) information and research programme, and (6) marketing consultancy services.[1]

The creation of regional Trade Assistance Centers (TACs) has allowed the decentralization of government efforts at providing integrated marketing services. In addition, 33 provinces in 6 pilot regions are being visited by Marketing Assistance Field Teams (MAFTs) to seek out potential beneficiaries, with plans to expand MAFT services to the other provinces.

As of June 1977 about half of the total assistance rendered by the various programmes within the Ministry of Trade was related to market information, most inquiries having to do with trade opportunities, production supply statistics, market goods, and information on storage, warehousing and transport. The other types of marketing assistance sought most frequently were: collaborative activities with both private and government agencies; counselling on business procedures, referral services and government policies, technical assistance on market surveys and analysis of manpower requirements; and direct marketing assistance. Recorded "accomplishments of marketing programmes" [2] during the period from January 1976 to June 1977 consist of: marketing information – 374 business groups and 8,551 individuals assisted; technical assistance – 320 and 2,135; business counselling – 459 and 1,733; collaborative activities – 717 and 1,140; and direct marketing assistance – 75 sales transactions valued at about ₱ 5 million.

Apart from the relative smallness of these figures, reflecting the limited resources being employed as yet in the government's marketing assistance to SMSIs, it is striking that there are no explicit programmes designed to assist small enterprises in exporting their products. Indeed it is in export marketing where government assistance would seem most needed by SMSIs, which would probably be critical for the country to exploit fully its comparative advantage in the production of labour-intensive manufactured goods.

2.6 Conclusion

The economic rational for policy action in the Philippines favouring labour intensive industry derives from two sources: (1) there are existing biases against relative labour use in the industrial incentive structure; and (2) private profitability understates the social desirability of labour intensive industrial projects in an LDC with a severe employment problem. The latter justifies the promotion of labour intensive industry even at a cost to the rest of the economy. However, since the social marginal productivity of labour intensive industry relative to other economic activities is not infinite, the cost effectiveness of policy measures to promote labour intensive industry also needs to be given some attention.

[1] For a detailed description of the programme, see UP-ISSI, *op. cit.*, pp. 144-147.
[2] *Ibid.*, pp. 147-148.

Directions for improvement of the policy climate for the development of labour intensive industry in the Philippines are suggested explicitly or implicitly in the above discussions. Three general objectives can be identified: (1) to accelerate the expansion of non-traditional manufactured exports; (2) to strengthen the linkage with the rest of the economy; and (3) to raise the general level of worker productivity and real earnings. These would be generally consistent with the more fundamental objectives of development policy, namely, economic growth, employment and income distribution.

There is a need, first of all, to gradually eliminate the various sources of market distortions that effectively higher the natural development of labour intensive industry. As discussed above, substantial disparities in effective protection rates due to the existing tariff structure and indirect taxes tend to encourage allocative inefficiency within the manufacturing sector, the induced resource flows discriminating against labour intensive industry (presumably the more efficient in domestic resource use in a labour-abundant LDC). They also impair the comparative advantage of selling to the export market because of the heavy protection to domestic sales. Modifications in the existing tariff structure and indirect tax system should be aimed at progressively marking the effective protection rates uniform across industries. This would provide for more competition in the domestic market induce cost and quality consciousness among local producers, and enable the more productive firms and industries to grow more rapidly. If for any reason it is necessary to protect some domestic industries, real protection can be provided by direct subsidies, which do not entail market (domestic vs. export) discrimination.

The international competitiveness of labour intensive industry can also be enhanced by adopting an exchange rate policy that does not overvalue the domestic currency. With the collapse of the Bretton Woods international monetary system, maintenance of exchange rate parities has ceased to be a commitment of national governments. The generalized floating of major currencies (in which most LDC trade is dominated) since 1973 has provided the monetary authorities in developing countries greater flexibility in the use of exchange rate in pursuing external balance. While in the past exchange rate adjustment (specifically, devaluation of the domestic currency) was a politically hazardous policy measure, the present regime of flexible exchange rates among trade partner currencies makes it necessary for an LDC government to actively manage the exchange rate. There should be no reason at this time, therefore, to maintain an overvalued currency that only penalizes production in industries (both import competing and exporting) where the country has comparative advantage relative to foreign competitors.

Fiscal incentives for industrial promotion in the Philippines tend to have an anti-employment bias, as discussed above. Relatively neutral ways of stimulating industrial investments should repalce those having distortionary effects on factor use and size structure. On the matter of the BOI's present system of industrial priorities which ostensibly seeks to promote industries that promise

long-term social profitability, the identification of such industries presents enormous difficulties. Careful evaluation with the use of shadow price and domestic resource cost measures would help, bearing in mind the need to take into account long-run considerations of future factor supplies, scale economies, learning and externalities. It is necessary to recognize, in any case, that subsidies to "priority industries" will serve their purpose only if they are given for a specified, limited duration; otherwise, the burden to the economy may become incalculable.

For a successful strategy of labour intensive industrial development, the relative disadvantage of small scale and regionally dispersed industries in getting adequate access to production inputs has to be overcome through special programmes of assistance. Cost effective ways of providing technical assistance, institutional credit (both investment funds and working capital), skilled labour and marketing assistance (particularly in the export field) should be implemented. Greater efforts can be made to reach a larger number of small and remote industrial producers. Wider adoption of labour intensive technologies in construction, mining and manufacturing should be promoted not only among government agencies and public corporations but also in private industry. Incentive availability to labour intensive enterprises would be facilitated by improvement in administrative procedures, which will hasten the dissemination of information, simplify paper work on eligibility requirements, and prevent abnormal delays in the granting of benefits. Indeed, considering the great mass of prospective clients, greater automaticity in the provision of assistance to labour intensive industry is warranted.

On the demand side industrial incentives and complementary infrastructure facilities could serve to strengthen the links between labour intensive industry on the one hand and the modern industrial sector, government and household consumers on the other. The experience with the PCMP and similar programmes would indicate some lessons for the further development of ancillary enterprises in the consumer durables and capital goods industries. Conscious effort should also be made to rationally orient the purchases of national and local government toward small scale and regional industries. Finally, policy action would seem also necessary in countering the extensive use of media by large industry (dominated by foreign subsidiary firms) to influence public taste and promote the consumption of capital-intensive products.

Admittedly, questions of a political economy nature are bound to arise, since the policy reform in the directions indicated above will have to content with the existing power structure and vested interests that have evolved from the policy biases of the past. This is probably the most critical dimension of any concerted policy attempt to actively promote labour intensive industry in the Philippines.

three

The Development of Labour Intensive Industries in Indonesia

H. Poot

3.1 Introduction

Unemployment is a serious problem in Indonesia. Recognising this the government has put increasing emphasis on the creation of productive employment opportunities in recent development plans. The manufacturing sector is expected to play a major role in creating new employment opportunities. However, employment growth in this sector will depend among others on the type of industrialisation strategy pursued. A higher pay off in terms of employment can be obtained by promoting labour intensive industries and by selecting more labour intensive technologies for a given output composition. As the small scale, cottage and household industries employ the majority of the workers in the manufacturing sector, promoting their development will have favourable consequences for employment.

The major aim of this study is to examine the development of the industrial sector in Indonesia particularly since the late sixties and its contribution to employment. The first two sections review the growth of the manufacturing sector during this period and the economic policies pursued by the government which had an important bearing on the performance of this sector. The next section deals in more detail with the structure and characteristics of the organised manufacturing sector especially the composition of output growth, of employment and the nature of the technology employed. The last two sections look at the growth of the small scale, cottage and household industries emphasizing the problems with which this sector is faced and outlines policies and programmes for its development.

3.2 Manufacturing in the Indonesian Economy

(a) *Growth of the Manufacturing Sector*

There has been a marked acceleration in the growth of the manufacturing sector in Indonesia since the late sixties. Growth of real value added in the manufacturing sector between 1970 and 1978 amounted to an average rate of 13.2 per cent. These growth rates were achieved after the sector had remained relatively stagnant during the first half of the sixties, experiencing an average rate of growth of only 3.4 per cent per annum between 1960 and 1965. Though in the latter half of the sixties expansion was faster, the growth rate remained relatively low at 6.5 per cent per year between 1965 and 1970 most of which was achieved during the years 1968 to 1970 (see Table 3.1).

The increase in the rate of growth of the manufacturing sector in the seventies has meant that its share in GDP increased from 8.2 per cent in 1970 to 12.3 per cent in 1978. In 1960 its share had been 7.4 per cent of GDP. However, the absolute share of manufacturing in total output still remained very low especially when compared to the economies of other ASEAN countries.[1]

Up to around 1965 the industrial strategy emphasised expanding manufacturing activities in the public sector, especially of basic products (i.e. steel, fertilisers, aluminium, cement, paper and textiles). The main aim was to achieve self reliance in the production of these basic goods. The government also actively intervened in the distribution system and in the setting of prices. Highly protective walls were drawn up to protect the development of manufacturing industries against imports. But these measures as the data indicate, led to little progress in expanding manufacturing output up to 1968. This was mainly the result of severe scarcity of foreign exchange which caused shortages of raw materials and supplies, adversely affecting capacity utilisation. Also because of limited credit availability little new investment could be undertaken. This situation was further worsened by continuing labour conflicts and political instability which hampered industrial growth.

A major change in policy took place after 1965, when controls on imports were relaxed. However, since credit availability still remained scarce local producers could not immediately take advantage of the improved availability of imported inputs. Moreover, local producers now experienced difficulties in competing with the cheaper imports. As a result production actually declined in most sectors during the years 1966 and 1967.

After 1968, measures to promote industrial growth became more effective and rapid rates of growth were realised. During this period measures were successfully implemented to tackle macro economic instabilities, such as the high rate of inflation. Also the role of the government in industrial development was de-emphasised. The medium and large scale private owned enterprises in the modern sector now became the main engine for industrial growth. Liberalised

[1] See Table 1.1, p. 11.

Table 3.1

Sectoral Composition of GDP
(Values in billion Rupiahs at constant 1973 prices)

Sector	*1960*	*1965*	*1970*	*1975*	*1978*	*Rate of Growth*		
						1960-65	*1976-70*	*1970-78*
Agriculture	1827 (51.7)	2002 49.2)	2354 (45.0)	2811 (36.8)	3240 (34.1)	1.8	3.5	3.9
Mining	162 (4.6)	331 (8.1)	519 (9.9)	828 (10.8)	1040 (11.1)	15.4	9.4	9.1
Manufacturing	261 (7.4)	309 (7.6)	431 (8.2)	848 (11.1)	1159 (12.3)	3.4	6.9	13.2
Water Power and Gas	–	12 (0.3)	25 (0.5)	41 (0.5)	53 (0.6)	–	15.8	9.8
Construction	142 (4.0)	100 (2.4)	142 (2.7)	365 (4.8)	494 (5.3)	–6.8	7.3	16.9
Transport	86 (2.4)	107 (2.6)	172 (3.3)	303 (4.0)	451 4.8)	4.5	10.0	12.8
Trade and Services	1059 (29.9)	1208 (29.8)	1589 (30.4)	2435 (31.9)	2991 (31.8)	2.7	5.6	8.2
Total	3537	4069	5232	7631	9392	2.8	5.2	7.6

Note: Figures in parenthesis are percentages.

Source: U.N., *Statistical Yearbook for Asia and the Pacific* (Bangkok: ESCAP, various years).

trade policies resulted in easier access to raw materials and capital goods and access to credit was also improved. In this period also substantial foreign investment was attracted by providing liberal incentives which were incorporated in the 1967 Foreign Investment Law.

(b) *Sources of Growth*

The high rates of growth in manufacturing industries since the late sixties were partly achieved through import substitution, but the generally high growth performance of the rest of the economy also strongly stimulated domestic demand for industrial products.

The importance of import substitution and other factors affecting the growth of domestic industrial production can be measured statistically by using an approach developed by Chenery. [1] In this method an estimate is made of the share of intermediate demand, domestic final demand, exports and import substitution, in the increase in output of industrial sectors. On the basis of input-output tables available for 1971 and 1975 this approach was applied to Indonesia and the results of the calculations for industries which grew more rapidly than the rest of the economy between 1971 and 1975 are presented in Table 3.2 which shows the sources of the non-proportional growth in output of different industries.

It can be observed that import substitution contributed significantly to the growth of such industries as food processing, wheat flour, spinning, other textiles, paper, fertilisers and machinery. The effect of final demand was important in case of the remaining food industries (including rice milling, other food products and cigarettes) and the transport equipment industry. Industrial expansion also resulted in an increase in the demand for a number of intermediates, such as wood products, chemicals, rubber products and metal products, which exceeded sometimes substantially the increase in output of these sectors.

In recent years this situation may have altered. The rates of growth of a number of intermediates producing industries strongly accelerated during the period 1974/75 to 1978/79. It can, therefore, be expected that the reliance on imports of such goods has declined. In view of the large share of these goods in total imports of manufactures, the import dependence of the manufacturing sector as a whole may have decreased.

(c) *Trade Pattern*

The shift in import dependence from consumer goods to intermediate goods can often be observed when countries pursue an import substitution strategy focusing on the development of relatively capital intensive sectors. In Indonesia its effect was that the reliance on imports of manufactured goods did

[1] H.B. Chenery, "Patterns of Industrial Growth", *American Economic Review* (September 1960).

Table 3.2

Sources of Growth by Industries[1]
1971-75

Sector	Percentage share in growth of:			
	Intermediate demand	*Domestic final demand*	*Exports*	*Import substitution*
Food processing	17.4	48.9	–3.4	37.1
Rice milling	5.6	82.0	–	12.4
Wheat flour	40.5	24.0	–	35.5
Other food products	–32.6	247.9	–121.4	6.1
Cigarettes	–24.0	132.1	–	–8.1
Spinning	41.5	31.7	–	26.8
Other textiles	57.0	41.8	–1.8	21.0
Wood products	88.7	5.5	–1.0	4.8
Paper	–52.9	11.7	8.3	132.9
Fertilisers	9.5	–	–	90.5
Chemicals	135.0	21.5	6.1	–62.6
Rubber products	73.8	42.0	–	–15.8
Metal products	149.4	7.1	1.0	–57.5
Machinery	8.6	–8.4	0.5	98.6
Transport equipment	40.4	100.4	1.0	–41.8

1 Calculated on the basis of the formula:

$$X_1 - X_p = (1 - U_o)(dA + dD - dE) + (U_o - U_1)Z_1$$

where X_1 is output in the final year, and X_p is output in first year if the sector had grown at the same rate as national income; A are intermediate inputs; D is domestic demand, E is exports and Z is total supply, U_o and U_1 are the proportions of total supply imported in the first and final year respectively. dA, dD and dE represent the differences between actual values in the final years for A, D and E and the values if each of these had increased at a rate proportional to national income. The formula explains, therefore, the sources of the non proportional growth in output of sectors.

The economy as a whole (proportional growth) expanded by a factor of 2.5 between 1971 and 1975 in nominal terms. Adjustments were made in this factor if whole sale price increases differed significantly from the average whole sale price increases. (Upward if price increases were higher than average and downward in the reverse situation.)

Sectors which showed a lower than proportional growth rate were excluded from the table. They included oils and fats, beverages, sugar refining, cement, other non metallic mineral products, steel and non ferous metals.

Source: Calculated from Biro Pusat Statistic (BPS), *Table Input Output Indonesia 1971* (Jakarta, 1975) and BPS, *Table Input Output Indonesia 1975* (Jakarta, 1980).

Table 3.3

Percentage Distribution of Imports by End Use

	1970	*1974*	*1977*
Consumer	21.5	19.2	18.8
Raw materials	3.2	7.9	15.6
Intermediates	41.4	38.1	27.7
Capital goods	33.9	34.8	37.5

Source: U.N., *International Yearbook of Trade Statistics* (New York, various years).

not decrease between 1971 and 1975 – only the composition of imports changed.

Table 3.3 shows that during the period between 1970 and 1977 the share of consumer goods in total imports has declined, while the shares of capital goods and raw material have increased considerably. During the early years of the seventies, the share of intermediates remained fairly constant, but declined substantially in subsequent years.

Exports of manufactured products are still relatively unimportant. In 1977 less than 5 per cent of total exports were accounted for by manufactured products. Manufactured exports as a percentage of manufactured output amounted only to 5.2 per cent in 1975 (4 per cent in 1971), the bulk of which were oil products.

Trade with ASEAN countries amounts still to a very small share of Indonesia's total trade volumes, as is clearly shown in the following table. Exports of machines are an exception; of the small amount of these commodities which is exported, 72 per cent goes to other ASEAN countries. Table 3.4 also shows that the bulk (approximately 90 per cent) of the Indonesian imports as well as export flows within ASEAN come from or are destined for Singapore.

Very few measures have been taken to promote trade within ASEAN. They include the distribution of a number of resource based large scale industries between the ASEAN countries. Under this scheme Indonesia has been allocated the establishment of an Amonia-Urea Plant, the construction of which is completed. Another measure was the reduction of import taxes on a limited list of 71 products in 1976. The import tax reduction applied to 15 products produced by Indonesia, including cement clinkers, canned vegetables, cutlery, jewellery, facial tissues, sanitary towels, sorghum, white rice flour, heavy duty, tyres and tubes, calcium carbide and cement. A scheme of industrial complementation in selected sectors is still under discussion.

Table 3.4

Share of Imports from and Exports to ASEAN Countries in 1976

	Share of Exports to ASEAN in total exports[1] %	*Share of Imports from ASEAN in total imports*[1] %
Total	8.9 (7.5)	14.0 (9.7)
Chemicals	5.6 (4.2)	5.4 (4.2)
Basic manufactures	12.0 (11.0)	7.2 (4.6)
Machines	72.4 (62.6)	3.2 (2.7)
Miscellaneous manufactures	10.6 (10.1)	6.9 (6.0)

1 Figures in brackets represent the share of trade with Singapore alone.

Source: U.N., *Foreign Trade Statistics of Asia and the Pacific,* (Bangkok: ESCAP, 1976).

(d) *Ownership Distribution*

Though private enterprise is expected to play a leading role in industrial development in Indonesia, the government exercises substantial control over the industrial sector. It operates a large number of state enterprises engaged in a wide of range of activities, ranging from cement, tyres, pharmaceuticals, textiles, fertilisers, to phonograph records. In recent years the government has increasingly engaged in large scale capital intensive import substitution industries, such as steel, fertilisers, cement and paper. The government has also become involved in joint ventures with foreign participation, mainly in resource processing industries such as oil, tin and aluminium. The contribution to value added of government enterprises is, therefore, substantial. In 1974/75 enterprises under the ownership of the Central Government amounted to 24 per cent of total manufacturing value added in medium and large scale industries. Partially or wholly owned foreign enterprises also play an important role in the industrial sector. Such enterprises contributed almost 25 per cent to industrial value added. The domestically owned enterprises contributed the remaining 47 per cent. Generally foreign owned enterprises are more capital intensive, which is illustrated by the high value added employment ratios in wholly or partly foreign owned enterprises.

(e) *Employment and Employment Trends in Manufacturing*

The manufacturing sector still employs only a small part of the employed labour force in Indonesia. In 1977, employment in manufacturing amounted to

Table 3.5

Distribution of Value Added and Employment by Type of Ownership

Ownership	*Value Added (%)*	*No. of Establishments (%)*	*Employment (%)*	*Value Added Employment Ratio (Thousand Rs.)*	*Average Size of Establishments (Number of workers)*
Central Government	23.6	5.0	16.4	1047	303
Domestic private	46.9	87.9	68.7	499	72
Foreign private	10.8	1.4	2.6	3047	167
Domestic private and foreign private	13.3	2.5	7.3	1333	270
Others (mainly or partially owned by the Government)	5.3	3.3	5.0	943	344
Total/Average	100.0	100.0	100.0	-	-

Source: BPS, *Sensus Industri 1974/75* (Jakarta, 1978).

8.6 per cent of total employment.[1] As is to be expected, the share of manufacturing employment was higher in urban areas than in rural areas (12.4 per cent and 7.8 per cent of total urban and rural employment respectively). Nevertheless, the bulk (77.3 per cent in 1977) of the employed in this sector are rural workers. An important characteristic of employment in manufacturing is the large share of female workers, accounting for almost 50 per cent of the total employed.

As a consequence of low rates of growth in value added, employment in manufacturing did not grow very rapidly during the sixties. A comparison of the 1961 and 1971 censuses reveals that in this period total employment in manufacturing increased at an average annual rate of growth of only 3.7 per cent. Surprisingly, it has been employment growth in rural areas which accounted for all of the growth in employment during the sixties, in urban areas manufacturing employment even declined.[2] Another interesting aspect is that female employment in the sector grew much faster than male employment at rates of 2.9 per cent and 5.1 per cent for males and females respectively, between 1961 and 1971.

The rate of growth of employment in manufacturing increased to approximately an average rate of 7.6 per cent per year between 1971 and 1977. The rate of employment expansion continued to be higher in rural areas at 7.8 per cent as against 7.1 per cent in urban areas, but the difference was much lower than during the previous period. Female employment growth also continued to be higher than male employment growth at 9.5 per cent, versus 6.1 per cent for males. A high proportion of the workers are self employed and unpaid family workers (43 per cent in 1977). Most of these are engaged in small scale and household activities.

Wage employment is the category which has experienced the most rapid rates of growth, since 1971, amounting to about 8 per cent per annum in the period 1971 to 1977 as compared to 6.8 and 7.4 per cent for self employed and unpaid family workers, respectively. These data also indicate that during the seventies employment in the organised sector, which employs the bulk of the wage earners, has been growing more rapidly than that in the small scale sector, though the latter nevertheless expanded its employment at respectable rates.

(f) *Inter-industry Linkages and Employment*

The benefits of industrial growth in terms of output and employment will be greater if industries develop or strengthen links with the rest of the economy. Such interindustry linkages will have to be taken into account when assessing the attractiveness of a particular industry.

1 The data used in this section were obtained from the 1961 and 1971 censuses and the 1977 labour force survey. See Appendix Table III.1.

2 Urban employment expansion in manufactures may be understimated, since new industries were often set up at the edges of towns, just outside urban boundaries used in the population census to delineate urban areas.

It is clear from Table 3.6 that substantial gains in employment can be achieved as a result of inter-industry linkages between sectors. It shows that total employment (direct plus indirect) effects can be a multiple of the direct effects. There are several industries which have high total employment coefficient mainly because of their strong indirect employment effects. These include the food processing sectors, oils and fats, sugar refining, beverages, chemicals, rubber products, basic metals and metal products industries. In general it appears that sectors with strong ties with the agricultural sectors have the highest indirect employment coefficients. It can also be observed that the sectors with the highest total labour coefficients, wood and wood products derive them mainly from a high direct employment coefficient. Their links with other sectors are much less substantial. Of course, in view of their high direct employment coefficients they remain attractive industry in terms of employment.

It would be interesting to find out what the impact has been of rapid industrial development during the seventies on inter-industry linkages and indirect employment creation. An idea of the broad trends can be obtained by comparing production coefficients for 1971 and 1975 (see Table 3.6). Across the board inter-industry linkages have declined slightly between 1971 and 1975. Substantial declines can be observed for the sectors sugar refining, beverages, spinning, wood and wood products, fertilisers and pesticides, chemical industries, rubber products, cement, iron, steel and basic metal industries.

A disaggregation of production coefficients shows that the major cause of the decline has been a decreasing importance of linkages with the primary sector. This may have happened as a result of a greater reliance on imports of raw material inputs. The size of linkages with other manufacturing sectors remained virtually the same for most sectors. The decline in the importance of inter-industry linkages with the labour intensive primary sector must have had significant unfavourable effects on employment, since this sector is highly labour intensive. It is likely, therefore, that indirect employment coefficients have declined between 1971 and 1975.

Table 3.6

Interindustry Production Coefficients in Manufacturing Industries for 1971 and 1975

Sector	Employment Coefficients 1971 [1]		Production Coefficients [2]		Cumulative Linkage with Primary and Secondary Sectors			
					1971		1975	
	total	direct	1971	1975	Primary	Secondary	Primary	Secondary
Food processing	7.6	3.5	1.989	2.010	0.510	1.245	0.337	1.304
Oil and fats	3.8	0.8	2.165	2.011	0.717	1.168	0.615	1.103
Rice milling	13.6	0.5	1.928	1.919	0.798	1.030	0.807	1.033
Wheat flour	11.6	2.2	2.016	2.062	0.411	1.331	0.284	1.410
Sugar refining	4.0	0.3	1.867	1.536	0.371	1.155	0.280	1.063
Food products n.e.c.	10.3	2.0	1.863	1.835	0.550	1.095	0.519	1.144
Beverages	5.0	0.5	1.935	1.408	0.170	1.400	0.042	1.199
Tobacco	3.8	1.7	1.673	1.640	0.352	1.075	0.395	1.047
Spinning	6.2	3.2	1.724	1.555	0.185	1.161	0.165	1.171
Other textiles, leather and wearing apparel	6.5	3.3	1.923	1.853	0.075	1.567	0.083	1.587
Wood products	15.3	12.2	1.965	1.787	0.423	1.180	0.296	1.143
Paper and printing	2.7	1.3	1.512	1.483	0.043	1.223	0.036	1.200
Fertilisers	2.2	0.6	1.924	1.306	0.354	1.184	0.075	1.092
Chemicals	2.6	0.4	1.902	1.718	0.263	1.359	0.133	1.371
Petroleum refining	1.2	0.6	1.753	1.747	0.544	1.075	0.605	1.041
Rubber products	3.2	0.6	2.077	1.843	0.484	1.293	0.329	1.331

Table 3.6 (*continued*)

Sector	Employment Coefficients 1971 [1]		Production Coefficients [2]		Cumulative Linkage with Primary and Secondary Sectors			
					1971		1975	
	total	direct	1971	1975	Primary	Secondary	Primary	Secondary
Non metallic mineral products	6.4	4.3	1.570	1.521	0.144	1.145	0.184	1.098
Cement	8.2	5.4	1.992	1.524	0.215	1.285	0.109	1.133
Steel and iron basic metals	3.4	0.6	1.656	1.437	0.087	1.190	0.028	1.084
Non-ferrous basic metals	2.1	0.6	1.875	1.774	0.593	1.111	0.607	1.051
Metal products	2.0	0.7	1.474	1.460	0.049	1.150	0.034	1.158
Machinery	4.0	2.1	1.446	1.423	0.058	1.140	0.022	1.154
Transport equipment	3.3	1.2	1.540	1.638	0.064	1.246	0.046	1.387
Others	7.9	8.0	1.756	1.650	0.135	1.358	0.177	1.213

1 Each coefficient represents the total increase in employment if final demand in increased by one million Rs.

2 Each coefficient represents the total increase in output (in Rs.) as a result of an increase in final demand for that sector by 1 Rs.

Source: Calculated from BPS, *Input-Output Tables,* 1971 and 1975, *op. cit.*

(g) *The Size Structure of the Manufacturing Sector*

An understanding of the existing size structure of the manufacturing sector is important when evaluating its employment potential. Indonesian statistics allow a distinction between large and medium scale (MLE's), small scale (SE's) and household and cottage industries (HCE's).[1]

Date from the 1974/75 manufacturing census show that SE's and HCE's contributed only about 19 per cent of total output and value added of the manufacturing sector. However, in terms of employment they appear to be quite significant with a share of 75 per cent of total employment in manufacturing (see Table 3.7).

Obviously there are major differences in productivity between the different size groups of industries. The higher productivity in the MLE's is largely the result of the use of more sophisticated technologies as is illustrated by the use of power equipment. Most MLE's use some kind of power equipment, whereas only a small minority of SE's (341 out of 47,845 establishments) do so.

There are likely to be greater similarities in technology between SE's and HCE's than between SE's and MLE's. That productivity in SE's is nevertheless substantially higher than in HCE's has other causes. The larger size of SE's compared to HCE's allows a more efficient division of labour. The prevalence of part time work further depresses productivity in HCE's. Skills may also be lower in HCE's. Another factor is the difference in industrial composition between the two size groups.

3.3 General Economic Policies Affecting Industries

The industrial sector has received high priority in the government's development efforts. The objective of employment creation in this sector has also been increasingly emphasized. "Industries which utilise relatively more manpower than capital"[2] was the fourth category of industries to be promoted in the First Five Year Development Plan. In the Second Plan it became the first in the series of priorities. Also in the current (Third) plan high priority is given to

1 Definitions for classifying industries by size group used by the BPS in its industrial enquiries are:

	before 1974/75	since 1974/75
large:	100 or more workers in establishments not using power, or 50 or more workers in establishments using power.	100 or more workers
medium:	10-99 workers in establishments not using power, or 5-49 workers in establishments using power.	20-99 workers
small:	1-9 workers in establishments not using power, or 1-4 employees in establishments using power.	5-19 workers
cottage:	establishments without paid workers.	establishments with less than 5 workers.

2 Republic of Indonesia, *The First Five Year Development Plan 1969/70 – 1973/74* (Jakarta: Department of Information, 1969).

Table 3.7

Output Value Added and Employment by Size Class of Manufacturing Industries in 1974/75

Size Class	*Output*			*Value Added*			*Employment*	
	Amount (million Rs.)	*per man-day*	*%*	*Amount (million Rs.)*	*per man-day*	*%*	*Number (Thousand persons)*	*%*
Large and medium	1295.3	8029	78.3	478.4	2965	77.9	665.8	22.8
Small	157.3	2745	9.5	52.8	922	8.6	269.0	9.4
Household and cottage	200.8	468	12.2	82.6	192	13.5	1934.1[1]	67.8
Total	1653.4	-	100.0	613.8[2]	-	100.0	2858.9	100

1 To improve comparability with small and large industries, employment in household and cottage industries has been expressed in man years rather than total persons employed, since a high proportion of participants in these industries work only part time.

2 It should be noted that there is a considerable gap between value added data for manufacturing from these sources and from national accounts data. According to the latter, GDP in manufacturing amounted to 890 billion in 1974 and 1124 billions in 1975.

Source: BPS, *Sensus Industri 1974/75.*

employment creation in manufacturing. It stresses the development of small scale, cottage and handicraft industries, as well as the promotion of export industries. However, other types of industries are being promoted including those that process agricultural produce and other local materials, substitute for imports to save foreign exchange, produce equipment required in agriculture or in processing agricultural produce and other local materials, substitute for imports to save foreign exchange, produce equipment required in agriculture or in processing agricultural products, and those that promote regional development. There are, of course, few industries which would not qualify as being important according to this wide ranging set of objectives.

In the presence of so many priority areas, the emphasis put on each single priority aspect may have become diluted. An evaluation of policies implemented will provide a better insight to what extent in practice employment creation in manufacturing has been promoted. In this section we review the general economic policies which have influenced the industrial sector such as direct government investment, fiscal incentives, foreign trade policies, and exchange rate policies so as to bring out biases in government policy in relation to the manufacturing sector as a whole as well as the more favoured industries or firms of particular size groups.

It should also be kept in mind that the direct control of the government over a substantial part of the industrial sector offers considerable scope for influencing employment creation. Employment creation in the state enterprises can be influenced through the selection of the most appropriate technology based on social profitability criteria. However, most wholly or partly government owned enterprises were undertaking activities which were relatively large scale and capital intensive and in which the scope for the selection of more labour intensive technologies was limited.

(a) *Fiscal Incentives*

Two sets of laws, the Law on Domestic Investment (PMDN) and the Law on Foreign Investment (PMA) regulate the establishment of new industries in Indonesia. An investment qualifies as domestic when the equity capital is 100 per cent domestic. In all other cases investments qualify as PMA's. The Investment Co-ordinating Board (BKPM) is the agency which deals with approving, licensing and supervising both foreign and domestic projects (according to Presidential Decrees Nos. 53 and 54). It handles all foreign investment applications and those domestic investment applications eligible for receiving incentives and facilities.

The BKPM prepares annually a list of industries according to priority. It contains: (a) Industries Indonesia wishes particularly to develop and for which it offers a full range of incentives as encouragement for investment. (b) Industries which are considered important for development as second level priorities and for which it offers a more limited range of incentives. (c) Industries in which

investment is permitted but which have a lower priority and for which no incentives are offered. (d) Industries which are closed to investment.[1]

The priority list contains a wide variety of activities. For domestic investors priorities in 337 areas have been identified and for foreign investors 240 areas of which 154 are tied to certain conditions such as production for exports only, or location outside Java.

The incentives offered include:

1. Exemption of import duties and restrictions on imported machinery, raw materials, some office equipment and building materials.

2. Tax holidays of a minimum of 2 years and one additional year on each of the following conditions: (i) savings of foreign exchange of over US$250,000 per year; (ii) location outside Java; (iii) value of investment in excess of US$15 million; (iv) if an industry is labour intensive, including industries which employ at least 2000 persons and have a capital labour ratio of less than US$5,000.00.

3. Exemption from corporate income tax, dividend tax and company tax on reinvested profits for a period not exceeding 5 years.

4. Other facilities include: (i) carry forward of losses over first 6 years; (ii) exemption from dividend tax; (iii) investment allowance of 20 per cent over 4 years; (iv) accelerated depreciation to a maximum of 25 per cent; (v) exemption from property tax and some fees; (vi) white washing of capital.

The first three incentives are only applicable to new projects. The facilities mentioned under 4 are both applicable to new and existing firms.

In Table 3.8 the number of projects approved in the manufacturing sector and the amount of investment involved during the period between 1967 and 1978 are shown.

It can be seen that foreign investment was mainly undertaken in basic metals, followed by textiles and chemicals. The bulk of domestic investment was allocated to textiles followed by chemicals and food processing. It also illustrates the importance of foreign investment in Indonesia which accounted for 45 per cent of total approved investment in the manufacturing sector.

It should be noted that the figures in the table refer to the projects approved. In practice only a part of these projects have actually been implemented. By the end of 1978 only 40 per cent of domestic approved investment had been undertaken. For foreign investment projects implementation was as low as 36 per cent. Nor do the figures represent a complete picture of manufacturing investment since many domestic investors are not applying for concessions because of the long period and complicated procedure involved in obtaining them.

In recent years, especially since 1975, there has been a slackening of investment approvals especially of foreign investment. Most of the approvals during the past few years have been related to expansion of existing enterprises rather than to the setting up of new ventures. It has been observed that "This

1 BKPM, *Investment Procedures* (Jakarta, 1979).

Table 3.8

Approved Projects by BKPM, 1967 to 1978

Sector	Foreign				Domestic			
	Number	*%*	*Investment (mil. $)*	*%*	*Number*	*%*	*Investment (bil. Rs.)*	*%*
Food	63	13.3	253.0	6.3	460	22.0	264.7	13.8
Textiles	66	14.0	1027.3	25.6	482	23.1	551.4	28.7
Wood	17	3.6	73.7	1.8	128	6.1	108.8	5.7
Paper	17	3.6	108.5	2.7	149	7.1	95.0	4.9
Chemicals	121	25.6	473.7	11.8	407	19.5	358.3	18.7
Non metallic minerals	20	4.2	471.1	11.8	122	5.8	253.8	13.2
Basic metals	20	4.2	1192.2	19.8	60	3.9	104.7	5.5
Metal working and machinery	129	27.3	389.2	9.7	249	11.9	167.7	8.7
Others	19	4.0	17.3	0.5	34	1.6	16.5	0.9
Total	472	100.0	4006.0	100.0	2091	100.0	1920.9	100.0

Source: Data collected from BKPM.

trend appears to be the result both of a heightened degree of uncertainty among potential investors following the devaluation and accompanying inflationary measures and of the passive role of the Foreign Investment Co-ordinating Board which lacks a clearly defined set of objectives and the administrative drive to initiate a plan of action to achieve them".[1]

Generally, the incentives structure outlined above favours the use of capital. Incentives which have a capital cheapening effect are exemption of import duties on capital equipment, accelerated depreciation and the tax credit of 5 per cent per year over a maximum of four years on additional investment.

Recently a provision has been introduced with the aim of promoting labour intensive industries. This provision allows for one additional year of tax holiday if the new investment creates more than 2,000 jobs and has a capital labour ratio of less than US$5,000. However, as a result of its limitation to relatively large enterprises it may be of little effectiveness in promoting more labour intensive industries.

A general deterrent to the use of investment incentives by smaller enterprises is the lengthy and costly application procedure. Most smaller firms cannot afford to go through this procedure and therefore do no generally benefit from the investment incentives. An argument can, therefore, be made to facilitate the procedures for investment approvals from smaller scale enterprises. The promotion of labour intensive industries could be further stimulated by including labour intensive industries in the top of the scale of the BKPM's priority listings, allowing such industries to receive the maximum benefits.

There seems less need for subsidisation of the wage bill to encourage investment in more labour intensive industries or the adoption of more labour intensive techniques. In Indonesia wages are already so low that the impact is likely to be limited. In general, policies which will only redress factor prices may have limited effect. It has been observed that "the low wages in Indonesia make it commercially possible for businessmen to use relatively labour intensive technologies even in the face of what are probably artificially low capital costs".[2] In spite of this, more expensive capital intensive technologies were often adopted. If cost minimisation is not a primary concern, making labour cheaper or capital more expensive may not have such a strong impact on the selection of technology.

Since capital intensity is strongly correlated with scale as we have observed earlier, regulations that limit incentives to firms of a certain size or that relate incentives inversely to the size of firm may be more effective in promoting employment in manufacturing.

[1] P. Rosendale, "Survey of Recent Developments", *Bulletin of Indonesian Economic Studies* (Australian National University, March 1980).

[2] C.T. Wells, "Men and Machines in Indonesia's Light Manufacturing Industries", *Bulletin of Indonesian Economic Studies* (Australian National University, November 1973).

(b) *Monetary Policies*

The availability of credit is a major condition for facilitating the expansion of manufacturing activities. The bulk of institutional credit is extended by Government controlled banks which in 1978 provided, 84 per cent of Rupiah credits and 95 per cent of foreign exchange credits. The manufacturing industry received 32 per cent of these credits (37 per cent of Rupiah credits and 19 per cent of foreign trade credits).[1]

The lack of availability of credit other than short term led the government to instituting a medium term lending programme, Kredit Investasi, administered by the state owned banks. Loans under this programme are extended both for fixed assets, financing and for working capital. The maximum loan period is 5 years. Of credits approved under this programme by early 1979, 40 per cent was absorbed in the manufacturing sector but outstanding Kredit Investasi amounted only to approximately 8 per cent of Rupiah credits extended to this sector.[2]

In spite of the increased availability of credit, problems in obtaining credit remain serious in particular for small and medium scale pribumi enterpreneurs, who often complain that institutional credit funds from the state banks are pre-empted by the state enterprises.[3] They often have to rely on the informal domestic financial markets where high rates of interest ranging from 2 to 5 per cent per month are being charged.

The structure of the capital market as discussed above provides relatively easy access to credit at favourable interest rates to large scale enterprises, and gives a further bias towards the use of capital by such enterprises.

(c) *Tariff Structure*

A complicated regime of high tariffs, quotas and other restrictions in imports has resulted in a highly protected manufacturing sector in Indonesia. A major reform in the tariffs system took place in 1973 in which tariffs were revised and its administration simplified. Its impact can be assessed from Table 3.9, which compares nominal and effective rates of protection for 1971 and 1975. It appears that for most sectors nominal rates of protection have actually increased between 1971 and 1975, major exceptions being the "other textiles" sector (weaving, wearing apparel and leather) and cement.

There is no clear trend in effective rates of protection. Of the industries listed in the table only 6 experienced a decline and the remaining 14 experienced increases in effective rates of protection. As is to be expected many of the

1 Calculated from: Bank Indonesia, *Indonesian Financial Statistics, August 1979* (Jakarta, 1979).

2 Investment credits fetch the following rates:

Up to Rs. 75 million	10.5%
75 to 200 million	12%
above 200 million	13.5%.

3 Non pribumi entrepreneurs, in addition to having access to the organised credit market, also can obtain credits from "various Asian sources", though little is known about the size of these credit flows.

Table 3.9

Nominal and Effective Rates of Protection in Selected Import Competing Industries[1]

Sector	Nominal Protection[2]		Effective Protection[3]	
	1971	1975	1971	1975
27. Food processing	30.2	38.4	224	270
30. Wheat flour	4.0	21.1	3	607
31. Sugar refining	40.6	−2.9[4]	171	6
33. Beverages	61.7	98.7	372	216
35. Spinning	12.4	15.7	26	52
36. Other textiles	83.5	59.2	1909	217
38. Paper	19.5	31.1	28	50
39. Fertilisers	6.1	−82.4[4]	11	−87
40. Chemicals	20.9	27.8	20	52
41. Oil refining	10.5	5.3	34	17
42. Rubber products	51.6	91.9	345	4042
43. Non metallic minerals	50.6	170.0	114	887
44. Cement	35.4	22.5	314	34
45. Steel	4.5	17.9	5	39
46. Non-ferrous metals	10.0	10.8	25	37
47. Metal products	21.2	24.5	63	56
48. Machinery	6.8	18.9	15	29
49. Transport equipment	31.6	29.2	52	37
50. Others	23.0	27.8	44	68

1 Import competing industries are defined here as industries of which 10 per cent or more of total demand is imported.

2 Nominal protection is import tax plus import duties divided by imports at c.i.f. prices.

3 Effective protection has been calculated according to the formala:

$$ERP = \frac{1 - \Sigma_i a_{ij}}{\frac{1}{1+t_j} - \Sigma_i \left(\frac{a_{ij}}{1+t_i}\right)} - 1$$

4 In 1975 imports of sugar and fertilisers were subsidised.

Note: The resulting estimates are crude: no account has been taken of the effect of quantitative import restrictions and export taxes.

Source: Calculated from BPS, *Input Output Tables for 1971 and 1975, op. cit.*

intermediate and capital goods industries obtain lower rates of effective protection than consumer goods industries.

In addition to import taxes, institutional barriers to entry of imports further enhance the level of protection. "These barriers stem from proliferation of import controls and procedures and their arbitrary enforcement, which effectively delayed and restricted easy entry".[1] Other controls on imports include prohibitions to import a number of products. Protection is also provided by restrictive credit arrangements which discourage importing.

In his analysis of the impact of tariff policies on employment, Paauw found a serious bias against the development of labour industries. He concluded that "most of Indonesia's import substitution manufacturing sector is so highly overprotected that developing export potential under current policies is unlikely". [2] The high levels of protection have also been the major cause for the selection of technologies and industries which are more capital intensive than "appropriate" for Indonesia. While recently a major adjustment has been made in the exchange rate, the system of import controls remained largely unchanged, except for the reduction in import taxes on a number of inputs, which actually must have increased effective rates of protection.

There is therefore a case for streamlining the tariff regime mainly by reducing import tax differentials between goods and the administration of import controls so that opportunities for expansion of labour intensive industries for export and the domestic market can be fully taken advantage of.

(d) *Exchange Rate*

An important factor affecting trade is the exchange rate regime. During the seventies the Rupiah became increasingly overvalued so that exports of labour intensive manufactures were more and more discouraged. The overvalued exchange rate could be maintained because of the accumulation of foreign reserves from the export of oil, and from a number of extractive products.

A major reform in the exchange rate was introduced in 1978 (November) when the Rupiah was devalued from Rs. 415 to Rs. 625 to the US dollar. This measure had a significant impact on the competitiveness of Indonesians exports, particularly of its labour intensive products. Paauw made an attempt to estimate the effect of this change on exports and employment. [3] He found that exports of manufactured products expanded at the spectacular rate of 72.9 per cent in US dollar value terms and by 201 per cent in volume terms in the first quarter of 1979 as compared to the same quarter in 1978. Most of this increase concerned labour intensive products. He also estimated that if the export increases would continue at the same rate over the whole year, employment as a result

1 D. Paauw, "Frustrated Labour Intensive Development: The Case of Indonesia", in E. Lee (ed.), *Export-Led Industrialisation and Development* (Bangkok: ARTEP, 1981).

2 Ibid, p. 161.

3 D. Paauw, "Foreign Trade and Employment", Report to Department of Manpower and Transmigration, UNDP, ILO (Jakarta, 1979).

of these exports would increase by over 400 thousand persons. These gains would be concentrated in such industries as textiles, clothing, footwear and electrical machinery. He also found that imports of manufactures were reduced considerably, possibly as a result of replacement of imports by domestic production.

The problem is of course to maintain the exchange rate at an appropriate level. In the past and in other countries (e.g. Korea and the Philippines) this has proven a difficult task. The continuing increase in earnings from a number of capital intensive extractive products, such as oil, timber and minerals add to the problem of maintaining the competitiveness of Indonesia's labour intensive exports, which still account for a negligible share of its total exports.[1] Nevertheless, in view of the substantial gains in employment which can be achieved as a result of an expansion in such exports, efforts to maintain the competitiveness of Indonesia's labour intensive exports need to be made.

High priority is already given by the government to keeping down the rate of inflation, by tight control of prices and credit. However, it should also be investigated what further measures could be taken with regards to the tariff structure, incentive system and institutional government support for the promotion of labour intensive exports to maintain the momentum of rapid export growth.

(e) *Other Areas of Government Policy*

The government has taken the initiative to provide several types of facilities to encourage industrial development. In the early seventies two industrial estates were established (one each in Jakarta and Surabaya). Currently one more estate is being developed (in Cilacap) while a number of others are being planned in various parts of the country. These estates have been successful in attracting substantial private investment. At the industrial estate of Jakarta over 100 establishments are operating employing about 20,000 workers. It is expected that at its completion it will have 200 enterprises employing 55,000 workers. These data imply that mainly larger scale firms were attracted to set up shop at this industrial estate.

A significant initiative is the promotion of an island near Singapore as a Free Trade Zone. It is being set up to capture labour intensive industries for which Singapore has lost much of the attractiveness due to increased labour costs.

Institutional support to industrial development is provided by various government departments, especially the Department of Industry. One agency, NAFED (National Agency for Export Development) is directly responsible for promoting exports. It has been recommended that "the specialised knowledge accumulated by NAFED should be used to guide an export promotion pro-

1 See for a discussion of these problems: ARTEP, *Export-led Industrialisation and Employment, Proceedings of a Symposium* (Bangkok, 1980).

gramme".[1] Besides institutional support for the promotion of exports through NAFED it will be necessary to tackle bottle-necks which currently are serious obstacles for exporters. It was found that such "bottle-neck factors include slow and cumbersome import procedures for making available intermediate goods for export processing, difficulties in export channels, including transportation, storage and official paper work and problem in dissemination of marketing information".[2]

3.4 Organised Manufacturing Industries [3]

(a) *Composition of Output and Employment*

The organised manufacturing sector in Indonesia is still heavily dominated by a small range of industries. The largest sector in terms of its contribution to value added and gross output is the tobacco industry. In 1978, its share in total manufacturing value added amounted to 25.7 per cent. The sector is followed by the food processing industry which contributed 14.5 per cent to manufacturing value added. The next important sector is textile manufacturing, contributing 10.8 per cent (see Table 3.10). Nevertheless, a trend towards a broadening of the industrial structure can be observed. In 1970 these three sectors contributed still 70 per cent to manufacturing value added, in 1974, 63 per cent and in 1978 it was down to 51 per cent.

Employment is also to a large extent concentrated among these three sectors (food, tobacco and textiles). They employed 60 per cent of the workers in the MLE's in 1978, down from 69 per cent in 1974. According to estimates, employment in MLE's increased by 11.5 per cent per year during the period 1970 to 1973 and by 7.9 per cent from 1974 to 1978.[4] A better appreciation of employment increases in MLE's will be obtained if employment trends are compared with trends in output. In the period 1970 to 1973 the employment output elasticity for all MLE's was 0.46. In the period 1974 to 1978 it was 0.44.[5]

The distribution of medium and large enterprises of MLE's is uneven. The large majority are located in Java, where in 1974 they generated 82.9 per cent of MLE value added and employed 86.5 per cent of the workers. This can be compared with Java's share in Indonesia's population amounting to 63 per cent. The expansion of the industrial sector during the seventies has not coin-

1 Paauw, 1979, *op. cit.*

2 Ibid.

3 The organised manufacturing sector refers to the medium and large establishments which employ more than 20 workers.

4 Due to differences in definitions, estimates between the period 1970 to 1973 and 1974 to 1978 are not strictly comparable. See Appendix Table III.2 for details.

5 Employment elasticity for the manufacturing sector as a whole over the period 1971 to 1977 was approximately 0.62. In view of the much lower employment elasticities for MLE's the employment elasticity for small industries must be close to 1.

Table 3.10

Percentage Distribution of Employment, Value Added and Gross Output by Sector

Sector		Employment		1970		1973		1978		
		1974	1978	V.A.[1]	G.O.[2]	G.O.[2]	V.A.[1]	G.O.[2]	V.A.[1]	G.O.[2]
311/312	Food	21.7	17.3	28.7	36.0	36.7	24.8	22.2	14.5	18.7
313	Beverages	0.8	0.8	1.8	1.0	1.0	3.2	1.6	1.9	1.3
314	Tobacco	20.5	17.5	32.7	24.9	12.8	23.0	18.3	25.7	19.6
321	Textiles	26.5	25.6	9.1	10.3	20.6	15.3	17.0	10.8	14.1
322	Clothing	0.4	0.7	0.8	0.3	0.1	0.1	0.1	0.2	0.2
323	Leather	1.1	0.3	0.2	0.2	0.3	0.1	0.3	0.2	0.4
324	Footwear		0.7	1.3	0.7	0.3	0.7	0.6	0.6	0.5
331	Wood products	3.6	5.2	0.7	0.7	2.4	2.6	2.0	3.4	3.2
332	Furniture		0.6	0.2	0.2	0.2	0.3	0.2	0.2	0.2
341	Paper	1.2	1.1	0.2	0.2	1.3	1.1	1.4	1.6	1.4
342	Printing	2.4	2.0	0.8	0.7	0.4	1.4	0.9	1.4	1.0
351	Industrial chemicals	4.4	1.3	1.1	0.8	1.1	3.1	2.0	6.3	3.8
352	Other chemicals		4.4	3.8	4.2	3.5	3.7	3.3	5.0	5.2
355	Rubber products	1.2	3.7	10.5	14.1	8.3	2.1	1.9	5.1	8.3
356	Plastics	1.1	1.9	0.1	0.4	0.3	0.7	0.9	1.1	1.1
361	Pottery and china ware		0.4	0.2	0.1	0.1	0.1	–	0.2	0.1
362	Glass	3.9	1.1	0.6	0.2	0.3	0.5	0.5	1.7	1.1

Table 3.10 (*continued*)

Sector		Employment		1970		1973		1978		
		1974	1978	V.A.[1]	G.O.[2]	G.O.[2]	V.A.[1]	G.O.[2]	V.A.[1]	G.O.[2]
363/364/369	Other non-metallic mineral products		3.1	2.7	1.6	1.8	3.0	2.0	6.2	3.7
371	Iron and steel	0.3	0.5	–	–	–	0.2	1.5	0.4	0.8
381	Metal products	3.4	3.9	2.7	2.0	2.8	2.7	3.1	2.7	3.9
382	Machinery	1.2	1.2	0.3	0.3	0.6	1.9	1.2	1.5	1.0
383	Electrical machinery	2.0	2.9	0.5	0.1	1.9	3.6	3.0	4.4	4.9
384	Transport equipment	2.3	3.1	0.7	0.8	2.6	5.1	6.1	4.4	4.7
390	Others	1.4	0.7	0.6	0.3	0.4	0.3	0.3	0.3	0.5
	Total	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0

1 V.A. is value added.

2 G.O. is gross output.

Source: BPS, *Survey Industri* (Jakarta, various years).
BPS, *Sensus Industri 1974/75, op. cit.*

cided with any significant de-concentration of industrial activities. Also in 1970, 86 per cent of MLE employment was concentrated on Java.

In real terms growth in value added of MLE's during the period 1970 to 1973 amounted to approximately 20 per cent per year (as compared to 14.7 per cent for the manufacturing sector as a whole). In the latter period, 1974 to 1977, the growth rate had declined to 15 per cent per year (10.2 per cent for the sector as a whole). [1]

The change in the industrial structure during the seventies as reflected in Table 3.10 indicates that particularly in the latter period the largest gains were made by intermediate and capital intensive industries (chemical, non-metallic products, electrical machinery, wood products, and paper products industries). Due to relatively low income elasticities and exhaustion of import substitution possibilities food processing industries, declined in importance. The same fate was experienced in the textile industry during the latter part of the seventies.

It is remarkable that the metal products industry did not increase its contribution to manufacturing value added. In many other countries this sector proved to be very important in stimulating the industrialisation process. Its relative stagnation in Indonesia may well prove to be a serious obstacle in its path towards further industrialisation.

Since the mid-seventies a number of problems have emerged which have impeded the achievement of continuing rapid rates of industrial growth. One major factor has been the development of the oil industry as a strong export sector. The existence of such a sector allowed the country to maintain a relatively strong exchange rate for the Rupiah at which it was difficult for domestic manufacturers to compete with imports inspite of the high levels of production or to promote exports. In an attempt to overcome this problem the Rupiah was devalued considerably in 1978. Another factor has been the ending of the easy stage of import substitution for a number of industries. Restrictive monetary policies with the purpose of keeping down the rate of inflation have also obstructed industrial expansion. Especially medium and small scale private domestic enterprises have been affected by difficulties in obtaining financing for expansion.

In addition, the high rate of growth initially achieved, coupled with the possibility of obtaining considerable protection and favourable investment incentives encouraged entrepreneurs to build up capacity to higher levels than warranted by demand. Also the allocation of resources by the government to developing intermediate and capital goods industries for which the minimum plant size requirements are high have contributed to the creation of excess capacity. Considerable underutilisation of capacity is a major factor in pushing up the domestic cost of production.

[1] Due to changes in definitions, after 1973, it is not possible to strictly compare the growth rates in the two periods.

A number of these problems can be alleviated by changing the emphasis in industrial development policies. More attention could be paid to developing labour intensive industries and industries which process local resources. In developing a number of the latter type of industries some progress has already been achieved e.g. the wood products industries. Examples of other such potentially promising industries are leather products and rubber products. Among labour industries can be classified a whole range of industries which are generally called "footloose" industries. Both types of industries could also be strongly export oriented. For the promotion of a balanced industrial structure there is also a need to develop light metal and engineering industries.

(b) *Labour Intensity and Technology*

An important aspect in assessing the employment potential of different industries is knowledge of their labour intensity. Most commonly labour intensity is measured as the ratio of capital to labour. For Indonesia, however, no estimates are available on capital stock. As an approximate measure we will use the value added-labour ratio. It has been found elsewhere that ranking of industries according to the capital-labour ratio and the value added-labour ratio are largely comparable.

Table 3.11 presents data for the sectoral value added-labour ratios. It shows that the most labour intensive sector is the structural clay products industry (bricks and tiles), closely followed by clothing and furniture manufacturing. Textile industry is also relatively labour intensive, as are pottery and china ware manufacture, plastics, other non-metallic mineral products, other manufacturing, wood products and printing.

Over time significant increases in labour productivity have taken place signalling increasing capital intensity. There are marked differences with regard to trends in capital intensity in different sectors. In the two largest sectors food and tobacco, capital intensity did not change substantially in either period 1971 to 1973 or 1974 to 1977. However, in the next largest sector, textiles, there was a sharp increase in capital intensity during the early years, reflecting the establishments of several large scale modern enterprises. A similar trend can be observed for wood and wood products manufacturing. The paper industry increased its capital intensity strongly in both the early and later period; as was the case with the chemical industries, metal products, and transport equipment industries. For the cement industries, it was during the latter period that capital intensity sharply increased.

It has therefore been the rapidly growing sectors which experienced the largest increases in capital intensity. These sectors expanded obviously through the establishment of modern large scale capital intensive plants.

Labour intensity is also correlated to the size of establishments. Generally, it can be observed that labour intensity declines with increasing firm sizes. An increase in capital intensity with scale will also be reflected in higher value added-labour ratios. In Indonesia the value added-labour ratio is significantly

Table 3.11

Value Added Employment Ratios by Sector (thousands of Rs.) and per Worker Value Added-Establishment Size Elasticities

	Sector	*1971*[1]	*1973*[1]	*1974*[1]	*1977*[1]	*1977*[2]	*Value added size elasticities*
311/312	Food	180	200	400	350	1060	0.39
313	Beverages	460	590	1550	1380	4270	0.89
314	Tobacco	240	230	400	490	1500	0.50
321	Textiles	110	250	250	270	500	0.58
322	Clothing	140	170	120	180	330	neg.
323	Leather	265	–	280	630	1120	0.35
324	Footwear		340	370	710	1300	0.28
331	Wood products	120	230	470	380	680	0.36
332	Furniture	120	110	230	210	380	0.36
341	Paper	320	510	330	670	1710	0.51
342	Printing	170	82	210	300	710	0.23
351	Industrial chemicals	260	460	1650	2710	5710	0.41
352	Other chemicals	220	330	370	770	1610	0.41
355	Rubber products	210	85	450	1040	2190	0.38
356	Plastics	140	93	180	290	600	0.18
361	Pottery, china ware	720	285	110	170	500	0.22
362	Glass	200	280	200	460	1410	0.43
363	Cement	170	–	430	1050	3230	0.62
364	Structural clay products		140	80	50	140	0.36
369	Other non metallic mineral products		–	140	190	590	0.22

Table 3.11 (*continued*)

	Sector	*1971*[1]	*1973*[1]	*1974*[1]	*1977*[1]	*1977*[2]	*Value added size elasticities*
371	Metal products	160	340	350	600	1140	0.48
382	Machinery	170	240	520	490	930	0.51
383	Electrical machinery	650	440	800	1150	2180	0.45
384	Transport equipment	190	560	940	1160	2210	neg.
385	Professional goods	–	–	240	370	710	0.26
390	Others	40	360	80	250	650	–
	Total	185	210	390	450	1200	–

1 Value added is expressed here in constant prices. Use is made of a series of price indices for output by major sectors (two digit) published in *Indikator Ekonomi*. Their application to a three digit industrial breakdown may result in biases if output prices of a subsector deviates from that for the two digit sector. Moreover, it may not always be appropriate to apply an output price deflator to value added, especially if prices for output and inputs are different.

2 Value added in current price.

Source: BPS, *Survey Industri, op. cit.*, and *Sensus Industri 1974/75, op. cit.* Prices indices were obtained from BPS, *Indikator Ekonomi* (Jakarta, various issues).

higher in larger establishments as compared to smaller ones. An attempt has been made here to assess more precisely the relationship between the value added-labour ratio and size class of establishment in different industries through elasticities. [1] They are also presented in Table 3.11 and show that the effect of size on value added per worker varies considerably between industries. Generally, the size of the elasticities seems to be positively correlated with the level of capital intensity. In other words more labour intensive industries have lower elasticities. [2] The implication is that for relatively labour intensive industries the development of smaller scale establishments entails a relatively low sacrifice in terms of labour productivity in view of the similarity of technology. Therefore, it may be easier to promote the development of small scale enterprises in generally more labour intensive industries. On the other hand the promotion of small scale enterprises in more capital intensive industries generates a higher pay off in terms of employment creation. Efforts to promote small scale enterprises in these more capital intensive industries is for this reason highly worthwhile.

The foregoing paragraphs compared labour intensities between industries and within industries between size classes. However, employment creation in manufacturing is also affected by the type of technology applied within an industry and size group. Because of the biases in factor prices favouring the use of capital, the large number of wholly or partly foreign owned enterprises and the general preference of entrepreneurs for working with modern technologies, it is likely that the level of technology in MLE's is more capital intensive than is "appropriate" for Indonesia given its high rates of unemployment and under-employment. In view of the lack of relevant data, however, it is difficult to assess the extent to which technologies are inappropriate in Indonesia.

One measure could be the use of second hand equipment. For the sector as a whole it is relatively unimportant; second hand purchases of equipment amounted in 1977 to 10 per cent of all purchases of equipment. However, there are a number of sectors for which it is substantially higher, especially for industrial chemicals (35 per cent), structural clay products (43 per cent), metal products (17 per cent), machinery (44 per cent), electrical machinery (38 per cent) and transport equipment (28 per cent). Most of these are relatively capital intensive industries but would probably have been even more capital intensive if less use had been made of second hand equipment.

However, the most satisfactory approach to assessing the appropriateness of technologies is through a comparison of the relative profitability of available

1 The formula used for calculating size elasticies was:

$$V.A./L = \alpha + \beta \text{ Emp/Ent.}$$

The average Employment and Productivity for different size classes of firms was obtained from IBRD, *Cottage and Small Industries in the National Economy* (Washington, 1979).

2 The strength of the correlation between labour intensity and the per worker value added-establishment size elasticity can be evaluated by comparing the ranking of industries according to labour intensity and to the size of th elasticity. The Spearman's rank correlation coefficient between these rankings is a high 0.84.

different technologies in manufacturing processes and sub-processes in highly disaggregated industries. Such studies elsewhere have shown that for a large number of industries there is a wide choice of technologies. [1]

A study of technologies in a number of light industries in Indonesia found that a wide variety of technologies were applied within the same industry. [2] In quite a few cases relatively capital intensive technologies were used, though they were less cost effective than less capital intensive technologies. It appeared that capital intensive technologies were often introduced when the firms have a monopolistic position as a result of high rates of protection or by producing a "brand" product. In these situations costs are not minimized.

(c) *Wages and Skills*

Wages in MLE's are relatively low, amounting in 1977 to Rs. 265,000 per worker per year (US$ 640). [3] On the average, wages and salaries per worker in MLE's (on a daily basis) are only twice as high as those paid by SE's (Rs. 572 as compared with Rs. 285 in 1974), compared to a more than 3 times higher value added per worker. As a consequence of low wages, the share of wages and salaries in value added of MLE's is also low (22 per cent in 1977).

To some extent differences in wages and salaries per worker between industries reflect differences in skill intensities. Industries, which have relatively low wages and salaries per worker, generally employ a larger proportion of unskilled workers and are also usually more labour intensive (compare Tables 3.11 and 3.12). However, there are a number of exceptions. Some industries have a significantly higher rank according to capital intensity than according to wage per worker i.e. tobacco, leather, and other non-metallic mineral products. In these industries unskilled work is prevalent, though the activity is relatively capital intensive. In a number of other industries wages per worker are relatively high, as compared to capital per worker i.e. in furniture making, printing metal products, machinery and pottery and earthenware. These industries require relatively highly skilled worker, while capital requirements are lower.

The average wages presented in Table 3.12 conceal a large degree of variations in wages actually paid in Indonesia. It has been found that for the same occupation wages can vary considerably between firms and regions, even for unskilled workers. High wage differentials were also found to exist for different skills, i.e. "from the scattered data available, ratios of skilled, specialised semi-skilled and unskilled wages in the region of 2 to 1.6 to 1 may be representative of many production workers". [4] These differences reflect the relative shortage of skilled workers. Currently, training programmes, formal as

1 See for example the articles in *World Development*, "The Choice of Technology in Developing Countries", Special Issue Vol. 5 (Nos. 9/10, September/October 1977).

2 Wells, *op. cit.*

3 Rupiahs were converted by the then going exchange rate of Rs. 415 to 1 dollar.

4 D.C.E. Chew, *Wage Policies and Socio Economic Development in Indonesia* (Bangkok: ILO-ARPLA, 1978).

well as in-plant training, are inadequate to meet the requirements for skilled workers. There is also a severe shortage of higher level personnel, technicians as well as managerial workers, consequently they are paid very high wages. The main industries where manpower shortages are felt are the rapidly expanding textile, oil, pharmaceutical, metal and machinery industries. [1]

Over time average wages and salaries per worker have increased considerablly (see Table 3.12). Even in real terms gains were substantial. Nominal wages and salaries increased by over 80 per cent during the period 1970 to 1973 and by almost 90 per cent in the period 1974 to 1977. In both periods the urban price index increased by 50 to 60 per cent. However, it is questionable whether over this period real wages for unskilled workers, who constitute the majority of the workers, have increased. One study observed that over short periods real wages of unskilled workers did increase but regarding trends over a longer period it observed that "wages seem to have stagnated in Indonesia in the 1970s despite continued rapid growth". [2] The low level of wages in Indonesian manufacturing gives it an important comparative advantage, which should allow it to develop labour intensive industries, especially since other countries in the region are experiencing rapid increases in wage costs.

3.5 Small Scale, Cottage and Household Industries

(a) *Structure*

According to the 1974/75 industrial census 3.9 million persons were engaged in HCE's in manufacturing industry and a further 343.2 thousand persons were engaged in SE's. A useful classification of different types of small industries has been presented in a recent report on small and medium scale industries in Indonesia. [3] It distinguished between the following categories:-

1. *"Local" Industries.* Such industries are usually very small household and cottage type industries which produce mainly for a small community. Most of the traditional type household enterprises and a large number of cottage industries, can be classified in this category.

2. *"Clustered" Industries.* An important characteristic of the small scale industrial structure in Indonesia is the concentration of industries producing similar products in one or a few villages. The occurence of such clustered industries has resulted mainly from the concentration of raw materials. But an important factor is also the presence of special skills or crafts. Clustered indus-

1 L. Berouti, *Population and Manpower Patterns and Trends in Indonesia* (Jakarta: ILO 1974).

2 G.F. Papanek, "Real Wages, Growth, Inflation, Income Distribution and Policies in Pakistan, India, Bangladesh and Indonesia". Discussion Paper No. 29 (Boston: Department of Economics, Boston University, 1979).

3 International Development Centre of Japan, "Industrial Development in South-East Asian Countries: Small and Medium Scale Industries, Republic of Indonesia, Phase I" (Tokyo, 1978). Mimeo.

Table 3.12

Wages and Salaries per Worker by Industry (Thousand Rs.)

	Sector	*1970*	*1973*	*1974*	*1977*	*1974 Per Employee per day (Rs.)*
311/312	Food	38.7	66.3	137.7	251.1	586
313	Beverages	67.3	182.9	408.3	705.7	2176
314	Tobacco	23.4	39.5	70.5	119.9	270
321	Textiles	36.8	67.6	111.6	191.6	436
322	Clothing	9.8	62.4	100.0	127.4	397
323	Leather	44.0	89.0	111.5	201.3	458
324	Footwear	70.5	95.6	284.3	307.8	1241
331	Wood products	41.9	86.6	173.6	277.4	782
332	Furniture	39.5	60.0	162.6	255.3	659
341	Paper	53.0	168.9	238.1	400.1	1067
342	Printing	53.4	74.5	145.9	317.7	636
351	Industrial chemicals	85.7	134.9	197.7	1411.3	895
352	Other chemicals	73.7	141.5	229.5	405.5	1084
355	Rubber products	45.1	124.6	281.6	411.3	656
356	Plastics	47.2	51.7	113.0	200.8	449
361	Pottery, china ware	105.0	148.5	105.2	257.8	441
362	Glass	43.1	96.1	202.5	345.2	860
364	Other non-metallic mineral products	66.9	73.1	181.7	322.8	770
371	Iron and steel	–	–	250.9	1096.2	1200

Table 3.12 (*continued*)

	Sector	*1970*	*1973*	*1974*	*1977*	*1974 Per Employee per day (Rs.)*
381	Metal products	56.6	95.6	172.7	267.5	742
382	Machinery	61.4	87.6	195.1	380.2	866
383	Electrical machinery	57.1	117.9	257.5	444.2	1156
384	Transport equipment	61.4	193.7	315.4	564.2	1470
385	Professional goods	–	30.0	118.9	244.3	452
390	Others	24.2	53.8	93.0	163.8	1587
	Total	39.1	70.1	141.0	264.8	572

Source: Calculated from BPS, *Survey Industri, op. cit.*, and *Sensus Industri 1974/75, op. cit.*

tries comprise HCE's as well as SE's. Industries which to a significant extent are concentrated in clusters are for example: weaving, batik, leather and leather products (including footwear), a number of food processing activities (e.g. coconut, sugar), wood working (including wood carving), bamboo and rattan, bricks and tiles, pottery, and some metal products (e.g. iron wares, and agricultural tools). Such clusters are most important in Java, especially Central and East Java. For example, in East Java there are over 300 such clusters, engaging 150,000 persons, which amounts to almost 30 per cent of the total participants in HCSE's in that province. These industries can serve a wide geographical market, though the bulk of the products usually goes to nearby towns. The marketing of the products is mainly undertaken by middlemen; who also provide the producers with raw materials and credit.

3. *"Independent" Industries.* These are industries which are a bit larger in scale and could vary from small scale to medium scale industries. They apply higher levels of technologies and are often mechanised. They have a greater ability to acquire newer technologies and are less dependent on middlemen for their raw materials and marketing.

Table 3.13 presents some characteristics of HCSE industries broken down by 3 digit sector. It shows that the bulk of the employed in cottage industries are engaged in a narrow range of activities i.e. in food, textiles, wood and bricks and tiles industries. These industries accounted for almost 93 per cent of the employed in HCE's. Employment in SE's is slightly more diversified. Nevertheless, the above mentioned industries still accounted for 80 per cent of employment in SE's. Other important SE's industries are manufacture of metal products and cement accounting each for approximately 5 per cent of small scale industry employment.

Wage employment is limited in HCE's. Only 8 per cent of the units hire labourers; they account for 4.5 per cent of the employed in this sector and for 8.4 per cent of the number of mandays worked. The average number of mandays worked by hired labourers is well over 200 per year. Apparently most of the hired participants work full time. On the other hand, most of the household workers either work part time or on a temporary basis. They work on an average only 105 full mandays per year. In SE's most workers are hired labourers comprising about 80 per cent of the employed in such enterprises.

Employment in small industries shows significant seasonal variations, particularly in HCE's. In the months August to December employment is highest (see Table 3.14). This period correspond with the slack season in agriculture. On an average, the number of working days during this period is approximately 15 per cent higher for household workers and almost 50 per cent for hired workers than in the remaining months. The difference is even higher in urban areas where in those months the number of working days is about 70 per cent higher for household participants and almost 50 per cent higher for hired workers compared to the rest of the year. Obviously a considerable number of persons who are normally engaged in agriculture work in HCE's during the slack season also

Table 3.13

Employment in Small Scale, Cottage and Household Industry by Sector

Sector		Cottage and Household Industries							Small Scale Industries (Thousands of Workers)	
		Employment (Thousands of Workers)				Mandays Worked per worker per year				
		Household Members	Hired Workers	Total	% of Total	Total	Hired Workers	Household Participants	Total	% of Total
311/312	Food	1,303.1	77.6	1,380.0	35.4	134	212	129	143.9	41.9
313	Beverages	5.2	0.3	5.5	0.1	85	210	79	3.5	1.0
314	Tobacco	11.2	3.8	15.0	0.4	118	158	104	3.8	1.1
321	Textiles	390.4	8.4	398.6	10.2	89	256	86	45.8	13.3
322	Clothing	23.7	2.6	26.3	0.7	107	258	90	4.8	1.4
323	Leather	3.0	1.2	4.2	0.1	136	232	97	1.2	0.3
324	Footwear	4.4	1.4	5.8	0.1	142	273	101	2.6	0.8
331	Wood products	1,518.9	17.4	1,536.4	39.4	91	222	89	25.6	7.4
332	Furniture	94.5	13.1	107.6	2.8	107	231	90	16.1	4.7
341	Paper products	4.8	0.4	5.2	0.1	111	275	97	0.7	0.2
342	Printing	3.1	1.2	4.3	0.1	141	275	88	7.4	2.2
352	Other chemicals	5.9	2.1	8.0	0.2	83	143	62	1.1	0.3
355	Rubber products	4.4	1.8	6.2	0.2	110	209	69	4.1	1.2
356	Plastics	5.5	1.1	6.6	0.2	113	271	81	2.9	0.8
361	Pottery and china ware	60.5	1.1	61.6	1.6	121	192	120	1.4	0.4
363	Cement	14.1	4.8	18.9	0.5	114	193	86	16.1	4.7

Table 3.13 (*continued*)

	Sector	Cottage and Household Industries							Small Scale Industries (Thousands of Workers)	
		Employment (Thousands of Workers)				Mandays Worked per worker per year				
		Household Members	Hired Workers	Total	% of Total	Total	Hired Workers	Household Participants	Total	% of Total
364	Structural clay products	143.7	22.4	166.1	4.3	136	245	119	28.2	8.2
369	Other non-metallic mineral products	15.7	1.0	16.7	0.4	107	284	96	1.0	0.3
381	Metal products	39.8	9.8	49.6	1.3	119	227	92	16.2	4.7
382/83	Machinery	3.6	1.6	5.2	0.1	130	247	76	2.3	0.6
384	Transport equipment	5.6	0.7	6.2	0.1	87	215	71	3.5	1.0
390	Others	61.7	3.2	64.9	1.7	107	255	99	5.5	1.6
	Total	3,722.7	177.2	3,899.9	100.0	110	222	105	343.2	100.0

Source: BPS, *Sensus Industri 1974/75, op. cit.*

Table 3.14

Mandays Worked by Main Season In HCE's

Period	*Urban*			*Rural*		
	Average of Working Days (per worker per month)	*Mandays Worked (000)*		*Average of Working Days (per worker per month)*	*Mandays Worked (000)*	
		Hired Workers	*Household Participants*		*Hired Workers*	*Household Participants*
August-December	11.6	906	2435.8	12.0	3099.2	32723.4
January-July	11.6	650	1428.3	12.4	2133.7	29178.1

Source: BPS, *Sensus Industri 1974/75, op. cit.*

Table 3.15

Employment in Small Scale and Cottage Industries[1] (thousands of persons)

		1964	*1974/75*
Total	participants	2057.0	3770.0
	male	1071.5	1305.3
	female	985.5	2464.7
Total	urban	200.0	238.1
	male	146.4	192.0
	female	53.6	46.1
Number of wage earners		338.1	343.0
Number of household workers		1718.9	3427.0
	full time	1084.1	1448.8
	part time	634.8	1978.2
Value added per worker (Rs. in constant process of 1964)		27690	18265

1 Small scale and cottage industries are defined here as enterprises which use power and employ less than 5 persons and those which do not use power and employing less than 10 persons. This was the definition applied in 1964. Several adjustments were introduced to make the 1964 and 1974/75 data comparable.

Source: BPS, *Sensus Industri 1964/65* (Jakarta, 1969).
BPS, *Sensus Industri 1974/75, op. cit.*

move to urban HCE's. Another factor which may explain some of the seasonal differences in employment is seasonality in the availability of raw materials.

A more detailed picture of employment growth in HCSE's can be obtained by comparing the 1964/65 and 1974/75 Industrial censuses. A broad comparison of general features is presented in Table 3.15. It shows that while the number of participants in HCSE's had increased considerably in the period 1964 to 1974/75, it concerned mainly an increase in part time female household participants. The increase in the number of participants was accompanied by a declining intensity of work and presumably a higher degree of work sharing. It seems, therefore, that the small scale sector did not expand significantly in terms of productive employment opportunities, as is also reflected by a decline in the value added per worker.

As compared to employment value added is less concentrated amongst a few industries. Food, textiles, wood and bricks and tiles industry generate

74 per cent of total value added in SE's and 86.2 per cent of value added in HCE's (see Table 3.16). There are a number of sectors in which value added of small scale and cottage industries constitutes a major part of total value added of the sector. They include such sectors as, manufacture of wearing apparel, wood and wood products, furniture, pottery, clay products, and other non-metalic mineral products.

In view of the low productivity in HCE's it is not surprising that wages paid to hired workers employed in such enterprises are low, on an average Rs. 255 (US$0.60 at the then prevailing exchange rate). For the HCE sector as a whole this is considerably higher than the average value added per manday (Rs. 192). However, an examination of a more detailed breakdown of industries reveals that in most industries value added per manday is significantly higher than wages per manday. Hired labour seems to be, therefore, mainly employed in enterprises and industries which have a relatively high level of productivity. Wages in SE's do not seem to be much higher than in HCE's inspite of the much higher productivity of these industries. The average wage for all SE's is Rs. 285 per manday. [1]

(b) *Urban-Rural and Regional Employment Characteristics*

The bulk of household and cottage manufacturing activities are undertaken in rural areas. Urban employment accounted only for 6.5 per cent of total employment in such activities. Also small scale enterprises are mainly based in rural areas. Only 20 per cent of the small scale establishments are located in municipal areas. [2]

The large majority of HCSE's is concentrated on Java, which accounted for 76.8 per cent of employment in HCE's and for 71.4 per cent of employment in SE's (see Table 3.17). There is a remarkable under-representation of HCE's in Sumatra. Provinces in which a relatively high proportion of the population is engaged in HCE activities are Central Java, Jogyakarta, and outside Java in North Sulawesi, South Sulawesi, Aceh, and West Nusatengarra. Since most HCE industries are engaged in processing natural resources, such as bamboo, rattan, timber, coconut, clay, rice and tahu, variations in the incidence of HCE's between provinces are most likely, mainly due to differences in the availability of such materials, though access to markets will also be important.

There are also major differences in the intensity of work in HCE's between urban and rural areas as well as between provinces (see Table 3.18). In rural areas most male participants seem to work on most of the working days during the year; female participants work only on one-half to one-third of the working days. In urban areas the reverse situation exists. Male workers work on average

1 Calculated from BPS, *Sensus Industri 1974/75, op. cit.*

2 Urban areas comprise more than municipal areas alone. The share of small enterprises in urban areas may therefore be higher than 20 per cent.

Table 3.16

Distribution of Value Added in Small Scale and Cottage and Household Industries

	Sector	*Percentage Distribution of Value Added of:*		*Share of Small Scale and Cottage Industries in Total Value Added*
		Small Scale	*Cottage Industry*	
311/312	Food	46.7	43.7	32.7
313	Beverages	1.0	0.2	5.0
314	Tobacco	0.6	1.3	10.4
321	Textiles	9.0	5.9	12.5
322	Clothing	1.3	1.7	79.3
323	Leather	0.5	0.4	42.0
324	Footwear	1.0	0.7	26.1
331	Wood products	8.1	21.1	60.1
332	Furniture	5.1	5.5	85.7
341	Paper	0.1	0.2	5.1
342	Printing	3.1	0.3	22.9
351	Industrial chemicals	0.8	–	8.7
352	Other chemicals	1.9	0.5	8.0
355	Rubber products	2.2	0.4	3.7
356	Plastics	1.1	0.5	24.8
361	Pottery and china ware	0.2	0.1	79.0
362	Glass	0.6	–	1.3
363	Cement	4.5	1.3	21.9
364	Structural clay products	3.4	8.8	88.7
369	Other non-metallic mineral products	0.2	0.4	61.5
381	Metal products	4.4	3.1	28.5
282/83	Machinery	1.3	1.0	–
384	Transport equipment	1.6	0.5	3.6
390	Others	1.4	2.0	18.3
	Total	100	100	22.1

Source: Calculated from BPS, *Sensus Industri 1974/75, op. cit.*

Table 3.17

Percentage Distribution of Employment and Value Added in Small Scale and Household and Cottage Industry by Province

Province	*Percentage Distribution of Population*	*HCE*		*SE*		*HCE Employment as Percentage of Population*		
		Employment	*Value Added*	*Employment*	*Value Added*	*Urban*	*Rural*	*Total*
Sumatra	*18.1*	*8.1*	*15.9*	*15.3*	*13.7*			
Aceh	1.7	1.9	3.1	1.5	1.2	0.6	3.6	3.2
North Sumatra	5.7	1.3	2.8	4.6	5.0	0.4	1.0	0.7
West Sumatra	2.3	1.7	2.7	2.2	1.8	0.8	2.5	2.1
Riau	1.4	0.4	1.0	1.4	1.3	4.6	0.1	0.8
Janbi	0.9	0.7	1.4	0.8	0.6	1.7	2.8	2.4
Sumatra, South	3.0	1.0	3.4	3.5	2.6	0.8	1.0	1.0
Benulu	0.4	0.4	0.5	0.2	0.2	1.7	2.6	2.5
Lampung	2.6	0.7	1.0	1.1	1.0	0.5	0.8	0.8
Java	*63.0*	*76.8*	*66.2*	*71.4*	*74.5*			
Jakarta	4.1	1.5	6.3	5.4	6.6	1.0	–	1.0
West Java	18.0	12.1	13.5	20.8	19.5	0.6	2.1	1.9
Central Java	18.1	41.9	27.5	21.6	23.6	1.9	7.4	6.8
Jogyakarta	2.0	6.9	3.8	2.7	3.2	1.8	11.5	10.0
East Java	20.8	14.6	15.1	20.7	21.6	0.8	2.3	2.1
Kalimantan	*4.5*	*3.1*	*4.8*	*2.8*	*2.6*			
West Kalimantan	1.8	1.0	1.5	0.9	0.7	0.8	1.9	1.6
Central Kalimantan	0.6	1.0	0.1	0.4	0.4	2.2	4.2	3.8
South Kalimantan	1.4	1.9	2.8	1.1	1.1	2.1	–	0.4
East Kalimantan	0.7	0.1	0.4	0.4	0.4	0.7	–	0.3

Table 3.17 *(Contd.)*

Province	*Percentage Distribution of Population*	*HCE*		*HE*		*HCE Employment as Percentage of Population*		
		Employment	*Value Added*	*Employment*	*Value Added*	*Urban*	*Rural*	*Total*
Sulawasi	*7.3*	*7.9*	*9.7*	*6.8*	*5.1*			
North Sulawesi	1.5	2.5	3.9	0.9	0.7	0.8	6.0	5.0
Central Sulawesi	0.8	–	0.1	0.5	0.3	1.5	–	0.1
South Sulawesi	4.4	5.3	5.6	4.6	3.6	1.2	4.1	3.5
South-east Sulawesi	0.6	0.1	0.1	0.8	0.5	4.8	–	0.5
Others	*7.2*	*4.1*	*3.7*	*3.8*	*4.4*			
Bali	1.8	1.7	1.6	1.6	2.2	1.6	2.9	2.7
West Nusa Tengara	1.8	2.1	1.4	1.0	0.9	1.3	3.4	3.3
East Nusa Tengara	1.9	0.1	0.1	0.6	0.5	6.8	–	1.3
Muluku	0.9	–	0.1	0.3	0.3	0.9	–	0.2
Irian Yaja	0.8	0.2	0.5	0.3	0.5	5.6	–	1.6
Total	100	100	100	100	100	1.1	3.5	3.0

Source: BPS, *Sensus Industri 1974/75, op. cit.*

only half of the year, while females work on most working days. It should also be noted that in urban areas the intensity of work is higher than in rural areas i.e. almost 70 per cent of the males and 60 per cent of the women worked full days. In rural areas HCE participants were more often working half days, i.e. full time working days accounted for only 50 per cent of the total days worked (see also Table 3.18).

The following explanations may be given for this situation. In urban areas the men who have to rely on casual work e.g. in construction may undertake simple manufacturing activities on which they can fall back during periods when there is no casual work available. Continuity in these small manufacturing business could be provided by the females in the family, who were observed to work more regularly in such activities. In rural areas working in HCE's is likely to be the main occupation for the men. They are assisted on a part-time basis by the women of the household. In rural areas women from agricultural households may also engage temporarily in household manufacturing activities during the slack season to supplement the family income. In general, the large extent of working half days or less in rural areas even among males reflects the marginal nature of HCE activities in these areas.

Table 3.18 shows that there are significant differences in productivity of HCE's between rural and urban areas and between provinces. Generally productivity of urban HCE's is considerably (2 to 3 times) higher than of rural HCE's. The productivity of HCE's in rural Java is very low. In Sumatra, rural HCE's achieve generally a relatively high productivity. The differences in productivity between provinces may partly be explained by differences in the industry composition of the HCE sector. For example, the prevalence of such low productive industries as raw sugar or tahu and tempe processing will depress total HCE productivity in a province significantly. Some confirmation of this relationship was obtained by relating the value of intermediate inputs per worker to value added per worker by means of a simple linear regression. The first explained about 55 per cent of the variations in the latter. In general, however, differences in the industrial composition of the HCE sector between provinces are not that extensive. Important industries which most provinces have in common are bamboo, rattan, raw sugar, rice milling, tahu and tempe processing. There must therefore be major differences in productivity between provinces in the same sector. Available data for a number of industries confirm this. For example, the productivity of rice milling in HCE's in Central Java amounted to Rs. 120 per manday as compared to only Rs. 92 in North Sumatra, while wooden furniture and raw sugar processing obtained a productivity of only Rs. 32 and Rs. 12 respectively in Central Java as compared to Rs. 71 and Rs. 29 respectively in North Sumatra. Differences in technologies applied between provinces, as well as in marketing conditions, the quality of the product, the level of skills, the extent to which the activity is engaged in as a subsidiary activity, or as an employment of last resort will all play an important role in explaining provincial differences in productivity.

Table 3.18

Employment Characteristics and Productivity by Provinces

Province	*Mandays Worked per Year*				*Full-time Mandays as a Percentage of Total Mandays Worked*				*Output per Manday (Rs)*	
	Rural		*Urban*		*Rural*		*Urban*			
	Male	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Rural*	*Urban*
Sumatra										
Aceh	144.0	48.7	83.0	126.0	43.7	37.0	55.1	25.6	988	2,023
North Sumatra	173.6	52.3	142.6	217.6	52.6	50.9	71.4	55.9	1,091	1,404
West Sumatra	116.2	52.7	88.3	181.2	52.9	49.1	63.5	58.9	910	1,624
Riau	180.6	44.2	95.5	80.4	55.6	41.9	36.2	10.9	807	2,084
Jambi	171.3	43.9	34.7	178.2	66.9	54.9	48.3	57.5	715	859
South Sumatra	179.6	53.4	73.5	145.8	57.1	57.8	43.6	41.9	1,760	960
Bengkulu	172.3	27.2	86.8	252.7	45.1	35.8	50.0	53.0	689	1,075
Lampung	146.8	58.4	97.8	191.8	47.2	38.0	67.1	56.4	674	1,123
Java										
Jakarta	–	–	–	201.2	–	–	69.3	52.3	–	1.719
West Java	177.0	62.8	127.7	206.4	54.5	52.6	66.2	57.8	532	1,958
Central Java	224.9	86.4	101.2	255.3	51.4	47.2	64.8	63.7	281	939
Yogyakarta	183.5	83.3	121.6	278.1	37.2	39.2	78.8	75.2	314	1,102
East Java	212.1	85.3	117.3	232.1	58.9	55.3	65.1	64.8	426	1,202
Kalimantan										
West Kalimantan	61.9	110.2	38.1	127.1	53.8	33.8	21.0	12.8	1,264	1,726
Central Kalimantan	60.3	188.7	77.9	209.9	–	–	46.6	36.6	–	782
South Kalimantan	–	–	57.6	156.6	53.7	55.6	73.9	70.0	522	1,202
East Kalimantan	–	–	83.4	132.3	–	–	69.8	34.8	–	1,534

Table 3.18 *(Contd.)*

Province	*Mandays Worked per Year*				*Full-time Mandays as a Percentage of Total Mondays Worked*				*Output per Manday (Rs)*	
	Rural		*Urban*		*Rural*		*Urban*			
	Male	*Female*	*Male*	*Female*	*Male*	*Female*	*Male*	*Female*	*Rural*	*Urban*
Sulawesi										
North Sulawesi	81.2	27.1	71.4	123.4	61.9	53.9	46.9	26.5	1,596	1,205
Central Sulawesi	–	–	70.7	112.4	–	–	48.5	28.6	–	1,612
South Sulawesi	160.0	70.6	68.6	192.1	62.4	67.8	64.6	64.6	459	761
South-east Sulawesi	–	–	–	–	–	–	54.7	55.0	–	558
Other Provinces										
Bali	186.9	52.9	94.4	187.2	29.4	25.0	59.6	56.0	715	1,280
West Nusa Tengara	166.0	52.9	50.8	162.9	54.1	49.5	36.9	40.5	478	1,634
East Nusa Tengara	–	–	21.7	94.9	–	–	24.1	18.1	–	996
Malukka	–	–	22.5	137.9	–	–	61.4	50.0	–	2,748
Irian Yaja	–	–	105.7	240.2	–	–	71.7	65.3	–	1,645
Indonesia	187.8	77.9	100.3	206.8	49.8	51.1	63.0	56.6	419	1,339

Source: Calculated from BPS, *Sensus Industri 1974/75, op. cit.*

The relationship between total output and employment can be measured quantitatively on the basis of provincial data. Fitting a simple linear regression equation gives the following results.

$$O_u = \underset{(-0.110)}{-15.4} + \underset{(15.095)}{1.333}\, L_u \quad R^2 = 0.90 \text{ (26 observations) (1)}$$

$$O_r = \underset{(2.475)}{280.6} + \underset{(17.216)}{0.277}\, L_r \quad R^2 = 0.95 \text{ (18 observations) (2)}$$

Equation (1) gives the relationship between mandays (L) and output in thousand Rupiahs (0) for urban areas and equation (2) does so for rural areas. The figures in brackets are t-statistics. The results show that there is a close relationship between output and mandays worked. An interesting finding is that whereas the marginal productivity of labour in urban areas is of the same order of magnitude as the average productivity (Rs. 1333 and Rs. 1280 respectively); in rural areas it is much lower (Rs. 277 and Rs. 403 respectively). It confirms that in rural areas employment is much more of a marginal nature than in urban areas. In urban areas increasing employment in HCSE activities would still have a significant impact on output, while in rural areas the impact on output of increased labour inputs are almost negligable. It would, therefore, require an upward shift in the productivity curve through capital injections, technological improvements, etc. to reach satisfactory income levels for additional workers in rural areas.

(c) *Displacement of Small Industries*

Establishment of large scale industries producing similar products to the ones produced in small scale industries and changes in consumption patterns in favour of "modern" articles have seriously affected employment in HCSE's. Areas of competition between large and small firms are weaving (mechanised weaving mills versus handlooms) processing of several types of food stuffs, beverages (carbonated soft drinks versus locally made drinks), rubber and wood processing, footwear (leather and wooden sandals versus plastic slippers) and household utensils and equipment (clay jugs and metal buckets versus plastic ones).

An industry in which small scale establishments have suffered most seriously from increased competition of large firms has been the weaving industry. In one report the loss of employment in the handloom sector between 1964 and 1974 has been estimated at between 40,000 and 90,000 full time jobs. [1] However, due to the rapid expansion of production of large scale

[1] R. McCawly, *Industrialisation in Indonesia, Development and Prospects* (Canberra: Australian National University, 1979).

Table 3.19

Number of Establishments and Employment in Small & Handicrafts Industries by Industry Group

Industry	*Number of establishments (000's)*		*Employment (000's)*	
	1969	*1974*	*1969*	*1974*
Food & beverages	203.5	233.9	574.5	630.6
Textiles, clothing	97.3	79.4	202.2	146.0
Leather & products	5.6	2.6	9.5	10.6
Wood & furniture	212.6	428.1	395.7	790.1
Paper & printing	2.4	0.3	7.5	1.4
Others	265.7	125.2	596.6	375.2
Total	787.1	869.5	1786.0	1953.8

Source: BPS, *Survey on Small-Scale Industry and Handicrafts, 1969 to 1974,* (Jakarta, various issues).

weaving enterprises, especially since the late sixties, employment in the industry as a whole did not decrease.

A series of surveys on small and handicraft industries carried out by the Central Bureau of Statistics also shed some light on displacement of small industries (see Table 3.19). The table suggests a strong decline in the number of establishments and in employment in the textile and wearing apparel sector. Other industries which experienced serious losses in the number of small establishments were miscellaneous manufacturing industries, and paper products, and printing. On the other hand the number of small scale establishment and employment in the wood and furniture sector increased significantly. No major changes occurred in the food and beverage sector. In the leather sector the number of small establishments declined but the number of employed increased slightly.

In a number of other areas small scale enterprises are also threatened. For example, considerable resources have been allocated to the development of large scale sugar refineries. Once they start production they are likely to force many of the cottage sugar mills out of production (which in 1975 employed over 780 thousand workers in HCE's alone). A similar threat is faced by small scale rice mills as mechanised rice mills are expanding rapidly. Increased competition from large scale enterprises constitutes therefore a formidable threat to small scale firms in many sectors.

3.6 Problems of Small Scale Industries and Measures for Its Promotion

The government's concern regarding the development of small industries is not a recent one. Already during the fifties priority was given to promotion of Pribumi owned labour intensive small enterprises, in addition to the development of state owned basic industries. Various programmes to assist small industries were initiated. The most important was the establishment of industrial centres (induks) specialised according to activity in areas where clusters of small enterprises engaged in similar activities were operating. Between 1952 and 1958, 18 such centres were established. They provided co-operative type of assistance in purchasing inputs, marketing of products, training and information. Most were set up to assist the weaving industry. However, it has been observed that they were not very successful. [1] Funds were insufficient to achieve the objectives while few small entrepreneurs expressed an interest in making use of the centres.

During the 1970s the interest in promoting small industries was revived. Consecutive development plans during this period gave increasing priority to the development of HCSE's in manufacturing. This has resulted in expanding ongoing assistance programmes and introducing several new initiatives. These efforts were undertaken because it was believed that these industries have a large potential of providing employment and income opportunities, particularly in rural areas. It has been observed that "the existing large base of SSE's (small scale enterprises) coupled with their low capital/labour ratio and low skill requirements, make SSE's suitable for absorbing a significant proportion of the new entrants to the labour force. SSE growth would also help nurture entrepreneurship, improve technical skills and reduce urban-rural income differentials and migration to the large cities." [2]

(a) Problems

It is generally recognised that there are serious obstacles to the development of small enterprises. These would have to be overcome before they can be expected to play a significant role in expanding productive employment opportunities. We have observed in a previous section that most small enterprises engage in traditional activities, which generally generate low value added. The increase in demand for their products may be quite low. Many workers are engaged on a part time basis or seasonal basis. Most of them are craftsmen rather than managers. One cannot, therefore, assume that the HCSE workers are budding entrepreneurs, who would develop into industrialists once a number of constraints have been removed. Major efforts and resources will be necessary to make progress possible and it should be expected that many of these efforts will fail. In view of the problems facing small industries, it may be too ambitious

1 See: T. Dietz and M. Veldhuis, "Groei Zonder Ontwikkeling: Industrialisation in Indonesia, 1942-heden", *Intermediair* (5 October, 1979).

2 IBRD, *Indonesia, Cottage and Small Industry in the National Economy* (Washington, 1979).

to expect that HCE can absorb a large number of new labour force entrants. Rather, priority should be given to increase productivity and reduce under-employment of those already engaged in them. Most small enterprises operate currently under a number of serious constraints which prevents them from taking advantage of opportunities for expansion. The most important problem areas include limited access to credit, lack of access to markets, and market information, poor quality control and design, inefficient production techniques and primitive equipment, lack of managerial capabilities and low levels of skills. Moreover, past industrial policies have often almost exclusively benefited the development of large scale industries further impounding the problems of small industries.

Programmes providing direct assistance to small enterprises in order to overcome these problems are necessary but not sufficient. The overall economic development strategy plays an important role in encouraging an expanding role of small industries. The development of other sectors (i.e. agriculture, large scale industries, transport and other infrastructure), foreign trade, income distribution, education and training all have an important impact on the development of small scale industries. They affect the availability of inputs, market opportunities, levels of skills and technology.

The aim of the general development strategy should therefore be to create a favourable climate for the development of small scale industries.[1] The major role of assistance programmes for small scale industries would then be to facilitate an effective response to the increasing opportunities.

(b) Programmes and Policies for Small Industries

A proliferation of government agencies including ministries, provincial governments and statutory bodies are undertaking assistance programmes for HCSE's. There are also several non-government institutions such as KADIN (Chamber of Commerce) and the universities which undertake similar programmes. Below we discuss some of these programmes.

(i) *Credit Availability*

Lack of capital has been identified as one of the main factors inhibiting the expansion of small scale enterprises. Access to capital is essential to finance the upgrading of technology, to expand production capacity to purchase larger quantities of inputs and better quality material, and to provide credit to customers. As we have seen earlier, value added per worker in small scale and especially cottage industries is very low and prevents the build-up of their own financial reserves. They are, therefore, heavily dependent on outside sources of capital.

The traditional and still most common source of credit for working capital in small industries is the middleman, who markets the products of small

1 See also McCawly, *op. cit.*

and cottage industries. The procedure of financing orders from small and cottage industry by the middlemen is usually as follows. The middleman places an order with the producer for the products he wants to obtain. The order specifies the price and other characteristics of the product. At the time the order is placed the middleman may give an advance to the producer for obtaining raw materials. At the time the order is completed the advance is deducted from the price, part of the remaining sum is paid in cash, but the largest part is paid for by a post dated cheque often payable only 3 months after the date of issue. Sometimes, the deferred payment can be used as credit for the purchase of materials.

Paucity of data makes it difficult to assess to what extent this system unduly exploits the small producers. A number of case studies have found that this source of credit can command interest rates of 2 to 2.5 per cent per month. This does not compare very unfavorably with interest rates charged by banks for overdrafts, which is also around 2 per cent per month. Other studies, however, found monthly interest rates of 3 to 5 per cent on this type of credit. [1]

In addition to the explicit rate of interest, small producers may also have to pay an implicit charge. For example it has often been observed that materials are sold to them at a price higher than the market price and/or that their products are bought at a price lower than the market price. [2] The system of deferred payments for their products, which is not always accompanied by a credit system for inputs, may lead to a continuing state of shortage of funds and indebtedness. The absence of adequate information on the operation of informal credit markets does not allow definite judgements on the extent to which it works to the disadvantage of the workers in small scale enterprises. Nevertheless, the high reliance of small producers on middlemen for the provision of inputs as well as for marketing seems unhealthy and can at least potentially be a source of exploitation. There is, therefore, a case to expand the easy availability of credit from alternative sources.

At the end of 1973 a major new scheme was introduced by Bank Indonesia to provide credit to indigenous small scale entrepreneurs. This scheme covers the provision of funds for plant and equipment investment (KIK, Kredit Investasi Kecil) and permanent working capital (KMKP, Kredit Modal Kerja Permanen). It is operated by the state owned banks, some (14) of the private banks and one of the development banks (BPD, Ban Pembangunan Daerah). It covers the sectors agriculture, manufacturing, transport, commerce and services.

For the purpose of this scheme enterprises in the manufacturing sector were defined as small if the net worth of the establishment amounted to Rs. 190 million or less (excluding the value of the house and the land). The maximum loan size was Rs. 10 million for both KIK and KMKP. Recently this has been revised upwards to Rs. 15 million. In the case of KIK the length of the loans is for

1 See for example, Soejatman, "The Growth and Employment Potential of the Leather Industry in Indonesia" (Bangkok: ARTEP, 1980). Mimeo.

2 For some evidence on this see Soejatman, *op. cit.*

Table 3.20

Record of KIK and KMKP Credits (Values in Millions of Rupiahs)

	1974	*1977*	*1979 (Nov.)*
KIK			
Approved applications			
Number	9554	39737	69971
Value	15253	74186	154795
Outstanding	13039	50462	94287
Average size of loan	1.6	2.1	3.1
KMKP			
Approved applications			
Number	14524	322391	630654
Value	15602	114990	291064
Outstanding	12513	61839	143792
Average size of loan	1.1	0.3	0.5

Source: Bank Indonesia, *Indonesian Financial Statistics* (Jakarta, various issues).

a maximum of 5 years and for KMKP, 3 years. Interest rates are 10.5 and 12 per cent for KIK and KMKP respectively. Since 1979 the condition of providing collateral of up to 100 per cent of the value of the loan has been dropped. An attempt was also made to simplify loan application procedures for this scheme.

Since the initiation of this scheme the credit extended has expanded rapidly as is illustrated in Table 3.20.

It can be observed that the average size of loan remained well below the maximum size. It has also been found that the programme has succeeded in reaching relatively small scale enterprises. This has been mainly the result of setting a relatively low ceiling, since large enterprises are not interested in trying to obtain loans of such a small size.

Currently, the manufacturing sector receives 13.5 and 12.7 per cent of KIK and KMKP credits respectively (see Table 3.21). Since the initiation of the schemes the share of the manufacturing in loan approvals has been declining continuously. By late 1979 it obtained 55 per cent of its 1974 share in KIK loans and only 33 per cent of its 1974 share in KMKP loans. Within the manufacturing sector the bulk of the loans were absorbed by food processing, garment, bricks, furniture, and agricultural tools (see Table 3.22).

Table 3.21

Percentage Share of Manufacturing in Total KIK and KMKP Loans

	1974	*1975*	*1976*	*1977*	*1978*	*1979 (Nov.)*
KIK	24.4	21.9	18.9	16.6	14.3	13.5
KMKP	38.5	31.3	22.3	17.6	13.9	12.7

Source: Bank of Indonesia, *Indonesian Financial Statistics, op. cit.*

Table 3.22

Distribution of KIK and KMKP Loans by Industry up to 1968

Industry	*KIK Loans*			*KMKP Loans*		
	No.	*Amount (Rs. Million)*	*%*	*No.*	*Amount (Rs. Million)*	*%*
Food	2594	5668	42	3729	5595	25
(Rice milling)	(1450)	(3100)	(23)	(952)	(1693)	(8)
Textiles	820	1589	12	3291	5476	25
Wood	700	1898	14	2781	4748	22
Paper	225	743	5	407	842	4
Chemicals	99	258	2	228	436	2
Non-Metallic mineral products	969	2204	16	1970	2625	12
Basic metals	30	88	1	129	198	1
Machinery	417	949	7	1040	1684	8
Others	72	124	1	286	417	2
Total	5956	13521	100	13861	22021	100

Source: IBRD, *op. cit.*

Difficulties in assessing the feasibility of projects in the manufacturing sector have been mentioned as a major cause for its low declining share in total KIK and KMKP loans. Especially, possibilities for marketing the products of the project were often found to be inadequately ascertained. As a result an increasing number of loan applications were turned down.

An important measure to facilitate credit extension under the KIK/KMKP programmes has been the introduction of the MASS system of credit extension. Under this system it is made easy for entrepreneurs in a certain area and engaged in a certain activity to obtain loans if a similar enterprise in that area has succeeded in obtaining one. This method was applied extensively for loans to the agricultural sector. However, at least until recently this system has not been applied to the manufacturing sector.

In the total credit picture KIK/KMKP credits still play only a small role. In 1978 total KIK credits amounted to 10 per cent of total institutional investment credit. The share of KMKP credit in total credit for working capital amounted to 6 per cent. For the manufacturing sector these shares were even lower. The share of KIK and KMKP credits amounted to 3 and 4 per cent respectively of total institutional credit extended to this sector. These shares fall far short of reaching even comparability with the share of cottage and small industries in total manufacturing value added, which as we have seen amounted to approximately 22 per cent in 1974/75.

In order to facilitate financing of credits to small industries a Credit Guarantee Institution, ASKRINDO, was established. This institution is linked to the KIK/KMKP schemes, providing guarantees to the handling banks for the bulk of the loans extended under these schemes. It also assists handling banks in reviewing loan applications.

In the operation of the credit schemes for cottage and small scale industries several problems have been identified, which seriously inhibit the expansion of such credits. From the small entrepreneurs the following complaints have been heard.

1. Loan applications take too long to process.
2. Too much emphasis on collateral; even for KIK/KMKP loans for which collateral requirements have been officially abolished, banks and especially private banks still sometimes require collateral of up to 200 per cent of the value of the loan.
3. Unofficial "commissions" are sometimes sought, which increase the cost of borrowing.
4. Loans for new projects require a business permit, which is sometimes difficult to obtain.
5. The luxuriousness of bank offices often prevents small entrepreneurs to take the initiative in seeking a loan.

Banks also have encountered problems in providing this type of credit, i.e.:

1. The feasibility of projects was often assessed inadequately.
2. The cost of handling small loans is relatively high.

3. Lack of book-keeping prevents an easy appraisal of the financial soundness of small businesses.
4. Money lent is sometimes used for personal expenditure.
5. Lack of concern from the part of the borrower regarding repayment of the loan.
6. Lack of collateral.
7. Deficiencies in preparing a description of the project for which a loan is sought.

In general, problems in credit extension are closely related to other problems encountered in attempts to promote small industries such as problems in marketing and lack of managerial and technical skills. Therefore, there is a strong case for co-ordinating credit extension efforts with other efforts to promote small industries. It would mean that enterprises looking for loans would also become major target groups for extension efforts. Co-ordination between organisations is particularly important at levels of local government.

Other suggestions which can be made are:

- Further simplifications of loan application procedures.
- Improving of skills of bank staff in assessing projects for small scale industries.
- The undertaking of feasibility studies by provincial planning organisations and improving the capability of these institutions in doing such studies.
- Preparing of industry profiles against which project proposals can be assessed.
- Application of the MASS approach. The availability of industry profiles, as well as the fact that often similar small industries are concentrated in clusters would seem to facilitate the application of the MASS approach in extending loans to small manufacturers.

(ii) *Extension Services and Training*

Many of the problems facing HCSE's are tackled through extension programmes and training courses. The most ambitious programmes are undertaken by the Department of Industry through its Industrial Extension Services for Small Industries Programmes (BIPIK), established in 1974. Its main objective is to provide assistance to HCSE's in training of entrepreneurship, technology, bulk purchasing of inputs and marketing. Its assistance is limited to pribumi owned enterprises. It defines small industries as enterprises with a capital stock of less than Rs. 70 million (US$ 110 thousand) exclusive of land and buildings and a capital labour ratio of less than Rs. 635,000 (US$ 1,000). In order to make the most effective use of available resources for these activities, BIPIK was also given the task of consolidating assistance efforts of other agencies and soliciting their support.

The BIPIK programme is mainly implemented by the provincial governments. A major component of the programme is the setting up of centres

through which the assistance is being channeled. Two types of centres exist: (a) Regional Development Centres, of which two have been established and 24 more are planned. These regional centres mainly aim at strengthening clusters of small industries. Their activities comprise procurement of raw materials and equipment and training of extension workers; (b) Service and Demonstration Centres of which 20 have been established. They engage in training entrepreneurs, skill training, bulk purchasing of materials, supply of machinery and information on new technologies.

In addition to such assistance activities BIPIK has carried out surveys among small industries and has drawn up industry profiles with the purpose of determining the major characteristics and problems of specific industries. More use of such studies could be made to examine in more detail the growth potential of such industries. They could also serve as a guide to focus the BIPIK assistance efforts on what such studies have identified as the most important obstacles to expansion.

In the implementation of this programme serveral difficulties have been encountered. Its resources are limited, both in terms of finances as well as in terms of qualified personnel. Moreover, it is financed on a yearly basis, which makes it difficult to organise longer term activities. It has not yet been very successful in obtaining the co-operation of other organisations in co-ordinating assistance programmes. Moreover, as a result of its rather generous definition of small enterprises the danger exists that really small scale industries are neglected. The programme needs therefore considerable strengthening to achieve a higher degree of effectiveness.

Attempts have also been made to organise small industries into co-operatives. However, this has proven to be difficult. Major problems include conflicts of interest between members, lack of strong leadership and qualified management, scarcity of capital and the development of an excessive debt burden once they rely heavily on loans, and difficulties in breaking into new markets. It also proved to be difficult for co-operatives to compete with established traders. In spite of these difficulties the organisation of small industries in co-operatives is potentially a major means to strengthening these industries and should therefore be pursued. Co-operatives have several advantages. They can easier meet credit conditions. They would be able to get inputs at lower prices, since purchases can be made in larger quantities. They would also be in a stronger position in marketing their products. An important requirement for a more successful co-operative development programme is closer co-operation between extension programmes and other types of programmes in assessing co-operatives.

(iii) *Technology*

The use of very primitive technologies and equipment is a major factor in explaining the low productivity of HCSE's. There is a strong need therefore to develop more efficient technologies for HCSE's and to extend information on

such technologies. Several technology research institutes exist. In total there are approximately 100 such institutes of which 14 are operated by the Department of Industry. However, most of these cater to larger size enterprises. Only in some of the institutes operated by the Department of Industry serious attempts are made to do research on technologies suitable for small industries. Nevertheless, even these lack the resources to respond quickly to requests for assistance and to disseminate the findings of their research. Closer co-operation with the existing extension services is necessary for the institutes to identify the technology problems of HCSE's and to facilitate extension of technology advice to small industries.

(iv) *Marketing*

Problems in marketing have sometimes been mentioned as an even more serious obstacle to expanding HCSE's than access to credit. Problems concern stagnating demand, poorly organised distribution channels and competition from larger enterprises.

A considerable share of the output of HCSE's is marketed through middlemen who also provide inputs and credit. They are often accused of paying too low a price for the products of HCSE's. However, unless other channels of distribution are developed, there seem to be few alternatives to using the middlemen. Most HCSE producers themselves currently lack the skills and information to undertake the marketing of their products. Diversifying the distribution system should therefore be an important element in the government's efforts to promote HCSE's. Disemination of market information, through the extension services, a more ambitious programme for developing co-operatives and promoting the setting up of trading corporations (both public and private) are some of the measures which can be taken in this area.

The most important incentive for expanding HCSE's will of course be increasing the demand for their products. A high rate of growth of the economy as a whole is, therefore, an important condition in establishing a favourable climate for HCSE's. However, whether increases in income are translated into a significantly expanded demand for products from HCSE's also depends on the nature of economic growth. Recent changes in the pattern of demand have been to the disadvantage of the HCSE sector. There has been a tendency for many consumers to substitute goods produced by HCSE's by similar goods produced in larger enterprises. Reasons related to price, quality, as well as taste and fashion.

In general serious efforts in reducing costs and improving quality coupled with a more effective marketing system are necessary to improve the competitiveness of small producers. A potential major source of demand currently untapped is the export market. Examples of products from HCSE's with strong export potential are garments, rattan products, furniture and other handicrafts. In addition to general measures necessary to facilitate expansion of industrial exports, a number of specific measures would be needed. They include the

development of channels for marketing these products abroad and disseminating information on quality and design to producers. A Government trading corporation such as NAFED (National Agency for Export Development) as well as private trading corporations have a crucial role to play in such export promotion efforts.

On the domestic market, HCSE's could greatly benefit from a change in government procurement policies. An attempt should be made to facilitate the purchase of products from smaller firms. Larger deals could be organised through co-operatives and trading firms.

Improving links between large and small firms could also encourage demand. Such linkages are still relatively underdeveloped in Indonesia. Scope for linkages between small and large enterprises is generally highest in the metal products, machinery, and electrical appliances and transport equipment industries.

The promotion of linkages through sub-contracting is currently receiving high priority in the Department of Industry's programmes to promote small industries. Policy measures include fixing the component content of certain products, such as automobiles, and a range of electronic products which have to be produced locally. However, a number of obstacles exist in the development of small scale ancillary industries. In the first place the import tax structure incorporates sometimes low taxes on components, but higher import taxes on some sub-components, result in negative effective protection for components products. Moreover, the experience has shown that regulations regarding local component production do not necessarily benefit HCSE's. For example, it has been found that the majority of ancillary firms in the automobile industries are relatively large scale enterprises. [1] The performance of HCSE's in terms of technology, effficiency, quality control, standardisation and skills will need to be improved in order to make it attractive for large firms to subcontract work to smaller firms. Furthermore, incentives are needed to encourage larger firms to offer subcontracts to HCSE's as well as to assist HCSE's in upgrading efforts.

Another approach to boost expansion of HCSE's which is currently being promoted by the Department of Industry is the reservation of certain product lines for small industries. It is planned to apply the reservation measure to industries engaged in producing simple consumer goods and handicrafts of which the majority is located in rural areas. However, such a restrictive measure may be difficult to implement. Detailed studies of industries will be necessary to identify those that have the potential of meeting efficiently domestic demand.

1 See: F. Harahap, W. Witoelar, A. Manan and K. Driwindro, "A Report on Ancillary Firm Development in the Automative Industry: The Indonesian Case," Discussion Paper Series No. 78.08 (Quezon City, CAMS, 1978).

Table 3.23

Promising HCSE's

Potential Import Substitution Industries	*Products with Domestic Demand Growth Potential*
Knitted or crocheted fabrics	Preserved & processed fish
Print, varnish and laquers	Rice, cleaned and polished
Glass & glass products	Bakery products
Agricultural equipment and tools	Batik
Vehicle bodies and parts	Wearing apparel
Electrical apparatus & supplies	Leather footwear
Bicycles & becas	Printing & publishing
	Roofing tiles
	Cutlery, nails, screw, bolts

Source: IBRD., *op. cit.*

(c) Identification of Promising Small Scale Industries

Efforts to promote small industries are likely to be most effective if they are concentrated on industries which have a clear growth potential. It is therefore, of importance to undertake case studies of small scale industries to assess this potential. A number of reports have in very broad terms identified areas in which the development of small industries show considerable promise.

An IBRD report [1] identified two sets of industries in which small industries are likely to have considerable potential for growth. The first set contains industries with scope for import-substitution. The second set identifies products which have scope for expansion due to growth of domestic demand. In addition to import-substitution and growth in domestic demand, criteria used in the selection for these industries included, their comparative advantage, capital labour ratio, domestic resource mobilisation, and optimal production size.

In general, high priority should be given to industries which have strong linkages with the agricultural sector, processing agricultural products or providing inputs into agriculture, as well as to engineering and metal working industries. The latter industries are still relatively underdeveloped in Indonesia. These are important, however, for skill development and technology adaptation.

The identification of promising industries needs to be followed up by studies of the structure of these industries focusing on the internal as well as external constraints which they are facing. Assistance programmes should aim at tackling such constraints.

[1] IBRD, *op. cit.*

3.7 Conclusions

The industrial sector in Indonesia has expanded rapidly during the seventies. Consequently major improvements in employment in this sector were achieved. The bulk of the growth in manufacturing value added was accounted for by medium and large scale industries. The growth in value added of household cottage and most small scale industries probably hardly kept up with the growth in population.

Within the medium and large scale sector the fastest growing industries during the first half of the seventies included a number of industries producing luxury type consumer goods industries, some intermediate industries, as well as some capital goods industries. During the second half of the seventies growth in most industries except for some intermediate industries slowed down. Reasons were declining opportunities for import substitution, overcapacity in some industries, restrictive monetary policies and a larger base.

The most rapidly expanding industrial sectors among MLE's were also among the most capital intensive ones, the major exception being the textiles industry. Therefore, in spite of a substantial increase in employment, in relation to value added employment growth was much less spectacular. The employment elasticity remained well below 0.50.

In spite of low growth rates in value added in household, cottage and small scale industries, the number of workers engaged in these activities increased significantly. As a result productivity in this sector has declined. Workers in these sectors are often only engaged on a part time or seasonal basis to supplement other sources of income. They are mainly undertaking simple processing or repairing activities of traditional types of products.

Both in larger and smaller enterprises there is extensive scope to expand productive employment opportunities. However, considerable changes in the nature of industrial expansion are necessary to achieve higher rates of growth of employment. Priority should be given to encouraging the development of relatively labour intensive sectors and within these sectors the emphasis should be on promoting small scale industries. Important is also the encouragement of the adoption of more appropriate (more labour intensive) technologies in manufacturing industries, especially in medium and large establishments.

The development of capital intensive industries during the last decade has been mainly due to the high levels of protection granted to such industries, as well as to the concentration of government ventures in these industries. Allocation of investment resources to such industries largely pre-empted their use for the development of more labour intensive industries. Protection also often prevented competitive pressures from outside. Less efforts were therefore made to select the most efficient technology, which would often have been more labour intensive than the technologies actually adopted.

As a complement to the recent devaluation efforts measures have to be implemented to reduce effective rates of protection, including reduction of import duties on final products and abolishing of administrative regulations

which further protect existing industries. Furthermore, the government should de-emphasise its involvement in the development of very capital intensive industries so that more resources will become available for the expansion of more labour intensive industries. There is also a need to assess the possibility of gearing the incentive system towards a more intensive use of labour and the impact such a system would have on the choice of technology. For example incentives could be differentiated according to the size of enterprise. A similar exercise could be undertaken to examine the efficacy of expanding the system of differentiated indirect taxes on the basis of production technology.

In general therefore, industrial policies should be "promotional" rather than "protectionistic". Such a strategy would include measures such as removal of industry specific protection devices, the provision of government financed training facilities to improve the quality of available labour, official support for measures to improve financial markets and institutions and the provision of other services such as infrastructure. In general, promotional policies would have a more favourable impact on employment in industry, since the support measures are likely to benefit a wider range of industries including export – oriented than import substitution industries.

Within the framework of a promotional industrial development strategy special promotional programmes for small industries can nevertheless be justified. Several millions of workers rely on these industries as sources of primary or subsidiary incomes. A number of programmes are being implemented by the government to assist and encourage small scale industries. However, there is a strong need to co-ordinate the activities of the various programmes and to focus them on the most important problems. There is also a need to improve the quality and extent of services provided by allocating more resources, financial and personnel, to such programmes.

Efforts are necessary to provide small industries with better access to more efficient technologies. These include existing technologies, but it may also be necessary to engage in research to develop such technologies. Obtaining credit remains a major problems. Conditions for obtaining credit under the ongoing KIK/KMKP schemes need to be relaxed to facilitate credit extension to manufactures. With regards to marketing, other channels of distribution need to be developed as alternatives to the present system which is still predominantly controlled by middlemen. However, such efforts can only be successful if all the services traditionally provided by the middlemen, including product information, inputs, credit and transport, can be made available. The encouragement of subcontracting can also provide an important stimulus to the development of small scale industries. The government has the possibility of taking the initiative in this area through its state enterprises. Another important aspects of small scale industrial development is improvement of skills.

[1] McCawly, *op. cit.*

The small scale industries sector comprises a large number of persons who only engage in these activities on a part time basis to supplement other sources of income. They would benefit in particular from information on the type of product to be produced and from assistance in marketing their products.

Small scale industry assistance programmes will be most effective if directed to industries for which products demand is likely to grow rapidly. Further research will be necessary to identify such industries. However, the most important stimulus for small scale industries as with large scale industries will be a general economic climate which is favourable to industrial growth.

The nature of country's general economic development strategy also has an important impact on the development of the industrial structure. Generally speaking an economic strategy favouring rapid income increases of the poor is likely to stimulate a stronger demand for products produced by relatively labour intensive often small scale industries leading to higher rates of growth in output and employment in such sectors.

APPENDIX TABLE III-1

Employment in Manufacturing in Indonesia (number in thousands)

	1961		*1971*		*1977*		*% Growth*	
	Number	*% of Labour Force*	*Number*	*% of Labour Force*	*Number*	*% of Labour Force*	*1961-71*	*1971-77*
Whole Country								
Total	1856.2	5.7	2682.0	6.5	4170.8	8.6	3.7	7.6
Male	1158.8	4.9	1538.5	5.6	2196.6	6.7	2.9	6.1
Female	697.4	7.8	1143.5	8.4	1974.2	11.1	5.1	9.5
Urban								
Total	684.2	15.9	626.8	10.4	946.3	13.4	–0.9	7.1
Male	500.5	15.4	436.6	10.0	641.7	12.8	–1.4	6.6
Female	183.7	17.5	190.2	11.3	304.6	14.8	0.3	8.2
Rural								
Total	1171.9	4.1	2055.2	5.8	3224.6	7.8	5.8	7.8
Male	658.2	3.2	1101.9	4.7	155.0	5.8	5.3	5.9
Female	513.7	6.5	953.3	7.9	1669.6	11.7	6.4	9.8
Percentage Rural								
Total		63.1		76.6		77.3		
Male		56.8		71.6		70.8		
Female		73.6		83.4		84.6		

Source: BPS, *Population Census 1961* (Jakarta, 1965) and BPS, *Population Census 1971* (Jakarta, 1975).
BPS, *Labour Force Survey 1977* (Jakarta, 1979).

APPENDIX TABLE III-2

Employment in MLE's by Sector 1970-77 (thousands of workers)

	Sector	*1970*	*revised*[1]	*1971*	*1972*	*revised*[1]	*1973*	*1974*	*1975*	*1976*	*1977*	*1978*
311/312	Food	270.6	322.1	322.9	342.7		355.6[2]	135.6	145.2	142.3	138.2	142.3
313	Beverages	5.2		6.1	6.5		5.9	4.7	6.4	6.0	5.9	6.3
314	Tobacco	173.4		162.4	232.2	157.2	152.0	128.0	133.5	169.5	162.6	143.4
321	Textiles	168.6		167.7	217.5		233.4	165.0	232.0	215.0	198.7	209.9
322	Wearing apparel	1.9		1.9	2.8		2.1	2.6	4.1	4.1	4.9	5.7
323/4	Leather and products	5.7		4.9	3.0		6.5	6.6	8.7	9.0	9.0	8.2
331/2	Wood products	14.6	19.1	24.7	41.2		41.4	22.4	38.5	41.6	45.2	47.8
341	Paper and products	4.7		8.5	11.0		7.9	7.3	8.1	9.2	8.8	9.3
342	Printing	15.1		17.9	19.9		19.5	14.7	17.9	18.4	17.7	16.7
351/2/6	Chemicals	33.8		39.0	50.8		48.3	38.1	53.8	58.2	58.3	61.8
355	Rubber products	115.6	146.2	160.9	186.7		194.9[2]	7.6[3]	9.4	10.7	11.2	30.5
361/69	Non-metallic minerals	20.0		27.6	41.1		45.6	24.6	33.5	34.3	35.5	38.2
371	Iron and steel	–		–	–		–	2.1	2.9	4.7	5.0	4.0
381	Metal products	16.7		20.8	25.5		27.3	21.3	22.4	31.2	29.5	32.4
382	Machinery	4.8		3.5	9.3		12.9	7.3	8.8	7.2	10.6	10.3
383	Electrical machinery	3.5		5.2	9.3		16.1	12.2	10.5	17.9	20.6	23.7
384	Transport equipment	7.1		6.5	14.0		14.4	14.6	22.1	25.9	25.0	25.1
390	Others	7.6		9.2	15.4		5.0	8.9	5.1	4.6	5.1	5.5
	Total	868.8	955.4	999.8	1229.0	1154	1188.8	623.6	762.5	809.8	79.8	821.1
	Number of establishments	16681		21472	28758		28053	7091	8487	8310	7950	7955
	Average size	52		47	43		42	88	90	97	100	103

Note: Due to changes in definitions the data series for the periods 1970 to 1973 and 1974 to 1978 are not comparable.

1 The revised estimates for food, wood products and rubber products were obtained by projecting backwards the rate of increase over the period 1971 to 1973. The revised estimate for tobacco was obtained by averaging the employment estimates for the years 1971 and 1973.

2 The 1978 survey data do not include tea processing, smoked rubber and rubber remilling industries. An estimate of employment in these sectors has been made by applying the increase in production in these industries between 1972 and 1973 to the 1972 estimates of employment in these industries.

3 To obtain comparativity of the 1974/75 census results for the rubber industries with the subsequent Industrial surveys, employment in smoked rubber and rubber remilling has been excluded from the 1974 estimate.

Source: BPS, *Survey Industri*, 1970 to 1973 and 1975 to 1978, *op. cit.* and BPS, *Sensus Industri 1974/75, op. cit.*

four

Employment and Export-led Industrialisation: The Experience of Singapore

Pang Eng Fong
Augustine Tan

This paper analyses the factors behind Singapore's industrial development since 1960. Its main objective is to assess the island state's experience in solving its unemployment problem with a labour intensive, export-oriented industrialisation strategy.

4.1 Economic Development in the Pre-1960 Period

Until the late 1950s Singapore functioned primarily as an entrepot linking its resource-rich hinterland to the world. Trade and supporting banking, insurance and shipping services provided its people with a standard of living higher than that enjoyed in its hinterland. Large scale industrial activities oriented to world markets were non-existent. The Pan-Malayan market was limited and provided little incentive for the development of domestic manufacturing. As far back as 1933, the colonial government decided against tariff protection as a means of promoting local manufacturing.[1] In consequence, manufacturing for

[1] A 1933 Commission on Straits Settlements trade noted that:

> "though the interests of the local manufacturer would be best served by protection, the interference with the freedom of the port which would be involved might be disastrous to the entrepot trade... The prosperity of Singapore has been built on its entrepot trade. Industrial development is a later growth and has not begun to approach the entrepot trade in importance. To disturb this merely for the sake of protecting still problematical industries would be to throw away the substance and grasp the shadow."

Straits Settlements, *Report of the Commission appointed by His Excellency, the Governor of the Straits Settlements to enquire into and report on the Trade of the Colony, 1933-34*, Vol. 1, p. 152.

world markets was not encouraged in Singapore. Existing industries were geared to fulfill the requirements of the trade sector and to produce simple consumer goods for the domestic market. As a result, only three broad categories of industries flourished before 1960. They were: (i) Industries based on easy access materials, e.g. industries processing rubber, coconut and vegetable oils, timber and other tropical produce. (ii) Industries catering to the local market and protected from import competition by high transport costs. They included industries producing beverages, clay products and furniture. (iii) Ancillary and service industries which had to be located near the sources of demand such as engineering, printing and publishing, motor vehicle repair and ship repair activities.

The government's role in manufacturing was confined largely to the provision of basic infrastructural facilities in the form of utility supplies, transport and communication, etc.

Before 1960, the only positive step taken to encourage investment was the establishment of the Singapore Industrial Promotion Board in 1957. Operating with a revolving fund of only one million Singapore dollars, the Board sought to promote new industrial undertakings in Singapore. Hampered by a lack of funds and personnel, it achieved little.

4.2 Development Progress, 1960-1979

(a) Rationale for Industrialisation

In 1959, Singapore became a self-governing state. For the first time since its founding as a British settlement in 1819, Singapore was in the hands of Singaporeans. They returned the People's Action Party to power and since then have allowed it to continue to govern Singapore.

The newly-elected government found the economic outlook for Singapore in 1959 gloomy. Entrepot trade, the source of Singapore's early growth and prosperity, showed signs of stagnating. The Treasury being almost bankrupt, development funds were scarce. Worse, potential investors were uncertain about the island's political future. Labour unrest was widespread.

The government realised that Singapore's political future and Singapore's economic viability were inseparable. To secure political stability, it had to produce tangible economic results. This meant a strategy to create job opportunities for not only the unemployed but also the growing tide of school leavers.

In 1957, 23,000 persons or 4.9 per cent of the labour force were jobless. When Singapore was granted self-government two years later, the unemployment problem had worsened because employment growth had failed to keep pace with the influx of new entrants into the job market.

As a result of rapid population growth, the dependency ratio increased steadily in the 1950s. In 1959, over 40 per cent of the population were below 15 years of age. Less than a third of the working-age population was econo-

mically active. So apart from the problem of creating jobs, Singapore had to provide housing, schools, and social services for its growing population.

To deal with the unemployment problem Singapore adopted an industrialisation programme. Nationalisation as a way to accelerate rapid industrial growth was ruled out as detrimental to Singapore's trade-based economy. Besides, there was little to nationalise. Industrialisation therefore had to be left to private enterprise.

A programme of industrialisation was drawn up by a United Nations team.[1] Known as the Winsemius report, the study laid the groundwork for Singapore's first development plan covering the period, 1961-1964.

The industrialisation strategy outlined by the Winsemius report centred on the creation of 214,000 new jobs by 1970 to absorb the backlog of unemployed and the projected inflow of new job seekers. The report estimated that 78,000 of the 214,000 new jobs would have to be in the manufacturing sector. It calculated that if the industrialisation programme was to succeed, capital investment amounting to $ 813 million for the decade was needed.

Recognising that such investments would take some time to be effected, the report emphasised the need for a crash programme to create jobs. Housing, social development, and infra-structure projects were identified as essential elements in this programme.

The Winsemius report's employment calculations were rough and based on several assumptions. They did not consider the extensive under-employment in most sectors of the economy, especially the service sectors where there was a large number of own account workers eking out a marginal existence. Secondly, the report did not take account of the net gain in migration from the Federation of Malaya. Thirdly, it assumed that the British Armed Forces stationed in Singapore and responsible directly and indirectly for some 20 per cent of the GDP would remain throughout the 1960s. Fourthly, political stability was assumed to continue both in the city-state and in neighbouring countries.

The Winsemius report recognised that Singapore's home market for manufactured goods was too small to sustain long-term economic development. Singapore's industrialisation policy must therefore be different from that of countries endowed with natural resources and blessed with a sizeable domestic market which can be protected by tariff and non-tariff barriers. The report, however, felt that large scale domestic industrialisation cannot initially do without infant industry protection. Tariffs and anti-dumping legislation must be enacted to protect selected industries so that they will have time to mature and develop export markets. In addition, it recommended the setting up of an Economic Development Board to spearhead the industrialisation programme.

A major part of the capital requirements for industrialisation, the report noted, had to be raised through foreign investment. It recommended special privileges (compensation against nationalisation and appropriation, permission

[1] United Nations, *A Proposed Industrialisation Programme for the State of Singapore* (New York: 1961).

to keep cash reserves outside Singapore, a 5-year tax holiday after the company's first profitable year and not after its first year of operation, a dividend tax, making reinvested retained earnings non-taxable instead of a 40% profit tax, and immigration permits to foreign managers and technicians) for foreign investment.

With respect to labour and skill development in the manufacturing sector, the report recommended the expansion of the Singapore polytechnic and the strengthening of vocational training institutes; the resumption of apprenticeship training programmes; the establishment of a prototype production and training centre; the introduction of training programmes for small entrepreneurs; the training of local technicians and foremen in industrialised countries; and the establishment of an engineering college.

To improve industrial relations, the report suggested ways to expand co-operation among unions, employers, and the governments. It also suggested that the Industrial Arbitration Courts take over conciliation and mediation functions from the Labour Ministry.

In 1959, tax incentives were first introduced to stimulate industrial growth. These included tax holidays for pioneer industries, tax concessions for capital spending by established firms, and accelerated depreciation allowances. Beginning in 1960, tariffs and quotas on manufactured goods were introduced for the first time. The objective was to encourage the setting up of import-substituting firms. By 1965, import duties had been imposed on 157 items including steel bars, sugar, cement, chocolates and a range of plastic and chemical products.

In 1960, the Economic Development Board (EDB) was set up as the government agency to promote industrial development. It provided under one roof all the services an investor was likely to need to set up a factory in Singapore. It cut red-tape and speeded up approvals for licenses and permits.

Despite the efforts at accelerating industrial growth, the tangible achievements duirng the period, 1960 to 1965, were modest, partly because of the Indonesian confrontation which halted Singapore-Indonesia trade, and partly because of continuing political uncertainty and labour unrest. Though its impact on growth was less than expected, the first Development Plan laid the groundwork for the spurt in industrial development in the late 1960s.

In 1964, steps were taken to prepare a Second Five Year Plan for the period 1966-1970. Although completed, the Plan was never released or published because of two unanticipated crises. The first took place in August 1965 when Singapore separated from the Federation of Malaysia. Access to a large protected domestic market – one of the main reasons for joining Malaysia – was lost. The second crisis occurred in 1968 when Britain announced the phased withdrawal of its troops from Singapore. To deal with these crises, new strategies were adopted. The import-substitution industrialisation programme was replaced by a strategy emphasising export-oriented industries. Infrastructure development was stepped up and additional incentives offered to attract foreign capital,

technology, and expertise. Measures were also taken to develop Singapore into a communication, transportation, financial, and service centre. Development spending was accelerated to counter the economic effects of the British military pull-out.

Singapore's export-oriented development strategy, pursued during a period when the world economy was booming and multinational companies were seeking offshore production sites, was remarkably successful. Between 1967 and 1973, Singapore's real GDP grew at an annual rate of 13 per cent. The backlog of unemployment accumulated from the early 1960s was wiped out. Growth also generated sufficient alternative job opportunities for the 40,000 workers laid off as a result of the withdrawal of British military troops from the island.

In 1972, full employment prevailed. Thousands of foreign workers were imported to meet the growing labour requirements of manufacturing and construction firms. Singapore's double-digit growth performance, however, did not last. The world recession of 1974-1975 flattened its growth path. Industrial output stagnated in 1975. The tide of foreign workers, estimated at its peak in early 1973 to exceed 100,000, receded. It was not until late 1976 that the Singapore economy recovered. Steady growth since then has created a strong demand for workers, particularly unskilled workers. By early 1979, the labour market was tight, despite an increased flow of foreign workers from not only Malaysia but also other countries including Thailand and Sri Lanka.

In mid-1979, the government, through the mechanism of the tripartite National Wages Council, attempted to dampen the labour market by adopting a high wage policy to encourage employers to reduce their demand for labour. Using wages as an instrument of economic policy is not new in Singapore. All through the 1960s and early 1970s, a policy of modest wage increases was pursued to attract foreign investment and promote employment growth. With the new wage policy, the emphasis has shifted from job creation to labour efficiency.

A statistical picture of Singapore's economic performance since 1960 is shown in Table 4.1. Singapore's gross domestic product (GDP at 1968 factor cost) has grown at an annual rate of 9% since 1960. In 1979, Singapore produced Singapore $ 11 billion worth of goods and services (at 1968 factor cost), five and a half times more than in 1960.[1] Real per capita income has more than tripled, thanks to a falling rate of population growth. Since 1960 Singapore's external trade has expanded nine times to nearly $ 70 billion.

Rapid growth has transformed the Singapore economy. Once highly dependent on entrepot trade, Singapore now has a diversified manufacturing-service-trading economy. Structural change has been particularly dramatic in the manufacturing sector. The sector's share of GDP has risen sharply from 13 per cent in 1960 to 23 per cent in 1979. In the same period, manufacturing employment jumped nine times to 294,000 or 29 per cent of the employed work force.

[1] The exchange rate in 1979 was approximately Singapore $2.20 = U.S.$1.00.

Table 4.1

Singapore's Economy: Performance Indicators, 1960 - 1979

	1960	*1965*	*1970*	*1975*	*1978*	*1979*	*Average Annual Growth (% p.a.)*
1. Gross Domestic Production (GDP) at 1968 Factor Cost ($ billion)	2.1	2.8	5.1	8.0	10.1	11.0	9.0
2. Private Consumption Expenditure at 1968 Market Prices ($ billion)	2.1	2.5	3.9	5.7	7.1	7.7	7.1
3. Gross Domestic Fixed Capital Formation (GDFCF) at 1968 Market Prices (% billion)	.2	.6	1.7	2.8	3.2	3.6	16.5
4. Real Per Capita GDP ($)	1,400	1,616	2,690	3,907	4,760	5,120	7.1
5. Population ('000)	1,634	1,865	2,075	2,250	2,334	2,363	2.0
6. Labour Force ('000)	490	560	727	873	991	1,053	4.0
7. Total Trade ($ billion)	7.6	6.8	12.3	32.0	52.6	69.3	11.7
8. Official Foreign Reserves ($ billion)	n.a.	1.1	3.1	7.5	11.5	12.6	19.7
9. Manufacturing Share of Real GDP (%)	13.2	15.6	19.7	20.7	22.5	23.0	–
10. Annual Population Growth (%)	3.5	2.5	1.7	1.3	1.1	1.1	–
11. Unemployment Rate (%)	13.5	12.5	10.4	4.5	3.6	3.3	–
12. Annual Change in Consumer Price Index (%)	0.4	0.3	0.4	2.6	4.8	4.0	–

n.a. = not available.

Sources: Department of Statistics: *Singapore Annual Key Indicators (various years); Singapore National Accounts, 1960-1973* (Singapore, 1975); *Yearbook of Statistics (various years);* Ministry of Trade and Industry, *Economic Survey of Singapore (various years);* Ministry of Labour, *Yearbook of Labour Statistics (various years);* D.J. Blake, "Employment and Unemployment in Singapore" in W.E. Chalmers, *Crucial Issues in Industrial Relations in Singapore* (Singapore: Donald Moore Press, 1967), pp. 166-191.

In the early 1960s, the major industries were footwear, food, paper products, boat-building, and car assembly. Today, Singapore exports a wide range of industrial and consumer products including appliances, typewriters, semi-conductors, rigs, machinery, and precision tools.

Other sectors of the economy too have been transformed. The transport, storage and communication sector has expanded greatly, particularly since the early 1970s. Singapore is now the third largest port in the world. Its communication and air networks reach to various parts of the world. In 1979, over two million visitors came to Singapore, making the tourist industry an important earner of foreign exchange. Since the late 1960s, Singapore has established itself as an important financial centre. In 1979, financial and business services accounted for 14 per cent of Singapore's GDP, up from 6 per cent in 1960.

Another feature of Singapore's industrialisation is the rapid rise of foreign investment, particularly striking in the manufacturing sector. When Singapore began industrialising in 1960, its manufacturing sector had 548 establishments, most of them small, locally-owned, and domestically-oriented concerns. Direct exports accounted for one quarter of total sales of $ 621 million. In 1979, there were 3,192 establishments with direct export sales of $ 16.4 billion, 25 times that of 1960. Foreign-owned companies, many of them subsidiaries of multi-national companies from the United States, Europe and Japan accounted for over 80% of the direct exports in 1979. In 1979, gross fixed assets of foreign manufacturing firms was over $ 5 billion, 35 times the figure in 1965 when Singapore began emphasising export-oriented industrialisation led by foreign capital. In other words, the phenomenal expansion of manufacturing exports in Singapore since 1960 was led by foreign firms. Local firms played only a supporting role.

Between 1966 and 1972, the fastest period of growth in Singapore's recent economic history, industrial output from wholly foreign firms increased eight-fold compared with a three-fold increase in output from wholly domestic firms. Wholly-owned foreign firms increased their share of industrial employment from 12 per cent to 29 per cent, of manufacturing value-added from 26 per cent to 43 per cent, and of capital expenditure in manufacturing from 40 per cent to 63 per cent.[1]

That the performance of local and foreign-owned establishments differs greatly is apparent from the statistics in Table 4.3. Because of their greater investment per worker, foreign firms in 1978 had much higher value-added per worker than firms with local equity. Although they comprised only 13 per cent of all manufacturing firms, wholly-owned foreign firms accounted for half the value-added and two-thirds of direct exports in the manufactuirng sector in 1978.

[1] See Kunio Yoshihara, *Foreign Investment and Domestic Response: A study of Singapore's Industrialisation* (Singapore: Eastern Universities Press, 1976).

Table 4.2

Selected Performance Indicators of Manufacturing Firms By Capital Structure, 1978

Capital Structure	*No. of Establish-ments*	*No. of Workers ('000)*	*Value Added ($m)*	*Direct Exports ($m)*	*Capital Spending ($m)*	*Value Added Per Worker ($'000)*	*Direct Export To Total Sales (%)*	*Capital Spending Per Worker ($'000)*
Wholly local	1,979	76	1,116	1,031	158	14.6	30.6	2.2
More than half local	327	39	771	1,032	90	19.6	48.2	2.3
Less than half local	260	41	652	1,643	99	16.0	68.2	2.4
Wholly foreign	380	87	2,624	8,927	475	30.0	76.7	5.5
Total	2,946	244	5,163	12,633	822	21.2	64.6	3.4

Source: Singapore, Department of Statistics, *Census of Industrial Production*, 1978.

(b) Factors Contributing to Growth

Favourable external developments contributed to Singapore's progress. These developments included the flow of investments from Hong Kong following disturbances there in 1967; the boom in oil exploration activities in the region; the protracted war in Vietnam in the 1960s which created a strong demand for Singapore's products and services; and the sustained growth in world output and trade from 1967 to 1973. The last development sparked a search for politically stable, low-wage, offshore locations by multinational companies, particularly those in the electronics industry.

The opportunities offered by favourable external circumstances could not have been taken advantage of had domestic conditions not been favourable. To begin with, Singapore started out with a few advantages. Its location at the crossroads of East and West enabled it to develop as a regional entrepot. Secondly, extremely dependent on trade, its people were of necessity outward-looking, receptive to ideas and responsive to changes in the region and the world. Their adaptability and relatively high level of literacy were assets when Singapore decided to industrialise. Thirdly, an urban economy, Singapore did not have to deal with the problems of a lagging low-productivity agricultural sector. Fourthly, Singapore in 1959 had a civil service which could be harnessed to implement development policies.

Singapore's initial advantages were reinforced by policies to improve the investment climate and to strengthen the capacity of public sector institutions to execute development policies. Investment policies pertained to fiscal incentives, the tariff system, labour and wages.

To attract investors, tax holidays ranging from two to five years were first granted to designated pioneer firms in 1959. In 1967, existing incentives were consolidated and new ones introduced. In particular, a 4 per cent concessionary tax on approved export profits was introduced and interest payments on approved foreign loans were exempted from tax. In addition, a concessionary tax rate of 20 per cent (compared with the normal 40 per cent rate on company profits) was introduced on royalties and fees paid to foreigners. Double tax deductions for export promotion expenses and accelerated depreciation allowances were also allowed in 1967. Since 1967, fiscal incentives have been modified and expanded in response to changing economic conditions. In 1970, to encourage the establishment of high-technology firms with long gestation periods, the tax holiday period for approved pioneer firms was raised to a maximum of 10 years. In 1975, the Capital Assistance Scheme was set up to provide financial assistance to capital-short, high-technology firms. In 1979, an investment tax credit scheme was introduced to encourage upgrading by existing firms and the setting up of firms with long gestation periods, i.e. firms that would not benefit from a short tax holiday period. Under the scheme, a company is granted tax exemption on profits equal to as much as 50 per cent of its investment in approved plant and equipment.

Singapore's efforts to promote industrial peace were supported by a consistent foreign investment policy characterised by an absence of restrictions. Though they are encouraged to form joint ventures, investors are not required to have local partners. Nor do they have to use a stipulated proportion of local materials in their inputs or hire a fixed proportion of local workers. Free to repatriate profits, they are also permitted to import workers with skills not available in Singapore.

The absence of onerous regulations on foreign investors does not mean that foreign investors are free to pursue action contrary to the national objectives of Singapore. From the beginning, the government has made clear to investors that it is the sovereign authority. Foreign investors are expected to operate in a manner consistent with national laws and goals.

Another factor that contributed to Singapore's industrial growth after 1966 was the dismantling of tariff protection following the adoption of an export-oriented industrialisation strategy. Quota restrictions were removed and import tariffs cut to foster a competitive manufacturing sector. Singapore did not go through a long period of import-substitution characterised by high tariff walls to protect domestic industries before switching to an export-led strategy.[1] Powerful interest groups dependent on tariff protection had not developed. Further, inefficiencies associated with protection were not yet deeply embedded in the industrial structure. The government consequently encountered few political and economic problems when it began to reduce tariffs after 1966.

Though they increased the benefits of investing in Singapore, fiscal incentives and free trade were not the only or even the main factors that attracted investors to Singapore.[2] Equally important to the creation of an attractive investment climate was industrial peace and discipline. Thus a firm policy with respect to labour and wages was adopted. In the early 1960s legislative and administrative steps were taken to curb rival unionism and to settle industrial disputes more swiftly through conciliation, mediation, and arbitration. These steps culminated in 1968 with the enactment of the Employment Act and the Industrial Relations (Amendment) Act to improve industrial relations and stabilise labour costs. The Employment Act placed ceilings on various fringe benefits while the Industrial Relations (Amendment) Act made issues such as recruitment, promotion, transfer, retrenchment, and dismissal non-negotiable. By greatly strengthening the powers of management relative to those of unions, the 1968 legislation ensured industrial discipline and wage stability.

1 Throughout the first half of the 1960s, tariff rates remained low for most items. Except for a few industries, the effective protection rates varied between 10 per cent and 20 per cent. See Augustine Tan, "A Study of Industrial Protection in Singapore", unpublished monograph, 1968.

2 Helen Hughes and P.S. You, (eds.), *Foreign Investment and Industrialisation in Singapore* (Canberra: Australian National University, 1969).

At the same time, Singapore's labour intensive industrialisation strategy accorded priority to human capital development. For the greater part of the 1960s, becasue of a rapidly growing school population, attention was given mainly to the quantitative problem of expanding primary and secondary education. In the late 1960s, after industrialisation took root, increasing emphasis was given to vocational, technical and professional training.[1] In addition, Singapore since the early 1970s has set up a variety of other training programmes. These included joint government-industry training schemes to produce skilled craftsmen for high-technology firms, overseas training and industrial scholarship schemes, and grants for companies with approved training programmes. These schemes together have enlarged the number of trained workers in precision engineering and tool and die making.

Probably the most important factor behind Singapore's economic success is the government. The government supplemented its liberal investment policy with institutional reforms. In 1959, the government centralised decision-making by abolishing the two-tier system of administration consisting of a rural board and a city council. Policy coordination was facilitated as a result of this move. To ensure smooth execution of development policy, the government created statutory boards with specific boards. The establishment of the Economic Development Board in 1960, already referred to, was a step in this direction. Staffed by capable officers and backed by adequate government resources, the EDB very early developed a reputation for efficiency and reliability. Until 1968, EDB's functions encompassed loan financing, industrial estate development, technical consultancy services as well as investment promotion and evaluation. In 1968, new institutions were created to take over some of the functions of EDB. The Development Bank of Singapore took over the function of industrial financing, the Jurong Town Corporation was given the responsibility of developing and managing industrial estates, and technical consultancy services were provided by the Singapore Institute of Standards and Industrial Research and the National Productivity Board. The EDB retained its function of investment promotion. It also continued to assist investors in their dealings with various government agencies.

Policy changes to ensure efficient development agencies were paralleled by efforts to raise the saving rate to provide the wherewithal for development programmes. Tight controls on public spending on non-development items produced budget surpluses while a system of compulsory contributions by

1 Singapore's "takeoff" into industrialisation that created jobs in the late 1960s, like that of many other countries, took place before the large-scale expansion of technical and post-secondary education. Hence it cannot be said that large-scale investment in technical training was crucial to Singapore's success in creating jobs. Labour short firms adjusted by using internal labour market mechanisms which included the expansion of internal training programmes, the lowering of hiring standards, the changing of job content, etc. See David Clark and Pang Eng Fong, "Accommodation to Changing Manpower Conditions: The Singapore Experience", in *Malayan Economic Review* (April 1977), pp. 26-39.

workers and employers to the Central Provident Fund, a scheme for workers' retirement, increased domestic savings. Consequently, deficit financing of development projects was rendered unnecessary as was recourse to foreign aid.

(c) Levels and Patterns of Employment

Rapid economic growth has changed the labour market in Singapore. As Table 4.3 shows, job expansion between 1957 and 1966 failed to keep pace with labour force growth. From 1966 to 1973, the labour force entrants continued to be large, but they were outstripped by the great increase in job opportunities generated by two-digit economic growth rates. As a result, the backlog of unemployment was wiped out and full employment achieved in the early 1970. During the recession of 1974-1975, employment expansion lagged behind labour force growth. Though unemployment rose, it was dampened by the withdrawal of many women from the workforce and the return of retrenched foreign workers to Malaysia. Since 1976, employment opportunities have grown much faster than the increase in labour supply. The unemployment rate dropped to an all-time low of 3.3 per cent in 1979.

One notable feature of Singapore's development is its increasingly labour intensive character. From 1957 to 1966, Singapore's labour absorption coefficient, i.e. the ratio of the employment growth rate to the output growth rate, was 0.29. This coefficient rose to 0.55 between 1970 and 1974 before falling to 0.49 in the mid-1970s. Since 1976, it has averaged 0.65. Until the early 1970s, a rising coefficient was in line with Singapore's economic strategy to create employment opportunities.

Growth has greatly changed industrial and occupational employment patterns. Reflecting Singapore's successful labour intensive industrialisation strategy, the manufacturing sector has emerged as the largest employer of workers, particularly unskilled females. The main industries contributing to the rapid growth of manufacturing jobs are textiles and garments, electrical and metal products. In 1979, the manufacturing sector employed 29 per cent of all workers, twice its share in 1957 (Table 4.4).

The largest employer two decades ago, the commerce sector ranked second in employment size in 1979. It accounted for 23 per cent of all jobs in 1979 compared with 28 per cent in 1957. The fall in the employment share of commerce largely reflects the diminishing importance of entrepot trade as a generator of job opportunities in the Singapore economy.

Since 1957, community, social, and personal services, like the commerce sector, have created jobs at a slower pace than the manufacturing and transportation sectors. Its employment share has consequently declined steadily from 29 per cent in 1957 to 21 per cent by 1979.

The employment shares of the transportation, storage and communication, and financial and business services sectors have both increased since 1957. Rapid employment expansion in these two sectors reflects Singapore's industrialisation

Table 4.3

Gross Domestic Product, Population, Labour Force and Employment 1957-1979

	1957	*1966*	*1970*	*1974*	*1976*	*1979*
1. Gross Domestic Product at 1968 Factor Cost ($ billion)	1.9	3.1	5.1	8.6	8.6	11.0
2. Population ('000)	1,446	1,930	2,075	2,219	2,278	2,363
3. Labour Force ('000)	472	571	693	851	904	1,053
4. Employed Persons ('000)	449	519	651	818	864	1,018
5. Unemployed Persons ('000)	23	51	42	33	40	35
6. Unemployment Rate (%)	4.9	9.0	6.0	3.9	4.4	3.3
7. Participation Rate (%)	57.0	52.3	56.5	57.8	57.6	61.4
Male	87.7	80.0	82.3	78.4	78.5	80.7
Female	21.6	24.2	29.5	37.1	36.4	41.9
8. Average Annual Increase in Real GDP (% p.a.)		5.6	13.3	10.8	5.7	8.6
9. Average Annual Increase in Population (% p.a.)		3.3	1.8	1.7	1.3	1.2
10. Average Annual Increase in Labour Force (% p.a.)		2.1	5.0	5.3	3.1	5.2
11. Average Annual Increase in Employed Persons (% p.a.)		1.6	5.8	5.9	2.8	5.6
12. Employment-Output Coefficient (11 ÷ 8)		0.29	0.44	0.55	0.49	0.65

Note: (i) Labour force estimates include foreign workers.
(ii) Labour force defined as employed and unemployed persons aged 15 years and above.
(iii) Labour force, employed persons and unemployment estimates for 1970 have been adjusted to exclude persons not actively searching for a job.
(iv) All figures have been rounded off.

Source: Department of Statistics, *Singapore National Accounts, 1960-1973* (Singapore: Singapore National Printers, 1975).

Report on the Census of Population, 1970: Vol. I (Singapore: Government Printer, 1973).

Economic Research Centre and Ministry of National Development, *1966 Sample Household Survey Report No. 1* (Singapore: Government Printer, 1967).

Ministry of Labour, *Report on the Labour Force Survey of 1976* (Singapore: Singapore National Printers, 1977).

Report on the Labour Force Survey of 1979 (Singapore: Singapore National Printer, 1980).

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Ministry of Labour and National Statistical Commission. *Report on the Labour Force Survey, 1974* (Singapore National Printers, 1974).

Ministry of Trade and Industry. *Economic Survey of Singapore, 1979* (Singapore: Singapore National Printers, 1980).

Table 4.4

Percentage Distribution of Employed Persons by Sector, 1957-1979

Sectors	*1957*	*1970*	*1979*
Agriculture	6.9	3.5	1.5
Quarrying	0.3	0.3	0.1
Manufacturing	14.3	22.0	28.8
Electricity, Gas and Water	0.8	1.2	1.0
Construction	5.2	6.6	5.3
Commerce	27.8	23.5	23.2
Transport, Storage and Communications	10.7	12.1	11.7
Finance, Insurance, Real Estate and Business Services	4.3	3.5	7.1
Community, Social and Personal Services	29.1	27.2	21.2
Activities Not Adequately Defined	0.4	0.1	0.1
Total Employed (%)	100.0	100.0	100.0
('000 persons)	449.0	650.9	1,018.3

Sources: Department of Statistics, *Singapore National Accounts, 1960-1973* (Singapore: Singapore National Printers, 1975).

Report on the Labour Force Survey of 1979 (Singapore: Singapore National Printers, 1980).

and its development as a regional financial, communication, distribution, and technical service centre.

The diversification of the Singapore economy since the late 1950s has greatly changed the demand for various types of workers. Reflecting the needs of an increasingly complex economy, the demand for high-level manpower – professionals, technicians, administrators, and managers – has expanded rapidly. In consequence, the share of professional, technical, administrative, and managerial workers in the work force has risen from 6.8 per cent in 1957 to 11.4 per cent in 1979 (Table 4.5). The employment share of clerical workers too has increased, thanks to the rapid growth of government services and non-traditional service sectors including finance, business services, and transport, storage and communication. The share of sales and service workers has, however, declined partly because of relatively slow growth in the entrepot sector and partly

Table 4.5

Percentage Distribution of Employed Persons by Major Occupation, 1957-1979

Major Occupations	*1957*	*1970*	*1979*
Professional, Technical, Administrative and Managerial Workers	6.8	10.3	11.4
Clerical Workers	11.6	12.9	15.8
Sales and Service Workers	33.3	29.9	26.4
Production Workers, Transport Equipment Operations and Labourers	38.5	39.2	38.6
Others[a]	9.8	7.7	7.8
TOTAL	100.0	100.0	100.0

[a] 'Others' include agricultural workers, fisherman and workers not classified by occupation.

Sources: Same as Table 4.3.

because of the fall in the number of own-account and part-time unpaid family workers as a result of rapid development. (In 1979, own-account workers and unpaid family workers represented 13 per cent of work force, down from 23 per cent in 1957).

Though the share of production, transport equipment and related workers has remained constant since 1957, its composition in 1979 is different from that in 1957. In 1957, unskilled odd-job male labourers working in small establishments accounted for a sizable share of the occupational group, production, transport equipment and related workers. In 1979, a significant proportion of production workers were women employed by large manufacturing firms.

Over the past two decades, shifts in the demand for labour caused by industrialisation have been accompanied by qualitative changes in the supply of labour. With the expansion of educational opportunities and training facilities, the proportion of educated workers in the labour force has risen steadily. Today, over two-fifths of the workforce have a secondary education compared with one-fifth two decades ago. The improving quality of the labour force has facilitated adaptation to changing demand conditions.

(d) Labour Productivity

The growth of Singapore's economy has been the result of, among others, increased factor inputs and productivity gains. Table 4.6 shows the proportion of growth due to labour force expansion and the proportion due to capital accumulation and increased efficiency in the use of both labour and non-labour

Table 4.6

The Contribution of Labour Force Expansion to Output Growth, Singapore, 1961-1979

	1961-66	*1966-74*	*1974-75*	*1975-76*	*1976-77*	*1977-78*	*1978-79*	*1961-79*
1. Average Annual Growth of GDP at 1968 Factor Cost (%)	5.9	12.3	4.0	7.2	7.8	8.6	9.3	9.1
2. Average Annual Growth in Employed Labour Force (%)	1.4	5.2	1.1	3.7	4.2	6.1	6.6	3.9
3. % of Growth Due to Increased Labour Input	24	42	28	51	54	71	71	43
4. % of Growth Due to Non-Labour Factors and Productivity Improvements	76	58	72	49	46	29	29	57

Note: Row 3 = Row 2/Row 1 x 100.

Row 4 = 100 – Row 3.

Sources: Same as Table 4.3.

resources. It shows that 43 per cent of Singapore's output growth since 1960 is attributable to labour force expansion. The other 57 per cent is due to capital deepening, scale economies, technical change, qualitative improvements in the labour force, and other factors.

Until the mid-1970s, productivity gains and growth in the stock of physical capital were the dominant factors in Singapore's output growth. From 1961 to 1966, increased labour input accounted for only a quarter of Singapore's 5.9 per cent annual growth during the period. From 1966 to 1974, the main sources of output growth were productivity gains and capital accumulation. Since 1975, however, the contribution of labour force expansion to economic growth has been increasing while that of capital and efficiency factors has been declining. In 1979, 71 per cent of the output growth can be traced to an increase in the employed labour force. Put differently, less than one-third of Singapore's 9.3 per cent growth in 1979 is due to non-labour factors and productivity improvements.

The poor productivity performance of Singapore in the late 1970s is puzzling as productivity gains are usually positively associated with the rate of output growth. In part, it probably was influenced by a policy that emphasized small wage increases and thus encouraged employment creation at the expense of capital investment and labour-saving measure.[1] A related explanation is that of labour hearding. As the labour market tightened, especially after late 1977, many labour intensive firms, affected by rising labour turnover, recruited more labour than they needed.

(e) *Wages*

Wage data for Singapore are imperfect and incomplete. A complete earnings series dating from the late 1950s is available only for production, transport, and manual workers. This series shows that average nominal weekly earnings of these workers rose by an average of 2 per cent a year in the 1960s. In real terms, earnings grew by 1 per cent a year as inflation (measured by the Consumer Price Index) averaged 1 per cent a year. Several factors contributed to the slow growth of earnings during a period of rising output, particularly after 1967. The first is excess labour supply. Until the late 1960s Singapore suffered from high unemployment and widespread under-employment. Economic expansion reduced unemployment but exerted little pressures on wages.

The second is a policy of wage restraint adopted by the government to attract foreign investors. The effect of this policy was particularly strong in the late 1960s when the pool of unemployed workers was shrinking fast.

A third factor contributing to the small increase in average earnings of production workers is the large influx of female workers into the labour-

[1] For an elaboration of this point, see Pang Eng Fong, "The Labour Market in Singapore: Key Issues and Outlook", in *Singapore Business Yearbook, 1979* (Singapore: Times Publications, 1979).

intensive electronics assembly, textiles, and clothing industries. This influx greatly enlarged the proportion of women in the labour force. As female wages were lower than those of men, the increase in average earnings of production workers as a whole was dampened.

In the 1970s, with the attainment of full employment, money earnings rose rapidly, averaging 10 per cent a year between 1972 and 1979.[1] Between 1972 – the year the tripartite National Wages Council (NWC) was formed to recommend orderly wage changes – and 1974, money wages rose by 14 per cent a year largely in response to labour market and inflationary pressures. From 1975 to 1978, average earnings grew moderately because the NWC recommended modest wage increases to maintain Singapore's competitiveness in world markets. (Though only guidelines, NWC recommendations are implemented by most large employers.) in 1979, the high wage policy of the early 1970s was resumed, this time with the primary aim of encouraging firms to upgrade and use increasingly scarce labour efficiently.

Rapid development in the 1970s has benefitted production, transport, and manual (PTM) workers slightly more than other occupational groups. As Table 4.7 shows, PTM workers increased their weekly earnings by an average of 13 per cent a year between 1972 and 1979, nearly 2 per cent more than that enjoyed by professional, administrative, managerial and related workers.

Excluding the minor sector – agriculture and fishing, mining and quarrying, and utilities which together employed less than 4 per cent of the workforce in 1979 – differences in the rate of increase in weekly earnings among major sector are small. Commerce recorded an average annual increase of 13.8 per cent, only 2.7 per cent faster than finance and business services. The narrow band of wage increases by industry reflects the influence of the widespread adoption of across-the-board, flat-percentage NWC wage guidelines.

(f) *Income Distribution*

Fortunately, rapid growth in Singapore has not been accompanied by growing income disparities. According to several studies, the Gini coefficient, a commonly used measure of income equality, has fallen slightly since 1966. [2] A recent report by the Department Statistics indicates that the Gini coefficient for household income in Singapore had declined from 0.40 in 1972/73 to 0.37 in 1977/78. [3] Singapore is thus one country that has combined growth with equity.

1 Ministry of Trade and Industry, *Economic Survey of Singapore, 1979* (Singapore: Singapore National Printers, 1980).

2 See Bhanoji Rao and M.K. Ramakrishnan, "Economic Growth, Structural Changes and Income Inequality, Singapore, 1966-1975," Council for Asian Manpower Studies: Discussion Paper Series No. 77-15, December 1977; and Pang Eng Fong, "Growth, Inequality and Race in Singapore", *International Labour Review*, Vol. III, No. 1 (January 1975), pp. 15-28.

3 Department of Statistics, *Report on the Household Expenditure Survey*, 1977/1978, (Singapore: Singapore National Printers, 1979).

Table 4.7

Average Weekly Earnings ($) by Industry and Occupation, 1972, 1979

Industry \ Occupational Group / Year	Professional[a]			Clerical[b]			Production[c]			All Workers		
	1972	1979	Average Annual Increase 1972-1979 (%)	1972	1979	Average Annual Increase 1972-1979 (%)	1972	1979	Average Annual Increase 1972-1979 (%)	1972	1979	Average Annual Increase 1972-1979 (%)
ALL INDUSTRIES	190.57	341.56	11.3	64.18	116.57	11.7	50.54	96.60	13.0	75.62	142.77	12.7
Agriculture and Fishing	204.60	306.68	7.1	66.65	93.39	5.7	37.09	85.75	18.7	55.42	118.03	16.1
Mining and Quarrying	219.79	623.47	26.2	65.46	148.98	18.2	63.96	125.11	13.7	69.06	214.66	30.1
Manufacturing	271.90	424.47	8.0	71.80	127.04	11.0	48.58	91.59	12.6	63.21	118.78	12.6
Electricity, Gas and Water	230.13	300.99	4.4	88.32	155.03	10.8	57.34	121.17	15.9	80.51	165.15	15.0
Construction	234.77	327.11	5.6	76.10	108.52	6.1	62.10	104.40	9.7	77.64	139.25	11.3
Commerce	239.16	416.21	10.6	55.70	101.82	11.8	45.86	99.42	16.7	68.49	134.69	13.8
Transport, Storage and Communications	277.88	505.75	11.7	74.67	129.25	10.4	61.57	124.63	14.6	84.68	162.42	13.1
Financing, Insurance, Rural Estates and Business Services	242.81	404.66	9.5	76.60	129.92	9.9	42.69	92.79	16.8	106.94	193.77	11.1
Community, Social and Personal Services	140.39	251.26	11.3	63.08	113.26	11.4	43.84	83.51	12.9	86.80	164.31	12.8

Notes: [a] Refers to professional, administrative, managerial and related workers.

[b] Refers to clerical, sales, service and related workers.

[c] Refers to production, transport and other manual workers.

Source: *Yearbook of Labour Statistics, 1979* (Singapore: Singapore National Printers, 1980).

4.3 The Role of Small Firms in Singapore's Manufacturing Sector

Because of Singapore's small domestic market and the imperative of creating jobs, the main thrust of its industrial efforts has been in the promotion of large scale multinational corporations geared to export markets. Despite this, small industries[1] in manufacturing have flourished. In 1978, there were 2,519 small manufacturing enterprises employing a workforce of 71,222 and generating an output of S$ 3.6 billion and value-added of $ 1.1 billion. They constituted 85.5% of all manufacturing establishments, 29.2% of Singapore's total industrial employment, 18.2% of total output and 22% of total manufacturing value-added.

(a) *Characteristics and Growth*

Table 4.8 shows that the number of small scale manufacturing establishments in Singapore has increased 5.4 times, from 497 in 1960 to 2,519 in 1978. Small firms accounted for 90.6% of the total number of manufacturing firms in 1960 but the percentage declined to 85.5 in 1978.

In 1960, small industries absorbed an impressive 55.9% of total employment in manufacturing, but by 1978, the percentage had dropped to only 29.2% (Table 4.9). This was largely due to the impact of government policy in promoting foreign investments. At the same time, of course, some of the small firms grew larger.

A similar trend can be seen in the growth of output and value added of small scale manufacturing firms (Table 4.10). In 1960 such firms produced $ 254 million worth of output, or 54.6% of total manufacturing output. Although output increased by 14 times in 1978 to $ 3.6 billion, the percentage contribution of small firms fell to only 18.2%. Similarly, value added by such establishments in 1960 was $ 65 million or 46% of total manufacturing value-added. In 1978, the corresponding percentage was only 22% although the value was $ 1.1 billion or 17 times the 1960 figure.

Table 4.11 shows the sales and direct exports of manufacturing industries in Singapore. In 1973, small firms had sales of $ 1.8 billion, of which $ 447 million, or 25% was exported. By 1978, their sales had increased to $ 3.6 billion, of which $ 1.2 billion, or 32.7% was exported. Exports by small firms constituted only 9.2% of total manufacturing exports in 1979. These figures show that small manufacturing firms in Singapore are largely geared to the domestic market.

Small firms are less capital intensive than large ones in Singapore's manufactuing sector (Table 4.12). The average capital expenditure per establishment was $ 90,186 compared to $ 1.4 million for the larger firms in 1978. In

[1] The figures quoted cover establishments employing between 10 and 99 workers, as reported in the *Census of Industrial Production*. No firm data is available for firms employing fewer than 10 workers. However a rough estimate of employment in such firms gave a figure of 25,727 in 1978 or 9.5% of the labour force.

Table 4.8

Small-Scale Manufacturing Industries in Singapore
(Number of Establishments by Size, for various years)

Year	*Total No. of establishments*	*Size of Establishments*			
		10 - 99 workers (No. of establishments)	*% of total*	*100 workers and over (No. of establishments)*	*% of total*
1960	548	497	90.6	51	9.4
1966	1,123	1,032	91.9	91	8.1
1970	1,747	1,534	87.8	213	12.2
1975	2,385	2,051	86.0	334	14.0
1977	2,638	2,256	85.5	382	14.5
1978	2,946	2,519	85.5	427	14.5

Source: *Census of Industrial Production*, various years.

Table 4.9

Employment by Small and Large Industries
(Manufacturing excluding rubber processing)

Year	*No. of establishments*		*No. of workers employed*		*Percentage of no. of workers to total no. of workers employed*		
	10 - 99 workers	*100 and over workers*	*10 - 99 workers*	*100 and over workers*	*10 - 99 workers*	*100 and over workers*	*Total*
1960	497	51	15,326	12,090	55.9	44.1	100.0
1966	1,037	91	29,820	22,987	56.5	43.5	100.0
1970	1,534	213	45,559	74,850	37.8	62.2	100.0
1975	2,051	334	58,208	133,230	30.4	69.6	100.0
1977	2,256	382	64,555	154,557	29.5	70.5	100.0
1978	2,519	427	71,222	172,502	29.2	70.8	100.0

Source: *Census of Industrial Production,* various years.

Table 4.10

Output and Value Added of Manufacturing Industry

Thousand Dollars

Year	*Establishments with 10 - 99 Workers*				*Establishments With Great Than 100 Workers*				*Total Output*	*Total Value Added*
	Output	*Percentage Distribution*	*Value Added*	*Percentage Distribution*	*Output*	*Percentage Distribution*	*Value Added*	*Percentage Distribution*		
1960/61	254,213	54.6	65,365	46.0	211,355	45.4	76,778	54.0	465,568	142,143
1965	614,756	56.6	160,081	46.0	471,607	43.4	188,280	54.0	1,086,363	348,361
1970	1,117,309	28.7	303,760	27.8	2,773,703	71.3	789,962	72.2	3,891,012	1,093,722
1975	2,560,709	20.3	736,796	21.6	10,049,435	79.7	2,674,333	78.4	12,610,144	3,411,129
1977[a]	3,392,983	19.4	1,015,036	22.7	14,125,266	80.6	3,460,422	77.3	17,518,249	4,475,458
1978	3,578,418	18.2	1,133,765	22.0	16,088,266	81.8	4,029,157	78.0	19,666,684	5,162,922

Notes: Rubber processing is excluded.

[a] Rubber processing and granite quarrying is excluded.

Source: *Census of Industrial Production*, various years.

Table 4.11

Sales and Exports of Manufacturing Industry

Year	Total Sales ($'000)	Total Exports ($'000)	Establishments with 10 - 99 workers				Establishments with more than 100 workers			
			Sales ($'000)	Percentage of sales to total sales (%)	Direct Exports ($'000)	Percentage of exports to total exports (%)	Sales ($'000)	Percentage of Sales to total sales (%)	Direct Exports ($'000)	Percentage of exports to total exports (%)
1973	7,961,293	4,269,774	1,778,814	22.3	446,620	10.5	6,182,479	77.7	3,823,154	89.5
1975	12,401,049	7,200,693	2,572,201	20.7	795,717	11.1	9,828,848	79.3	6,404,976	88.9
1976	15,556,536	9,575,927	3,162,806	20.3	979,052	10.2	12,393,730	79.7	8,956,875	89.8
1977	17,390,502	10,969,405	3,379,285	19.4	1,095,831	10.0	14,011,217	80.6	9,873,574	90.0
1978	19,555,504	12,632,733	3,562,532	18.2	1,166,633	9.2	15,992,972	81.8	11,466,100	90.8

Notes; 1. Rubber processing is excluded.

2. Data for earlier years are not available.

Source: *Census of Industrial Production,* various years.

Table 4.12

Capital Expenditure by Establishments (1978)

Size of Establishments (Workers)	*No. of Establishments*	*Total Capital Expenditure (S$'000)*	*Average Capital Expenditure per Establishment (S$)*	*Average Capital Expenditure per Worker (S$)*
10 – 99	2,519	227,181	90,186	3,191
100 and over	427	594,656	1,392,637	3,447
Total	2,946	821,838	278,967	3,372

Source: *Report on the Census of Industrial Production, 1978.*

terms of capital intensity (expenditure per worker), however, small firms do not differ significantly from large ones ($ 3,191 compared to $ 3,447).

(b) *Linkages Between Big And Small Firms*

This is an area where the small industry performs an important role. The relation of the small-industry with the large can be dichotomised into:

(i) Indirect Complementarity

(ii) Direct Complementarity

(i) *Indirect Complementarity*

As its name suggests, indirect complementarity means the division of tasks between small and large manufactuirng units which comes about without direct agreements or contracts. As Staley and Morse pointed out:

> "It results from the sorting-out process of competition. Both in small and large firms, alert managers are continually making cost comparisons and seeking those particular product lines and operations in which their firms will have greatest opportunities for profit. Characteristically, . . . , small firms are best at certain kinds of tasks and large ones at other kinds".[1]

Thus small industries can coexist competitively with the large ones by seeking out those activities where they have cost advantages, thereby complementing the large industries, while avoiding direct competition.

(ii) *Direct Complementarity*

By this is meant a relation between manufacturing firms (large and small) in which one systematically uses the product of another as an input into its own manufacturing operation. This relation exists between factories of all sizes - from one large factory to another, from one small factory to another, from small to large, and from large to small.

Direct complementarity thus takes the form of either further manufacturing or sub-contracting. In the former case a small factory uses the products of a large factory as a basis for its own operations. In this case the small industry is the buyer. Examples of small firms which are involved in this type of relationship are those that assemble radios and television sets, and those that produce furniture, toys, etc. The small firms buy the electric components, plywood, aluminium sheets, etc. from the large firms.

In sub-contracting, the small firm makes components, or supplies for a large factory or factories. Most small firms in the electronics industry in Singapore for example, form this "support industry". In sub-contracting (also called "contract manufacture"), the main contractor orders products, components or services from a sub-contractor who manufactures, transforms, or

1 R. Staley and M. Eugene, *Modern Small Industry For Developing Countries* (New York: McGraw Hill, 1965), pp. 249-50.

provide services according to the design, specifications, or requirements of the buyer.

The concept of sub-contracting manufacture and servicing is basically to improve the productivity of the industry as a whole by making use of under-utilised capacities and capabilities as well as the specialised skills available in the existing small industry. Normally, large foreign firms would avoid investing in components and part manufacture if such facilities are available within the industrial base of the country.

Sub-contracting jobs are of three types, specialised sub-contracting, economic sub-contracting and capacity sub-contracting. In the first case some of the big firms contract out their work which they are unable to perform due to lack of specialised skills or facilities within their own manufacturing complex. In the second case because the types and volumes of components required by a large establishment are rather varied and restrictive for the large firms to undertake manufacturing it becomes more economical for a small scale industry to perform this operation. In the third case in order to fulfil the buyers' orders within a certain committed time period, large establishments may have to sub-contract part of their manufactuirng and servicing to the small industry.

The *Census of Industrial Production* provides data for work given out by all manufactuirng firms employing 10 persons or more. Work given out refers to "payments to other firms or persons for work performed on raw or basic materials supplied by the reporting establishments. In cases where the reporting establishments are engaged in servicing activities, that part of the servicing activities given out to other firms or persons is also requested and included as work given out".[1] In Table 4.13, it can be seen that work given out by manufacturing firms in Singapore amount to $ 399 million in 1978. This represented only 2% of total manufacturing output, although, as a percentage of the output of small firms (11.2%) it was not insignificant.

(c) *Entrepreneurship*

The only available study of entrepreneurship in Singapore involves small firms. While its limitation are evident, the study is relevant to the problem of developing local entrepreneurship. It was noted earlier that, since the early sixties, Singapore's industrial development has been mainly reliant on foreign investment.

1 Department of Statistics, *Report on the Census of Industrial Production* (Singapore, 1978), p. 3.

Table 4.13

Work Given Out and Output of Manufacturing Industry

Year	*Total Work Given Out ($'000)*	*Total Output ($'000)*	*Percentage of Work Given Out to Output (%)*
1968	18,979	2,175,668	0.9
1969	26,852	3,213,899	0.8
1970	49,387	3,891,012	1.3
1973	130,719	7,938,073	1.6
1976	312,482	15,517,439	2.0
1977	320,860	17,518,429	1.8
1978	399,160	19,666,684	2.0

Notes: 1. Rubber processing and granite quarrying are excluded.

2. Data for 1967 and the years before it are not available.

Sources: *Census of Industrial Production,* various years.

The sample survey by Ch'ng Hak Kee[1] had produced the following observations and conclusions:-

(i) Thirty one per cent of the entrepreneurs were formerly commercial traders, 24 per cent were former employees of mercantile firms and 22 per cent were engineers and technicians. Factory workers and artisans comprised 9.3 per cent of the total.

(ii) Fifty six per cent of the enterprises were formed and controlled by family members. It is not surprising therefore that 53 per cent trusted only family members or relatives. Twenty three per cent followed traditional methods of operation. Thirty five per cent of the owner-managers were over-burdened with detailed work, to the neglect of future planning and development. About a third adopted the Chinese incentive system of annual bonuses.

[1] Ch'ng Hak Kee, "Some Characteristics of Local Small-Scale Industries and Entrepreneurs" *The Singapore Manager,* Vol. 12 (No. 1, June, 1978). In this sample only 4 per cent of the firms interviewed were public limited companies, 68 per cent were private limited companies, while the rest were partnerships (14 per cent) and sole proprietorships (14 per cent). The firms interviewed were largely locally owned; 58 per cent were wholly locally-owned, 30 per cent were joint ventures and 11.7 per cent foreign owned. Sixty two per cent of the firms produce mainly for the local market while the rest cater to export markets.

The Confucian heritage is dominant in Singapore as in South Korea, because 76 per cent of the population is Chinese in origin. The sense of hierarchy and social discipline plus love of learning are features of the heritage which have proven to be beneficial to development of entrepreneurship. The negative factors like low social status of manual or technical labour and the merchant class do not appear to be inhibiting.

It has been noted that some 12,000 foreign managers, engineers and technicians (20 per cent of these workforce categories) helped to employ 250,000 workers or about 30 per cent of the total workforce in Singapore. These figures illustrate the heavy reliance on foreign entrepreneurs. Furthermore, the Prime Minister[1] of Singapore has noted that

(a) the bigger and more established a multinational corporation, the higher its success rate;

(b) the less experienced the industrialist and the less advanced his technology, the higher the failure rate.

The failure rate of wholly-owned U.S., European and Japanese multinational corporations was only 6 per cent. Wholly owned Singapore firms had a failure rate of 38 per cent while joint ventures had a failure rate of 14 per cent. Such figures notwithstanding, it is in the long-term interest of Singapore to develop its own entrepreneurship. The Government has recently recognised this necessity.

4.4 Problems of Small Industries

(a) *Financial Aspects*

The most serious handicap a small establishment has is a ready access to fianace. Most banks are reluctant to extend loans to small firms for the following reasons:-

(i) The small firms' securities are of doubtful value. Their machinery can be rendered obsolete very quickly.

(ii) The organizations of small firms are unstable. For example, the resignation of a good manager or technician may change the security position of the firm overnight.

(iii) Most small firms do not have a 'track record' sufficient for the banker to work on in ascertaining the credit-worthiness of the firm.

(b) *Technical Aspects*

Small firms face the problem of uneconomical operations for the following reasons:

1 Lee Kuan Yew, *Extrapolating From the Singapore Experience* (Singapore: Ministry of Culture, 1978), p. 14.

(i) Being small, a firm has very limited production capacity. As such the benefits of scale can hardly be realised by the small firm.

(ii) The profusion of other small industrial establishments in a limited home market gives rise to price-undercutting and poor product quality.[1]

(iii) Most small firms are employing outmoded and inefficient production techniques, not because they want to, but because they have to. The financial aspects discussed earlier on adequately explains this situation.

(c) *Other Factors*

Other problem affecting small firms in Singapore are:

(i) environmental control and health regulations, which add to overhead costs;

(ii) rising wage costs and utility charges increase overhead expenses. Small firms are generally less profitable and less able to absorb wage increases because of low productivity. The implementation of National Wages Council guidelines which are uniform for all industries hence affect small firms more seriously than larger firms.

(iii) dislocation due to urban renewal. Urban renewal and re-development have become a regular feature in Singapore. With the resultant displacement and removal costs, small firms find that they have to pay higher rentals. However, these problems are somewhat alleviated by subsidised rentals for those whose premises are acquired by Government.

(d) *Government Policies For Small Industries*

The Singapore Government has encouraged local industries to develop supporting facilities and services to the multinational corporations. It has also helped small industries to market their products through intra-ASEAN and international trade fairs and missions.

Small industrial entrepreneurs can resort to the following schemes for financial assistance:

(i) *The Small Industries Finance Scheme (SIFS)*

The SIFS was launched on 2nd November 1976 by the Economic Development Board and the Development Bank of Singapore.

This scheme is tailored to suit the needs of the small establishments engaged in manufacturing, assembly and supporting operations. Only small

[1] One local large electronic company which monitors the quality of its suppliers stated that the reject rate of some was as high as 75% whereas it was 0% for Japanese suppliers. Several firms attributed this to the lack of experience of local firms. Pang Eng Fong and Linda Lim, *The Electronics Industries in Singapore: Structure, Technology, and Linkages*, Research Monograph Series No. 7 (ERC), Chopmen Enterprises, August 1977.

firms with $ 2 million or less in fixed productive assets are eligible to quality for this scheme which gives a maximum loan of $ 2 million.

The progress of SIFS from November 1976 to June 1979 is shown in Table 4.14 which gives a breakdown by industry-group of the loans granted. Up to June 1979, only 147 loans have been given.

Table 4.15 presents a summary of loans approved under SIFS for the period November 1976 – December 1979. Up to December 1979, 191 small firms had received a total of $ 29.5 m in loans.

(ii) *The Monetary Authority of Singapore Rediscounting Scheme for Export and Pre-Export Bills (MASS)*

MASS was introduced in May 1975 to aid the exporters by allowing them to borrow at cheaper interest rates than those available in the market.

Although no figures are available, it can be inferred that the number of small firms which have resorted to this scheme is small, since the scheme caters for exporters, and such people are few among the small industrialists.

(iii) *The Investment Allowance Scheme (IAS)*

The IAS is yet another incentive scheme for local investors to expand, upgrade and diversify their activities. The scheme is an alternative for investors who do not receive tax concessions and exemptions on profits under the pioneer status scheme.

The IAS allows for up to 50% of approved new investments to be deducted against taxable profits.

(iv) *The Development Bank of Singapore Fixed Advanced Facility Scheme*

This is a credit scheme offering short-term loans ranging from 1-6 months. The attraction of the scheme is that the interest charged is below the prime rate, though above the inter-bank rate.

(v) *The Skills Development Fund (SDF)*

The SDF was introduced in July 1979. The fund was formed from the contributions of employers who have to give 2% of every worker's salary, or $ 5 for each worker earning less than $ 750 a month. The Fund is administered on a tripartite basis involving the government, trade unions, and employers.

The raison d'etre of the SDF is to upgrade skills to higher technological levels, as well as the development of common user skills that are necessary for upgrading firms.

Firms can also get help from government agencies to upgrade their technology. Technical assistance is provided by the Singapore Institute of Standards and Industrial Research and consultancy services in product design, plant management, quality control etc. are available from the National Productivity Board.

Table 4.14

Loans Granted (November 1976 – June 1979)

Industry Group	*No. of Loans Given*	*No. of Companies*	*Building Loan*	*Machinery Loan*	*Working Capital Loan*	*Total*	*Percentage of Total Loan Approved*
			($'000)				
Food, Beverages and Tobacco	6	4	130	480	510	1,120	5.3
Textiles and Garments	10	9	–	175	630	805	3.8
Wood and Cork Products	23	18	1,775	268	969	3,012	14.3
Paper, Paper Products & Printing	16	13	1,370	1,823	65	3,258	15.4
Chemical Products	5	4	330	55	350	735	3.5
Plastic Products	20	12	120	1,376	800	2,296	10.9
Metal Products	40	32	3,285	1,066	1,883	6,234	29.5
Electrical & Electronic Products	13	12	437	439	152	1,388	6.6
Other Manufacturing Industries	14	14	1,075	343	840	2,258	10.7
Total	147	118	8,522	6,025	6,559	21,106	100.0

Source: *Singapore Investment News*, August 1979.

Table 4.15

Summary of Loans Approved under STFS (November 1976 – December 1979)

Year	*No. of Companies*	*Building Loan*	*Machinery Loan*	*Working Capital Loan*	*Total*
		($'000)			
1976 (Nov-Dec)	10	–	610	620	1,230
1977	57	3,368	2,076	2,539	7,983
1978	42	2,932	1,394	1,630	5,956
1979	82	7,113	3,180	4,050	14,343
Total	191	13,413	7,260	8,839	29,512

Source: *Singapore Investment News*, Feb., 1980.

The Economc Development Board (EDB) itself arranges joint ventures with foreign companies and helps with licensing arrangements. There is also a Product Development Assistance Scheme, launched in March 1978 by the EDB which is designed to encourage small industries to innovate, through a dollar for dollar matching expenditure in product design and development. The Scheme, with an initial budget of $ 1 million, was set up in recognition of the need to develop local applied research and product development capability and to build up indigenous technology. The maximum grant for each project is $ 100,000.

4.5 Summary and Conclusions

Singapore's transformation in less than two decades from a stagnating entrepot to an industrialising independent country enjoying full employment was due to both internal and external factors. More precisely, it was the result of the development of domestic policies and institutions to take advantage of favourable external circumstances.

From the time it began to industrialise, Singapore has adopted a consistent set of policies towards foreign capital, technology and skills. Singapore, after independence, did not place severe limits on the participation of foreigners in its economy. Instead, it concentrated on developing an investment climate that enlarged profit-making opportunities for foreign investors.

The government also dismantled tariff protection in order to foster a competitive manufacturing sector. Singapore did not have a long experience with an import-substitution strategy. When it switched to an export-led strategy,

powerful interest groups dependent on protective tariffs had not emerged. The transition to export-orientation was therefore smooth.

Fiscal incentives and free trade contributed to Singapore's attractiveness as a place to invest, but they were not the only or even the main factors that attracted investors to Singapore. Equally important to investor confidence were industrial peace and worker discipline. The Singapore government ensured industrial peace and worker discipline by changing administrative rules and labour legislation to minimise the potential for disputes. It recognised that industrial peace is crucial to the success of a liberal foreign investment policy and that it must be established quickly even if it means that tough labour legislation favouring employers have to be enacted.

At the same time, Singapore's labour intensive industrialisation accorded priority to human capital development. Throughout the 1960s, attention was given mainly to the quantitative problem of expanding primary and secondary education. Later, after the backbone of the unemployment problem was broken the emphasis was put on technical and professional education.

Singapore's liberal investment policy was implemented by efficient development agencies staffed by capable officers and backed by adequate resources. Tightly managed and cost-conscious, these agencies contributed greatly to the build-up of infrastructure that made Singapore an efficient place to do business.

The establishment of efficient development agencies was paralleled by controls on public spending and by measures to increase domestic savings through a system of compulsory contributions by workers and employers. From 1959, Singapore strove to avoid deficit financing and minimise dependence on foreign aid as a method of financing development programmes. Instead, it emphasized financial conservatism in public spending.

In short,it was through liberal investment policies and effective government institutions that Singapore was able to promote the industrialisation of its economy and, concomitantly, eliminate its unemployment problem.

five

Labour Intensive and Small Scale Manufacturing in Thailand

Somsak Tambunlertchai
Chesada Loohawenchit

5.1 Introduction

One major objective of industrial development is to increase employment opportunities to absorb surplus labour in the economy. Thailand is traditionally an agricultural economy where the great majority of the population lives in the rural areas. The extent of under-employment has been substantial and there is considerable rural-urban migration although migrants usually face uncertain employment prospects.

One possible way of increasing the pace of employment absorption is through the development of labour intensive industries, either in rural or in urban areas. The development of labour intensive small scale industries scattered throughout the country could be an important avenue for generating employment. The development of these industries, however, has thus far been relatively neglected by economic policy.

The objective of this paper is to present an overview of the structure of the manufacturing sector with particular emphasis on labour intensive and small scale industries. Because of the lack of detailed data on employment by individual industries, however, and because there has been virtually no study on labour intensive industries, this paper has drawn heavily on previous studies on medium and small scale industries[1] which provide some analysis on employment related issues.

1 Saeng Sanguanruang, Somsak Tambunlertchai, and Nit Sammapan, *A Study of Small and Medium Scale Industries in Thailand,* (in Thai) National Institute of Development Administration and Thammasat University, 1977 (hereafter referred to as the SMI Study), and Saeng Sanguanruang, N. Xuto, P. Saengpassorn, and C. Piputsitee, *Development of Small and Medium Scale Enterprises in Thailand,* Association of Development Research and Training Institutes of Asia and the Pacific (ADIPA) Report, Bangkok 1978.

The paper is organised in the following manner. Sections 5.2 and 5.3 provide a description of the importance of the manufacturing sector in the Thai economy and an analyses of various policy measures affecting the growth of the sector especially the impact of trade and exchange rate policies. The next section investigates the important characteristics especially as regards capital intensity of manufacturing firms for different size groups. Section 5.5 gives a detailed description of the small scale industry sector so as to bring out the problems with which it is presently faced. Finally, the concluding section suggests some policy changes for the encouragement and growth of labour intensive industries in Thailand.

5.2 Manufacturing in the Thai Economy

(a) *Structural Change in the Thai Economy*

The past two decades have witnessed a rapid change in the structure of Thailand's economy. From one dominated by agriculture during the late fifties and early sixties, the economy has become more and more diversified. Leading this structural change is the manufacturing sector whose share in GDP increased from 11.7 per cent in 1960 to 21.3 per cent in 1978. This has resulted in the manufacturing sector now become the most important sector next to agriculture, whose share is 27.1 per cent of total GDP (See Table 5.1).

The growth rate of the manufacturing sector during the last three years was on average significantly higher than that in the past. This can be seen by the contribution of this sector during 1975-78 towards GDP growth of 33 per cent, which was not only larger than its share of GDP but also greater than the contribution towards GDP growth of the agricultural sector (Table 5.2). At this pace, it is quite likely that within the next decade the manufacturing sector will overtake the agricultural sector as the largest contributing sector to GDP.

(b) *Employment*

Although GDP from manufacturing has reached a significant share of total GDP, employment in manufacturing presents a different picture. The share in total employment of the sector in 1978 was only 6.7 per cent compared to the share in total GDP of 21.3 per cent (Table 5.3). When the agricultural sector is excluded, manufacturing has a more or less similar share in total non-agricultural employment and total non-agricultural GDP. This may be explained by the dualistic nature of the economy with the traditional economic or agricultural sector employing the majority of the labour force [1] and the modern economic or non-agricultural sector employing only a small proportion.

[1] According to the Labour Force Survey, labour force refers to all persons 11 years of age and above who work or are looking for work during any week preceding the survey date or are waiting for the farm season. The employment figures presented are thus the number of persons at work.

Table 5.1

Gross Domestic Product by Industry

	GDP (billions of 1972 baht)					*GDP Share (Per cent)*				
	1960	*1966*	*1970*	*1975*	*1978*	*1960*	*1965*	*1970*	*1975*	*1978*
Agriculture	28.6	36.2	48.3	62.1	69.6	40.51	36.34	32.20	30.42	27.09
Mining and Quarrying	0.9	1.7	2.6	2.5	4.1	1.23	1.71	1.70	1.22	1.58
Manufacturing	8.3	14.0	23.3	37.1	54.8	11.74	14.05	15.54	18.20	21.31
Construction	3.4	5.7	8.7	8.5	13.6	4.79	5.75	5.80	4.17	5.27
Electricity and Water Supply	0.2	0.5	1.6	3.2	4.5	0.30	0.55	1.09	1.56	1.76
Transportation and Communication	4.7	6.3	9.2	12.4	16.2	6.68	6.29	6.13	6.10	6.30
Wholesale and Retail Trade	11.2	16.2	26.5	36.1	41.6	15.84	16.28	17.67	17.71	16.17
Banking, Insurance and Real Estate	1.3	2.6	5.8	9.9	12.2	1.87	2.61	3.87	4.85	4.75
Ownership of Dwellings	2.1	2.4	3.0	3.6	4.0	2.98	2.44	2.00	1.74	1.56
Public Administration and Defence	3.2	4.3	6.5	8.4	10.9	4.56	4.32	4.31	4.10	4.25
Services	6.7	9.6	14.5	20.3	25.6	9.50	9.66	9.69	9.93	9.96
Total	70.6	99.5	150	204.1	257.1	100	100	100	100	100

Source: NESDB, *National Income of Thailand*, various issues.

Table 5.2

Gross Domestic Product by Industry: Growth Rate and Contribution to Growth

	GDP Growth Rate (Percent/year)				*Contribution to GDP Growth (Percent)**			
	1960-65	*1965-70*	*1970-75*	*1975-78*	*1960-65*	*1965-70*	*1970-75*	*1975-78*
Agriculture	4.83	5.94	5.15	3.87	26.29	23.96	25.51	14.15
Mining and Quarrying	13.56	8.87	−0.78	17.82	2.77	1.78	−0.18	3.02
Manufacturing	11.02	10.72	9.75	13.88	19.72	18.42	25.51	33.40
Construction	10.89	8.83	−0.46	16.96	7.96	5.94	−0.37	9.62
Electricity and Water Supply	20.11	26.19	14.87	12.03	1.04	2.18	2.96	2.45
Wholesale and Retail Trade	7.66	10.34	6.38	4.84	17.30	20.39	17.74	10.38
Banking, Insurance and Real Estate	14.87	17.41	11.29	7.21	4.50	6.34	7.58	4.34
Ownership of Dwellings	2.71	4.56	3.71	3.57	1.04	1.19	1.11	0.75
Public Administration and Defence	6.09	8.61	5.26	9.07	3.81	4.36	3.51	4.72
Services	7.46	8.60	6.96	8.03	10.05	9.70	10.72	10
Total	7.10	8.56	6.35	8.00	100	100	100	100

Source: NESDB, *National Income of Thailand,* various issues.

* Let Y_t designates GDP of end year, Y_o GDP of beginning year, V_{it} value added generated by the ith sector in end year and V_{io} value added by i^{th} sector in beginning year. Contribution of the ith sector to GDP growth for the period calculated by $\frac{V_{it} - V_{io}}{Y_t - Y_o} \times 100$

Table 5.3

Employment and Gross Domestic Product 1971-78

	Employment (thousand persons)		*GDP (million baht)*		*Value Added Per Worker (baht)*	
	1971	*1978*	*1971*	*1978*	*1971*	*1978*
Agriculture	13,750	16,350	50,537	69,645	3,675	4,260
Mining and Quarrying	99	90	2,856	4,053	28,886	45,097
Manufacturing	689	1,475	25,202	54,801	36,590	37,146
Construction	197	312	7,689	13,560	38,948	43,419
Electricity and Water Supply	30	58	1,879	4,518	62,214	77,897
Commerce	1,234	1,638	27,189	41,589	22,032	25,385
Transportation and Communication	223	386	9,373	16,205	42,041	41,938
Service	1,225	1,811	32,363	52,756	26,424	29.131
Total	17,447	22,120	157,088	257,127	8,998	11,624

Source: NESDB, *National Income for Thailand,* various issues.

In Table 5.4, growth rates of employment and income for the periods 1960-70 and 1971-78 were compared. Data on employment for the two periods are from different sources making comparisons difficult. However, the use of growth rates and relative measures instead of absolute employment figures may not be inappropriate in studying changes in employment during the two periods. Although GDP for the manufacturing sector grew at about the same rate during the two periods, employment took a big jump in the latter period. The growth rate of manufacturing employment increased from 4.1 per cent in the sixties to 11.5 per cent in the seventies. Translated into income elasticity of employment, it is 0.38 in the sixties and 0.98 in the seventies. Despite limitations on the comparability of data from the different sources, it seems clear that the manufacturing sector has increased its employment generating capacity in the seventies. The increase in the labour absorptive capacity of the manufacturing sector may have been due to a shift in policies in the seventies towards export-based industries which are considered to be labour-intensive from import-substitution industries which were heavily promoted in the sixties and which are capital intensive.

The growth in the manufacturing sector would accomplish the employment objective even more if the output elasticity of employment in the manufacturing sector were higher. One way to raise this figure would be to promote labour intensive technology in production in general. Another would be to change the composition of the manufacturing sector by promoting labour intensive rather than capital-intensive industries. However, both courses of action would be fruitful only if they do not diminish the growth capacity of the sector. If they do, short term increases in employment would only produce a long term reduction in future employment opportunities. In order to see whether such courses of action are desirable, we need a better understanding of the structure of the manufacturing sector.

(c) *Growth and Structural Change*

There has been a significant structural change in the manufacturing sector over the years. In particular, the share of output from food, beverages, and tobacco decreased from almost 60 per cent of output from manufacturing in 1960 to less than 40 per cent in 1978 (see Table 5.5). Industries playing a larger role over the years include textiles, non-metallic mineral products, petroleum refining and coal, basic metal industries, metal products, repairing of non electrical machinery and electrical machineries and supplies. The latter industries experienced high growth rates of over 16 per cent although these growth rates must be interpreted keeping in view the fact that almost all these industries started from a small output base in 1960. Three industries which started from a much larger base and experienced rapid growth were textiles, non-metallic mineral products and transport equipment. The most dramatic growth took place in the textile industry with its share in value added in the manufacturing sector increasing from only 5.2 per cent in 1960 to 12.5 per cent in 1978.

Table 5.4

Employment and GDP Growth in the 1960s and 1970s

	Employment Growth (Percent/year)		*GDP Growth (Percent/year)*		*Income Elasticity of Employment*		*Contribution to Employment Growth (Percent)*	
	1960-70	*1971-78*	*1960-70*	*1971-78*	*1960-70*	*1971-78*	*1960-70*	*1971-78*
Agriculture	1.8	2.5	5.4	4.7	0.33	0.53	61.4	55.8
Mining and Quarrying	11.0	–1.3	11.2	5.1	0.98	–0.25	1.6	–0.2
Manufacturing	4.1	11.5	10.9	11.7	0.38	0.98	7.0	16.9
Construction	10.6	6.8	9.9	8.4	1.07	0.81	3.7	2.5
Electricity and Water Supply	5.7	9.9	23.1	13.4	0.25	0.74	0.3	0.6
Commerce	1.9	4.1	9.0	6.3	0.21	0.65	4.7	8.7
Transportation and Communication	5.5	8.2	6.9	8.1	0.80	1.01	3.6	3.5
Service	6.6	5.7	8.4	7.2	0.79	0.79	17.7	12.6
Total	3.2	3.4	7.8	7.3	0.41	0.47	100.0	100.0

Source: IBRD, *Employment in Thailand,* 1977.
NESDB, *National Income of Thailand,* various issues.

Table 5.5

Value and Share of Output by Industry in the Manufacturing Sector

	GDP (millions of 1972 baht)				
	1960	*1965*	*1970*	*1975*	*1978*
Food	2,872 (34.6)	3,674 (25.7)	4,798 (20.6)	6,810 (18.3)	11,011 (20.1)
Beverages	876 (10.6)	1,517 (10.6)	3,035 (13.0)	3,348 (9.0)	6,011 (11.0)
Tobacco	1,079 (13.0)	1,729 (12.1)	2,401 (10.3)	3,444 (9.3)	3,883 (7.1)
Textiles	431 (5.2)	1,522 (10.6)	2,157 (9.2)	5,058 (13.6)	6,840 (12.5)
Wearing Apparel	664 (8.0)	786 (5.5)	1,093 (4.7)	2,608 (17.2)	4,392 (8.0)
Wood & Cork	397 (4.8)	743 (5.2)	735 (3.2)	942 (2.5)	891 (1.6)
Furniture & Fixture	98 (1.2)	200 (1.4)	308 (1.3)	268 (0.7)	418 (0.8)
Paper & Paper Products	17 (0.2)	51 (0.4)	171 (0.7)	341 (0.9)	635 (1.2)
Printing & Publishing	265 (3.2)	378 (2.6)	517 (2.2)	1,026 (2.8)	1,306 (2.4)
Leather & Leather Products	49 (0.6)	71 (0.5)	232 (1.0)	326 (0.9)	374 (0.7)
Rubber & Rubber Products	46 (0.6)	94 (0.7)	374 (1.6)	903 (2.4)	1,446 (2.6)
Chemical & Chemical Products	566 (6.8)	837 (5.8)	1,478 (6.3)	1,840 (5.0)	2,992 (5.5)

	GDP (millions of 1972 baht)				
	1960	*1965*	*1970*	*1975*	*1978*
Petroleum Refining	1 (0.01)	646 (4.5)	1,412 (6.1)	2,782 (7.5)	3,068 (5.6)
Non-Metallic Mineral Products	240 (2.9)	567 (4.0)	1,179 (5.1)	2,192 (5.9)	3,246 (5.9)
Basic Metal Industries	36 (0.4)	78 (0.5)	392 (1.7)	408 (1.1)	580 (1.1)
Metal Products	32 (0.4)	95 (0.7)	439 (1.9)	519 (1.4)	524 (1.0)
Machinery	48 (0.6)	192 (1.3)	534 (2.3)	621 (1.7)	1,001 (1.8)
Electrical Machinery & Supply	50 (0.6)	117 (0.8)	318 (1.4)	468 (1.3)	841 (1.5)
Transport Equipment	449 (5.4)	850 (5.9)	1,200 (5.1)	2,378 (6.4)	4,331 (7.9)
Misc. N.E.C.	75 (0.9)	164 (1.1)	547 (2.3)	792 (2.1)	1,011 (1.9)
Total	8,290	14,310	23,320	37,146	54,801

Note: Figures in parentheses are percentages.
Source: NESDB, *National Income of Thailand*, various issues.

Table 5.6

Growth Rates by Industry in the Manufacturing Sector

	Growth Rate (Percent)				
	1960-65	*1965-70*	*1970-75*	*1975-78*	*1960-78*
Food	5.0	5.5	7.3	17.4	7.8
Beverages	11.6	14.9	2.0	21.5	11.3
Tobacco	9.9	6.8	7.5	4.1	7.4
Textiles	28.7	7.2	18.6	10.6	16.6
Wearing Apparel	3.4	6.8	19.6	17.9	11.1
Wood & Cork	13.4	–0.2	5.1	–1.8	4.6
Furniture & Fixtures	15.3	9.0	–2.7	16.0	8.4
Paper & Paper Products	24.6	27.4	14.8	23.0	22.3
Printing & Publishing	7.4	6.5	14.7	8.4	9.3
Leather & Leather Products	7.7	26.7	7.0	4.7	12.0
Rubber & Rubber Products	15.4	31.8	19.3	17.0	21.1
Chemical & Chemical Products	8.1	12.0	4.5	17.6	9.7
Petroleum Refining[a]	264.7	17.0	14.5	3.3	56.2
Non-Metallic Mineral Products	18.8	15.8	13.2	14.0	15.6
Basic Metal Industries	16.7	38.1	0.8	12.4	16.7
Metal Products	24.3	35.8	3.4	0.3	16.8
Machinery	32.0	22.7	3.1	17.3	18.4
Electrical Machinery & Supply	18.5	22.1	8.0	21.6	17.0
Transport Equipments	13.6	7.1	14.7	22.1	13.4
Misc N.E.C.	16.9	27.2	7.7	8.5	15.5
Total	11.5	10.3	9.8	13.8	11.1

Note: [a] 1965-78 (9.1)

Source: NESDB, *National Income of Thailand,* various issues.

The largest and most important industry has been and remains the food industry. Although experiencing a rapid decline in its share in manufacturing output in the sixties, it seems to have reached a relatively stable share of 20 per cent of manufacturing GDP. It remains the most significant contributor towards growth in the manufacturing sector due mainly to its large output base.

The beverages and tobacco and snuff industries although still quite important have now been overtaken by the textile industry. The share of the beverages industry in total sector output has not shown any trend and seems to be fluctuating around a stable level while that for the tobacco and snuff industry seem to be experiencing a decline.

(d) *Size and Regional Distribution*

An important characteristic of the manufacturing sector in the Thai economy is the predominance of small-scale industrial establishments. Despite the bias in government policies in favour of large scale industry, most of the manufacturing establishments in the country are still small-scale.

In Thailand, the actual number of industrial enterprises of different sizes is not known. Statistics on manufacturing establishments with different employment sizes from different sources are inconsistent, although they all show the importance of small scale firms in terms of number. According to the statistics obtained from the Factory Control Division, Ministry of Industry, there were a total of 60,296 registered factories in the country by the end of 1978. Of those, 33,166 or 55 per cent were rice mills. Over 90 per cent of the registered factories were small-scale firms with less than 50 workers. The manufacturing enterprises which are required to register with the Factory Control Division are those with 7 or more workers, or those who use machinery of 2 horse power or over. Although a large number of industrial enterprises meet this requirement for registration, many have not registered with the Ministry of Industry. These "illegal factories" are mostly small or medium scale industrial establishments. There is in addition a very large number of small establishments usually called "cottage undertakings" which are not qualified for registering as "factories". These are family workshops mostly with no paid employees and which are engaged in activities like handicraft, foundry, spinning of textiles by handlooms, and making apparels. Numerically these small establishments comprise a very high percentage of manufacturing establishments in the country.

Table 5.7 shows the distribution of registered factories (excluding rice mills) in different employment sizes by geographical regions. Firms with less than 10 employees comprised 63.5 per cent and those with 10-49 workers 29.7 per cent of the total. Apart from reflecting a high proportion of small scale enterprises, the figures also reveal a high degree of geographic concentration: more than half of the registered factories were located in Bangkok and nearby provinces, and most of the very large sized firms were located either in Bangkok or other provinces in the Central Region.

Table 5.7

Percentage distribution of Registered Factories by Regions and firm size, June 1979[1]

	Size of Employment						
	Less Than 10	*10–49*	*50–99*	*100–199*	*More Than 200*	*Total*	*Total Number*
Bangkok Metropolis	68.4	27.6	2.3	1.0	0.7	100.0	11,496
Provinces Near Bangkok[2]	45.2	37.6	8.8	5.1	3.3	100.0	3,002
Other Central Provinces	71.0	24.5	2.4	1.0	1.0	100.0	4,200
Total Central Region	(65.3)	(28.5)	(3.4)	(1.6)	(1.2)	100.0	18,698
Northern Region	56.8	33.3	6.8	1.4	1.7	100.0	2,156
Northeastern Region	58.5	33.0	4.9	2.9	0.7	100.0	3,526
Southern Region	63.7	31.4	2.9	1.0	1.0	100.0	2,088
Kingdom Total	63.5	29.7	3.8	1.7	1.2	100.0	26,468

1 Excluding Rice Mills.

2 Smutprakarn, Patumtani, Smutsakorn, Nontaburi, and Cholburi.

Source: Statistics obtained from the Factory Control Board.

Since the early 1970s, the government aware of this imbalance of industrial growth has attempted without much success to disperse industrial investments to other regions. Explanations for the clustering of factories in and around Bangkok include the closeness to the biggest commerce market and the availability of modern facilities for both production and living conditions. Bangkok is also the country's biggest port hence transportation costs can be significantly reduced for firms which use a large amount of imported materials. There is also a severe lack of infrastructional facilities for industrial development such as electricity, water supply, communication system, etc., in the provincial areas which hinders the speed of industrial decentralisation.

(e) *Manufactured Exports*

Another indicator of the increasing significance of manufacturing in the Thai economy is seen in the enlarged share of manufactured products in the country's merchandise exports. In the late 1950s, exports of primary products comprised more than 90 per cent of the country's total merchandise exports. These export commodities were rice, rubber, tin, and teak. By the late 1970s other types of primary products, particularly maize, cassava, jute, and kenaf have increased their shares in total exports. There are also increased items of mineral, forestry and fishery products.

Different definitions of manufactured exports give different export shares and growth rates. According to a classification made by the Bank of Thailand, exports of manufactured goods rose from a share of 4 per cent in total exports during the 1960s to over 20 per cent in the 1970s. On the other hand, exports of agricultural products which traditionally form a major bulk of total exports declined significantly. Moreover, agriculture based products, particularly processed food, constituted the largest share of the country's manufactured exports (see Table 5.8).

Similar to the export structure, the structure of imports has been undergoing changes in recent years. Due to the import substitution policies, there has been a significant decline in the import share of consumer goods, especially of non-durable ones. From about 36 per cent during 1958-60, the import share fell to about 12 per cent during 1976-78 (Table 5.9). Consumer goods imports were replaced by imports of intermediate products and raw materials whose import share rose from about 18 per cent during 1958-60 to about 28 per cent during 1976-78. Import shares of capital goods also rose during the 1960s but have since then declined somewhat. The import share of fuel and lubricants increased also beginning 1973, undoubtedly due to the higher price of oil and related products.

A glance at the trade figures of the past would indicate that trade in agricultural commodities has contributed a great deal toward foreign exchange earnings. Taken as a whole, however, Thailand's merchandise trade balance has been in deficit every year since the mid-1950s and the trade gap has been

Table 5.8

Percentage distribution of Exports by different sectors

Sectors	*Percentage Distribution (%)*			
	1963	*1968*	*1973*	*1978*
Agricultural	80.0	71.3	53.4	47.2
Fishery	0.8	2.3	4.9	5.0
Forestry	2.4	1.6	2.1	0.4
Mining	8.0	13.6	8.6	10.5
Manufacturing	4.3	4.0	20.7	22.7
Others	4.5	7.2	10.3	14.2
Total	100.0	100.0	100.0	100.0

Source: Chaiwat Wibulswat and Somkid Saengpet, "Export Structure of Thailand: 1959-1978", International Economics Division, Economic Research Department, Bank of Thailand, September 1979, Table 7.

widening since then. This is because the surplus from primary product exports has not been sufficient to meet the high import requirements of domestic consumption and investment.

The country's balance of payments, however, present a different picture. It was in surplus in the 1960s because of capital inflows in terms of foreign aid and loans, and private capital movements which were able to compensate for the merchandise trade deficit. The country's balance of payments turned into deficit during 1969-71 and after 1975 until the present time (Table 5.10).

It is obvious that in the long run, the country cannot keep on incurring payments deficit. Any long term strategy to solve the balance of payments problem must also be geared toward increasing exports over imports One possible way of increasing exports is through the promotion of manufactured exports. As mentioned earlier, manufactured exports have expanded rapidly in recent years. Some of the agricultural commodities have been exported in a more processed form in the past decade. The major components of manufactured exports were various kinds of processed food, textile fabrics and garments. Other manufactured products, although still occupying a relatively small share in total manufactured exports, have shown a very high growth potential (see Appendix Table V.1).

Most of the manufactured exports of Thailand are either resource-based or labour intensive, consistent with the country's factor endowment. However, there are other factors that work to help the expansion of manufactured exports. These include the incentives provided by the Thai Government to exporters of manufactured products and other efforts made by the government

Table 5.9

Percentage distribution of Imports by economic classification

	1958-60	*1961-63*	*1964-66*	*1967-69*	*1970-72*	*1973-75*	*1976-78*
I. Consumer Goods							
A. Non-Durable	28.09	24.35	18.79	14.70	11.38	8.28	7.06
B. Durable	8.16	7.29	7.79	8.23	6.00	4.84	5.07
Total Consumer Goods	36.25	31.65	26.58	22.93	17.38	13.15	12.13
II. Intermediate Products & Raw Materials							
A. Chiefly for Consumer Goods	10.88	11.72	13.47	13.78	17.73	17.45	16.50
B. Chiefly for Capital Goods	7.17	6.07	7.15	7.99	10.16	10.34	11.31
Total Intermediate Products & Raw materials	18.05	17.78	20.62	21.71	27.89	27.79	27.81
III. Capital Goods							
A. Machinery	13.60	15.77	17.20	21.39	21.65	21.02	18.42
B. Others	10.76	12.96	13.34	13.28	11.61	10.69	8.80
Total Capital Goods	24.36	28.48	30.54	34.67	32.81	31.71	27.22
IV. Others							
A. Vehicle & Parts	7.65	8.98	9.85	10.59	7.80	7.03	7.49
B. Fuel & Lubricants	10.70	9.99	9.72	7.49	9.64	18.18	21.90
C. Others	3.01	3.12	2.69	2.60	4.47	2.16	3.45
Total of Others	21.35	22.09	22.26	20.69	21.90	27.35	32.84
Grand Total	100.00	100.00	100.00	100.00	100.00	100.00	100.00

Source: Bank of Thailand, *Monthly Bulletin*, various issues.

Table 5.10

Thailand's Balance of Trade and Balance of Payments, 1958-1978

Year	*Merchandise Trade Balance (millions of baht)*	*Surplus/Deficit in Balance of Payments (millions of baht)*
1958	−1,663.0	−402.1
1959	−1,413.4	132.0
1960	−956.3	947.9
1961	−269.1	1,655.0
1962	−1,962.6	1,294.9
1963	−3,117.0	948.7
1964	−1,960.6	1,430.0
1965	−2,556.3	1,985.0
1966	−4,479.4	3,304.4
1967	−8,150.2	1,313.0
1968	−10,650.0	449.1
1969	−11,310.7	−913.8
1970	−12,244.8	−2,652.0
1971	−9,940.9	−335.2
1972	−8,884.6	3,991.4
1973	−10,802.4	864.2
1974	−14,302.2	8,012.0
1975	−20,161.2	−2,858.0
1976	−11,084.9	−82.8
1977	−25,598.8	−7,537.9
1978	−28,495.1	−13,298.0

Source: Bank of Thailand, *Monthly Bulletin,* various issues.

to promote manufactured exports. The main driving force for export expansion, however, seems to come from the private sector, with individual firms trying to find overseas outlets for their products and striving to improve the quality of their products for more successful export sales.

Although the prospect for expansion of manufactured exports look good, there are a number of factors which may work to hinder the rapid expansion of manufactured exports in the near future. These include the rising protection against labour intensive manufactured goods in a number of importing countries and the lack of raw materials in certain resource-based industries. The restrictive trade practices in developed countries have thus far seem not to have affected much Thailand's industrial exports. As a matter of fact, the international

market situation thus far seems to have helped some of the exports particularly labour intensive items such as textiles, shoes, and clothing. The imposition by some developed countries of quota restrictions on exports from other major exporting countries seems to have given room to Thai exports. As exports of these products expand, however, Thailand will soon be subject to the same export restrictions as have been imposed on more advanced countries. The development of new manufactured exports together with the active finding of new export markets could help avoid these problems.

In addition to possible external constraints there are domestic constraints as well. These include the lack of infrastructural facilities, red tape on import and export procedures, and the inefficiency of government officials dealing with export trading. The elimination of these obstacles will help to promote manufactures exports.

5.3 Industrial Development Policy

(a) *National Plans and Investment Promotion*

The First Development Plan (1961-66) was quite broad and vague on the role of industry but it showed that government policy sought to promote industrialisation through private enterprises. Activities undertaken to promote industrialisation included the development of economic infrastructure such as transportation, communication, electricity, etc. These were done with the objective of providing cheap public facilities and services to the private sector. The massive investment in infrastructural facilities during this period undoubtedly contributed much to the growth of manufacturing investment during the past two decades.

The setting up of the Board of Investment (BOI) in 1959 was intended to provide an apparatus through which governmental policies on investment may be implemented. Under an investment promotion law, the government extended various incentives to firms and industries intended to be promoted. Among the major incentives provided to industrial firms under promotion are the exemption of import duties on machinery and other capital equipment, the reduction or exemption of import duties on raw materials and other intermediate inputs, the imposition of import surcharge on competing imported goods, and the exemption from corporate income tax for a certain length of time. The investment promotion law has been revised several times since 1960.

In the early 1960s, the aim of investment promotion was largely import substitution. Large scale production with capital intensive techniques was given higher priority in the promotion list. In the 1962 Investment Promotion Act, industries promoted by the BOI were classified into different groups. Industries classified under Group A were given full exemption from import duties and business taxes on imported raw materials and other intermediate products, while those under Group B and Group C were given, respectively, one half and one-

third of such exemption. With the exception of those in Group C, almost all industries on the promotion list were import substitution industries. Minimum sizes were specified for most of the activities under promotion.

The Second Five Year Plan (1967-1971) continued to give more importance to industries producing for the domestic market but it started to give attention to industries utilizing domestic raw materials and labour. Investment incentives previously given to Group A and Group B industries were no longer granted and all industries promoted by the BOI were considered as if they were in Group C, where one third of import duties and business taxes on imported intermediate goods were granted.

The strategy of export promotion was set out in the Third Development Plan (1972-1976). There was also an emphasis on decentralization of industrial location. The investment promotion law was revised to give more incentive to export industries and enterprises located in provincial areas. The policy of export promotion and dispersion of industrial factories has also been emphasized in the Fourth Development Plan (1977-1981).

In 1977, the investment promotion law was changed. This new investment law which since then has been in effect tends to give more incentives to investors under promotion and more discretionary power to the BOI as compared to the previous law. Although special incentives are still given to export industries, large scale import substitution industries are also given promotional privileges. Protective measures such as import surcharges and recommendations to raise staff rates on competing imports still remain.

It is obvious that incentives given to firms under promotion are considerable. The exemption of import duties and business taxes and reduction of such duties and taxes on material inputs serve to reduce the cost of capital and intermediate products. The incentives provided also tend to encourage the use of imported materials. The emphasis on relatively modern and large scale production in addition leads to the bias in favour of capital-intensive industrial activities.

Manufacturing enterprises receiving promotional privileges from the BOI are actually only a small fraction of all manufacturing industries in Thailand. By the end of 1979, there were only around 1,000 firms under official promotion, most of which were manufacturing firms. However, various important consumer and investment products have been produced by the promoted manufacturing firms. It is hard to make a precise estimate of the contributions towards employment of the promoted industries in the Thai economy. If the estimated figures made by the projection at the time of applying for promotional status reflect the actual employment situation, the total employment to promoted manufacturing firms would constitute 17.3 per cent of total employment in the manufacturing sector in 1978.[1]

[1] The employment figures estimated by firms at the time of applying for promotional status, however, could be much different from the actual employment figures. Since employment generation is one of the criteria stated by the BOI in granting promotional status, the projected employment figures could be exaggerated.

Manufacturing firms under official promotion are mostly large-scale firms. Nearly one-half of these firms have varying degree of foreign investment. The promoted manufacturing firms are in general more capital-intensive and import dependent than typical small- and medium-scale manufacturing firms. The high import content and capital intensive nature of production of promoted manufacturing firms can be seen from the high investment on asset-to-employment ratio and the percentage of imported to total materials of promoted firms (Table 5.11). The degree of import content of these firms is actually much higher since imported capital equipment is not included in the material imports presented in Table 5.11 and capital goods in promoted manufacturing firms are almost entirely imported. There are, however, relatively labour intensive industries in the promoted sector. These include tobacco curing, garments, footwear, furniture, and miscellaneous manufactures.

(b) *Trade and Exchange Rate Policy*

In Thailand, differential tariffs are more frequently used than import controls to protect domestic industries. Tariffs on imported consumer and intermediate goods which could be produced locally are generally high while tariffs on other intermediate and capital goods are generally low. The tariff structure has generally been biased in favour of import competing industries and against export oriented industries. The effective protective rates are particularly high for consumer goods, both non-durable and durable, and transport equipment, while export industries on the average receive negative protection (See Table 5.12).

Various incentives given to exporters of manufactured goods devised since the early 1970s, however, partially compensate for the bias in the tariff structure. The major incentive for exporters of manufactured products is the rebate of import duties and business taxes on imported inputs which are used in the production of export commodities. The Bank of Thailand also offers rediscount facilities with preferential interest rate through commercial banks to provide short term loans to exporters. An Export Service Center was established in 1975 to provide information to both Thai exporters and potential foreign importers. In 1979, the BOI extended promotional privileges to large scale trading companies engaged in exporting. These measures are all geared towards the promotion of manufactured exports. It is worth noting, however, that the average protection given to import competing industries has increased in recent years despite the stated policy shift to export promotion. This can only be interpreted as an inconsistency in trade and industrialisation policy. The prolonged protection will help the survival of inefficient import competing industries and retard the adjustment towards a more outward-looking orientation.

In contrast to trade policy, exchange rate policy seems not to have been deliberately used by the government to influence to pace of industrial development in Thailand. But the pegging of the baht to the U.S. dollar over the years together with the realignment in major currencies since the early 1970s

Table 5.11

Capital Intensity and Import Dependence Ratio of Promoted Industries, 1978

(000's Baht)

Industry	*Book Value of Total Assets[a]/ Employment*	*Percentage of Imported Raw Materials/Total Raw Materials*
Food	245.21	21.80
Beverage	265.16	–
Tobacco	66.41	3.44
Textiles	253.23	54.32
Wearing Apparel except Footwear	78.85	53.01
Leather Products	193.78	33.28
Footwear	28.71	19.88
Wood Products	156.18	5.90
Furniture and Fixture	78.29	2.37
Paper Products	739.51	56.84
Printing and Publishing	535.37	74.01
Industrial Chemicals	831.44	56.78
Other Chemical Products	364.14	57.47
Petroleum Refineries	7,837.09	100.00
Miscellaneous Products of Petroleum	273.83	91.94
Rubber Products	365.66	63.03
Plastic Products	145.94	–
Pottery	242.05	43.68
Glass and Glass Products	273.35	64.18
Other Non-Metallic Mineral Products	470.73	39.79
Iron and Steel Basic Industries	488.41	72.20
Non-ferrous Metals	568.62	38.72
Fabricated Metal Products	290.98	74.27
Machinery	273.56	69.84
Electrical Machinery and Supplies	136.83	73.81
Transport Equipment	468.13	79.15
Scientific Equipment	76.35	91.87
Others	72.24	41.28
Total	295.71	58.35

Note: [a] Includes current assets.

Source: Data collected from Board of Investment.

Table 5.12
Average rates of protection
(Per cent)

	Nominal rates of protection			*Effective rates of protection*		
	1971	*1974*	*1978*	*1971*	*1974*	*1978*
Processed foods	50.9	5.8	9.0	205.9	-46.4	78.5
Beverages and tobacco	116.5	150.1	69.1	439.2	946.2	4.0
Construction materials	21.8	32.9	12.2	23.4	49.3	91.7
Intermediate products I	11.4	0.3	14.8	15.3	-6.7	16.2
Intermediate products II	36.1	30.0	19.2	50.3	75.4	55.3
Non-durable consumer goods	44.9	39.8	64.6	57.4	134.6	212.4
Consumer durables	45.0	48.2	57.3	93.2	136.2	495.6
Machinery	10.2	28.0	21.4	7.6	23.7	58.3
Transport equipment	58.8	37.9	80.5	146.5	135.0	417.2
All industries	n.a.	30.8	27.3	87.2	18.6	70.2
All industries excluding food, beverages and tobacco	n.a.	n.a.	36.4	44.2	45.9	90.3
Non-import-competing	71.2	34.6	50.8	175.0	39.7	99.6
Import-competing	33.6	24.8	35.7	56.1	44.8	85.9
Export	-7.4	-6.5	13.7	-24.3	-39.9	40.3

Source: IBRD, *Industrial Development Strategy in Thailand,* 1980, table 7.

significantly influence the country's trade and industrial structure. For a few years after the Second World War, an exchange control system based on a multiple exchange rate system was employed to solve the balance of payments deficit facing the country. Then, beginning in 1955, the exchange system was unified and the baht-U.S. dollar rate was fixed. The policy of the government since then has been to maintain the value of the baht in terms of the U.S. dollar. Starting from November 1978, a system of setting the exchange rate on a daily basis has been adopted to give more flexibility in the determination of exchange rates, and it is declared that the baht will be tied to a "basket" of several foreign currencies instead of to the U.S. dollar alone. In practice, however, the baht-dollar exchange rate has been quite stable while exchange rates with other currencies have fluctuated.

Being pegged to the U.S. dollar and faced with realigned currencies, the exchange rate of the baht relative to other major currencies has been affected.

The baht has since late 1971 depreciated relative to most other currencies, especially the Japanese yen. It is believed that the baht was overvalued during the 1960s as a result of the overvaluation of the U.S. dollar. Although there is an argument that the baht is still overvalued at the present time, the depreciation of the U.S. dollar to which the baht has been tied seems to have helped improve the competitiveness of Thai manufactured exports and accelerate their expansion since the early 1970s.

(c) *Policy on Small Scale Industry*

An example of the lack of effective implementation of industrial development plans is the case of small scale industries. The First Plan stated that the government would help create and find markets for small scale and cottage industries while the Second Plan stated that policies would strive to improve efficiency and increase production of these industries. Statements on the promotion of small and cottage industries also appeared in the Third and Fourth Plans. A proposal to set up a Small Industry Service Institute to provide technical knowledge, training, research, and machinery designing and a Small Industry Loan Fund to provide financial assistance or credit for small scale industries were also included in the Second Plan. Agencies to provide such services have been set up under the jurisdiction of the Department of Industrial Promotion, Ministry of Industry. But so far little has been done to carry out these policies. In the case of the Small Industry Finance Office (SIFO) which was set up in 1963 to provide credit to small and medium scale producers, it lent out only 265 million baht worth of loans between 1967 and 1971. In contrast the Industrial Finance Corporation of Thailand (IFCT) approved loans to large scale industries totalling over 3,232 million baht during the same period (Table 5.13). The SIFO face a number of problems including lack of financing, inadequate manpower and structural problems.[1] Unlike the SIFO which has to rely on budgetary allocations from the government, the IFCT is a privately-operated development bank and has the flexibility in raising money from non-government sources. It also has greater flexibility in its administration. Recently there have been efforts to restructure SIFO along the lines of the IFCT. It is hoped that the new SIFO could provide better service to satisfy the financial needs of small scale industries.

The Industrial Services Division (ISD), formerly known as Small Industry Service Institute (SISI), was established in 1966 with financial assistance from the UNDP. It also received assistance from the ILO in providing experts, equipment, and training services. ISD established a regional center in Chiangmai in the Northern part of the country in 1972. The aim of ISD was to provide advising services on production techniques, marketing and product design along with manpower training. So far, despite being well-equipped with modern machinery,

[1] For a more detailed discussion on SIFO, see SMI Study, Chapter 8, and Sanguanruang, et. al., *op. cit.*, Chapter 7.

Table 5.13
SIFO & IFCT Loan Approvals

Loan approval	*1967-71*	*1972-76*	*1967-76*
Number			
SIFO	498	312	810
IFCT	99	181	280
Amount (million baht)			
SIFO	123	142	265
IFCT	654	2,578	3,232
SIFO/IFCT	18.8	5.5	8.2

Source: Saeng Sanguanmeang, et. al., *Development of Small and Medium Manufacturing Enterprises in Thailand,* an ADIPA Research Project, Vol. I: Main Report (December 1978); and IFCT, *Quarterly Report* (April-June 1979).

the ISD's impact has been quite limited. Most of the services provided have been of the technical type with little support in other areas such as management and marketing. Even on the technical aspect, consideration seems not to have been given to the choice of technology appropriate to the existing environment.[1]

Besides the ISD, there is the Handicraft Promotion Division (HPD) and the Cottage Industries Division (CID) in charge of promoting small home industries under the Department of Industrial Promotion. The HPD gives advice on design and quality improvement and also provides marketing assistance to handicraft producers. The scope of operations of the Division of Handicraft Promotion has however been very limited. The CID, on the other hand, provides training services, advices on technology, use of raw materials, etc., to home industries throughout the country. The scope of operations of these divisions has also been very limited.

In addition to these three agencies which were set up to promote small and medium scale manufacturing enterprises, there are other official institutions which provide assistance to manufacturing enterpreneurs and workers in general. These are mainly under the Department of Industrial Promotion, Ministry of Industry and the Department of Labour, Ministry of Interior. Among them are Thailand Management Development and Productivity Center (TMDPC) which provides training, seminars, and consulting services to manufacturers on management techniques, inventory control, production planning and control, etc., and the National Institute for Department of Skilled Labour (NIDSL), which provide training for skill improvement of industrial workers. NIDSL has regional offices

[1] See detailed analysis on ISD operations in the SMI Study, Chapter 8, and Sanguanruang, et. al., *op. cit.,* Chapter 8.

in Rachburi and Cholburi in the central region, Lampang in the North, and Khon Kaen in the South. Again, however, the scope of operations of these institutions has been very limited due to budgetary constraint.

(d) *Regional Industrialisation and Industrial Estates*

Although there has been a great deal of talk about moving industries out of the Bangkok Metropolis and the Central Region since the late sixties, little has actually been done. Such decentralisation of industries has appeared as policy statements in various Development Plans. In late 1973, the Industrial Estate Authority of Thailand (IEAT) was created to implement such a policy. But so far the only industrial estate completed is the Bang Chan Industrial Estate Project on the outskirts of Bangkok. There are about twelve other industrial promotion zones which are not yet completed. Of these, four (Lard Krabang, Laem Chabang, and Bang Poo, all in the Central region near Bangkok, and Songkla-Hat Yai in the Southern region) are at the development stage while the rest have not yet been started. Lard Krabang and Laem Chabang have also been planned to include export processing zones.

It is noteworthy that after six years of its establishment, the IEAT has not been able as yet to set up viable industrial zones in other regions away from the vicinity of Bangkok. This may have been because of insufficient resources provided by the government. But it may also have been the IEAT's own policy which seems to give more weight to Bangkok and the surrounding provinces. Although it seems the Southern and Eastern Industrial Estate Projects have made some progress, the Northeastern and Northern projects are still in limbo even though feasibility studies have already been completed.

To provide incentives to industrial enterprises to locate their plants in the provincial areas, special incentives have been offered since 1972. Certain investment zones have been identified. Industrial firms located in the investment zones will receive special incentives in addition to regular promotional incentives. These include a reduction of business taxes up to 90 per cent for a period not exceeding five years, an extension of income tax holiday, an allowance to double the cost of transportation, electricity and water supply and a reduction from taxable corporate income of up to 25 per cent of the investment cost of installation of infrastructural facilities.

However, the incentives provided apparently have not been sufficient to compensate for the higher cost of setting up plants far away from Bangkok. There is no tendency for promoted firms to move out of the Central region. Out of 839 promoted firms operated in 1978, 474 or 56.6 per cent were located in Bangkok and Smutprakarn (a province adjacent to Bangkok), and another 234 or 27.9 per cent were located in other provinces in the Central Region, and only 131 or 15.6 per cent were located in other regions. Promoted firms that located in regions other than Bangkok and nearby provinces are mostly hotels and cold storage and agro- and mineral-based industries.

The emphasis on large scale industries and the protective structure which works to promote them has undoubtedly contributed to the concentration of industrial activities near the main port and the principal consumer market in Bangkok. Unless the incentives system is changed to correct the bias against raw material based and labour intensive small and medium scale firms and adequate infrastructural facilities in the provincial areas are improved, it is not likely that the government's efforts at industrial decentralisation will bring much fruitful results.

5.4. Characteristics and Performance of Manufacturing Enterprises of Different Sizes[1]

In the formulation of industrial development policy not much attention was given as such to the size of industries although policy measures designed to promote industrial investment were mostly aimed at relatively large and modern industries. But the fact is that a great majority of the industrial enterprises in Thailand are small in scale in their production.[2] A study of small and medium scale industries in Thailand made in 1977 (the SMI Study) reveals that the size of the firm is one of the important variables is explaining differences in characteristics and behaviour of industries.

In this section, comparisons of various characteristics and performance of firms of different sizes will be made mainly on the basis of information obtained from the SMI Study. Due to the difficulty of obtaining reliable investment or output data, the SMI Study used employment scale as a criterion in determining the size of the firm. For comparison purposes, the study divided the firms into 5 groups according to number of workers: (1) those with less than 10 workers; (2) those with 10-49 workers; (3) those with 50-99 workers; (4) those with 100-199 workers and (5) those with 200 or more workers.

Besides the lack of certainty that employment scale is a good indication of the size of the firm, one problem with using the results of the SMI Study to assess the relative importance of different economic variables for firms of different sizes is that the study intended to survey only the small and medium scale firms that used 10 to 200 workers. The survey returns, however, actually included in its coverage a large number of firms with less than 10 and with more than 200 workers. Since its attention was focused on firms with 10-200 employees, the study did not pay as much attention to firms with less than 10 and to firms with more than 200 workers, although with respect to the large size firms, the study believed that they were quite representative of large manufacturing firms in the country.

[1] The analysis in this and the next sections has mainly been drawn from the SMI Study and Somsak Tambunlertchai, "Employment Effects of Small and Medium Scale Industries in Thailand", Research Report Series No. 9 (Faculty of Economics, Thammasat University, November 1978).

[2] The definition of small scale industries will be discussed in the next section.

For all its weakness, however, the SMI Study contains a wealth of economic data for firms of different sizes and hence will be used extensively here. Data from other sources will also be used wherever possible.

(a) *Employment and Factor Intensity*

Accurate data on relative size of employment for different manufacturing industries are not available. However, various industrial surveys all indicate that food processing and textile related industries have the highest share of employment. Other industrial groups with a relatively large share of employment include tobacco curing, wood products, and metal products.

Table 5.14 shows the volume of employment by 3 digit TSIC[1] industrial group based on the data obtained from an industrial survey by the National Statistical Office (NSO) in 1977. The number of employment in each industrial group presented in the Table is obviously influenced by the number and the size of the firms included in each industrial group. Since the sample of the NSO survey represents the large sized firms more than the small scale firms, the employment figures shown are biased against those industrial groups where small firms are dominant.[2]

The volume of employment of an industry depends not only on the size of the industry in terms of production and investment but also on the intensity of labour utilisation as compared to other inputs. One way of assessing the employment generating capacity of an industry is to consider how much employment is generated at a given level of investment or output. There have been attempts to study the capital intensity of different industries in the manufacturing sector. One such study is that of Narongchai Akrasanee and Rachain Chintayarangsan[3] which used the number of workers employed for one million baht of value added as a measure. The findings are that confectionery, pottery, china and earthenware and various textile-related articles are among the most labour intensive, whereas alcoholic beverages, cigars and cigarettes, and cement are among the least labour intensive activities (see Table 5.15). The use of employment to value-added ratio in a single period to assess factor intensity is subject to many limitations since the measure tend to include a number of short run factors. Certain industries may be experiencing high profits in that period and thus appear to be relatively capital intensive, and vice versa. The low labour intensity in certain industries may also be a reflection of higher average labour

1 TSIC means Thai Standard Industrial Classification. The TSIC is similar to ISIC although it includes some indigenous products.

2 The NSO industrial survey covered manufacturing enterprises with more than 10 workers. For firms with less than 20 workers, samples comprising 20 per cent of the total population were drawn for firms with more than 20 workers, a complete census was attempted. A total of 4,913 samples were selected in the 1977 survey and over 2,000 firms responded. About 1,500 firms passed the consistency check. Quite a few firms with less than 10 workers were included in the actual survey.

3 Narongchai Akrasanee and Rachain Chintayarangsan, "Factor Proportions in Trade", CAMS Discussion Paper (Manila: Council for Asian Studies, 1976).

Table 5.14

Sample Survey Showing Employment by Industry, 1977

Industry	*No. of Firm*	*Employment*	*% Female/Total*
Food	352	25,673	24.59
Beverage	24	8,447	34.08
Tobacco	73	14,957	54.95
Textiles	163	54,068	74.74
Wearing Apparel Except Footwear	21	2,301	82.88
Leather Products	7	749	44.08
Footwear	3	106	59.43
Wood Products	205	15,457	21.03
Furniture and Fixture	15	550	32.00
Paper Products	23	4,230	41.11
Printing and Publishing	48	4,045	43.78
Industrial Chemicals	30	2,869	24.19
Other Chemical	104	8,974	56.27
Petroleum Refineries	3	1,029	3.50
Miscellaneous Products of Petroleum	1	114	14.04
Rubber Products	36	2,902	39.28
Plastic Products	14	874	48.97
Pottery	41	3,677	57.27
Glass and Glass Product	14	3,291	30.63
Other Non-Metallic Mineral Products	66	10,360	16.29
Iron and Steel Basic Industries	42	7,237	10.47
Non-Ferrous Metals	2	16	–
Fabricated Metal Products	83	6,419	41.33
Machinery	66	2,344	21.59
Electrical Machinery and Supplies	36	5,922	52.11
Transport Equipment	49	9,265	13.32
Scientific Equipment	4	895	63.35
Others	25	1,975	64.46
Total	1,550	198,891	45.18

Source: NSO, *Industrial Survey 1977.*

Table 15.5

Labour Requirements by Industries According to the Trade Categories, 1973
(Number of Workers per one million baht of value added)

Industries	$\frac{L}{VA}$ [1]	*Rank* [2]	$\frac{L}{VAT}$ [1]	*Rank* [2]
Alcoholic beverage	4.9	1	12.2	2
Cigars and cigarettes	5.3	2	6.4	1
Cement, concrete	8.8	3	20.4	4
Passenger car assembly	9.5	4	22.5	7
Iron and steel	10.7	5	23.2	9
Bus and truck assembly	11.5	6	23.0	8
Electric wires and cables	11.7	7	19.5	3
Rubber tyres and cables	13.8	8	26.5	17
Glass, glass products	14.3	9	24.5	12
Vegetable oils and fats	14.3	10	20.5	5
Non-alcoholic beverages	14.4	11	34.0	30
Dairy product	14.8	12	25.8	15
Textile yarn and thread	16.1	13	21.6	6
Essential oils, perfume and toiletries	16.2	14	26.8	19
Materials of rubber	18.0	15	24.3	11
Sugar	18.1	16	24.2	10
Chemical products	19.5	17	3.7	35
Tapioca flour	20.0	18	26.5	18
Paper and paper board	20.1	19	27.4	20
Paper products	21.6	20	25.9	16
Motorcycle and non-motorized vehicles	22.7	21	28.7	22
Wood products	23.4	22	25.6	13
Pharmaceuticals	24.1	23	29.3	23
Misc. mfg. art's nes.	24.5	24	32.1	26
Monosodium glutamate	24.9	25	25.8	14
Chemical materials	25.2	26	28.4	21
Agricultural machinery	28.1	27	36.6	32
Shaved wood	25.5	28	30.6	24
Textile fabrics	29.4	29	32.3	28
Printed matter	30.1	30	21.1	25
Plastic material	31.4	31	32.3	27
Non-ferrous metal	33.2	32	33.2	28
Furniture	34.4	33	35.9	31
Non-metallic construction material	34.6	34	37.6	33
Vehicle parts	36.7	35	38.4	34
Radio, T.V. & elec. household app.	37.4	36	40.1	36
Metal products	42.0	37	42.5	37
Matches	45.5	38	45.7	38
Rubber products	49.2	39	47.9	39
Non-electrical machinery	61.8	40	48.4	41
Cereal preparations	61.9	41	57.7	40
Clothing	72.3	42	66.1	43
Leather products	80.2	43	58.8	42
Footwear	84.4	44	74.3	46
Textile articles	84.4	45	71.8	44
Cordage and rope	86.5	46	71.9	45
Pottery, china and earthenware	89.3	47	74.9	47
Confectionery	118.2	48	101.3	48

[1] L/VA = Workers per one million baht of value added, direct.

L/VAT = Workers per one million baht of value added, direct plus indirect of home goods.

[2] Ranking from the least to the most labour-intensive industries.

Source: Akrasanee and Chintavarangsan, *op. cit.*

productivity in addition to more intensive use of capital. In addition, workers employed may also be sensitive to short run factors. To the extent that both value added and workers employed move in the same direction, however, the measure could be of some use to help indicate relative labour intensity. One way to improve such measure would be to average the workers employed and value added or output over a number of years so that short run effects may be reduced or eliminated. It is unfortunate that reliable time series data are not available.

Another study which attempted to measure capital intensity of industry is the SMI Study which utilised data on fixed assets and workers employed. These data are summarised in Table 5.16. Although the results may also include short run factors through the number of workers employed, the use of fixed capital-labour ratio as a measurement of capital intensity may be more acceptable. It may be seen that industries which have fixed assets of over 100,000 baht per worker include industrial chemicals, textiles, glass products, machinery, food, non-metallic mineral products and scientific equipment while those with fixed assets of less than 50,000 baht per worker include wood product, tobacco, pottery, iron and steel products, and footwear. The coverage of different sizes of firms and different types of products in each industrial group to a certain extent influenced the average capital intensity. It is interesting to note that textiles and food products which were normally thought to be labour intensive industries turned out to be relatively capital intensive, while iron and steel products which were normally thought to be capital intensive turned out to be labour intensive. The explanations provided by the SMI study for such a result is that there are large firms in the textile and food industries whose fixed assets are valued quite high while there are firms in the iron and steel products industry mostly small workshops, which have low asset value. In a more detailed classification (at 5 digit TSIC) based on the NSO Industrial Survey results in 1977, labour intensive industries (those with fixed assets/worker ratio below 50,000 baht) appear in nearly 40 activities. (These are shown in Appendix Table V.2). Most of the labour intensive products listed in Table 5.16 are manufactured by small scale firms.

It is commonly believed that firms of different sizes in the same industrial group tend to have different degrees of capital intensity. Besides the possible product differentiation between large and small firms, the different factor intensities also imply that for a number of industries, there may be a wide enough range of alternative technologies to produce goods. Large firms would tend to choose capital intensive production technology while smaller firms would prefer labour intensive technology. The use of labour and capital in any industry depends on many factors. A high capital-labour ratio in certain types of industry is necessitated by the nature of production and available techniques. But in other industrial activities there may be some flexibilities in choosing the factor mix between capital and labour. Business firms would like to keep unit cost low, and the decision for using capital and labour will be influenced by the

Table 5.16

Fixed Assets[a] to Labour Ratio by Industry, 1977

Industry	*Fixed Assets/Worker (฿ 000)*
Food	112.6
Beverage	81.0
Tobacco	29.4
Textiles	296.1
Wearing apparel	50.1
Leather products	98.5
Footwear	45.2
Wood products	21.6
Furniture	50.6
Paper products	86.8
Industrial chemicals	400.5
Other chemical products	82.3
Rubber products	50.7
Plastic products	85.2
Pottery	34.6
Glass products	127.7
Non-metallic mineral products	110.9
Iron and steel products	42.1
Non-ferrous metal	51.9
Fabricated metal products	88.8
Machinery	114.7
Electrical appliance	61.5
Transport equipment	63.7
Scientific equipment	105.1
Miscellaneous	48.6
Total	112.5

Note: [a] at replacement cost.

Source: SMI Study, *op. cit.*

relative price of the inputs, except in the case where a fixed capital-labour ratio is compelled by the available production technology. It is often pointed out that the desire to modernise industry in many LDCs leads to subsidisation on the use of capital, while social pressure may lead to the setting of minimum wages higher than the market clearing wage rate. This would create price distortions in the factor market and lead to inefficient utilisation of resources. However, larger firms are more likely to obtain credit at low cost for the procurement of capital and less likely to be exempted from the minimum wage registration. Compared to large scale firms, small industrial enterprises may have to procure capital at higher cost while paying workers a lower wage rate and hence tend to be more labour intensive in their production.

The above argument tend to be confirmed by an empirical study of the capital-labour ratio by different sizes of firms in Thailand's manufacturing industries. Table 5.17 shows, among other things, the capital-labour ratio by different sizes of firm obtained from the SMI Study. It is interesting to point out that although firms with small employment sizes are also firms with less assets, the smallest factories of less than 10 employees have a higher capital-labour ratio than factories with 10-99 employees. This may be because, for very small firms, it is difficult to distinguish which assets or part of assets are for and which are not for production purposes, since the factory concerned is also usually the residence of the owners and their workers. This is clearly brought out by the data on the composition of fixed assets in Table 5.17 where it is shown that factories with less than 10 workers have the highest asset composition in terms of building and land.

In Table 5.17, if only factories with 10-99, workers are considered, there is a slight positive relationship between the firm size and the capital-labour ratio. When factories with 200 or more workers are included, it is beyond doubt that larger factories tend to have a much higher capital-labour ratio. This confirms conventional belief that large firms employ more capital intensive technology.

The high capital-labour ratio of large scale manufacturing firms in Thailand may be due to several factors. Large firms are in a better position to acquire credit for the provision of fixed capital. The official promotional privileges which some of the large firms enjoy enable them to import machinery and equipment with tax exemption and may also have led to the widespread use of capital. The adoption of foreign technology may also compel firms to use modern machinery and equipment and thus may contribute to the high capital-labour ratio. In contrast, small scale firms have several reasons to use relatively labour-intensive technology. These include the limitation of using large machines and equipment, and the fact that smaller firms offer wages lower than the larger ones. These price and other factors thus work to lower the capital-labour ratio of smaller firms.

A low capital-labour ratio implies a higher capacity to generate employment at a given level of investment. However, the low level of capital used may also imply lower productivity. There is an argument that says that emphasis

Table 5.17

Certain Characteristics of Manufacturing Industries by Size of Employment, 1977

Characteristic	*Size of Employment*					
	Less Than 10	*10–49*	*50–99*	*100–199*	*More Than 200*	*Average*
Workers/Factory (person)	6.8	22.5	68.1	133.5	436.3	49.8
Assets/Factory (1,000 baht)	542.9	1,421.7	4,799.0	11,404.8	80,830.8	5,565.8
Production/Factory (1,000 baht)	583.1	2,309.2	10,671.8	21,062.5	98,795.5	8,237.5
Value Added/Factory (1,000 baht)	153.3	655.7	3,173.3	6,928.5	34,939.7	2,694.8
Assets/Worker (1,000 baht)	85.6	67.7	77.6	87.6	216.1	122.7
Production/Worker (1,000 baht)	85.5	101.9	157.9	157.8	226.4	165.2
Value Added/Worked (1,000 baht)	22.5	29.2	46.6	51.9	80.1	54.0
Production/Assets	1.07	1.61	2.24	1.85	1.22	1.48
Value Added/Assets	0.28	0.46	0.66	0.61	0.43	0.48
Composition of Goods in Production (%)						
– Consumer Goods	71.0	56.9	46.7	39.1	69.5	58.3
– Intermediate Goods	16.3	21.3	42.5	47.0	25.1	31.1
– Capital Goods	12.7	21.8	10.8	13.9	5.4	10.6
Composition of Assets						
– Buildings	27.8	20.9	21.3	17.2	14.6	16.9
– Machinery	30.7	36.2	55.3	50.8	77.3	64.1
– Transport Equipments	10.1	11.3	6.8	8.5	1.6	4.8
– Land	29.9	28.3	12.8	15.9	4.7	11.2
– Others	1.5	3.3	3.8	7.6	1.8	3.0

Source: SMI Study, *op. cit.*

on labour intensity may lead to slower growth of output. If the intensive use of capital leads to higher efficiency of production and higher returns which in turn lead to a higher rate of re-investment, the choice of capital intensive industries may lead to a higher rate of growth of output and employment in the long-run.[1] Against this argument, the SMI study evaluated the relative efficiencies of firms in different industries and of different sizes and found that although industries with a higher capital-labour ratio tend to have a higher labour productivity, their use of capital is by no means efficient since the average capital productivity is generally lower in capital intensive industries. Since capital is a relatively scarce factor of production, to maximize output, the scarce factor should be efficiently utilised. The output capital instead of output-labour ratio should be a better indicator of the efficiency of production. Rank correlation analyses have been performed between output and value added per unit of capital and capital-labour ratio in different industries. It appears that the correlation coefficients between capital productivity and capital intensity are negative at significant levels. This indicates that capital intensity and capital productivity are heading in the opposite direction, implying that industrial groups which are capital intensive have a tendency to have low average capital productivity (see Table 5.18). The result on factor intensity and productivity thus tend to suggest that the promotion of labour intensive industries in Thailand would not conflict with the objective of promoting the efficiency and growth of industrial output.

When the size of the firm is considered, it is seen in Table 5.17 that the labour productivity of large factories is higher. However, it is interesting to note that while capital per worker is about 2.5 times greater for factories with 100-199 workers, the labour productivity as measured by value added per worker is only about 1.5 times greater. The lowest figures on production and value added per baht of invested capital is that of factories with less than 10 workers. While different industries require different optimal scale of production and it is risky to make a swift generalisation, the figures in Table 5.17 tend to indicate that capital is not utilised efficiently in many large and small sized firms.

The low efficiency of the smallest sized firms is worth a more careful investigation. The relatively low capital productivity found in the largest size group firms, on the other hand, could well be an indication of excessive use of capital in these firms resulting from the bias in the incentive system in favour of the use of capital inputs.

(b) *Employment and Wages*

There has been no consistent time series data on the skill composition of the industrial work force in Thailand. On the basis of data from the Labour Force Survey, a report on employment situation in Thailand by the World Bank

[1] For this argument, see W. Gallenson and H. Leibenstein, "Investment Criteria Productivity and Economic Development", *Quarterly Journal of Economics*, Vol. 69 (August 1955).

Table 5.18

Rank Correlation Coefficient $\frac{O^a}{K}$, $\frac{V^b}{K}$, and $\frac{K^c}{L}$

	$\frac{O}{K}$	$\frac{V}{K}$	$\frac{K}{L}$
O/K	1	0.6108	−0.5231
V/K	0.6108	1	−0.3577
K/L	0.5231	−0.3577	1

[a] O/K = Output to fixed assets.
[b] V/K = Value added to fixed assets.
[c] K/L = Value of fixed assets per worker.

Note: The rank correlation coefficient between O/K and K/L is significant at 0.01 level, and the coefficient between V/K and K/L is significant at 0.05 level.

Source: SMI Study, *op. cit.*

estimated that unskilled workers (which include farmers, fishermen, miners craftsmen and labourers) in various industrial sectors declined from 88 per cent to 79 per cent between 1960 and 1970, and the upgrading of employed workers was more pronounced in the nonagricultural sectors.[1]

Cross-sectionally, it is also hard to make a clear distinction between skilled and unskilled workers. Recently, an attempt was made to disaggregate skilled and unskilled components of industrial workers in 1971 and 1973 using occupation and years of job experience as criteria by Narongchai Akrasanee and Siri-Laksana Chutkul.[2] The skilled employees in 1971 and 1973 for all enterprises covered in the industrial survey were estimated to be 15.7 per cent and 17.8 per cent of the total work force, respectively. High skilled work force ratios appear in cement, chemical products, glass products, metal products and soft drinks. But the high variation of wages among the skilled work force across industries lead to the suspicion about the reliability of the estimated skill index.

In the SMI Study, workers are classified into 6 categories: (1) family workers (paid or unpaid), (2) managerial personnel, (3) sale personnel, (4) technicians, engineers, and other types of skilled workers, (5) general factory

1 "Thailand Special Report on Employment", World Bank Discussion Paper (October 1977.

2 Narongchai Akrasanee and Siri-Laksana Chutikul, "Wage Differentials in Manufacturing Industries", Discussion Paper No. 77-02, (Manila: Council for Asian Manpower Studies, February 1977).

workers, and (6) others. If managerial personnel, sales personnel, and technicians and engineers are classified as skilled workers, the requirement of skilled workers are seen to be quite different among industries. The meaning of technicians, or skilled workers, or managerial and sale personnel as given by different surveyed firms, however, may not be the same. The technicians or skilled workers in one industry may signify a high level of expertise, while in some others what are considered skilled workers may refer to no more than general workers who have had some prior training.

For this study, it would be more interesting to see the distribution of the work force by skill category among the firms of various employment sizes. Table 5.19 presents the relevant data. There are two points to be noted here. One is that the smaller firms had the highest concentration of family members, consistent with widespread belief. The second is that the smaller firms employed a higher proportion of skilled workers than the larger firms, contrary to popularly held notions.

The fact that the skilled labour classified in the same category may represent different degrees of training and skill can be seen from the differentials in monthly compensation of the workers in the same job category but in different industrial group. In general it is found that while there are large wage differentials among skilled workers across industries, inter-industry differentials have not been as large for unskilled workers.

Wage differentials among industries may be caused by several factors, which include unequal hours of work, differences in skill components, and differences in the proportion of male-female workers. Narongchai and Siri-Laksana found that the male-female ratio, the size of the firm, and the capital intensity are among the important variables explaining wage differentials. The SMI Study, however, suggests that when various types of compensation are added up, the average incomes among workers in large and smaller firms are not much different. Small firms tend to pay lower wages than the larger ones, but their fringe benefits (including payment in kind such as free food and lodging) are better. In all, workers' compensation tend to increase with the size of the firm, but the compensation differentials are not so large (see Table 5.20).

Female workers comprise a significant portion of the industrial work force in Thailand. According to the NSO Survey of 1977, they constituted 43.6 per cent of the total industrial labour force. Most of the female workers do low skilled jobs and receive lower wages than their male counterparts on the average. Moreover, the proportion of female workers tend to increase as the scale of wages increase (see Table 5.21).

There are no reliable data on wage trends in different industries over time. The wage differential study reveals than cement, diary products, iron and steel, and chemicals are among the industries consistently paying high wages, while low wages usually appear in wearing apparels, food canning and other non-metallic mineral products. However, there have been wide fluctuation on wages paid in the same industry in different years and no conclusion can be made on

Table 5.19

Proportion of Various Types of Employees by Size of Employment, 1977

Size of Employment	*Types of Employees*						
	Family members	*Managerial personnel*	*Sales personnel*	*Technical personnel*	*General wage laborers*	*Others*	*Skilled laborers*[a]
Less than 10 workers	14.7	2.4	1.9	16.6	61.9	2.5	20.9
10 – 49	7.3	3.3	2.5	13.3	71.3	2.3	19.1
50 – 99	3.0	6.4	3.4	6.9	74.7	5.6	16.7
100 – 199	1.6	4.7	2.9	9.3	75.3	6.2	16.9
200 and over	0.6	2.8	1.3	6.7	77.3	11.3	10.8
All size	3.6	3.9	2.3	9.2	74.6	6.4	15.4

[a] Managerial, sales and technical personnel.

Source: SMI Study, *op. cit.*

Table 5.20

Average Monthly Compensation Received per Worker by Types of Compensation and By Size of Employment, 1977

(Baht)

Size of Employment	*Type of Compensation*			
	Wages	*Bonuses*	*Fringe Benefits*	*Total*
Less than 10 workers	835.0	28.3	210.8	1,074.1
10 – 49	848.3	46.7	164.2	1,059.2
50 – 99	1,034.2	72.5	168.3	1,275.0
100 – 199	1,123.3	68.3	117.5	1,309.1
200 and over	1,126.7	51.7	103.3	1,281.7
All sizes	1,025.8	56.7	135.8	1,218.3

Source: SMI Study, *op. cit.*

Table 5.21

Proportion of Female Workers by Scale of Wage and by Size of Employment, 1977

(Baht)

Size of Employment	*Wage Scale*						
	Under 400 ฿	*401–600*	*601–800*	*801–1,000*	*1,001–2,000*	*2,001–5,000*	*Over 5,000*
Less than 10	46.9	25.6	25.5	24.0	15.8	12.5	–
10 – 49	52.1	47.2	36.2	21.3	12.1	8.8	–
50 – 99	48.4	55.0	55.6	36.7	26.1	16.0	23.1
100 – 199	77.5	69.4	49.4	64.9	21.4	14.4	25.9
200 workers & over	63.6	46.1	39.2	64.3	29.7	12.8	8.2
All sizes	52.8	49.9	43.3	44.3	23.7	12.8	13.4

Source: SMI Study, *op. cit.*

the trend of the general wage level. Considering the fact that minimum wages for industrial workers have been increased several times in recent years, one would conjecture that the general wage level has been rising rapidly. What is more interesting is whether or not the real wage has increased given the fact that the general price level has also been rising rapidly in recent years. The World Bank study on employment in Thailand tends to suggest that up until 1975 the real wage for industrial workers had been relatively stagnant. A comparison between the increase in the consumer price index and the increase in the minimum wage rates by the Bank of Thailand suggests that the real wage decreased from October 1974 to October 1978, but increased slightly after that. The latest adjustment in the minimum wage from 45 to 54 baht for Bangkok and adjacent provinces was approved by the Cabinet recently. This is an increase of 20 per cent over the prevailing rate and will be effective starting in October 1980. Minimum wages for other regions were also adjusted. Since the consumer price index is believed to have increased at a rate less than 20 per cent during October 1979 to October 1980, this latest adjustment is expected to raise real wages to a certain extent.

(c) *Cost Structure and Import Content*

Table 5.22 shows the expenditure items including profits of different sizes of firms contained in the SMI Study. The share of profits rises while the share of wages declines which the size of the firms. The higher wage share in the cost structure of small and medium scale firms as compared to the larger ones could be another indication of the more intensive use of labour in the smaller firms. The higher profit share of larger firms, on the other hand, could be interpreted as the result of more efficient operations in these firms. It is argued, however, that since the production values are calculated at market prices, the higher profit share of larger enterprises may reflect the monopolistic power of the larger firms. Various incentives and protective measures offered mainly to large scale enterprises also enable them to reap higher profits than would be otherwise. In addition, when the average profit to fixed asset ratio is considered, medium scale firms with 50-199 workers turned out to have a higher profitability than larger firms. The rank correlation between profit rate and capital-labour ratio shows a very weak relationship thus suggesting that industries with higher capital intensity are not more profitable than those with a lower capital intensty.

It is seen that the profit share in total production of the smallest sized firms is exceptionally low. The explanations provided are that there might be over estimation of some expenditure items in these firms. It could also be possible that the revenue of the very small enterprises are low and part of the revenues that have been spent by the entrepreneurs' family members during the year have been treated as expenditures instead of profits by the enterprises.

Cost of raw materials comprise the most important expenditure item for firms of all sizes. The proportion of material cost tend to decrease slightly with

Table 5.22

Expenditures and Profit by Size of Employment, 1977

Expenses	Size of Employment											
	Less Than 10		*10–49*		*50–99*		*100–199*		*200 & over*		*Total*	
	(฿)	*(%)*	*(฿)*	*(%)*	*(฿)*	*(%)*	*(฿)*	*(%)*	*(฿)*	*(%)*	*(฿)*	*(%)*
Raw materials	61,348	60.5	863,838	60.3	863,025	58.2	823,927	55.9	2,161,248	52.1	4,773,386	55.3
Salaries, wages	15,298	15.0	178,741	12.5	143,736	9.7	144,898	9.8	289,762	7.0	772,435	9.0
Depreciation & capital expenditures	8,046	7.9	63,830	4.5	85,787	5.8	72,032	4.9	194,324	4.7	424,019	4.9
Utilities	1,869	1.8	34,355	2.4	10,714	0.7	18,327	1.3	40,443	1.0	105,728	1.2
Rent	982	1.0	5,602	0.4	2,280	0.1	3,239	0.2	7,880	0.2	19,983	0.2
Fuel	1,989	1.9	23,034	1.6	17,090	1.1	23,377	1.6	29,518	0.7	95,008	1.1
Advertising	279	0.3	2,197	0.1	3,810	0.3	5,310	0.4	5,797	0.1	17,393	0.2
Taxes	1,904	1.9	26,502	1.8	16,080	1.1	37,174	2.5	128,459	3.1	210,119	2.4
Interest	6,249	6.2	34,224	2.4	21,628	1.5	25,064	1.7	104,644	2.5	191,809	2.2
Patent fees	78	0.1	6,249	0.4	824	0.2	1,899	0.1	7,069	0.2	16,119	0.2
Other expenses	1,532	1.5	38,344	2.7	68,156	4.6	51,714	3.5	256,408	6.2	416,154	4.8
Profit	1,884	1.9	156,304	10.9	249,557	16.8	267,413	18.1	923,857	22.2	1,599,015	18.5
Total	101,458	100.0	1,433,220	100.0	1,482,707	100.0	1,474,374	100.0	4,149,409	100.0	8,641,168	100.0

Source: SMI Study, *op. cit.*

the size of the firms. It is noted however that if profits are excluded it would appear that the proportion of expenditure on raw materials in total cost does not differ greatly among firms with different sizes.

It is observed that depreciation and capital expenditures tend to have a lower share in the larger size firms despite the high fixed asset value in these firms. This could be due to underestimation of expenditure of this item on the part of large firms. It could also be due to the fact that small scale firms tend to use relatively old machinery and equipment which need frequent repair and causes high maintenance cost.

Small scale firms tend to pay a relatively higher proportion of expenditure on interest. But firms in the largest size group also have higher interest payments than medium scale firms. One reason why small manufacturing enterprises tend to pay high interest charges may be due to their disadvantage in securing funds from the organised financial market. The high interest payment on the part of the firms in the largest sized group, on the other hand, may be a reflection of the substantial amount of funds that these firms put in high investment in fixed assets or inventory.

The SMI study also found that larger sized firms use proportionally more imported materials than small scale firms. The average percentage of imported to total material inputs for firms with 10-49 workers is 22.7 per cent, while that of the firms with more than 200 workers is 42.4 per cent.

(d) *Ability to Export*

One would expect that large sized firms have higher capability in exporting their products. The SMI study, however, reveals that there is quite a number of small scale firms which also engage in export sales, either directly or through trading agents. Out of 1,049 firms covered in the survey, 160 have some export sales. Larger-sized tended to have a higher proportion of export sales although there are some smaller-sized firms, particularly those with 10-49 employees, which also exported a substantial portion of their output.

Table 5.23 shows the value of exports to total sales for different sizes of firms. It is seen that the export to sale ratio of smaller scale firms are not lower than that of the larger ones. Export items from small scale firms include jewellery, wood handicrafts, various types of food products, plastic goods, and traditional garments. These findings suggest that in the promotion of manufactured exports, small scale enterprises cannot be ignored.

5.5 Small Scale Industries

There are different definitions for "small-scale firms" depending on the purpose for which the definitions are to be used. In Thailand, the Small Industry Finance Office (SIFO) defines small scale firms which are eligible for loans from it as those industrial and service enterprises whose fixed assets do not exceed 2 million baht. But since 1978 loans from SIFO have been extended to firms

Table 5.23

Export Value by Size of the Firm, 1977

Size of Employment	*No. of Firms with Export Sales*	*Export Value (Baht)*	*Export to Total Sales in the same Size Group*
Less than 10	11	19,571	19.3
10 – 49	62	382,028	26.7
50 – 99	34	311,070	21.0
100 – 199	27	501,016	34.0
200 and over	26	611,511	14.8
Total	160	1,825,196	21.1

Source: SMI Study, *op. cit.*

with fixed assets of up to 5 million baht. The Industrial Service Division (ISD), on the other hand, considers small scale enterprises as those which are in modern industries, in which owners manage their own businesses, and in which operational functions are not clearly departmentalized. The SMI study defines small scale manufacturing firms as those with 10-49 employees, and medium scale firms as those with 50-199 workers. In what follows, small scale manufacturing firms will be referred to as those with less than 50 workers, thus including home industries and manufacturing establishments with less than 10 workers (including family workers, paid and unpaid employees).

(a) *Importance of Small Scale Industries*

It is difficult to make an estimate of the magnitude of small scale enterprises in terms of output or employment. This is not only because of the wide discrepancies on the number of manufacturing firms of different sizes among different official sources, but also because of the lack of enumeration of numerous home of cottage industries throughout the country. According to a rough estimate made by the SMI study, small manufacturing firms with less than 50 employees accounted for 34.7 per cent in terms of manufacturing value added and 54.8 per cent in terms of manufacturing employment in 1976. But the estimate was based on the number of manufacturing establishments of different sizes of the Factory Control Division, Ministry of Industry which did not include numerous cottage and small scale firms. Hence, despite the high proportion of value added and employment estimated as contributed by the small scale firms, the statistics could understate the contributions of these firms.

The fact that small scale enterprises constitute the great majority of the enterprises in the manufacturing sector and contribute much to output and employment makes them important. But these are other reasons for giving special attention to small scale industry. Industrial enterprises in less developed countries usually start on small scale, then grow in size over time. It is relatively easy for a new enterpreneur to start up in small scale production. The financial loss due to failure is not great. Small scale enterprises thus serve as a training ground for enterpreneurial skill and ability. Furthermore, as we have already seen, in Thailand as in many other developing countries, small scale industries have the distinctive characteristic of being more labour intensive than larger size firms. And then also small scale firms tend to be more foreign exchange saving, i.e., they need less foreign exchange in their operation. Moreover, the fact that small scale manufacturing enterprises are scattered throughout the various regions of Thailand suggests that their development can have substantial contribution to the dispersion of industrial activities in the country. Finally small scale industries can have extensive employment impact in provincial areas. Cottage undertakings located in villages or in small towns usually have a very close link with the agricultural sector, securing labour and raw materials from this sector as well as selling output to them. Through these industries rural people who, after working hard in farm activities during the planting and harvesting season become unemployed or underemployed, find gainful employment. Unfortunately, there has not yet been any study on the employment generating capacity of rural cottage industries. It is, however, safe to say that these industries help to increase income and employment in the rural areas.

Notwithstanding their importance, cottage industries in Thailand seem to have grown only as a natural consequence of economic growth and improved transportation and communication without much intervention from the government. Their development certainly can be accelerated if the government extends to them marketing information, technical and fnancial support, and other forms of assistance.

(b) *Management and Entrepreneurship*

According to data from the Factory Control Division industrial activities where small scale firms are concentrated except rice mills include agro-based food processing, repairing of motor vehicles, motor boats, and machinery, printing, saw milling, and manufacturing or assembling of various types of metal, wood and plastic goods for household use. Most of the small scale enterprises are single proprietorship. The owner of the enterprise is usually also the manager. Business functions are not formally departmentalised. Workers are recruited without prior testing and the upgrading of skills is done mostly through on-the-job training. Most of small scale firms do not have systematic records for their assets and liabilities, and incomes and expenditures.

Production methods in small scale firms are rudimentary. On the whole, production starts when job orders are received. Occasionally, it is also carried

out to meet the needs of the market as assessed by speculation or common sense.

Most of the entrepreneurs in small scale firms have had little formal education. They would have received only a few years of primary school education (see Table 5.24). This, however, does not imply that these entrepreneurs lack initiative or ability to adjust themselves to changing market conditions. On the contrary, many of them are capable entrepreneurs. In fact, many have established their present business without much help from others. Most of these entrepreneurs have had some knowledge and experience in their line of business before establishing their own firms. A significant proportion of entrepreneurs have had previous experience in commerce, or were employed in industrial firms. For entrepreneurs in small industries, experience in industrial factories seems to be an important factor for starting up their own firms. It is found in the SMI study that the proportion of factory workers becoming entrepreneurs is higher for small scale than for larger scale industries. This can also be interpreted to mean that it is relatively easier for experienced factory workers to start up their own business in small scale.

It is interesting to note that small scale firms rely on their own design and technology more than do larger scale firms. Most of the surveyed firms in the SMI study claimed that the product design was their own, although foreign methods might have been adapted. The proportion of firms with own-designed techniques tended to decrease with the size of the firm, while those which bought foreign technology, and received assistance from the government and foreign sources tended to be large scale firms (see Table 5.25). This may imply that small scale manufacturing enterprises have a relatively higher degree of adaptability in their technology than larger size firms which are more heavily influenced by imported technology.

(c) *Marketing*

Most of the small scale firms made their sales to regular customers. They based their production programmes on job orders received. A smaller portion of these firms sold their products to whatever market they could find. Only a very small fraction had their sales on contract (see Table 5.26).

With respect to their principal types of activity, about 16 per cent of small scale enterprises are reported to be engaged in manufacturing or repairing parts and components for other factories. Thus "selling to regular customers" as reported in Table 5.26 would have included this inter-relationship among industrial enterprises. To what extent this refers to subcontracting arrangements is not clear. Little is known on the subject of subcontracting in Thai industries. But it has been observed that some small scale labour intensive industries such as garments, and handicrafts, have been made on the "putting out" basis where materials are provided by manufactures to home workers for further processing. For example, garments are cut and sent to household for sewing; in the Northern

Table 5.24

Distribution of Enterpreneurs by Educational Level in Different Sizes of Firms, 1977

Employment Size	*Level of Education*								
	First 4 years of Primary School	*5th to 7th year of Primary School*	*High School*	*Commercial School*	*Vocational School*	*University Graduate*	*Master Degree and Higher*	*Others*	*Total*
Less than 10	94 (54.7)	34 (19.8)	23 (13.4)	3 (1.7)	4 (2.3)	5 (2.9)	2 (1.2)	7 (4.1)	172 (100.0)
10 – 49	284 (48.1)	77 (13.1)	125 (21.2)	24 (4.1)	18 (3.1)	28 (4.7)	4 (0.7)	30 (5.1)	590 (100.0)
50 – 99	44 (36.7)	13 (10.8)	25 (20.8)	4 (3.3)	3 (2.5)	15 (12.5)	6 (5.0)	10 (8.3)	120 (100.0)
100 – 199	18 (32.1)	3 (5.4)	15 (26.8)	2 (3.6)	2 (3.6)	8 (14.3)	5 (8.9)	3 (5.4)	56 (100.0)
200 & over	8 (27.6)	1 (3.4)	6 (20.7)	1 (3.4)	0 (0.0)	8 (27.6)	2 (6.9)	3 (10.3)	29 (100.0)
Total	448 (46.3)	128 (13.2)	194 (20.1)	34 (3.5)	27 (3.5)	64 (2.8)	19 (6.6)	53 (5.5)	967 (100.0)

Source: SMI Study, *op. cit.*

Table 5.25

Sources of Methods of Production
Number of Enterprises (%)
1977

Number of employees	*Methods*						
	Bought foreign technology	*Copy foreign design without any adaptation*	*Improve on foreign design*	*Received foreign assistance*	*Design own product*	*Received advice from government unit*	*Total*
Less than 10 workers	4 (2.1)	33 (17.0)	32 (16.5)	19 (9.8)	104 (53.6)	2 (1.0)	194 (100.0)
10 – 49	32 (4.4)	132 (18.0)	149 (20.3)	8 (1.1)	392 (53.5)	20 (2.7)	733 (100.0)
50 – 99	18 (9.9)	25 (13.8)	36 (19.9)	8 (4.4)	81 (44.8)	13 (7.2)	181 (100.0)
100 – 199	8 (8.3)	13 (13.5)	20 (20.8)	9 (9.4)	42 (43.8)	4 (4.2)	96 (100.0)
200 workers and over	7 (14.6)	9 (18.8)	5 (10.4)	9 (18.8)	13 (27.1)	5 (10.4)	48 (100.0)
Total	69 (5.5)	212 (16.9)	242 (19.3)	53 (4.2)	632 (50.4)	44 (3.5)	1,252 (100.0)

Source: SMI Study, *op. cit.*

Table 5.26

Methods of Looking for the Market by Size of Employment, 1977

Employment size	*Methods of Marketing*				*Total*
	Usually fetch whatever market	*Sell to regular customers*	*Sell on contract*	*Sell to irregular customers*	
Less than 10 persons	49 (28.8)	114 (67.1)	4 (2.4)	3 (1.8)	170 (100.0)
10 – 49	214 (35.7)	353 (58.8)	25 (4.2)	8 (1.3)	600 (100.0)
50 – 99	69 (51.5)	54 (40.3)	9 (6.7)	2 (1.4)	134 (100.0)
100 – 199	35 (50.7)	24 (34.8)	10 (14.5)	–	69 (100.0)
200 persons and up	15 (41.7)	19 (52.8)	–	2 (5.6)	36 (100.0)
Total	382 (37.9)	564 (55.9)	48 (4.8)	15 (1.5)	1,009 (100.0)

Source: SMI Study, *op. cit.*

provinces, handicraft shops sometimes provide wood and design to village households with craftmanship for carving. What is more interesting, however, is the relationship of small scale enterprises with large ones. In some developed countries, small industrial enterprises play an important role in supplying parts and components and other materials to larger enterprises or engaged only in certain parts (usually labour intensive ones) of the production of certain commodities. This kind of division of labour could lead to the improvement of the overall efficiency of the manufacturing sector. In Thailand, the subcontracting system has not been adequately developed. The reasons are that the types of product manufactured by large and small firms are quite different and there exists a wide gap in the technology employed. The control of quality of the products produced by smaller firms is difficult. The business tax system based on sales of each firm can also work to encourage vertical integration and hence discourage the division of the production process to different firms. There may, however, be room for the development of subcontracting as industrialisation proceeds and the technological capability of small and medium scale firms improved, particularly in assembly-type industries where the division of the stages of production is more feasible.

(d) *Finance*

Industrial enterpreneurs in Thailand appear to have heavy reliance on their own savings as the principal source of funds to start up their business. Table 5.27 shows the structure of sources of capital at the time of establishment of 805 enterprises from the data obtained in the SMI study. Over two-thirds of the initial capital came from personal savings of the entrepreneurs. The rest came from unorganized markets, chiefly from borrowing from relatives and friends. Only 12.3 per cent of the initial capital of these enterprises was financed by institutions in the organized financial market. At the same time, however, entrepreneurs of larger enterprises rely more on their personal funds and resort more to borrowing from commercial banks for their initial capital need than do entrepreneurs of smaller scale firms.

The amount of capital needed for starting up a manufacturing enterprise is much less for a small scale enterprise. It was found in the SMI survey that 80 per cent of firms with less than 10 workers needed less than 500,000 baht to start up their business and over two-thirds of the firms in the 10-49 workers group needed less than 1 million baht for their initial capital. On the average, firms with less than 10 employees needed 800,000 baht and those with 10-49 employees needed around 1.6 million baht to start up their business. But for firms with more than 200 workers, 29 million baht was needed on the average.

Sources in the organized financial market, particularly commercial banks, play an important role in financing working capital for present operation of industrial enterprises. But most of the capital needed was still financed by the firms themselves. The degree of reliance on own capital tends to decrease and

Table 5.27

Source of Finance for Capital at Time of Establishment by Size of the Firm, 1977 (Baht)

Source of Finance	*Employment size of the firm*					*Total*
	Less than 10 workers	*10 – 49*	*50–99*	*100–199*	*200 worker and over*	
1. Personal fund	90,606 (89.6)	504.062 (65.0)	339,364 (70.6)	301,205 (81.3)	525,349 (81.3)	1,760,586 (72.6)
2. Unorganized markets	8,625 (8.5)	189,176 (24.3)	90,307 (18.9)	16,647 (3.9)	60,000 (9.3)	364,755 (15.1)
Borrow from relatives and friends	3,893 (3.9)	95,701 (12.3)	39,784 (8.3)	1,706 (0.4)	0 (0.1)	141,084 (5.8)
Shares*	1,355 (1.3)	24,237 (3.1)	12,757 (2.7)	4,339 (1.0)	0 (0.0)	42,688 (1.8)
From firms with which entrepreneurs have business contact	1,437 (0.4)	5,616 (0.7)	22,919 (4.8)	902 (0.2)	60,000 (9.3)	89,874 (3.7)
Other	2,940 (2.9)	63,622 (8.2)	14,847 (3.1)	9,700 (0.0)	0 (0.0)	91,109 (3.8)
3. Organized markets	1,947 (1.9)	82,302 (10.5)	50,872 (11.3)	103,040 (24.4)	60,855 (9.4)	299,016 (12.3)
Commercial banks	1,827 (1.8)	73,148 (9.4)	47,514 (9.9)	96,553 (22.9)	50,855 (7.8)	269,897 (11.1)
Finance companies	0 (0.0)	1,780 (0.2)	388 (0.8)	0 (0.0)	10,000 (1.6)	12,168 (0.5)
Small Industries finance office	0 (0.0)	1,133 (0.1)	2,000 (0.4)	0 (0.0)	0 (0.0)	3,113 (0.1)
Industrial Finance Corporation	120 (0.1)	6,261 (0.8)	970 (0.2)	6,487 (1.5)	0 (0.0)	13,838 (0.6)
Total	101,178	775,500	480,543	420,890	646,204	2,424,357

* Money through a method of co-operative financing among a number of participants, each of whom puts up an agreed sum once a month, the participant who offers the highest interest getting the pool for any one month.

Source: SMI Study, *op. cit.*

use of funds from organized financial market tends to increase as the business becomes larger (Table 5.28).

From the information obtained in the SMI study, it seems that the Small Industry Finance Office (SIFO), which was set up precisely to help finance small scale industries, plays a negligible role as a source of funds both at the initial and operating stages.[1] Over 80 per cent of the firms in the small scale category (with 1-50 employees) reported that they had never heard of the name of SIFO before! And of those entrepreneurs who heard about the availability of financial assistance from the government unit, only a fraction applied for loans. Furthermore, there were many entrepreneurs who needed financial assistance but did not know the procedures and related details

Some entrepreneurs felt that it was easier to obtain loans from commercial banks and other private financial institutions than from government agencies. But borrowing from commercial banks is also difficult for small firms because of their lack of collateral and lack of a good accounting system. The fact that commercial banks required fixed assets as collateral tends to force small enterprises to rely on their own savings or on unorganised sources for their financial needs. Though it may be desirable to have a high degree of self financing, depending mainly on self financing will seriously limit the potential for further growth, particularly in the case of small enterprises where accumulated profits and savings are low. Borrowing from unorganised markets, on the other hand, usually requires payment of higher interest rates and the amount of funds available is very limited. As shown in Table 5.29, interest rates from unorganized sources are higher than those charged by commercial banks and other financial institutions, and smaller firms tend to pay higher interest rates on the average. But the problem on the cost of the funds is not as great as the availability of funds, as the SMI study found that small enterprises tended to complain more about collateral problems and less on interest rates than did their larger counterparts.

The findings on finance and credit of the SMI study thus suggest that small scale firms have difficulty in gaining access to institutional credit and have to resort to their own funds or other sources in the unorganized financial market to get their business started and meet expenditures on current operation. Government assistance in the field of financial credit is very limited. Lack of finance may also impose a severe constraint for further expansion of quite a number of small-scale industries. In the SMI study, about 20 per cent of the small scale firms mentioned that they had plans for further expansion. Those entrepreneurs who did not want to expand their business, gave lack of market and lack of finance as among the most important reasons. We may thus say that provision of financial assistance to small scale industries on more liberal terms

[1] The Industrial Finance Corporation of Thailand (IFCT), which confines its loans to relatively large industrial enterprises, naturally appears to have insignificant contribution in the SMI study where small and medium scale firms are concentrated.

Table 5.28

Source of Finance of Present Working Capital by Employment Size of the Firm, 1977 (Baht)

Sources of Finance	*Number of employee*					*Total*
	Less than 10 workers	*10–49*	*50–99*	*100–199*	*200 workers and over*	
1. Personal fund	129,455 (86.28)	928,268 (66.7)	762,085 (59.2)	712,083 (67.8)	1,257,499 (62.1)	3,789,339 (64.18)
2. Unorganized markets	14,056 (9.4)	277,930 (20.0)	274,255 (21.3)	150,076 (14.3)	300,126 (14.8)	1,016,443 (17.21)
Borrowing from relatives and friends	6,228 (4.1)	123,543 (8.9)	119,414 (9.3)	74,201 (7.1)	13,740 (0.6)	337,126 (1.71)
Shares	1,292 (0.86)	34,663 (2.49)	23,744 (1.85)	1,525 (0.15)	246,950 (12.19)	308,174 (5.22)
Firms with which entrepreneurs have business contact	483 (0.32)	90,081 (6.47)	96,134 (7.47)	48,819 (4.65)	39,436 (1.94)	274,953 (4.65)
Other	6,053 (4.03)	29,643 (2.13)	34,963 (2.72)	25,531 (2.43)	0 (0.0)	96,190 (1.62)
3. Organized markets	6,702 (4.46)	185,166 (13.31)	250,215 (19.44)	187,915 (17.87)	467,737 (60.91)	1,097,735 (17.33)
Commercial banks	0 (0.0)	6,256 (0.45)	23,604 (1.84)	12,733 (1.20)	0 (0.0)	42,593 (0.72)
Small Industries Finance Office	0 (0.0)	4,009 (0.29)	960 (0.07)	0 (0.0)	0 (0.0)	4,969 (0.08)
Industrial Finance Corporation	0 (0.0)	10,834 (0.78)	2,900 (0.23)	9,300 (0.89)	3,768 (0.18)	26,802 (0.45)
Total	150,212 (100.0)	1,391,363 (100.0)	1,286,554 (100.0)	1,050,014 (100.0)	767,864 (100.0)	5,903,454 (100.0)

Source: SMI Study, *op. cit.*

Table 5.29

Average Interest Rate by Sources of Finance and Size of the Borrowing Firm, 1977
(% annum)

Number of employees	*Sources of fund*					*Total average*
	Borrowing from relatives and friends	*Borrowing from commercial banks*	*Borrowing from finance companies*	*Share*	*Other*	
Less than 100 workers	18.7	13.3	21.0	17.0	18.7	16.8
10 – 49	19.3	13.4	14.8	17.0	19.3	16.3
50 – 99	18.3	13.6	17.1	13.2	18.3	15.5
100 – 199	20.6	13.6	16.2	5.5	20.6	16.2
200 workers and above	18.0	12.9	12.0	3.0	18.0	9.6

Source: SMI Study, *op. cit.*

can be very helpful for the operation and expansion of many small scale industries.

(c) *Problems of Small Scale Industries*

Besides shortage of capital and lack of access to formal financial credit, there are other problems faced by small scale manufacturing firms. These include inadequacy of demand, underutilised capacity,[1] shortage of funds, poor quality and unstable supply of raw materials, lack of skilled workers, loss of skilled workers to larger enterprises, high rate of turnover of workers in general, and shortage of workers during agricultural seasons.

Some of these problems result from the limitation in managerial capabilities of entrepreneurs in small scale firms. The low educational background of the entrepreneurs perhaps contributes to some of these problems. But there are problems that go beyond the entrepreneurs themselves. These include low sanitary work environments, inadequate safety devices for workers, and low wages (wages much below the minimum rate required by law) in some enterprises. Of course these problems also occur in larger scale firms, but they are more frequently found in small scale enterprises.

Admittedly the various problems mentioned above are very hard to tackle. The poor working environment is due both to lack of planning on the part of industrial cities and to the lack of awareness by industrial entrepreneurs of environmental problems. We may blame the entrepreneurs for their profit-mindedness and reluctance to improve environmental conditions in their factories. However, we should expect government offices in charge to be helpful in providing advice to industrial entrepreneurs on factory environments and on workers' welfare. At present, government services of the type needed to solve the problems described above seem very inadequate if not totally lacking.

Entrepreneurs of industrial enterprises are generally disturbed by frequent visits by officials from various government offices and they complain that the visits are mostly for the purpose of inspection and control rather than giving advice or assistance to help solve problems. It may not be too wrong to say also that most government officials in charge of visiting factories are not well-trained to give advice to industrial entrepreneurs, and many industrialists tend to distrust government officials. It is evident that if we want to have industrial growth without too much negative effects on workers' welfare, substantial efforts have to be exerted to improve the government's delivery system for its services.

[1] There was, however, high rate of capacity utilisation in some small industries. The SMI study unfortunately did not provide much information on capacity utilization. On another survey of small and medium scale firms in 1978, it was found that capacity utilisation for larger enterprises was on average slightly higher than that for small scale firms in 1975, 1976, and 1977. See, Saeng Sanguanruang, et. al., *op. cit.*, Chapter 5.

5.6 Conclusions and Policy Recommendations

The industrial sector in Thailand has grown fairly rapidly in the last two decades and has contributed substantially to the absorption of surplus labour. However, the employment creation has not been rapid enough and there remains considerable unemployment and under-employment.

One of the most effective ways for eliminating or reducing the labour underutilisation problem is the encouragement of labour intensive small scale industries. Unfortunately, however, Thailand's policies have not always been favourable to these industries.

The import substitution policies of the 1960s tended to favour large scale industries and even the current incentives for the expansion of exports have not been free of the old biases.

Despite the fact that the incentive system tends to favour large scale enterprises, small manufacturing enterprises seem to grow well in Thailand and may in fact have contributed significantly to the growth of the industrial sector. Many small scale industries possess several qualities which are desirable for industrial growth and for employment absorption. Their production is relatively labour intensive and with less import content. They are scattered throughout the country and their development can help generate employment and income in the rural areas or provincial towns.

Despite the often alleged low efficiency of small scale manufacturing firms, empirical studies reveal that small scale firms are not less efficient in a number of criteria than large scale ones. In particular, they tend to use capital inputs more efficiently although their average labour productivity is lower due to the use of less capital equipment.

It is evident from the analysis of the structure and growth of the industrial sector in Thailand that the major thrust of policy for employment creation in the manufacturing sector should be the encouragement of manufactured exports and the promotion of small and medium scale enterprises. The promotion of export industries alongside with small and medium scale industries will not incur any conflict in industrial development policy since many of the small and medium scale industries are labour intensive and/or resource-oriented as well as reflective of the nation's comparative advantage.

Although Thailand's manufactured exports have grown fast, the major market outlet for the country's industrial products has up to the present time been the domestic market. Much emphasis was placed on protecting import substitution industries during the 1960s and the structure of protection has not been changed despite the efforts on export promotion. Among the industrial activities that are heavily protected are a variety of modern consumer goods industries which generally cater to the urban high- and middle- income groups. The protective measures might have helped to make a quick start on industrial development in the beginning. But it also has created a number of problems for the economy including substantial trade deficits due to high import content of

many industries, concentration of industrial activities in the areas near Bangkok which creates serious environmental problems, and the neglect of a large number of domestic industrial activities whose products are neither direct substitutes for imports, nor are yet being exported. Many of these products are simple household goods which are manufactured by small scale firms and consumed by a great majority of low-income people.

Despite their survival and growth alongside the larger firms, small scale industries confront a number of difficulties which constrain their growth. These difficulties include shortage of raw materials, shortage of funds, managerial deficiency, and inadequate demand for their products and, as a consequence, underutilisation of their capacity. Generally speaking, the most serious of these problems seem to be lack of finance and lack of managerial manpower.

The promotion of export industries and small and medium scale industries, if it is to be successful, will need some changes in policy measures related to industrial development. Since the present incentive system is biased in favour of import substitution industries, it needs to be corrected, not necessarily by giving more subsidy to export industries but rather by reducing protection to import substitution industries. The reduced protection to certain industries may hurt these industries in the short run, but will result in improvement of efficiency and industrial growth in the long run. If the high tariff on luxurious consumer goods is to be maintained, the domestic production of these products should be equally taxed so that domestic production of these products would not be encouraged. Industries covered by the official promotion programme should be carefully selected and preference should be given to labour intensive industries for mass consumption or for exporting.

In proposing the promotion of labour intensive small scale enterprises, we are not suggesting a blanket support for all of them. Considering that there are so many of these small scale labour intensive industrial enterprises, it is not possible to include all of them into the official promotion scheme. It may also be undesirable to do so. A more reasonable approach would be to give promotional privileges to industries which are by various criteria desirable for the economy without imposing minimum limit on the size of investment.

Since the constraints on numerous small industries are lack of marketing channels, shortage of finance and lack of managerial skills, assistance to small industries should emphasize these areas. Technical assistance on production methods should also be made to improve the efficiency of these industries. Various governmental units, particularly the Small Industry Finance Office (SIFO) and the Industrial Service Division (ISD) have already been giving assistance to small industries along this line but the scope of their operation is too limited.

The reorganization of SIFO to give it more flexibility in its operation and expand its present scope of services has recently been approved by the cabinet. The reorganised loan office is expected to be more helpful to small-scale industries than the present SIFO. But to ensure accessibility of services to small

enterprises, more publicity needs to be made. As many regional branch offices as are economically justifiable should be set up. The co-operation with the Government Savings Bank (GSB) or Bank for Agriculture and Agricultural Co-operative (BAAC) to use their office as loan windows should also be considered. The simplification of loan procedures and provision of advices on accounting and on other matters would be helpful to entrepreneurs of small enterprises who are usually with very low formal education.

The Industrial Service Division (ISD) too should expand its scope of operation. So far the ISD has only one branch office is Chiengmai, although another branch office in Khon Kaen in the Northeast Region has been planned. But it would be better if smaller and more diversified technical assistance centers could be set up in other provinces as well. In view of lack of budget and manpower, concentration may be planned on specific industries in specific regions where staff members specialized in those particular industries could be trained and research can be done for technology appropriate to local conditions for these industries.

Training on management and provision of information on marketing should also be implemented by the government. Feasibility studies may be done in selected industries and advice given to industrial entrepreneurs on the marketability of their products. Improvement of infrastructure particularly of transportation can be very helpful to marketing products, agricultural as well as non-agricultural, in the rural areas. In particular rural electrification will be helpful to the development of rural industries.

There are some negative aspects of small industries which need to be put under control by the government. These include unhealthy environment and violations of the labour law in various aspects. But even in these areas government offices can give helpful advice.

It should be clarified that these recommendations do not mean that small industries should be heavily protected or subsidised by the rest of the economy. Excessive protection of industries whether large or small is undesirable. Rather it is suggested that enough assistance should be extended to small industries to help them make their contribution to overall economic development.

Finally it should be kept in mind that small, medium, and large scale industries are all parts of the nation's industrial system and each has its place in the economy. Some industries may be suitable for small scale production while others would be more efficient for large scale operation. We have emphasized the merits of small scale industries here because of their importance in the Thai economy and because of the need to compensate for the relative neglect, intentionally or unintentionally, that they have suffered under past government policy.

Appendix Table V.1

The Structure and Growth of Thai Manufactured Exports: 1972 and 1976

(Millions of Baht)

Industry	1972 Exports	1972 Percent of total	1976 Export	1976 Percent of total	Annual Growth Rate 1972–1976
I. *Processed Food*	2,691.6	37.22	12,642.3	57.69	47.22
1. Meat and meat product	1.0	0.01	77.0	0.35	196.23
2. Sugar and confectionary	1,355.0	18.74	6,854.9	31.43	49.97
3. Dairy product	0.6	0.01	23.4	0.11	149.90
4. Cereal product	358.0	4.95	941.0	4.31	27.33
5. Food product	977.0	13.51	4,746.0	21.76	48.46
II. *Beverage and Tobacco*	290.0	4.00	6.8	0.03	–60.87
6. Beverage	4.0	0.04	6.8	0.03	14.19
7. Tobacco	286.0	3.95	–	–	–
III. 8. *Construction Material*	234.0	3.24	488.5	2.24	20.20
IV. *Intermediate Products I*	673.0	9.31	1,363.2	6.25	19.30
9. Lumber and plywood	208.0	2.88	897.5	4.11	44.13
10. Leathers	68.0	0.94	125.9	0.58	16.65
11. Fuel and Petroleum	248.0	3.43	118.5	0.54	–16.86
12. Glass and glass product	24.0	0.33	52.0	0.24	21.32
13. Chemical product	32.0	0.44	36.8	0.17	3.56
14. Iron and steel	93.0	1.29	132.5	0.61	9.25

(Millions of Baht)

Industry	1972 Exports	1972 Percent of total	1976 Export	1976 Percent of total	Annual Growth Rate 1972–1976
V. *Intermediate Products II*	2,585.0	35.73	4,146.1	19.01	12.54
15. Textile	649.0	8.97	3,109.7	14.26	47.95
16. Paper and paper product	35.0	0.48	71.6	0.33	19.59
17. Rubber and rubber product	27.0	0.37	87.2	0.40	32.29
18. Metal product	1,729.0	23.91	403.8	1.85	–30.48
19. Chemical product	24.0	0.33	72.8	0.33	31.97
20. Wood product	121.0	1.67	401.0	1.84	34.92
VI. *Consumer non-durable*	733.9	10.15	2,109.0	9.67	30.20
21. Clothing	255.0	3.53	1,646.4	7.55	59.40
22. Textile articles	21.0	0.29	65.5	0.30	32.89
23. Shoes	0.3	0.00	7.7	0.04	125.08
24. Printing and publishing	2.6	0.04	2.1	0.01	–5.20
25. Pharmaceuticals	33.0	0.46	112.5	0.52	35.88
26. Miscellaneous	422.0	5.83	274.8	1.26	–10.17

(Millions of Baht)

Industry	1972 Exports	1972 Percent of total	1976 Export	1976 Percent of total	Annual Growth Rate 1972–1976
VII. *Consumer durable and machinery*	25.0	0.35	1,055.6	4.84	154.91
27. Furniture	3.0	0.04	72.1	0.33	121.41
28. Consumer electrical goods	8.0	0.11	43.3	0.20	52.53
29. Machinery agricultural & Non-electrical	2.0	0.03	5.8	0.03	30.50
30. Electrical machinery	7.0	0.10	918.8	4.21	238.48
31. Transport equipment (Motor vehicle)	5.0	0.07	15.6	0.07	32.90
Total	7,232.5	100.00	21,811.5	100.00	31.78

Source: Data collected from the Department of Customs.

Appendix Table V.2

Labour-intensive Industries[a]

TSIC Code	*INDUSTRY*
32114	Silk weaving
38419	Ship repairing
33120	Wooden and cane containers and small cane wares
32190	Miscellaneous textile products
32140	Carpets and rugs
33190	Miscellaneous wood products
31141	Canning of fish
36100	Pottery
31119	Other meat products
33190	Miscellaneous wood products
31411	Tobacco curing
35112	Manufacture of charcoal
31310	Distilling, rectifying and blending spirits
32209	Other wearing apparels and accessories
31139	Canning and preserving of fruits and vegetables
31173	Noodles and similar products
32201	Men's and boy's clothes
32202	Women's, girl's and infant's clothes
33113	Manufacture of builder's woodwork
36190	Structural clay products
37120	Iron and steel foundries
31139	Other canning and preserving of fruits and vegetables
35232	Perfumes, cosmetics, and other toilet preparation
31151	Oil and fats
39012	Jewellery
38320	Manufacturing and repairing of radio, television and communication equipment and apparatus
32400	Footwears
32202	Rattan furniture
34120	Containers and boxes of paper and paper board
38298	Machinery repair shops
35293	Incense products
35591	Rubber sheets and black rubber
31142	Fish sauce
32117	Textile printing
38439	Other vehicle parts and accessories
31171	Bakery
32130	Knitting mills

Source: NSO, *Industrial Survey*, 1977.

[a] Industries with fixed-assets to worker ratio below 50,000 baht in the order from less to more labour intensive.

six

The Case for Labour Intensive Industries in Malaysia

Chee Peng Lim
Donald Lee
Foo Kok Thye

6.1 Introduction*

The objective of this study is to review the growth of the manufacturing sector in Malaysia during the period of the sixties and the seventies and to assess its role in the nation's overall economic activity with the aim of highlighting potential employment growth areas, particularly in labour intensive and small scale industries. It begins with an analysis of the characteristics of the manufacturing sector in Malaysia and brings out the important factors especially import substitution and export expansion which have contributed to Malaysia's industrial development. This is followed by an evaluation of government policies especially protection and fiscal incentives upon the growth and changing structure of industry in Malaysia. The next three sections specifically deal with the small industry sector in Malaysia and analyses its importance, the major problems with which it is faced and in the light of these suggests measures which can help promote the growth of this sector. Finally, the last section summarises the major conclusions of the study.

The present study is limited to Peninsular Malaysia. This is primarily because comparable data do not exist for East Malaysia (comprising the States of Sabah and Sarawak). The Censuses of Manufacturing Industries that have been conducted have concentrated entirely upon manufacturing activity in Peninsular Malaysia. This is not as serious an omission as it may seem because Peninsular Malaysia accounts for more than 90 per cent of all manufacturing activities in the Federation.

* We are grateful to H. Poot of the Asian Regional Employment Programme (ARTEP) for his valuable suggestions and comments on earlier drafts of this paper.

Data on manufacturing activities have been drawn primarily from the Censuses of Manufacturing Industries, the most recent of which was conducted in 1973. Thus our detailed analysis of the structure of the industrial sector does not go beyond 1973. However, in tracing the growth of the sector, we have drawn upon other secondary sources for data on such things as output, value added and employment in order that the data presented are the most recent available.

The data presented numerous problems. The four industrial censuses that have been conducted in 1959, 1963, 1968 and 1973 contain problems of changing definitions and classifications. Thus, many of the figures are not directly comparable and adjustments have to be made in order to extract appropriate figures. Also though census coverage is ostensibly complete, since the 1963 census at any rate, total coverage of all activities classifiable as manufacturing is still incomplete especially for the small establishments which escape the government list on which the census is based. Thus, our estimates of total industrial output and employment must necessarily represent an underestimate.

6.2 The Manufacturing Sector in Malaysia

(a) *Growth of the Industrial Sector*

The manufacturing sector in Malaysia has recorded remarkable growth in recent years. Over the periods 1961-1970 and 1970-1978 the sector grew at an average annual rate of 13.8 per cent (in current prices) and 12.9 per cent (in real terms),[1] respectively, and its contribution to gross domestic product rose from 8.1 per cent to 12.2 per cent between 1961 and 1970 and to 17.4 per cent between 1970 and 1978 (Table 6.1).

The rapid expansion of the manufacturing sector has meant that, in recent years, it has secured itself an important role in the overall growth of the economy. Over the period 1970-1978, the sector's contribution in the growth of real gross domestic product was 23.4 per cent and this even surpassed that of agriculture which accounted for 22.5 per cent of total growth (Table 6.2).

The fast expansion of manufacturing activity is further documented by data from the manufacturing censuses on the growth in value added for the sector. Total value added arising from manufacturing was estimated at M$204 million in 1959 and by 1973, the figure had increased by more than ten-fold to M$2,060 million.[2] This increase represents an average annual growth rate in the region of 18 per cent.[3] In addition, when growth rates are calculated over different time-periods (as summarised in Table 6.3) we observe that there was

1 Since 1970 national accounts data are available in constant prices.

2 The Malaysian riggit (M$) is approximately equal to US$ 0.45 or US$ 1.00 equals M$2.20.

3 See Appendix Table VI-I for value added and share in growth for different industries in the manufacturing sector during 1959-73.

Table 6.1

Malaysia: Gross Domestic Product by Sectors[a]
(M$ Million)

	1961	*1966*	*1970*	*1974*[b]	*1978*[b]
Agriculture, forestry & fishing	1,906 (37.9)	2,183 (31.7)	3,432 (32.1)	4,518 (30.5)	5,488 (27.7)
Mining & quarrying	371 (7.4)	541 (7.9)	613 (5.7)	619 (4.2)	913 (4.6)
Manufacturing	408 (8.1)	756 (11.0)	1,307 (12.2)	2,175 (14.7)	3,443 (17.4)
Construction	173 (3.4)	274 (4.0)	481 (4.5)	677 (4.6)	920 (4.6)
Others	2,169 (43.1)	3,125 (45.4)	4,875 (45.5)	6,808 (46.0)	9,073 (45.7)
G.D.P. at factor cost	5,027	6,879	10,708	14,797	19,837

Note: Figures in parentheses are percentages.

[a] Old System of National Accounting.

[b] Expressed in 1970 current prices. 1961 – 1970 data are expressed in current prices.

Source: Based on statistics collected from the Department of Statistics, Kuala Lumpur.

Table 6.2

Malaysia: Average Annual Growth Rate and Share of Growth of Important Sectors

	Average Annual Growth Rate		*Share of Growth*	
	1961-70	*1970-78*[a]	*1961-70*	*1970-78*
Agriculture, forestry & fishing	6.8	6.0	26.9	22.5
Mining & quarrying	5.7	5.1	4.3	3.3
Manufacturing	13.8	12.9	15.8	23.4
Construction	12.0	8.4	5.4	4.8
G.D.P. at factor cost	8.8	8.0		

Note: [a] In real terms.

Source: Department of Statistics, Kuala Lumpur.

Table 6.3

Peninsular Malaysia: Rate of Growth of Value Added from Manufacturing 1959-73

Period	*Average Annual Growth Rate*
1959-63	16.0
1963-68	16.5
1968-73	20.9

Source: Appendix Table VI-1.

an acceleration in the increase in value added, particularly after 1968. This spurt appears to coincide with the increasing use of tariff protection as an instrument to advance industrial development.[1] However, in this period some success was also achieved in expanding manufactured exports. It is clear that manufacturing output has been growing rapidly and is assuming a dominant role in determining overall economic growth.

The expansion of the manufacturing sector has had an important impact upon the foreign trade sector. The rationale for a more diversified economy for Peninsular Malaysia rests on, among other things, the need to offset the effects of the long-term declining prospects of export earnings from rubber. This has implications for both exports and imports. For exports the basic issue is whether new lines of exports have developed and, for imports, whether domestic production has replaced some of the imports. We observe in Table 6.4 that manufacturing exports from Malaysia have been growing steadily over the period reviewed. In 1968, total manufactures exported accounted for 10.4 per cent of total exports. By 1973, the value of manufactured exports had nearly doubled to M$ 981 million and represented 13.3 per cent of total exports. More recent data for trade indicate that in 1977, manufacturing's share in total exports was 18 per cent. Thus the growing importance of manufactured product as an export earner is clear. To a considerable extent the expansion of manufactured exports can be explained by the growth of textiles, timber and electronics production in recent years. However, the traditional exports (rubber, timber, palm oil and tin) still remain dominant in terms of the total export earnings of the country. It appears that it will be a long time before Malaysia's traditional export-earners are displaced to any large extent by exports from the manufacturing sector.

When we turn to Malaysia's imports we observe that the total value of imports in Malaysia has increased steadily over the period analysed (Table 6.5).

1 See Section 6.3 for details.

Table 6.4

Malaysia: Manufacturing Exports 1968 – 1977[a]
(M$ Million)

	1968	*1970*	*1973*	*1977*	*Average Annual Rate of Growth 1968 – 1977*
Food, Beverages and Tobacco	91	104	141	290	13.7
Textiles and Footwear	27	31	113	340	32.5
Wood Products	43	90	274	396	28.0
Rubber Products	11	16	21	59	20.5
Chemical and Chemical Products	33	30	54	70	8.7
Non-metallic Mineral Products	10	18	15	37	15.6
Basic Metals	9	18	26	62	23.9
Machinery and Transport Equipment	21	20	70	690	47.4
Petroleum Products	172	159	102	164	–0.1
Other Manufactures[b]	13	36	165	620	53.6
Total Manufactures	430 (10.4)	522 (10.1)	981 (13.3)	2,730 (18.0)	22.8
Other Exports	3,693	4,641	6,391	12,465	14.5
Total Exports	4,123	5,163	7,372	15,195	15.6

Notes: [a] Net exports excluding re-exports.
[b] Including electronics.

Source: Department of Statistics, *Annual Statistics of External Trade* (Kuala Lumpur, various years).

Table 6.5

Malaysia: Gross Imports 1965 – 1977

(M$ Million)

SITC Group	*1965*	*1968*	*1970*	*1973*	*1976*
Food	613.9 (23.5)	765.0 (21.7)	786.7 (18.3)	1,078.2 (18.2)	1,440.6 (14.8)
Beverages & Tobacco	60.7 (2.3)	77.0 (2.2)	92.9 (2.1)	97.7 (1.6)	116.7 (1.2)
Crude Materials Inedible	229.4 (8.8)	283.5 (8.0)	322.1 (7.5)	372.5 (6.3)	537.5 (5.5)
Mineral Fuels, Lubricants etc.	174.2 (6.7)	501.4 (14.2)	517.5 (12.0)	392.9 (6.6)	1,309.8 (13.5)
Animal & Vegetable Oils & Fats	14.8 (0.6)	22.1 (0.6)	23.8 (0.5)	27.2 (0.5)	21.1 (0.2)
Chemicals	208.3 (8.0)	237.9 (6.8)	312.5 (7.3)	525.9 (8.8)	919.3 (9.5)
Manufactured Goods	510.2 (19.6)	610.2 (17.3)	770.2 (18.0)	1,250.6 (21.1)	1,620.0 (16.7)
Machinery & Transport Equipment	580.2 (22.2)	776.2 (22.0)	1,197.3 (27.9)	1,786.6 (30.1)	3,179.9 (32.7)
Miscellaneous Manufactured Articles	165.3 (6.3)	186.2 (5.3)	199.9 (4.7)	333.0 (5.6)	491.9 (5.1)
Other Imports	51.3 (2.0)	64.6 (1.8)	65.5 (1.5)	69.3 (1.2)	76.5 (0.8)
Total	2,608.3	3,524.1	4,288.4	5,933.9	9,713.3

Note: Figures in brackets refer to column percentages.

Source: *Annual Statistics of External Trade, op. cit.*

In 1965, imports totalled M$ 2,608.3 million, and this figure increased to M$ 9,713.3 million by 1976 – an average annual rate of growth of 12.7 per cent. Breaking down gross imports by groups we observe a slight shift in imports away from manufactured goods. In 1965 manufactured goods represented nearly 20 per cent of gross imports. By 1976, its share had dropped to nearly 17 per cent, even though imports of manufactured goods grew at 11 per cent per annum between 1965 and 1976. On the other hand, machinery and transport equipment increased its share from 22.2 per cent to 32.7 per cent over the period.

If we examine Table 6.6 Malaysia's trade flows by ASEAN and non-ASEAN countries, a clear pattern of trade emerges. While absolute exports to and imports from ASEAN countries have grown rapidly – exports grew at 12.3 per cent and imports at 11.1 per cent per annum between 1968 and 1977 – their relative shares in Malaysia's overall exports and imports have been declining. In the case of Malaysia's exports to ASEAN countries, these have declined from 44.6 per cent to 34.9 per cent of total exports between 1968-1977. Similarly, the relative share of total imports originating from ASEAN countries declined from 28.1 per cent in 1968 to 22.1 per cent in 1977. It would thus appear that Malaysia is exporting to and importing from non-ASEAN countries to a larger extent than before. There is however a good reason to believe that trade with ASEAN countries may in fact be overstated. Examining the figures for trade with Singapore, we observe that a sizeable proportion of exports and imports from ASEAN countries, in fact, arise from Singapore. Much of Malaysia's exports to Singapore are in fact re-exports and end up in countries other than ASEAN countries. Similarly, imports from Singapore are not necessarily of ASEAN origin. Thus trade between Malaysia and her ASEAN partners is still limited, but may have considerable potential for expansion. However, this requires further modifications of existing trade policies particularly regarding the rationalization of manufacturing activities so as to encourage complementary trade flows between member nations.

(b) *Composition of Output*

The composition of output in the manufacturing sector also underwent substantial change during the period 1959-73. An important change is the gradual reduction in the dependence of the sector upon locally available raw materials as clearly evidenced by the reduced share of value added originating from off-estate processing (Table 6.7). The share of off-estate processing in value added in manufacturing fell from 30.7 per cent in 1959 to 11.5 per cent in 1973 despite an average annual growth rate of 8.1 per cent in value added over the same period.

There has been a substantial shift in value added towards capital goods – this was the fastest growing major group over the period 1959-1973 with an average annual growth rate of 27.1 per cent in value added. As a result of its

Table 6.6

Malaysia: Commodity Trade by Direction, 1968-1977

(M$ Million)

	ASEAN[b]				*Singapore*				*Non-ASEAN*[a]				*Total*	
	Export	*% Share of Total*	*Import*	*% Share of Total*	*Export*	*Share of ASEAN Trade*	*Import*	*Share of ASEAN Trade*	*Export*		*Import*		*Export*	*Import*
1968	1,837	(44.6)	992	(28.1)	850	46.3	296	29.8	2,286	(55.4)	2,532	(71.9)	4,123	3,524
1972	2,413	(49.7)	1,090	(24.0)	1,131	46.9	365	33.5	2,441	(50.3)	3,453	(76.0)	4,854	4,543
1974	4,647	(45.6)	2,267	(22.9)	2,208	47.5	820	36.2	5,548	(54.4)	7,624	(77.1)	10,195	9,891
1977	5,216	(34.9)	2,563	(22.1)	2,820		1,127		9,743	(65.1)	9,052	(77.9)	14,959	11,615
Average annual growth rate 1968-1977 (%)	12.3		11.1						17.5		15.2		15.4	14.2

Note: [a] Comprises U.S.A.; Western Europe (EEC countries, Spain, Sweden, Switzerland); Eastern Europe (Bulgaria, Czeckoslovakia, Hungary, Poland, Rumania, U.S.S.R., Yugoslavia, East Germany); West Asia (Bahrain, Iran, Iraq, Kuwait, Saudi Arabia, Egypt, United Arab Emirates).

[b] Includes Singapore.

Source: Department of Statistics, *Economic Report 1979/1980*, Ministry of Finance.

Table 6.7

Peninsular Malaysia: Value Added in Manufacturing by Industry

	Average Annual Growth Rates			*Share in Value Added (%)*		
	1959-73	*1963-73*	*1968-73*	*1959*	*1968*	*1973*
Consumer Non-Durables	*16.7*	*16.7*	*17.7*	*31.6*	*41.2*	*35.0*
Foods	11.3	14.0	11.3	18.1	16.1	10.3
Beverages	13.7	16.7	11.0	3.4	4.2	2.6
Tobacco	19.2	16.5	18.0	3.8	6.5	5.6
Textiles	–	38.5	39.8	b	2.2	4.5
Wearing Apparel	–	31.0	39.1	b	0.6	1.3
Footwear	–	11.2	25.0	b	0.2	0.2
Chemicals	34.7	10.9	15.8	0.4[d]	4.3[e]	3.4
Pottery, China & Earthenware	18.3	21.5	41.8	0.2	0.1	0.3
Printing & Publishing	14.7	14.6	16.9	5.7	6.0	4.9
Plastics	–	37.1	39.6	b	1.0	1.9
Consumer Durables	*15.3*	*22.1*	*23.6*	*3.5*	*3.0*	*3.2*
Furniture	13.2	9.2	13.4	1.2	1.2	0.8
Automobiles & Bicycles	16.2	38.6	28.9	2.5[f]	1.8[h]	2.4
Intermediate Goods	*17.1*	*19.1*	*18.0*	*24.9*	*33.5*	*28.8*
Wood & Cork	17.2	20.0	26.6	11.2	10.8	13.1
Paper & Paper Products	–	19.2	23.8	b	0.7	0.8
Leather & Leather Products	–	16.0	25.4	b	0.1	0.1
Rubber & Rubber Products	12.9	13.3	9.6	5.0	5.8	3.5
Chemical (Industrial)	15.1	21.2	19.8	4.6	4.5	4.2
Petroleum & Coal	–	–	5.0	–	4.6	2.2[n]
Non-metallic Mineral Products	17.5	15.9	13.9	4.1	6.9	5.0

Table 6.7 (*continued*)

	Average Annual Growth Rates			*Share in Value Added (%)*		
	1959-73	*1963-73*	*1968-73*	*1959*	*1968*	*1973*
Capital Goods	*27.1*	*25.6*	*34.6*	*5.6*	*12.5*	*20.8*
Basic Metals	45.6	31.5	34.0	0.2[j]	3.5	5.8
Metal Products	15.6	14.1	17.7	2.9	3.3	2.8
Non-electrical Machinery	20.4	19.5	28.2	2.2	2.9	3.7
Electrical Machinery	–	44.7	55.4	b	2.4	8.1
Transport Equipment	15.0	6.5	16.6	0.3	0.4	0.3
Miscellaneous	*3.7*	*–1.7*	*16.8*	*3.6*[l]	*0.9*[m]	*0.8*
Estate Processing	*8.1*	*18.4*	*28.1*	*30.7*	*8.8*	*11.5*
Total	*15.9*	*18.7*	*21.6*	*100.0*	*100.0*	*100.0*

Notes: Refer to Note to Appendix Table VI-2 for explanation of footnotes.

Source: Department of Industries, *Census of Manufacturing Industries*, Peninsular Malaysia (Kuala Lumpur, various issues).

high growth rate, capital goods accounted for 20.8 per cent of total value added in manufacturing in 1973. Within this group all components have been growing in excess of 10 per cent per annum. Basic metals was one of the fastest growing sectors between 1959 and 1973, but it was overshadowed by the huge increase in output and value added that occurred in electrical machinery especially after 1968.

Intermediate goods industries show the next highest growth rate over the entire period but unlike capital goods industries, the rate of growth has remained fairly steady. The share of these industries in total value added has declined somewhat to 28.8 per cent in 1973. While wood, paper and leather industries exhibited a slight acceleration after 1968, other industries in this category experienced a slackening off in the pace of expansion. Wood and cork still dominate this major group contributing slightly more than 45 per cent of value added obtained by all intermediate goods. In fact, apart from wood and cork, almost all other industries in the group have experienced a decline in their share of total value added in the manufacturing sector.

Despite having been fairly well established in 1959, consumer non-durables still exhibited a strong increase. However, even though their share of value added had fallen slightly after 1968 to about 35 per cent in 1973 it still remains the largest of any major category. Since 1968, pottery, china and earthenware have been the fastest growing industries followed closely by textiles, wearing apparel and plastics.

Consumer durables had the lowest growth rate for value added over the whole period 1959 to 1973 among the major categories of industries with the exception of off-estate processing. This was mainly due to a very low rate of growth before 1963. Since 1963 the rate of growth of this group of industries exceeded that of consumer non-durables and intermediate goods. The rate of expansion of motor vehicle assembly was one of the highest between 1963 and 1968 due to the establishment of motor vehicle assembling plants in 1966. After 1968, there has been a slight slackening off in the rate of growth of value added in these industries though the rate of expansion remained high.

Growth rates for most industries were particularly high after 1963. Since then, tariffs were deliberately and consistently used for the first time to protect industries. The establishment and rapid growth of several industries resulted from this. The growth of a few industries slackened off after 1968 largely because of the relative exhaustion of import substitution opportunities such as in food manufacturing, rubber products, chemical and chemical products and non-metallic mineral products. Basic metal products and electrical machinery, for which import substitution possibilities still existed, continued to have high growth rates. Finally, export expansion helped other industries like tobacco, wearing apparel and footwear to overcome the limitation of the domestic market and continued to expand.

According to Hoffman,[1] during the 1960s growth in domestic demand and import substitution were, in aggregate, dominant direct sources of industrial growth, though exports became more significant towards the end of the decade. His results indicate that the high industrial growth of recent years can be linked to an apparent shift in the relative importance of the domestic market, import substitution and export growth in favour of the latter.

(c) *Employment*

Employment creation has been and still is an important objective of the government's industrialisation policy. Table 6.8 shows that there was very slow growth in total employment between 1947 and 1957 – the average annual rate of growth was less than one per cent. After 1957 the situation has altered dramatically. During the period 1957-1970, manufacturing employment grew by 4.9 per cent per annum – an absolute increase of more than 117,000 new jobs in this period. The Government has estimated that by 1975 the total number employed in manufacturing had reached about 363,000, implying an annual growth rate of close to 8 per cent between 1970-1975.[2]

Table 6.9 contains estimates of the number of workers employed in "informal" manufacturing activities. In 1957, the total employed in the "informal" sector was estimated to be more than two-thirds of total employment in manufacturing. By 1970, it was estimated that while there were about 150,000 persons employed in the formal sector, 102,000 persons were employed in the "informal" sector. Since the late sixties nearly the entire growth in employment in manufacturing has taken place in the formal sector. However, although "informal" employment has been relatively stagnant, it is still very significant but the lack of reliable data on this sector means that most of the analysis of the manufacturing sector is limited to the formal sector only.

Table 6.10 presents employment figures by major groups of industry for 1959, 1963, 1968 and 1973. Of particular interest is the period since 1968. Between 1968 and 1973 the capital goods industry was the fastest growing major group in the sector. Over these five years it increased its employment by more than 25 per cent per annum. This fast expansion can be attributed directly to the rapid growth in the electrical machinery (mainly electronics) industry which increased its employment by more than twelve-fold, making it the largest employer in the group in 1973.[3] Employment in basic metals was also growing fast during 1968-1973 but not quite as fast as had been achieved earlier.

Significant changes were also evident within the consumer non-durables sub-sector. Employment in this sub-sector grew at an average rate of nearly 16

1 L. Hoffman, "Import Expansion – Export Expansion and Growth in a Developing Economy: The Case of West Malaysia", *Weltwirtschaftliches Archiv* (No. 3, 1973).

2 Malaysia, *Third Malaysia Plan 1976-1980* (Kuala Lumpur: Government Printer, 1976).

3 See Appendix Table VI-2 for details.

Table 6.8

Peninsular Malaysia: Employment in Major Sectors 1947-1970

('000)

	Number Employed				*Average Annual Rate of Growth*		
	1947	*1957*	*1970*	*1975*[b]	*1947-57*	*1957-70*	*1970-75*[b]
Agriculture and Forestry	1,241 (66.4)	1,245 (59.1)	1,359 (52.5)	1,534 (46.2)	c	0.7	2.5
Manufacturing	126 (6.7)	135 (6.4)	252 (9.7)	363 (11.0)	0.7	4.9	7.6
Other Industries[a]	132 (7.1)	213 (10.1)	233 (9.0)	364 (11.0)	4.9	0.7	9.3
Services	371 (19.8)	515 (24.4)	747 (28.8)	1,056 (31.8)	3.3	2.9	7.2
Total	1,870	2,108	2,591	3,317	1.2	1.6	5.1

Note: Figures in brackets refer to column percentages.

[a] Including mining and quarrying, construction, electricity, water and sanitary services, transportation, storage and communications.

[b] Estimates.

[c] Less than 0.1 per cent.

Source: *Censuses of Population,* 1947, 1957 and 1970. *Third Malaysia Plan* (Kuala Lumpur: Government of Malaysia).

Table 6.9

Peninsular Malaysia: Estimates of Employment in Manufacturing[b] 1957 – 1973
('000)

Year	*(1) As Covered in Population Census*	*(2) As Covered in Industrial Census*	*(3) Total Labour Force as in Population Census*	*Share of Manufacturing In Total Employment (Percentage) (1) ÷ (3)*	*Residual (1) – (2)*
1957	135	44[a]	2108	6.4	91
1959	146[a]	57	n.a.	–	89
1963	174[a]	81	n.a.	–	93
1968	220[a]	120	n.a.	–	100
1970	252	150[a]	2591	9.7	102
1971	n.a.	165[a]	n.a.	–	n.a.
1972	n.a.	190[a]	n.a.	–	n.a.
1973	n.a.	268	n.a.	–	n.a.

Notes: [a] Estimates of full-time workers only.
[b] Includes off-estate processing.
n.a. – not available.

Sources: 1. Statistics Department.
2. Adapted from Table 4, *Malaysia: Second Plan Performance and Third Plan Issues*, World Bank, 1976.

Table 6.10

Peninsular Malaysia: Employment[a] in Manufacturing 1959-73
(Formal Sector)

(000's)

Manufacturing Sectors	*1959*	*1963*	*1968*	*1973*	*Growth Rates*			*Share in Growth 1968-73*
					1959-73	*1963-73*	*1968-73*	
Consumer Non-Durables	21.8	34.5	50.1	104.4	11.8	11.7	15.8	36.5
Consumer Durables	3.3	3.3	6.2	12.5	10.0	14.3	15.2	4.3
Intermediate Goods	18.5	26.8	41.5	74.5	10.5	7.6	12.4	22.2
Capital Goods	5.3	12.2	20.5	64.5	19.5	18.1	25.7	29.5
Miscellaneous	3.9	1.1	1.2	3.4	–0.9	11.8	22.4	1.5
Estate Processing	8.8	9.6	10.8	19.7	5.9	7.5	12.7	6.0
Total	61.6	87.5	130.3	279.0	11.4	12.3	16.5	100.0

Note: [a] Includes both full-time and part-time workers.

Source: See Appendix Table VI-2.

per cent per annum between 1968 and 1973. The leading industries were textiles, wearing apparel, footwear, pottery, china and earthenware, and plastics. Three of these five industries – textiles, wearing apparel and plastics – actually improved upon already impressive rates of growth in the preceding inter-censal period of 1963-1968.

Of the remaining industries in the other main groups, only the manufacture of motor vehicles and bicycles and miscellaneous products produced employment growth rates in excess of the average annual rate of 16.5 per cent for the sector as a whole during 1968-1973. The slowest rate of employment growth, on the other hand, was recorded for the manufacture of rubber and rubber products of about 4 per cent per annum.

In terms of thier share in total manufacturing employment, the consumer non-durables dominated the sector. In 1973, these industries employed 104,401 workers or more than 37 per cent of total employment. The largest employers in this group were: food, textiles, printing and publishing and wearing apparel.

The capital goods industries, because of their rapid expansions, increased their share of total employment almost three-fold. In 1959, this sub-sector accounted for 8.7 per cent of employment; by 1973, its share was 23.1 per cent. The employment share of intermediate goods industries, fell, however, from 31.8 per cent in 1959 to 27 per cent in 1973.

For the industrial sector as a whole there has been a significant shift in employment between major group of industries. This is most evident when we observe that over the period 1968-1973, the shares in employment growth of consumer non-durables, capital goods and intermediate goods were 36.5 per cent, 29.5 per cent and 22.2 per cent, respectively. Consumer durables contributed merely 4 per cent of the increase in total manufacturing employment. Even so between 1968-1973 there were three industries which dominated employment growth in manufacturing, i.e. textiles, wood and cork products and electrical machinery, contributing 40.9 per cent of the increase in employment in the manufacturing sector.[1]

(d) *Size Classes of Industries*

It is important to distinguish between size classes of industries when examining growth in output and employment. Table 6.11 presents data on the distribution of employment and manufacturing firms by employment size groups. An important development is the change in employment shares by size of firms. In 1959, small scale enterprises defined as those employing less than 50 full-time employees accounted for 55.4 per cent of full-time employment in the manufacturing sector. By 1973, the balance was tipped in the opposite direction: large firms accounted for 75 per cent of total manufacturing employment. Between 1968 and 1973, firms employing more than 50 full-time paid

1 See Appendix Table VI-2.

Table 6.11

Peninsular Malaysia: Employment Data by Employment Size Group, 1969-1973

Employment Size Group	*Employment*[a]				*Average Employment per Establishment*				*Share of Employment Growth*
	1969	*1963*	*1968*	*1973*	*1959*	*1963*	*1968*	*1973*	*1968-1973*
1 – 4	4,740 (8.3)	6,557 (8.1)	6,067 (5.0)	7,482 (2.8)	2.2	2.2	2.2	2.2	1.0
5 – 49	27,003 (47.1)	32,935 (40.7)	38,558 (31.9)	59,666 (22.2)	14.6	15.2	16.0	16.6	14.3
50 – 99	9,023 (15.7)	12,855 (15.9)	18,696 (15.5)	34,851 (13.0)	67.8	69.9	68.0	69.3	11.0
100 and above	16,607 (28.9)	28,662 (35.5)	57,486 (47.6)	166,159 (62.0)	210.2	209.2	249.9	299.9	73.7
Total	57,373	81,011	120,807	168,162	11.5	9.1	13.4	24.2	100.0

Note: [a] Paid, full-time employment only.

Source: *Census of Manufacturing Industries, op. cit.*, various issues.

workers contributed nearly 85 per cent of the increase in employment. It is also interesting to note that average employment per firm increased during the period. It is clear that there has been a movement towards the establishment of large scale enterprises. Consequently, much of the employment that has been generated has been in larger firms rather than smaller ones.

The growth rates that we present in Table 6.12 demonstrate more clearly our findings. With the exception of the period between 1959-1963, we observe that the larger the firm, the faster has been the rate of increase in both the number of establishments and number of employees. Between 1968 and 1973, full-time employment in firms employing more than 100 employees grew by 23.6 per cent each year.

(e) *Capital Intensity*

The data in Table 6.13 show that generally smaller firms are less capital-intensive than larger firms. We observe that value added per worker as well as fixed assets per worker increase with the employment size of the firm up to a point. Thus as capital-intensity increases, the average productivity of labour tends to increase as well. However, value added per worker does not rise steadily through all employment size groups. For instance, in 1963 this ratio increased with increases in size of firm from $ 4,000 to $ 6,900 and then fell to $ 6,100 for firms with 500 workers and more. In 1973, value added per worker was highest ($ 10,000) for firms with 200-499 full-time workers. Interestingly, the largest firms in each census year had lower value added and fixed capital per worker indicating that capital intensity was lower compared to firms in the next largest employment size group. Obviously, the firms in the largest employment size groups were utilizing relatively larger quantities of labour, confounding the expectation that larger firms tend to be more capital-intensive.

In Table 6.14 we reproduce estimates of the output elasticity of employment of firms by employment size. We note that when we measure employment elasticities over the period 1968-1973, for all size cases except one, the estimates were higher than those measured between 1959-1973. The exception was for firms with 50-99 workers. It is perhaps striking to note that employment elasticities were highest for the largest-size firms indicating the increasing importance of labour-intensive industries amongst the larger firms.

(f) *Import Substitution and Export Expansion*

The progress of import substitution can be discerned quite clearly from the changes in the value of the output demand ratio which measures the extent to which domestic demand[1] is met by domestic production in each industry

[1] Defined as domestic production plus total imports minus total exports. (See Appendix Table VI-3).

Table 6.12

Peninsular Malaysia: Growth Rates of Number of Establishments And Full-Time Paid Employment By Employment Size Group

(Per Cent)

Employment Size Group (No. Paid Employee)	*1959 – 1963*		*1963 – 1968*		*1968 – 1973*	
	No. of Firms	*Full Time Employment*	*No. of Firms*	*Full Time Employment*	*No. of Firms*	*Full Time Employment*
No. Paid Employee	35.4	0	–0.6	0	–1.2	0
1 – 4	11.1	8.5	–1.3	–1.5	3.6	4.3
5 – 49	4.0	5.1	2.1	3.2	8.3	9.1
50 – 99	8.5	9.3	8.4	7.8	12.8	13.3
100 and above	14.8	14.6	10.9	14.9	19.2	23.6
TOTAL	15.3	9.0	0.4	8.3	4.2	17.3

Source: *Census of Manufacturing Industries, op. cit.*, various issues.

Table 6.13

Peninsular Malaysia: Selected Data on Employment, Investment and Output by Employment Size Group, 1963, 1968, 1973

		Average Value Added per Worker (Thousand Malaysian $)	*Average Value of Fixed Assets per Worker*[a]	*Average Capital/ Output*	*Average Capital/ Value Added*
1963	1 – 19	4.0	n.a.	n.a.	n.a.
	20 – 49	4.1	n.a.	n.a.	n.a.
	50 – 99	5.5	n.a.	n.a.	n.a.
	100 – 199	6.1	n.a.	n.a.	n.a.
	200 – 499	6.9	n.a.	n.a.	n.a.
	500 & over	6.1	n.a.	n.a.	n.a.
	Total	*5.1*	n.a.	n.a.	n.a.
1968	1 – 19	4.5	3.2	0.17	0.70
	20 – 49	5.0	5.1	0.27	1.06
	50 – 99	6.4	5.0	0.24	0.79
	100 – 199	10.2	11.1	0.28	1.08
	200 – 499	8.3	11.4	0.44	1.38
	500 & over	9.4	8.8	0.29	0.94
	Total	*7.1*	*7.3*	*0.29*	*1.03*
1973	1 – 19	5.7	3.9	0.17	0.68
	20 – 49	6.7	6.1	0.23	0.90
	50 – 99	9.4	8.1	0.26	0.87
	100 – 199	9.8	10.0	0.28	1.02
	200 – 499	10.0	12.4	0.39	1.24
	500 & over	8.7	8.0	0.33	0.92
	Total	*8.7*	*8.5*	*0.30*	*0.99*

Note: [a] Book value as at December 31.

n.a. – not available.

Source: *Census of Manufacturing Industries, op. cit.*, various issues.

Table 6.14

Estimated Employment Elasticities by Employment Size of Firms[a]

Employment Size	*Output Elasticity of Employment*	
	1959-1973	*1968-1973*
1 – 19	0.47	0.55
20 – 49	0.48	0.51
50 – 99	0.94	0.49
100 and above	1.00	1.11
Total (all firms)	0.72	0.82

Note: [a] Full-time paid employees only.

Source: Calculated from *Census of Manufacturing Industries, op. cit.*, various issues.

or group of industries. The pattern of import substitution follows that which is common in other less developed countries where the movement has been from finished consumer goods, to intermediate goods and, finally, to capital goods.

Resource-based industries have largely enjoyed comparative advantage in production for domestic demand or export during the early stages of industrialisation. For instance, as early as 1963, local production of tobacco, furniture, rubber and rubber products, and wood and cork products accounted for more than 80 per cent of domestic demand. By 1973, the ratio of domestic production to domestic market had risen in all four industries to well over unity (Table 6.15).

Areas where import substitution have also been successful are food, beverage, wearing apparel, printing and publishing, motor vehicles, bicycles, plastics, leather and leather products, non-metallic mineral products, and electrical machinery. We notice that industries which produce more than 70 per cent of market demand are more highly concentrated among those producing consumer and intermediate goods.

The reason for this pattern is clear. There is an obvious and relatively large domestic market for finished consumer goods already in existence, and the cost disadvantages are normally less than those for either intermediate or capital goods. This is particularly true where the manufacturing process consists primarily of the assembly of imported parts and components. It is clear that by 1973 the first easy period of import substitution was nearly completed with 89.5 per cent of consumer non-durables, 94.8 per cent of consumer durables and 86.5 per cent of intermediate goods were being produced domestically.

Table 6.15

Peninsular Malaysia: Production as a Percentage of Domestic Market

	1963	*1968*	*1973*
Consumer Non-durables	*50.7*	*70.5*	*89.5*
Foods	45.3	69.3	95.6
Beverages	48.9	77.5	104.6
Tobacco	83.7	91.3	101.7
Textiles	11.7	32.7	55.8
Wearing Apparel & made up goods	17.1	54.4	169.5
Footwear	a	a	a
Chemicals	74.5	77.4	73.2
Pottery, China & Earthenware	25.5	31.6	49.5
Printing & Publishing	69.9	82.6	92.3
Plastics	a	a	104.2
Consumer Durables	*21.1*	*47.1*	*94.8*
Furniture	96.0	100.0	106.6
Automobiles	5.9	42.5	98.4
Bicycles	2.8	8.8	52.8
Intermediate Goods	*46.4*	*77.9*	*86.5*
Wood & Cork	96.4	108.5	242.0
Paper & Paper Products	15.9	23.8	31.7
Leather & Leather Products	64.3	81.5	87.2
Rubber & Rubber Products	86.4	105.7	107.5
Chemicals	23.8	48.6	46.1
Petroleum	b	84.1	45.5
Non-metallic Mineral Products	53.4	84.6	86.3
Capital Goods	*22.1*	*34.0*	*47.7*
Basic Metals	22.3	38.9	54.8
Metal Products	40.1	50.3	63.4
Non-electrical Machinery	16.3	22.3	25.9
Electrical Machinery	10.7	34.0	63.5
Transport Equipment	36.8	24.2	13.7
Miscellaneous	*a*	*a*	*a*
TOTAL	*43.8*	*62.4*	*75.3*

Note: 1959 percentages cannot be calculated because it is not possible to separate re-exports from either imports or exports and ratios based on available data are therefore inflated. Furthermore, in some cases, categorizations of production, import and export data are not comparable.

[a] Ratio cannot be calculated because production, import and export data are not comparable.

[b] Ratio cannot be calculated because production has been included in miscellaneous category.

Source: Appendix Table VI-3.

For the manufacturing sector, as a whole the export-output ratio changed little between 1963 to 1968 (see Table 6.16). However, by 1973, the ratio had more than doubled. The intermediate industry group had a higher ratio than the other three product groups in 1973 primarily because of the wood and cork industry which is highly export-oriented. Clearly, manufacturing growth was mainly import-substituting until 1973. However, for the older established consumer goods industries there appears to be a tendency for their export-output ratios to increase as the limits of the domestic market are reached. Examples of such industries are beverages, tobacco and wearing apparel.

Between 1963 and 1968 the export-output ratio fell or remained unchanged for twelve industries. This is indicative of an increasing bias against exporting that was probably fostered by protection which tended to encourage production for the domestic market at the expense of exports during that period. Notable drops in the ratio were evident in the case of textiles, chemicals, electrical machinery and furniture. There appeared to be room for further expansion of these industries if they could reorientate themselves to the export market. In 1973, the situation had changed: seventeen industries had experienced a rise in their export-output ratio. However, the majority of industries exported less than 20 per cent of their respective domestic output. At present, with much of the import-substitution potential utilized, particularly among consumer and intermediate goods, future growth will have to take place through export expansion.

Between 1970 and 1974, the sharp increase in exports of manufactures was accounted basically by four groups of largely labour-intensive industries: electrical machinery, footwear and clothing, textiles and miscellaneous manufacturing.[1] The bulk of the expansion of exports (not documented here) was from free trade zones where multinational corporations predominate. One of the largest components of Malaysia's non-traditional exports was electronic products. Electronics assembly firms were the first to be established in the free trade zones. However, with large imports of component inputs, the net export earnings of the electronic assembly industry are low compared to gross export earnings that have been achieved.

Data for 1973 thus indicate that import-substitution has taken place quite successfully in many areas. While there has been an expansion of exports, it has been limited to a small number of sectors only. Future employment growth will have to rest more heavily on the ability of Malaysia's manufacturing industries to escape the confines of the domestic market and to expand into the export market.

1 Miscellaneous manufacturing includes substantial "assembly-type" industry in scientific and measuring equipment.

Table 6.16

Peninsular Malaysia: Exports as a Percentage of Domestic Production

	1963	*1968*	*1973*
Consumer Non-durables	*13.2*	*11.4*	*17.3*
Foods	16.8	13.4	14.7
Beverages	0.0	6.4	15.4
Tobacco	0.0	0.0	12.4
Textiles	27.8	17.0	21.3
Wearing Apparel & Made Up Goods	13.9	38.3	63.2
Footwear	a	a	a
Chemicals	34.5	21.9	30.0
Pottery, China & Earthenware	7.1	4.0	3.6
Printing & Publishing	2.3	4.0	3.5
Plastics	a	a	11.2
Consumer Durables	*11.2*	*2.5*	*13.3*
Furniture	18.2	5.3	11.8
Automobiles	2.0	1.4	13.7
Bicycles	0.0	0.0	14.0
Intermediate Goods	*7.1*	*12.7*	*35.5*
Wood & Cork	1.2	9.3	59.2
Paper & Paper Products	11.1	14.8	19.7
Leather & Leather Products	11.1	5.7	3.4
Rubber & Rubber Products	17.0	10.8	18.4
Chemicals	14.2	10.5	14.7
Petroleum	b	23.7	16.5
Non-metallic Mineral Products	2.3	8.3	9.5
Capital Goods	*5.6*	*6.6*	*14.4*
Basic Metals	2.8	6.9	6.7
Metal Products	5.3	6.3	16.5
Non-electrical Machinery	3.1	3.9	25.2
Electrical Machinery	22.6	9.5	9.2
Transport Equipment	1.2	4.8	40.8
Miscellaneous	*a*	*a*	*a*
TOTAL	*10.4*	*10.9*	*23.7*

Note: 1959 percentages cannot be calculated because it is not possible to separate re-exports from either imports or exports and ratios based on available data are therefore inflated. Furthermore in some cases, categorizations of production, import and export data are not comparable.

a Ratio cannot be calculated because production and export are not comparable.

b Ratio cannot be calculated because production data has been included in miscellaneous category.

Source: Appendix Table VI-3.

6.3 Industrialisation Policies

(a) *Policies and Incentives*[1]

In the development of policies to diversify the economy, the focus on the manufacturing sector was undisputed from the start. Industrialisation policies have been directed both at creating the pre-conditions for general industrial growth and at influencing the structure of the manufacturing sector by promoting specific industries.

After independence, the government concentrated on efforts to promote the development of infrastructure and to maintain a climate friendly to private enterprise. The private sector was left, virtually free from control, to build up industries. To streamline the industrialisation effort, the government created two independent agencies in 1963: the Federal Industrial Development Authority (FIDA), recently renamed the Malaysian Industrial Development Authority (MIDA); and the Tariff Advisory Board which was subsequently replaced by the Special Action Committee on Tariffs (SACT), which was serviced by a tariff unit operating within FIDA.

Taxes and import duties were kept low and investment incentives, such as accelerated depreciation, were granted. During the sixties the heavy priority on investment in infrastructure was continued, though the emphasis had shifted to agricultural expansion. The granting of tariff protection to new industries (which began in 1964), and the income tax reform of 1967, gave investment incentives to new industries. After the racial riots of 1969, various public corporations were established in an effort to restructure the economy and to break down economic barriers along racial lines. Industrialisation and employment creation have been fostered by a policy that did not encourage trade unionism. As a result strike activity has been minimal, and industrial wages are among the lowest in East Asia. This appears to have played an important role in attracting foreign investment, particularly in labour intensive industries.

The major fiscal incentive was the granting of 'pioneer status' to an investor whose project was approved by the government which made it exempt from company tax (40% flat on profits) for a period of 2 to 5 years depending

1 For details see Lee Hock Lock, *Public Policies and Economic Diversification in West Malaysia, 1957-1970* (Kuala Lumpur: University of Malaya Press, 1978).
Teh Kok-Peng, *Protection, Fiscal Incentives and Industrialisation in West Malaysia since 1957*, Monograph Series on Malaysian Economic Affairs No. 4 (Kuala Lumpur: Faculty of Economics and Administration, University of Malaya, 1977).
Wolfgang Kasper, *Malaysia: A Study in Successful Economic Development* (Washington: American Enterprise Institute for Public Policy Research, 1974).
Chee Peng Lim, *The Role of Small Industry in the Malaysian Economy* (Kuala Lumpur: University of Malaya Press) (forthcoming).
Lo Sum Yee, *The Development Performance of West Malaysia, 1955-1967* (Kuala Lumpur: Heinemann Education Books, 1972).

upon the amount of capital invested. Under certain grounds this period could be extended for one year, on each of the following conditions:

(i) that the firm is established in a "development area",
(ii) that its products are "priority" products, and
(iii) that its output satisfies certain domestic content stipulations.

Thus a firm could earn a maximum of 8 years exempt from tax.

Other fiscal concessions consisted of the Labour Utilisation Relief which was similar to pioneer status except that exemption was based on number of full-time paid employees, being 2 years for firms employing between 51 and 100 workers, 3 years for 101 to 200, 4 years for 201 to 350 and 5 years for above 351 workers. Also the import of machinery, equipment and industrial raw materials required to launch a project were not subject to import duties. Selected industries were provided tariff protection by the Tariff Advisory Board which was established in 1963.

In order to encourage local production of manufactured goods to be export-oriented, some export duties were replaced and some rationalized. To assist exports further, the government offers four main types of incentives, namely, relief from income tax including payroll tax, investment tax credit, accelerated depreciation allowances and export allowances. The Investment Tax Credit incentive is granted to companies not enjoying pioneer status. The amount of tax credit given will not be less than 25 per cent of the total capital expenditure incurred by the project. The credit will be increased by an additional 5 per cent for each of the conditions, set for pioneer firms, that a firm is able to satisfy viz. location in a development area, production of a priority product and domestic content requirements.

As regards provision of physical facilities there are 21 industrial estates in various parts of Malaysia that have been provided with all the necessary facilities like power, water and communications. Suitable areas are cleared by public institutions in co-operation with Malaysian Industrial Estates Limited. The land is normally owned by the States and leased to the industrialist for ninety years. In some of them investors can lease or buy standardized factory units suitable for medium and small-scale operations. In addition to industrial estates, the government has developed 4 Free Trade Zones (FTZ) at Bayan Lepas, Prai, Sungei Way and Ulu Klang specifically for export-oriented industries. Apart from the usual facilities found in industrial estates, industries sited within such FTZs enjoy minimum customs formalities and duty-free imports of raw materials, component parts and machinery required directly in the manufacturing process and exports of the finished or semi-finished articles.

Financial facilities are made available through a well-developed network of commercial banks, merchant banks and other financial institutions. Long-term credit is available from the Malaysian Industrial Development Finance Berhad and the Development Bank of Malaysia.

There was growing criticism of the incentives system in the early seventies and the Economic Planning Unit undertook a fundamental review of fiscal

incentives in preparation for the Third Malaysia Plan.[1] Employing the "capital subsidy equivalent"[2] it was demonstrated that:

(i) the value to the investor of pioneer tax holidays rises with the level of profits;

(ii) the alternative Investment Tax Credit is only more attractive than the tax holiday if the rate of return turns out to be very low in the long run; and

(iii) the alternative Labour Utilization Relief is only more attractive with projects that have very low capital-labour ratios.

The granting of pioneer status is still the incentive which is most frequently granted. In 1977, 24.5 per cent of MIDA approval of manufacturing investment projects obtained pioneer status. The next most important incentive granted was the investment tax credit with a share of almost 15 per cent in approvals. Very few projects were granted the remaining incentives such as labour utilization relief and locational incentives. Moreover, almost 54 per cent of approvals did not receive any incentives (see Table 6.17). It can be observed that the proportion of approvals which received incentives has gradually increased since 1974. There has been a significant change in the pattern of investment approvals which obtained incentives. The proportion of approvals being granted with investment tax credit has substantially increased while the proportion of pioneer status incentives has declined. It should also be noted that there has been a significant decline in yearly approvals, from 525 in 1974 to 400 in 1977. It is difficult to assess whether with the provision of incentives more investment has been realized than would have been the case if no incentives had been provided.

One study by Teh[3] (1977) showed that redundancy of incentives exists in the case of firms which are already receiving substantial protection in the domestic market.

However, in spite of the protection and fiscal incentive policies which provided strong incentive for production in the domestic market, substantial growth in exports was achieved, implying that the profitability of exports were even higher than the artificially raised profitability of producing for the domestic market.

The role of government intervention in promoting exports is much less clear. Earlier we had pointed out that the export boom was dominated by a narrow range of products. In the case of electronics, in particular, the promotion of Free Trade Zones was clearly a key factor for success. Fiscal incentives directed at export growth were introduced as early as 1968 in the Investment Incentives Act. Recent evidence indicates that export-oriented projects were strongly represented in pioneer approvals while most import-substituting

1 EPU, *Tax Incentives for Industry*, 1974.

2 The ratio of net present value of the tax benefits stream to equity.

3 Teh, *op. cit.*

Table 6.17

MIDA Approvals of Manufacturing Enterprises by Incentive 1974, 1976, 1977

	1974		*1976*		*1977*	
INCENTIVE	*No.*	*%*	*No.*	*%*	*No.*	*%*
Pioneer Status	166	31.6	105	24.8	98	24.5
Investment Tax Credit	31	5.9	76	17.9	56	14.0
Labour Utilization Relief	15	2.9	7	1.6	11	2.8
Locational Incentive	–	–	7	1,6	14	3.5
ICA/IBA/ADA [a]	305	58.1	223	52.5	218	54.5
No Tax Incentive	4	0.8	7	1.6	3	0.7
TOTAL	525	100.0	425	100.0	400	100.0

Note: [a] ICA = Increased Capital Allowance.
ADA = Accelerated Depreciation Allowance.
IBA = Increased Building Allowance.

Source: Data obtained from the Malaysian Industrial Development Authority, Kuala Lumpur.

projects received approval without obtaining incentives (Appendix Table VI-5). Purposely pre-selecting recipients of fiscal incentives on the basis of their export orientation, seems to be a promising way to provide an incentive to export.

(b) *The Role of Pioneer Industries*

The encouragement of industries through the award of "pioneer status" ranks as one of the more important incentives that have been established by the government. In 1968, ten years after the introduction of the pioneer incentives, the value added of pioneer establishments amounted to nearly one-third of the total value added of the entire manufacturing sector (see Appendix Table VI-4). This is significant, considering the simultaneous increase in non-pioneer industries over the same time period. In 1973, pioneer industries experienced a further rise in their share of value added from 31.8 per cent to 37.1 per cent (see Appendix Table VI-5). Also while in 1968, pioneer companies accounted for more than 50 per cent of the value added in 6 of the 12 industry groups,

by 1973, the share of pioneer firms exceeded 50 per cent in only four industry groups: textiles, petroleum and coal, basic metals, and electrical machinery.[1]

Pioneer firms increased their share of total manufacturing employment from 20.5 per cent in 1968 to 33.2 per cent in 1973. During 1968, pioneer firms employed more than 50 per cent of the workers engaged in textiles, petroleum and coal, basic metals and electrical machinery. By 1973, pioneer establishments had become the main employers in 5 industry groups; textiles, chemicals, petroleum and coal, basic metals, and electrical machinery.

The contribution of pioneer establishments towards the growth in value added and employment in the manufacturing sector is particularly significant in view of the fact that in 1973, pioneer incentives were only given to slightly more than 3 per cent of the total number of firms in the sector.

In 1968 and 1973, pioneer firms, on the average, had higher output per worker values for the smaller employment size groups and lower output per worker values for the two largest employment size groups. In addition, value added per worker for pioneer firms were also higher for the smaller employment size groups and lower for the largest employment size group. This suggests that while smaller sized pioneer firms tended to be more capital-intensive than their non-pioneer counterparts, the larger pioneer firms were on the average, more labour-intensive than firms without pioneer incentives.

This trend has meant that newer pioneer establishments tend to employ more workers per firm. In 1968, only about 23 per cent of all firms receiving pioneer incentives employed more than 200 workers each. By 1973, more than 36 per cent of pioneer firms were employing more than 200 workers each.

It has been argued by others that the government's investment incentives have led to creation of capital-intensive industries particularly among those receiving pioneer incentives. However, the large increase in employment shares experienced by new pioneer firms suggests otherwise. We attempt here an assessment of the capital-intensity of pioneer industries and attempt to see whether they tend to utilize skilled or unskilled labour.

In examing capital intensity, taking into account both physical and human capital, we apply the method developed by Lary[2] when measuring factor intensities of groups of industries in the United States. Lary's measure is based on the principle that the value added per employee of an industry is a reflection of the flow of services from both human and physical capital employed in the production process. The "wages and salaries" component of value added represents the contribution of labour, while the non-wage value added represents that of physical capital. Using data from Census of Manufacturing Industries these two components of value added were plotted for 1968 and 1973, respectively, with wage value added per worker on the vertical axis and non-wage

1 See Appendix Table VI-4 and Table VI-5.

2 H.B. Lary, *Imports of Manufactures from Less Developed Countries* (New York: National Bureau of Economic Research, 1968).

value added per worker on the horizontal axis (see Appendix Figures 1 and 2). The average value added per worker and non-wage value added per worker for the manufacturing sector are drawn in the diagrams and these divide each chart into 4 sectors – the lower left sector of the charts represents the zone with intensive use of relatively unskilled labour and low use of physical capital per worker.

On this basis we can classify the industries according to usage of capital and skilled labour for 1968 as follows:

	Capital Intensive		*Labour Intensive*	
	Pioneer	*Non-pioneer*	*Pioneer*	*Non-pioneer*
Skill Intensive	food	beverages	non-metallic mineral prod.	wood & cork prod.
	beverages	chemicals	basic metals	
	chemicals	non-metallic minerals	metal prod.	
	petroleum		non-electrical machinery	
	electrical machinery			
Skill Extensive		basic metals	textiles	food
		electrical machinery	wood & cork prod.	textiles
				petroleum
				mineral
				non-electrical machinery

It is further interesting to note that in terms of their capital intensity, pioneer firms in industries were generally relatively more intensive in the use of physical as well as human capital as compared to non-pioneer establishments. Only non-pioneer firms in two industry groups, non-metallic minerals and basic metals, were relatively more capital-intensive. Though they were less skill intensive than the corresponding pioneer industries, there was also one industry (wood & cork products) in which pioneer firms were less skill intensive than non-pioneer firms.

The analysis suggests that the pioneer incentive, up to 1968, had generally encouraged relatively more capital-intensive firms. This may have arisen because the tax relief period granted was linked to the size of capital investments. We should acknowledge that there is also the possibility that the choice of techniques for new entrants (that is, between capital- and labour-intensive

methods) could have been limited and thus there was a generally tendency towards physical capital-intensity. Pioneer companies, nevertheless, up to 1968 tended to utilize relatively more skilled labour when compared to firms without the incentive. This trend, if it had persisted, would have been counter-productive especially since the need to create greater employment opportunities for unskilled labour had become increasingly urgent over the years.

The classification of sectors for 1973 was as follows:

	Capital Intensive		*Labour Intensive*	
	Pioneer	*Non-pioneer*	*Pioneer*	*Non-pioneer*
Skill Intensive	food	chemicals	metal prod.	beverages
	chemicals	petroleum		besic metal prod.
	non-metallic mineral prod.	non-metallic mineral prod..		wood & cork prod.
	basic metals			non-electrical machinery
				electrical machinery
Skill Extensive	non-electrical Machinery		textiles	food
			wood & Cork prod.	textiles
				metal prod.
			electrical machinery	

We observe that there have been significant changes in the position of industries. Pioneer firms in the non-metallic mineral products and basic metals industries have become both capital and skill intensive. In 1968 they were relatively skill and labour intensive. Among non-pioneer industries the petroleum and coal products industries became capital and skill intensive from being labour extensive and skill extensive in 1968. The pioneer firms in the non-electrical machinery industry changed their position from relative skill intensive and labour intensive in 1968 to capital intensive and skill extensive in 1973, remaining the only industry in this category. In the category labour intensive and skill intensive were added the non-pioneer industries beverages, from being capital and skill intensive, basic metals, and electrical machinery from being capital intensive and skill extensive and non-electrical machinery from being labour intensive and skill extensive. The most dramatic change can be observed for pioneer firms in the electrical machinery industry which changed from being capital and skill intensive to labour intensive and skill extensive.

Major changes took place in the relative position between pioneer and non-pioneer firms in the same industry. In 1973 pioneer firms in two industries were less capital intensive than their non-pioneer counterparts, i.e. in wood and

cork products and chemical industries. Pioneer industries in three industries became less skill intensive than their non-pioneer counterparts, i.e., non-metallic mineral products, non-electrical machinery and electrical machinery industries, though they remained more capital intensive.

The results indicate that while pioneer firms in general continue to be more capital intensive than non-pioneer establishments, overall there has been a clear and favourable shift towards greater labour intensity by pioneer firms. We note that pioneer firms in three out of ten industries experienced a fall in their value added-labour ratio between 1968 and 1973. In contrast, non-pioneer firms in all industries recorded an increase in their value added-labour ratio over the same period. Overall, the wage value-added labour ratio for all pioneer firms fell from $2,710 to $2,170 between 1968 and 1973, while that for non-pioneer firms rose marginally from $2,130 to $2,190 over the same period.[1] This suggests that pioneer firms are tending to employ relatively more unskilled labour and have become increasingly more labour intensive since 1968. Accompanying this trend, has been a decline in the non-wage value added-labour ratio among all pioneer firms from $8,800 to $7,540 between 1968 and 1973. Non-pioneer firms, in general, have increased their non-wage value added-labour ratio as well as their total value added-labour ratio, reflecting to some extent the impact of new technology and general modernization which have led to increased productivity among workers in non-pioneer firms.

(c) *Protection*

Tariff protection in Malaysia is granted on an ad hoc "made-to-measure" basis, which simply means that each application for tariff protection is examined on its own merits. Up to 1963, the tariff was seen primarily as a revenue raising instrument. Between 1963 and 1969, the period coinciding with the existence and operation of the Tariff Advisory Board, the tariff was seen also as a protective instrument. Finally, after the establishment of the Capital Investment Committee in 1969, the tariff came to be regarded more as a promotional instrument.[2]

Since the early 1960's protection has increased steadily although in recent years the rate of increase has diminished.[3] As might be expected, there is some correspondence between the rates of growth of industries and of tariff protection. Table 6.18 presents estimates of effective rates of protection for 1962, 1966, 1969 and 1972 taken from Edwards (1975). The data confirm the

1 See Appendix Table VI-6 and Table VI-7.

2 See Teh (1977) *op. cit.*, for further discussion of the development of Malaysian tariff policy.

3 See C.B. Edwards, "Protection, Profits and Policy – An Analysis of Industrialization in Malaysia", Ph.D. dissertation submitted to University of East Anglia, 1975 (unpublished). Compared with other developing countries in Asia the level of tariff protection in Malaysia is relatively low.

Table 6.18

Peninsular Malaysia: Estimates of Effective Protection and Share of Imports in Domestic Market

	Effective Protection[a] (Per cent)				*Imports as Percentage of Domestic Market*	
	1962 (1)	*1966 (2)*	*1969 (3)*	*1972 (4)*	*1963*	*1973*
Rubber processing off estates	*–25*	*–15*	*–20*	*–10*	–	–
Coconut processing off estates	*200*	*NVA*	*NVA*	*NVA*	–	–
Dairy products	–5	80	30	15		
Pineapple canning	–5	–5	20	15		
Other grain milling	0	80	80	55		
Sugar refining	0	185	185	185		
Edible vegetable oils/fats	65	80	100	300		
Food processing	*5*	*55*	*65*	*80*	*56.0*	*25.9*
Breweries	15	80	75	25		
Soft drinks	15	5	5	0		
Beverages	*15*	*40*	*40*	*15*	*51.3*	*27.6*
Tobacco products	*60*	*110*	*125*	*115*	*16.3*	*11.0*
Textiles	*55*	*110*	*95*	*95*	*91.6*	*56.1*
Clothing	*25*	*40*	*400*	*400*	*85.3*	*37.6*
Sawmills	10	45	50	85		
Plywood mills	10	20	15	30		
Sawn and plywood	*10*	*40*	*55*	*70*	*4.8*	*1.3*
Furniture	*50*	*50*	*40*	*230*	*21.5*	*6.0*
Paper products	*40*	*95*	*140*	*95*	*86.0*	*74.6*
Rubber products[b]	*90*	*170*	*140*	*170*	*28.4*	*12.3*
Industrial chemicals	15	90	160	180		
Fertilizers	20	20	300	250		
Paints	5	15	0	nil		
Soaps	20	10	10	10		
Perfumes, etc.	30	45	55	65		
Chemical products	*20*	*20*	*50*	*50*	*79.8*	*63.1*
Petroleum products	*0*	*0*	*0*	*0*	*33.4[g]*	*62.0*
Bricks, etc.	0	0	–5	5		
Cement	15	35	30	30		
Cement & concrete products	20	30	40	20		

Table 6.18 (*continued*)

	Effective Protection[a] *(Per cent)*				*Imports as Percentage of Domestic Market*	
	1962 (1)	*1966 (2)*	*1969 (3)*	*1972 (4)*	*1963*	*1973*
NMMP (Cement, etc.)	*10*	*25*	*25*	*25*	*47.8*	*21.9*
Primary Iron/steel	5	5	55	65		
Other I/S basic shapes	−10	40	285	150		
Non-ferrous metal products	45	45	170	170		
Basic metals	*−10*	*40*	*130*	*105*	*78.3*	*59.2*
Prefabricated structural shapes	15	20	35	55		
Arch metal products	5	55	0	0		
Wire & Wire products	55	115	35	45		
Tin cans	45	45	65	60		
Brass, etc. products	−15	30	25	25		
Metal products	*15*	*40*	*30*	*35*	*62.2*	*47.1*
Batteries	40	130	130	130		
(Other) electrical appliances	30	210	1600	1600		
Elect. machinery/goods	*35*	*155*	*410*	*440*	*91.8*	*42.3*
Assembly of motor vehicles			125	125		
Assembly of cycles			245	210		
Transport equipment			*135*	*140*	*63.6*	*91.9*
Plastic products	*15*	*65*	*265*	*415*	–	–
Total: including off-estate	*15*[c]	*45*[d]	*45*[e]	*55*[f]	–	–
Total: excluding off-estate	*25*[c]	*50*[d]	*65*[e]	*70*[f]	*62.7*	*41.0*

Note: NVA: Negative world value added.

a Calculated using the Halanna formulation.

b Excluding retreading.

c Using 1963 value added weights.

d Using 1967 value added weights.

e Using 1969 value added weights.

f Using 1970 value added weights.

g Refers to 1968.

Source: Tables 10, 11 and 26 of Edwards, *op. cit.*

growth in levels of effective protection given to manufacturing industry since the early 1960's. The time series data also indicate that a positive relationship does exist between the level of effective protection by industry and the degree of import substitution achieved. In Table 6.18 we have attempted to compare changes in the share of imports in the domestic market to changes in the level of effective protection. While the coverage of the two sets of data are not completely compatible, the exercise however allows us a crude measure of the relationship between protection and import dependence. We observe that import shares have fallen in all major industrial groups except petroleum products and transport equipment over the period 1968 to 1973. On the other hand, the estimated effective protective levels, between 1962 and 1972, have risen for all industries except beverages. Thus, even though this comparison is rather casual, it suggests that the output of domestic firms have successfully supplanted imports in most cases.

While there are no recent data on effective protection, it is possible to gauge the direction in which protection has progressed in recent years. Between 1973 and 1976, nominal tariffs on a wide range of final manufactured goods have been increased. During the same period import duties on basic metals and certain intermediate goods have been reduced or abolished.[1] The pattern of nominal tariff changes suggest that, in general, levels of effective protection are likely to have increased further since they were last measured in 1972.

Undoubtedly, the existing high effective protection has also fostered the growth of some inefficient industries principal examples of which are textiles for the domestic market, paper boxes, fertilizers and assembly of motor vehicles and motorcycles. Such industries are often inefficient by virtue of an inability to capture economies of scale. Another effect of the tariff setting system has been to discourage cost consciousness in the entrepreneur. Further, since a firm seeking tariff protection is required to be able to fulfill a given proportion of the domestic market for its product, it is encouraged to produce on a larger, rather than small scale. This might be beneficial when there are increasing returns to scale. But in general, these policies, together with direct controls on entry tend to discourage small and medium-scale industries.

The manufacturing sector as we have seen tends also to produce final stage, rather than intermediate, products. The structure of protection, it would appear, has prevented a "deepening" of the pattern of industrialisation. The level of effective protection escalates with the stage of production, particularly as a result of the widespread practice of allowing firms duty-exemptions on imported inputs. High levels of protection would appear to discourage exports of manufactured goods. However, in view of substantial growth in exports in recent years, this has not happened in Malaysia. This may be because protection could enable some firms to cover fixed costs in the domestic market, thus allowing them to export on the basis of variable costs.

1 The major tariff changes up to 1976 are shown in Appendix Table VI-8.

Nevertheless, it can be observed that industries with higher effective rates of protection tend to export a smaller proportion of their output.[1] This means that industries in receipt of tariff protection are generally less export-oriented.

6.4 The Small Industry Sector

The term "small industry" used here refers to that group of establishments which employs less than 50 paid full-time workers each and whose activities can be classified as manufacturing activities by the International Standard Industrial Classification.[2] The selection of an upper cut-off point at 50 paid full-time workers is justified on the grounds that by the present standard of the Malaysian economy, any manufacturing establishment which employs 50 or more workers is generally regarded as large.

The material on which this study is based draws heavily from secondary data and published material. Unfortunately, however, very few studies have been done on small industry in Malaysia.[3] This study relies heavily on survey data collected in 1973 for two studies by Chee. In addition data from other sources are used, particularly those from the Department of Statistics and agencies concerned with small industry promotion. We also rely heavily on data collected by the Census of Manufacturing Industries, Peninsular Malaysia (hereinafter referred to as the Census).

According to the 1973 Census, the small industry sector accounted for 90.4 per cent of all manufacturing establishments in Malaysia (Table 6.19). However, in terms of paid full-time employment, this sector employed only 25 per cent of the total number of paid employees in manufacturing in 1973. In addition, small industry provided 78.1 per cent of total part-time employment. Finally, small industry made 22.3 per cent of the gross sales in 1973 and contributed 18.9 per cent of the net value of manufacturing output.

1 Compare Table 6.16 and 6.18.

2 United Nations (Statistical Office), *International Standard Industrial Classification of All Economic Activities* (New York, 1958).

3 They are:
J. Stepanek, "Measures for the Development of Small-scale Industries in the Federation of Malaya" (Kuala Lumpur: 1960). Mimeo.
L. Munjal, "Study of the Small-scale Industries in Malaysia", (Kuala Lumpur: Federal Industrial Development Authority, 1969). Mimeo.
Lang Wong and F. Schippers, "Small-scale Industries – Joint Report on Mission to Malaysia" (Kuala Lumpur: Malaysian Industrial Development Finance Limited, 1970). Mimeo.
Chee Peng Lim, "The Role of Small Industry in Malaysia", Ph.D. thesis submitted to the University of Malaya, 1975 (to be published by the University of Malaya Press).
Gerald T. O'Mara, "An Econometric Analysis of Small-scale Industry in Malaysia", (Washington, D.C.: World Bank, May, 1975). Mimeo.
Chee Peng Lim, M.C. Puthuccary, and Donald Lee, "A Study of Small Entrepreneurs and Entrepreneurial Programmes in Malaysia", Faculty of Economics and Administration, University of Malaya, Kuala Lumpur, 1978. Mimeo. (to be published by the University of Malaya Press).

Table 6.19

Principal Statistics of Manufacturing Establishments in Peninsular Malaysia by Paid Full-Time Employment Size Group, 1973

Paid Full-Time Employment	*Number of Establishment*	*% of Total*	*Net Value ($ '000)*	*% of Total*	*No. of Paid Employees at 31st Dec.*				*Total Employment*	*% of Total*	*Gross Sales ($ '000)*	*% of Total*
					Full-time	*% of Total*	*Part-time*	*% of Total*				
No Paid Full-time Employment	3,148		14,434		–		2,582		2,582		55,669	
1 – 4	3,270		41,033		7,488		2,021		9,507		158,365	
5 – 9	1,352		53,307		8,920		905		9,825		200,532	
10 – 19	1,079		84,729		14,907		1,157		15,964		343,324	
20 – 29	565		88,198		13,663		988		14,651		367,919	
30 – 49	590		154,403		22,302		766		23,068		583,054	
Subtotal 0-49	10,004	90.4	436,102	18.9	67,180	25.0	8,419	78.1	75,597	27.1	1,709,133	22.3
50 – 99	503		326,044		34,851		485		35,336		1,084,065	
100 – 199	288		381,951		38,809		1,287		40,096		1,385,777	
200 – 499	190		559,944		57,660		191		57,851		1,815,478	
500 and over	76		608,066		69,690		391		70,081		1,670,719	
Subtotal 50 & over	1,057	9.6	1,876,005	81.1	201,010	75.0	2,354	21.9	203,364	72.9	5,956,039	77.7
Total for All Groups	11,061	100.0	2,312,107	100.0	268,188	100.0	10,773	100.0	278,961	100.0	7,665,172	100.0

Source: Calculated from data in Department of Statistics, *Census of Manufacturing Industries*, Peninsular Malaysia, 1973 (Kuala Lumpur, Malaysia).

(a) *Capital Intensity and Productivity*

In discussing capital intensity and productivity (of both capital and labour) there are serious problems of data and methodology. Most of the data used in this study are based on Chee's survey. The more serious problem is in regards to the measurement of capital in the calculation of capital-labour and capital-output ratios.[1] The Census data uses book value of assets and which without correcting for depreciation (with provisions for accelerated depreciation allowance) and for changes in cost of capital (a problem especially severe during the inflationary period of the seventies) becomes extremely difficult to interpret. There are similar problems in Chee's survey as regards to the valuation of fixed assets which are also book value of assets. Similarly in regards to labour, all workers are usually lumped together without taking into account the composition of labour according to skill category.

Thus we will be the first to admit that the data presented below must be interpreted with considerable caution and not considered by any means as conclusive as regards support for propositions regarding capital intensity or productivity of capital or labour being higher or lower in small establishments compared with large ones. However, taken as a whole these measures of performance may be interpreted as very rough indicators of relative capital intensity and productivity keeping in mind the fact that there are no alternative available data.

In Table 6.20 we have given selected ratios of manufacturing establishments by employment size group for 1973 based on Chee's survey and Census data for the same year. The table shows that according to Chee's survey fixed capital per worker generally increase with employment size although the trend is not so obvious with total capital.[2] This reflects the use of relatively more working capital by small scale industries. Still, the total capital per worker for all small establishments, on the average, is about 14 per cent lower than that for large establishments. Fixed capital per worker for all small establishments, on the average, is about 20 per cent lower than that for large establishments. Data calculated from the *1973 Census* suggests that fixed capital per worker for all small establishments, is, on the average, nearly 50 per cent lower than that for large establishments. There is one possible explanation for the difference. Value of fixed assets in Census data only includes owned fixed assets. Fixed assets used

1 On the use of capital-labour ratio see John W. Kendrick, "Productivity Trends: Capital and Labour", *Review of Economics and Statistics*, Vol. 38 (August 1956), pp. 248-257; Joan Robinson, *The Accumulation of Capital* (London: MacMillan, 1956). Some of the difficulties in defining the numerator and denominator of this quotient are discussed in Netherlands Economic Institute, *Capital-Labour Ratios of Certain Industries in Some Countries* (Rotterdam, 1955). An alternative measure of capital-intensity is the value added per employee. See H.B. Lary, *Imports of Labour-Intensive Manufactures from Less Developed Countries* (New York: National Bureau of Economic Research, 1968).

2 The value of fixed assets in this study generally refers to book value unless otherwise specified.

Table 6.20

Selected Ratios of Manufacturing Establishments in Peninsular Malaysia by Employment Size Group, 1973

Paid Full-time Employment Size Group	*Fixed Capital per Worker*[a] *(KF/L) ($000's)*	*Total Capital per Worker*[a] *(K/L) ($000's)*	*Fixed Capital per Worker*[b] *(KF/L) ($000's)*	*Total Capital/ Value Added Ratio*[a] *(V/K)*	*Fixed Capital/ Value Added Ratio*[b] *(V/KF)*	*Value Added per Worker (V/L)*[a] *($000's)*	*Rate of Return on Total Capital*[a] *(P/K)*
0 – 4	5.4	8.5	3.2	0.28	1.35	2.5	17.1
5 – 9	5.8	8.5	3.3	0.41	1.64	3.5	21.7
10 – 19	5.9	10.6	3.7	0.39	1.47	4.1	19.8
20 – 29	6.0	13.3	4.4	0.39	1.37	5.1	21.3
30 – 49	6.2	9.4	6.7	0.44	1.00	4.2	23.6
50 and over	7.3	11.6	9.6	0.65	0.97	7.5	41.1
Total/Average	6.8	10.9	8.2	1.81	0.99	6.1	33.7

Source: [a] Chee, 1975, *op. cit.*, 467.

[b] Calculated from data in *Census of Manufacturing Industries 1973, op. cit.*

in production but which are rented are excluded. Since a large proportion of fixed assets used in small industry production are rented, particularly the buildings,[1] the exclusion of this item understimates the value of fixed assets used in small industry production. However, the data does show that capital intensity rises with size of establishments.[2] In other words, the employment potential of a small establishment is greater than that of a large establishment for a given amount of capital. This applies not only to the direct but also the indirect employment potential. Small industry has a greater indirect domestic employment effect, partly because of the propensity of large firms to import both capital goods and raw materials. Small firms generally require a much lower proportion of imports than large firms.

There may be several reasons why small industry tends to be labour-intensive and large-scale units tend to be capital-intensive. Small firms are confronted with factor prices which are much closer to scarcity levels than those facing large firms. Wages are lower while capital costs are higher. Data from the 1973 Census showed the workers in small industry receive, on an average, wages which are nearly a third lower than their counterparts in large industry.[3]

The capital-value added ratio may give an indication of the efficiency of capital input in a sector as well as a measure of investment required for producing a given output. In view of the rather high level of unemployment in Malaysia at the moment [4] the average productivity of capital may be relevant as an important indicator of static efficiency from the social vantage point. At the aggregative level, the capital-value added ratio has often been used as an indicator of the economy's ability to "spread" its capital stock effectively in terms of yielding a maximum output. Table 6.20 shows that the smallest establishments have the least favourable (lowest) average productivity of capital for all employment sizes. The largest establishments have the most favourable (highest) average productivity. The average productivity of capital seems to increase with the size of the establishment.

1 Chee, *op. cit.*, Chapter IV.

2 Studies in a number of other countries also show that capital-labour ratio tends to be positively correlated with size. For the Philippines, Columbia, Kenya, India, Pakistan and other countries, see ILO, *Sharing in Development* (Geneva, 1973); R.A. Berry, "The Relevance and Prospects of Small Scale Industry in Columbia", Economic Growth Centre, Discussion Paper No. 142 (Connecticut, 1972); P.N. Dhar and H.F. Lydall, *The Role of Small Enterprises in Indian Economic Development* (New Delhi: Asia Publishing House, 1961); M.C. Shetty, *Small-scale and Household Industries in a Developing Economy* (Bombay: Asia Publishing House, 1963); ILO, *Employment Income and Equality: A Strategy for Increasing Productive Employment in Kenya* (Geneva, 1972); Kathleen Ann DiTullia, "The Role of Small Industries in the Political Economy of Bangladesh", unpublished Ph.D. dissertation, Political Science Department, Syracuse University, 1972.

3 See Appendix Table VI-9.

4 The level of unemployment in Malaysia in 1976 was about 7 per cent. See Malaysia, Treasury, *Economic Report 1976-1977* (Kuala Lumpur: Government Printer, 1976), p. 14. In addition there is considerable under-employment.

Data calculated from the *1973 Census* however, do not show a clear trend. Data from the *1968 Census* suggest that average productivity of capital seems to decrease with size of establishment.[1] The difference between the Census and Chee's data may again be explained by the exclusion of rental assets in the Census data. From the above discussion it would appear that small establishments tie up a relatively large amount of fixed capital. They may therefore be rather inefficient users of capital.

The value added per worker is meant to indicate the productivity of labour input in a particular scale of establishment. Table 6.20 shows the obvious tendency of productivity of labour to increase with the size of establishment. The average value added per worker for small establishments is about 48 per cent lower than that in large establishments, but also rises with size of establishment even among small establishments. The low value added per worker may be explained by a number of factors:

(i) The relatively backward forms of production used by small establishments, which are often based on traditional methods. In many cases as we have already noted they have to rely on used and outmoded machinery and use less capital per worker;

(ii) Differences in the composition of the labour force. The small establishments use more part-time labour and less skilled labour;

(iii) Differences in plant utilisation rate with the larger establishments having a higher plant utilisation rate as we have observed earlier.

(iv) Other factors such as economies of scale and organisation of production.

Since output per unit of capital and average labour productivity are possibly an increasing function of establishment size it would appear that total factor productivity is higher in the larger establishments than in the smaller establishments.

As a measure of profitability the average rate of return on total capital by size of establishment have been calculated (see Table 6.20).[2] The average rates of return on total capital for all establishments in the sample is 33.7 per cent. This high rate of return is partly explained by the fact that gross profits in this analysis include interest on the owner's capital and the remuneration for his labour, besides pure profits. (In many establishments in Chee's survey, the bulk of capital has been invested by the owner. It shows that owners provide 74.5 per cent of total initial capital). Furthermore, most of the capital for expansion and operational requirements also come from the owners themselves. In addition, in small establishments the owners and their families provide nearly 20 per cent of the labour force.[3] Thus a large element of wage is included in gross profits.

1 Chee, *op. cit.*, p. 404.

2 To calculate the rate of return gross profits were related to the book value of owned assets and/or capitalised value of rented assets.

3 Chee, *op. cit.*, Chapter III.

Finally the rates of return may be higher because of inflation. The book values of assets are based on prices prevailing in earlier years when the general price level was much lower. Nominal profits are also larger to the extent that they include an element of stock appreciation.

The average rate of return on total capital for all small establishments in the sample is 21.6 per cent and is lower than that for large establishments. In view of what we have said previously, the rate is probably overestimated. It is not easy to arrive at the "true" rate but we estimate that it is probably around 15 per cent for small establishments. This may appear somewhat low but is still much higher than the interest rate to be earned from fixed deposit. More important, private profitability underestimates the social desirability of investment in small industry. Subject to the reservations about the use of the above ratios as measures of efficiency the data presented seem to suggest that very small establishments employing less than 5 workers are least efficient. Establishments employing between 5 to 49 workers appear to be slightly less efficient than those employing 50 and more workers. In adition large scale operations may also be able to capture significant economies of scale.[1] However, it should be remembered that small industry tends to use a greater proportion of unskilled labour and domestic raw materials.[2] Both of these resources are relatively abundant. In addition, the capital used comes mainly from the personal hoardings of small entrepreneurs and those of their relatives and friends. Utilisation of such idle capital by small enterprises enables capital from organised sources (e.g. bank loans) to be concentrated in the large-scale sector where it helps to accelerate technological progress and industrial growth. Therefore, the lower productivities of capital and labour in the small size group are not sufficient reason for discouraging small industry.

(b) *Industry Ranking*

The criteria that were used to rank establishments by size of employment might also be used in a similar way to rank different industries to select those for promotion. The rate of return on fixed capital might be a good criterion to establish preferences for investment. However, maximum profit might not necessarily coincide with other social objectives such as employment creation. Furthermore high profits might simply reflect very high effective rates of protection, the presence of monopoly elements or other such factors. Thus, criteria other than return on assets might also be necessary to determine a suitable rating of industry. Criteria were selected on the assumptions that a high level of employment was socially desirable; that preferred industries should have good growth potential; that such industries should make the best possible use of capital and labour respectively; and that fixed capital per worker should be minimised. In view of this, the following four additional criteria are selected:

1 This has been confirmed by O'Mara, *op. cit.*

2 Chee, *op. cit.*, Chapters III and V.

(i) Growth index incorporating a ratio of net value added by industry between 1968 and 1973;
(ii) Average productivity of fixed capital or the output-capital ratio;
(iii) The average productivity of labour or net value added per worker; and
(iv) Fixed capital per worker.

We are not claiming that the above criteria will enable us to arrive at a precise rating of industries. The criteria assume that many other factors are the same for each industry which may not necessarily be the case. In addition, inter-relationships may exist between the performance criteria selected. For instance the average productivity of fixed capital may be related to the amount of fixed capital per worker. Despite these weaknesses the above criteria are used for want of something better to provide a rough guide in the order of preference for investment in the selected industries.[1]

Table 6.21 shows the above efficiency measures by industry rearranged by order of preference according to each measure. The industries are then ranked according to their positions in the quartiles of the various columns and the result of this exercise appears in Table 6.22. It will be seen that not a single industry appears in the top quartile of the 5 columns. Eight industries, namely tin cans, leather, sawmills, iron foundries, industrial machinery and parts, bakeries, motor vehicle bodies and clothing fall within the top 2 quartiles of the 5 columns. These are obviously the preferred industries. The preferred industries appear to share certain characteristics:

(i) they do not require a high level of technological expertise or capital;
(ii) they process domestically produced raw materials and
(iii) they produce products which serve a limited area and are generally made to order.

There is wide scope for developing the tin cans industry in future if assistance can be obtained to establish a tin plate industry. At the moment however, the scale of operation does not justify the establishment of a tin plate mill. Present development should focus on the industrial machinery and parts industry. This industry has important links with the Malaysian export sector. The rubber, tin, palm oil as well as domestic manufacturing industries depend on the industrial machinery and parts industry to supply them with pumps, rubber machinery, estate machinery as well as gears, engine parts and bearings.[2] This industry helps to save foreign exchange by replacing costly imported machinery with locally produced items. It also produces machinery better suited to local conditions. Furthermore, the industry has prolonged the life of imported machinery, motor vehicles and equipment by supplying parts no longer in

1 It would have been desirable to extend the performance criteria to all manufacturing industries but the lack of data from the Census restricted the choice to industries in Chee's sample.

2 John T. Thoburn, *Primary Commodity Exports and Economic Development* (London: J. Wiley & Sons, 1977) p. 297.

Table 6.21

Order of Preference for Selected Efficiency Measures by Industry

Rate of Return on Fixed Capital		*Average Productivity of Fixed Capital*		*Fixed Capital Per Worker ($)*		*Value Added Per Worker ($)*		*Growth Index*	
Coconut Oil Mills	0.971	Coconut Oil Mills	1.2	Batik-making	1,378.4	Tin Cans	10,878.3	Iron Foundries	7.5
Tin Cans	0.746	Leather	1.2	Clothing	3,092.4	Retreading	8,630.8	Wire	7.1
Wire	0.722	Wire	1.2	Iron foundries	3,492.4	Coconut Oil Mills	8,424.0	Clothing	6.1
Clothing	0.655	Batik-making	1.2	Furniture	4,169.4	Sawmills	5,343.1	Plastic	5.3
Retreading	0.628	Clothing	1.1	Bakeries	4,558.2	Wire	5,011.2		
Leather	0.605	Sawmills	1.1	Medicine	4,595.5	Motor Veh. Bodies	4,802.3	Blacksmithing	2.9
Sawmills	0.585	Tin Cans	1.1	Ind. Machinery and Parts	4,631.9	Ind. Machinery and Parts	4,374.0	Tin Cans	2.8
Iron Foundries	0.527	Iron Foundries	1.1	Leather	4,768.3	Plastic	4,291.7	Sawmills	2.8
Ind. Machinery and Parts	0.488	Ind. Machinery and Parts	1.1	Wire	5,048.4	Fabricated Structural Shapes	3,631.6	Coconut Oil Mills	2.8
Bakeries	0.458	Retreading	1.0	Tin Cans	6,028.5	Blacksmithing	3,611.6	Motor Veh. Bodies	2.5
Motor Veh. Bodies	0.484	Motor Veh. Bodies	0.9	Sawmills	6,831.0	Bakeries	3,559.3	Ice Cream	2.0
Soft Drinks	0.402	Bakeries	0.9	Fabricated Structural Shapes	6,881.6	Iron Foundries	3,438.5	Furniture	1.9
Plastic	0.352	Furniture	0.9	Soft Drinks	7,949.7	Leather	3,403.0		
Blacksmithing	0.336	Soft Drinks	0.8	Plastic	8,142.5	Clothing	2,990.5		
Medicine	0.326	Fabricated Structural Shapes	0.8	Motor Veh. Bodies	8,170.9	Furniture	2,663.3		
Fabricated Structural Shapes	0.289	Blacksmithing	0.7	Retreading	9,839.4	Ice Cream	2,507.8	Soft Drinks	1.5
Furniture	0.274	Medicine	0.6	Blacksmithing	9,849.1	Medicine	2,407.4	Bakeries	1.4
Ice Cream	0.163	Plastic	0.6	Coconut Oil Mills	20,372.2	Soft Drinks	2,267.8	Medicine	1.2
Batik-making	−0.036	Ice Cream	0.3	Ice Cream	23,081.1	Batik-making	2,178.8		

Source: Chee, *op. cit.*, p. 426.

Table 6.22

Preference Ranking for Selected Measures by Industry

1	*2*	*3*	*4*
Industries in All Top Quartiles of 5 Columns	*Industries in Top Quartiles of 4 Columns*	*Industries in Top Quartiles of 3 Columns*	*Industries in Top Quartiles of 2 Columns*
–	Clothing Wire	Clothing Wire Coconut Oil Mills	Clothing Wire Coconut Oil Mills Retreading Batik-making Iron Foundries Tin Cans
Industries in 1st or 2nd Quartiles of 5 Columns	*Industries in 1st or 2nd Quartiles of 4 Columns*	*Industries in 1st or 2nd Quartiles of 3 Columns*	*Industries in 1st or 2nd Quartiles of 2 Columns*
Tin Cans Wire Leather Sawmills Iron Foundries Ind. Machinery & Parts Bakeries Motor Vehicle Bodies Clothing	Tin Cans Wire Leather Sawmills Iron Foundries Ind. Machinery & Parts Bakeries Motor Vehicle Bodies Clothing Coconut Oil Mills Plastic Furniture	Tin Cans Wire Leather Sawmills Iron Foundries Ind. Machinery & Parts Bakeries Motor Vehicles Bodies Clothing Coconut Oil Mills Plastic Furniture Retreading Soft Drinks Blacksmithing Fab. Structural Shapes	Tin Cans Wire Leather Sawmills Iron Foundries Ind. Machinery & Parts Bakeries Motor Vehicles Bodies Clothing Coconut Oil Mills Plastic Furniture Retreading Soft Drinks Blacksmithing Fab. Structural Shapes Medicine Batik-making

Source: Table 6.21.

common use in the exporting countries. The industrial machinery and parts industry is also a potentially important training ground for skilled labour whose existence would provide external economies for the further development of manufactuirng. The development of the industry would spread what Solo has called the "cognition of mechanism", a recognition of value to the society of mechanisation and of the use of technical skills.[1] The "Mid-term Review of the First Malaysia Plan" singled out the industrial machinery and parts industry as one of four type of manufacturing activities to which encouragement should be given.[2] Unfortunately, to date, little specific encouragement has been given. For one thing, the products manufactured by the industry have not received any import protection. Indeed Power's study of the structure of protection in Malaysia concludes that the local manufactures of machinery is, on average, subject to a negative effective rate of protection since imports of its inputs are subject to import taxes, while, with some exceptions, imports of final engineering products are not.[3]

Of the eight industries identified earlier, priority should also be given to the iron foundries industry. This industry is basic to all other engineering and machinery inudstries. Like the industrial machinery and parts industry, the industry has strong links with the export sector in Malaysia. More important, it has the potential to serve the needs of several engineering industries such as machine tools; electric motors; automobiles; and diesel oil engines, by producing the castings required by such industries.[4] In particular, the expansion of the iron foundries industry can produce car component parts for the various motor assembly plants in Malaysia. In this way, the present car assembly plants in Malaysia can be gradually converted into car manufacturing industries, including the manufacture of buses and lorries.[5] The same priority may be given to the leather product and clothing industries which also falls within the top 2 quartiles of the 5 columns. The production of leather goods is not a difficult manufacturing process which involves complex familiarisation programmes. Many of the small existing factories can, with judicious planning, be up-graded to efficient units by assistance in production planning, quality control, credit and finance. The production of leather goods is well suited to Malaysia since the raw material is readily available and there is abundant labour. Both the skill

1 R. Solo, "The Capacity to Assimilate on Advanced Technology", *American Economic Review*, Vol. XVI (May 1966), pp. 91-97.

2 Malaysia, *Mid-term Review of the First Malaysia Plan* (Kuala Lumpur: Government Printer, 1973), pp. 73-74.

3 J.H. Power, "The Structure of Protection in Developing Countries", in B. Balassa (ed.), *The Structure of Protection in Developing Countries* (Baltimore: J. Hopkins, 1971), pp. 212-217.

4 Chee, (1978), *op. cit.*

5 For further discussion see Chee Peng Lim and Fong Chan Onn, "Project AFDA: First Year Report on the Malaysian Transport Equipment Industry", CAMS Discussion Paper Series No. 77-10, September 1977 (mimeo).

and capital requirements are relatively low in the leather goods industry and it has a high export potential.

Like the leather product industry, the clothing industry is relatively labour-intensive and does not show significant economies of scale. Thus the clothing industry is suitable for the development of small firms. The same priority should also be given to the remaining industries identified in the above list, namely, wire and motor vehicle bodies. The wire industry includes the manufacture of fabricated wire and cable products from wire rods, excluding insulated wire and cable. These include fencing, netting, guards, wire rope, nails, tacks, bolts, nuts, washers, rivets, screws, spikes, springs, paper clips, steel wool, collapsible tubes, kitchen wire goods, concrete reinforcing wire, etc. The motor vehicle bodies industry involves the manufacture of bodies for lorries, pick-ups, buses and other types of commercial vehicles. Both industries are dominated by small firms and are relatively labour intensive. To sum up, except for the tin cans industry, for reasons mentioned earlier, all the seven identified industries deserve priority in any government assisted promotion of the small industry sector. All these industries are dominated by small firms, show a reasonable rate of return on capital and growth potential, are relatively productive in terms of capital and labour and are relatively labour-intensive.

6.5 Problems Facing Small Industry in Malaysia

The plea for government assistance to small industry is made because of the problems facing small industry in Malaysia. Although some of these problems are similar to those facing large firms, there are certain problems which are peculiar to small industry, particularly those relating to government discriminatory policies and lack of access to institutional credit. There is some evidence to suggest that past as well as existing government policies and practices have discriminated, albeit unintentionally, against small industry. First let us consider the granting of fiscal incentives to encourage investment in the manufacturing sector.

(a) *Fiscal Incentives*

Most of the existing fiscal incentives have a built-in bias against small industries. With regard to tax relief concessions for pioneer firms, the period of tax relief is longer the higher the level of investment.

The labour utilisation relief scheme which provides for exemption of income tax and development tax is based on the number of full-time paid employees engaged in the project according to the following criteria:

(i) 51 – 100 workers – 2 years tax relief
(ii) 101 – 200 workers – 3 years tax relief
(iii) 201 – 350 workers – 4 years tax relief
(iv) 351 and above – 5 years tax relief

Although the aim of the labour utilisation relief scheme is to encourage more labour-intensive projects (which may not qualify for tax relief under the capital investment criterion), this scheme evidently discriminates against small firms employing less than 50 workers. The effects of the bias in the fiscal incentive scheme towards large firms may be seen in Table 6.23 which shows the number of pioneer status establishments by Fixed Assets Size Group in 1973. Establishments employing fixed assets of $200,000 and above form 89.3 per cent of the total number of establishments.

The pioneer industry programme has therefore mainly benefited the large establishments. Not only that, as Wheelwright has pointed out, the method of granting tax relief adopted in the Investment Incentives Act has also mainly benefited foreign firms and firms which need it least.[1] Out of 92 firms enjoying pioneer status in 1963-1967, 59 qualified for tax relief. Ten firms, all foreign controlled, with annual average rates of profit of over 18 per cent, received 78 per cent of tax relief granted, amounting to over $40 million.[2]

Also the investment tax credit scheme is designed to favour projects with heavy investments and those that have a long gestation period before profits are made.

It is difficult to assess the differentiating effects of other forms of fiscal incentives on small and large firms. There was however reasons to believe that investment tax credit and import duty concessions tend to favour large over small firms. The investment tax credit scheme, as we have seen favours projects with heavy investments and those that have a long gestation period before profits are made. In most cases these are projects undertaken by large, capital-intensive enterprises. Import duty concessions on machinery tend to favour relatively capital-intensive and generally large competitors. It is possible that the differentiating effect of the other incentives is neutral. For instance, tariff protection is extended to commodities rather than firms so that the benefits accrue to all firms irrespective of size.[3]

It is also difficult to assess the differentiating effect of non-fixed incentives on small and large establishments.[4] There is however some evidence that the provision of industrial sites has benefited mainly the large establishments. Data from Chee's survey show that 45.0 per cent of the establishments located in industrial estates are large establishments. In a study of the Tasek Industrial Estate in Ipoh, Arulappu found that, of the 56 allocated sites, 57.1 per cent was

1 E.L. Wheelwright, "UNIDO Industrial Development Mission to Malaysia – Final Report", (Sydney: University of Sydney, February 1972) p. 63. Mimeo.

2 *Ibid.*

3 Lee Hock Lock, "Public Policies and Measures Towards Economic Diversification – A Critical Study of the Experience of West Malaysia 1957-1970", Ph.D. thesis submitted to the University of Malaya, 1978.

4 These include guarantee of investment, protection against dumping, establishment of industrial sites and free trade zones.

Table 6.23

Number of Pioneer Status Establishments by Fixed Assets Size Group, 1973

Fixed Assets Size Group ($)	*Number of Establishments*	*Percentage*
Under 10,000	3	0.8
10,000 – 19,999	6	1.7
20,000 – 49,999	5	1.4
50,000 – 99,999	4	1.1
100,000 – 199,999	20	5.6
Sub-total 0 –199,999	38	10.6
200,000 – 499,999	54	15.2
500,000 – 999,999	63	17.7
1,000,000 – 4,999,999	153	43.0
5,000,000 – 9,999,999	26	7.3
10,000,000 and over	22	6.2
Sub-total 200,000 and over	318	89.4
Total	356	100.0

Source: *Census Manufacturing Industries 1973, op. cit.*

taken up by large establishments.[1] The larger of the small establishments took up the remainder, while the really small establishments were left out altogether.

(b) *Activities of the State*

The activities of the state affect small industry in a number of ways. To begin with, consider the purchasing activities of the state as a major or dominant buyer of a wide range of goods and services. Except for the policy of favouring Malay firms in certain cases the state does not buy or give out tenders to any particular group of firms. Such a policy inevitably favours large establishments. The reason is that in the interests of administrative efficiency and in the search for economies in purchasing, government organisations tend to place their orders

1 Alfred F. Arulappu, 'Tasek Industrial Estate: A Case Study of a Developmental Project by the Ipoh Municipal Council", Graduation Exercise (unpublished), Faculty of Economics and Administration, University of Malaya, 1970/71. The Tasek Industrial Estate was developed in mid-1960 by the Ipoh Municipal Council. It was developed with the aid of a $1.75 million Federal Government loan and covered 370 acres.

in relatively large amounts at a time and often by selective tender.[1] Bulk purchasing and selective tender favours large, well-established firms.

Another way in which the role of the State in the economy has affected small industry is the collection of estate duty. For every dollar of the first $25,000, no estate duty is payable in Malaysia. For every dollar of the next $25,000 the rate of duty is 5 per cent, rising on a graduated scale to a maximum of 50 per cent for every dollar exceeding $2 million.[2] The rates of duty may not be very severe but in view of the limited financial resources of small firms the burden imposed is a heavy one. This is particularly so when death duties are often assessed on a purely notional valuation of non-marketable assets. In this case payment of the duty imposes a severe strain on the firm's liquidity and may force selling off or closure of the business. Even if the duty can be met out of non-trade assets, the firm may be drained of external capital and will face a financial crisis if a second death should occur before long.

Another way in which increased State activity has adversely affected the small industry sector has to do with social benefits. Since 1950 the government has passed a series of social legislations which is aimed at the provision of greater social benefits such as: The Weekly Holiday Ordinace; The Employees Provident Fund Ordinance; Workmen's Compensation Ordinance, 1951; The Employment Ordinance, 1955 (Part IX on maternity leave and allowance); and Employees' Social Security Act, 1969.

These social legislations probably place a bigger financial and administrative burden on small establishments than on large. In some instances, as with the Employees' Social Security Act, these measures have directly raised the costs of employing labour in establishments of all sizes. In all cases they have led to increased overhead administrative costs which have inevitably weighed more heavily on the small than on the large establishments.

A fourth way in which State activity also places a bigger administrative and financial burden on small firms than on large, has to do with environmental problems. Increasing population, pollution and the progress of technological development have all made necessary an increasing number of regulatory controls as, for example, in the fields of public health, fire and sanitation, environmental regulation, development and planning controls and atmospheric pollution. These controls weigh more heavily on small firms than on large.

1 Anyone who is familiar with the Malaysian Government's purchasing system will understand why this is so. See Abdul Aziz Mohd. Ali, "Government's Purchasing System – Its Nature and Problems", Diploma in Public Administration Project Paper 1974/1975, University of Malaya, unpublished. It should however be pointed out that the above practice of discriminating against small industry is not confined to Malaysia. According to a survey by the Small Enterprises Agency in Japan, orders placed by major central government offices and the Japan National Railways headquarters reached a total of represent ¥ 524,300 million in 1961 of which those with big enterprises represent 81.2 per cent with only 18.8 per cent going to small enterprises. See T. Ito, "The High Growth of the Japanese Economy and Problem of Small Enterprises", *The Developing Economies* (July – December 1963) p. 14.

2 Malaysia, *Finance (Estate Duty) Act*, No. 38 of 1971.

Stringent quality control measures also discriminate against small firms. For example, those introduced recently in the pineapple canning industry have discouraged the entry of small less capital-intensive enterprise.

Discrimination may also appear in a less overt form. For example, since employment in a large establishment is more rewarding and prestigeous, many workers, as soon as they are qualified, move to larger enterprises. In this way the smaller establishments are subsidising the large enterprises in the training of manpower. Similarly, government regulations and practices tend to work against small industry. For example, large firms with skilled administrative staff and influential directors are better able than small entrepreneurs to take advantage of duty exemptions or export subsidies and are more successful in obtaining import licences.

To sum up, small industry faces a considerable number of disadvantages which are the result of government policies and activities, and which amount to a form of discrimination against the sector. The fact that this discrimination is unintentional is irrelevant. What is significant is that this discrimination, in addition to that in the field of credit (see below), restricts the freedom of small enterprises to compete. Consequently it places them in an inferior position vis-a-vis the large enterprises.

(c) *Access to Institutional Credit*

Despite the large variety of financial institutions in Malaysia of which there are more than 20 types and the large volume of credit extended, small industry has limited access to institutional credit. Most of the capital required for the establishment and operation of small enterprises comes from the entrepreneurs themselves with shortfalls being met from relatives, friends or other non-institutional sources. This fact has been documented in a number of studies, both overseas and in Malaysia.[1] For example in Chee's survey of small industry in Malaysia, 92 per cent of the firms reported that their initial capital was obtained from their own savings or that of family, relatives or friends.

Although the lack of access to institutional finance might force the small industrialist to mobilise other forms of finance such sources obviously might be

[1] For Malaysia see Chee, *op. cit.;* H.K. Charlesworth, "Increasing The Number of Bumiputra Entrepreneurs", MARA Institute of Technology, May, 1974 (mimeo.). For other countries see such studies as U Tun Wai, "Interest Rates Outside the Organised Money Markets of Underdeveloped Countries", *International Monetary Fund Staff Papers,* Vol. 6 (November 1957) pp. 80-142; S.K. Basu, *Place and Problems of Small Industries* (Calcutta: Mukherjee and Co. Ltd., 1957); Ramakrishna, K.T., *Finances for Small-scale Industry in India* (Bombay: Asia Publishing House, 1962); Rosen, George, *Some Aspects of Industrial Finance in India* (London: Asia Publishing House, 1962); Development Bank of the Philippines, *Annual Report 1967,* Manila; Charles Nisbet, "Interest Rates and Imperfect Competition in the Informal Credit Market of Rural Chile", *Economic Development and Cultural Change,* Vol. 16 (October 1967) p. 73; and *IBRD, Financing the Development of Small-scale Industries,* World Bank Staff Working Paper No. 191, November 1974.

inadequate to provide for the capital needs of the establishment with adverse effects on the operation of the business. Vital machinery cannot be purchased and production has to be carried out in congested rented premises and productivity suffers as a result. Credit cannot be extended for the same reason and business is lost to a larger rival with access to bank credit.

There are several reasons why commercial banks are reluctant to lend to small industry. Firstly, it is less profitable to lend to small industry than to large establishment because of higher lending costs and greater risks. Lending costs tend to be high because of the diseconomies of scale. As to the risk element this tends to be greater because small enterprises are typically deficient in equity and acceptable collateral. The risk of business failure is also higher for small enterprises. Secondly, the banks find it difficult to obtain credit information about the applicants and their businesses. The loan applications are often not accompanied by balance sheets and income statements or if they are, these statements are not properly prepared. In a number of cases it is also necessary to visit the small establishment but few banks have the personnel or the time to do so. Finally, the main source of bank funds are depositors. Small industrialists are not a major source of deposits so their borrowing needs yield in priority to large depositors.

For a number of reasons then, small establishments have little or no access to institutional credit and have to finance expansion or working capital requirements from internally generated funds or non-institutional sources. These factors may help to explain why many of these establishments cite shortage of capital as a major problem.[1]

(d) *Other Problems*

Other major problems facing small firms are shortage of raw materials, shortage of skilled labour, difficulty in obtaining suitable land and building for their production facilities, marketing and management.

Raw materials are either not available or not available immediately. Apart from shortages many small firms complain that prices of raw materials had gone up, in some cases by a wide margin. Although the problem of raw materials affects all firms regardless of size, small establishments appear to be more severely affected by the shortage of raw materials . The reason is many small firms purchase only a small amount of raw materials at a time so they are less favoured than large firms. A number of small firms have to bribe their suppliers to ensure an adequate supply. Those who were unable to do so lost out to their rivals, mainly the favoured large establishments.

The shortage of skilled labour especially skilled metal tradesmen and mechanics is another problem. Again, although this problem affects both small and large firms, the small firms appear to be more adversely affected. According

1 See Chee's and Chee *et. al.'s* survey, *op. cit.*

to the small firms the large ones often poached their skilled workers by offering better wages and conditions of work. Small industry finds it difficult to obtain and retain skilled labour because of its inability to pay a high rate of wage comparable to those in large establishments.

Some establishments complained that they did not have enough land or building for expansion or in some cases even for their present scale of operation. Those with adequate land or building were worried over the tenure. A number of small establishments also complained that lack of adequate and proper premises was inhibiting production. Where the factory space was small, lay-out was not functional and the workplace cluttered with raw materials, machinery and tools. There was a constraint to expansion since large machinery could not be installed. Besides much labour was wasted shifting raw materials to make room for work. Thus it was not surprising at times, to find work being carried out near the roadside, on the pavement or in make-shift work sheds. Entrepreneurs with inadequate factory premises were eager to move out to industrial estates but were worried over the cost and location of these estates. A few respondents, particularly those in the east coast, complained about floods. Production was often interrupted during the monsoon season when the premises were flooded. Establishments in the rural areas generally complained about the low voltage of electric power, the poor water supply and poor communications and transport facilities.

Marketing problems included seasonality of demand, customer problems, delivery and keen competition. There were also complaints about the sales tax, not only for increasing prices but also for causing administrative problems. A number of small establishments had problems marketing their products because of a number of factors such as poor designs, poor quality of finished product due to the use of poor quality raw materials and lack of quality control, lack of after-sales service and lack of precision due to inadequate equipment and lack of skilled personnel.

6.6 Promotion of Small Industry in Malaysia

Any policy for developing small industry should aim at promoting modern, self-supporting and economically viable manufacturing enterprises rather than a group of weak and inefficient industries which would need to be artificially sustained in their production, management and financing. In fact a national policy for small industry development should not be based on the assumption that small industry requires preferential treatment to be viable. Small industry is competitive with large industry and does not require preferential treatment. But the competitive base of small industry may be eroded if the government, deliberately or otherwise, discriminates against small industry.

Once a clear policy for small industry is agreed upon the next step is to formulate a comprehensive plan for the promotion of the sector. Here

priorities should be indicated in respect of industries to be encouraged and means of action to be followed. We have already suggested some industries which might receive priorities although there may be others equally deserving. Various means exist to foster small industry, such as technical and financial assistance, improved supply and marketing arrangements, promotion of industrial cooperation and complementarity of industrial activities, training of personnel, etc. At this moment we will focus on the main areas of assistance in relation to the more pressing problems facing small industry in Malaysia. As we have seen, the most serious problem is the shortage of working and fixed capital. Many small establishments can obtain no significant leverage through institutional borrowing and are limited to their own and family resources. As a result they find it difficult to compete with the large establishments.

It should be pointed out that small establishments do not have sufficient capital not because they cannot afford the cost of credit but because in many cases it is simply not available (except outside the organised money market). In fact many small establishments would not mind paying a rate of interest slightly above the market rate if credit were available. The higher rate would be much less than the rate charged by non-institutional sources. More significantly the rate would also be much less than the marginal rate of return under self-financing investment using existing techniques. Greater access to credit is especially important in view of the limited sources and type of credit available to a small establishment in Malaysia where the money market is still not fully developed.

Improving access to credit for small industry should begin by strengthening existing loan programmes through improvements in staffing and in project follow-up. Once this is done, there should be a substantial increase in the volume of small industry loans. The Central Bank could do this either by authorising commercial banks to increase their loans to small industry or encouraging commercial banks to lend to small industry by providing the banks loans at a special discount rate for re-lending to small industry. At the same time the commercial banks should also make a greater effort to assist small industry. They should adopt a development and not commercial orientation in processing loan applications from small entrepreneurs. A change in attitude will be mutually beneficial to the commercial banks since small enterprise financing may form a major part of commercial bank portfolio in the long run. This has been the experience in India[1] and will no doubt also be the experience in other developing countries.

We are not suggesting that removing the financial constraint would be sufficient to solve the problems of small industry. As a matter of fact, small industry also suffers from a variety of other problems such as out-moded techniques of production; ineffective marketing organisation; poor quality of product; and inefficient management. Besides as we have already noted, the

[1] According to a discussion between the authors and Mr. S.V.S. Sharma, Principal Director, Small Industry Extension Training Institute, Hyderabad, India.

typical small entrepreneur in Malaysia has no formal management training and little practical managerial experience. All these problems are probably interrelated. For example, poor management gives rise to problems in production and marketing; inadequate finance gravely limits the capacity of small industry to expand or improve the quality of its product. Thus any approach which aims to minimize problems in one area only is likely to prove futile.

A number of institutions already exist to serve small industry in Malaysia. But for a long time to come these institutions, limited by staff and other resources, can only offer limited assistance. Moreover, these institutions are more suitably equipped to assist the large rather than the small establishments. On this basis we would like to endorse Professor Wheelwright's suggestion for the establishment of a Small Industry Development Corporation (or SIDC).[1] The SIDC can evolve from the Co-ordinating Council which we observe has not made any significant achievement in the absence of adequate powers and resources. The proposed SIDC should be set up as a high level government agency with an initial paid-up capital of at least $20 million. It should come under the Ministry of Trade and Industry and would have statutory authority for regulating and promoting small enterprises as well as assisting them financially. The SIDC should be headed by a high-level official in a position to influence other ministries. The major functions of the SIDC should include: (i) formulation of policy measures for small industry in conjunction with overall planning for the economy as a whole and for the manufacturing sector in particular, (ii) investigation of discriminatory aspects of existing policies and the formulation of positive policy counter-measures; (iii) furthering the implementation of appropriate policy measures through legislative and/or administrative action; (iv) establishment of institutions to assist small industry, and supervision of such institutions; and (v) initiation of a systematic collection and analysis of data pertaining to small industry.

The proposed Corporation will undertake the supply of suitable equipment and raw materials, training and knowledge of techniques and the provision of market outlets. The most important task of the SIDC should be the establishment of an Industrial Extension Service for small industry.

Another area in which the extension service would be of immense value is marketing. Small firms need assistance in locating distributors and suppliers. They also need information on existing markets as well as potential markets they might exploit. Assistance, therefore, is needed in finding markets, in establishing and maintaining production standards and credit facilities.

Another means of support for small industry and one which pre-supposes a close relationship between small and large industrial units, is subcontracting. At the moment, subcontracting has not been fully developed in Malaysia.

1 E.L. Wheelwright, *op. cit.*, pp. 48-56. This suggestion has also been made by the Malaysian Institute of Consultants. Recently it was also endorsed by Senator Kamarul Ariffin, President of the Malay Chamber of Commerce and Industry in Malaya and Chairman of Bank Bumiputra.

Certain factors hinder its development. For example, the sales tax on final products involves cumulative tax payments and thus acts as a disincentive to subcontracting. Taxation on value added would, on the other hand, favour subcontracting. In addition, information on the possibilities of complementary relationship between large and small industries is lacking. A subcontractor's exchange could be set up whereby demand and supply are made known and information provided.[1] Thus on the supply side there would be information on the availability of machinery, production capacity and specialization of small industry. On the demand side information would be provided on the demand for parts, components and processing or finishing operations on the part of large establishments.

The government might also consider encouraging small establishments to form cooperative societies.[2] Collective action could be taken by small establishments without losing their independence. In this way they could get together to perform some functions which, because of their size, they are unable to perform individually. They could undertake joint programmes on such matters as marketing, export and purchase of raw materials. The system could also enable the small industrialists to participate in fairs and exhibitions, something that would be difficult on an individual basis. Cooperatives are particularly useful in promoting exports of small industry. Collective action could be propagated and initiated through the proposed Industrial Extenstion Service.

Another method which the government could take to assist small industry is to make use of a maximum number of small industry products.[3] A surprisingly large number of products required by the government in its day-to-day operations are produced by small firms. By taking deliberate measures to place orders with these firms the government can greatly stimulate small industry. Both the governments of India and the United States have established formal organisations to ensure small manufacturer a fair share of government orders.[4] While such an organisation may not be necessary in Malaysia at the initial stage, a positive, unambiguous statement of the government's policy of favouring small manufacturers may be helpful.

In addition a number of fiscal measures can also be introduced to place small industry on an equal footing with its large scale counterpart.[5] The first

1 E. Edwards, "The Subcontracting Exchange", Paper presented at an expert group meeting on the role and promotion of subcontracting in industrial development, Paris, 6-11 October, 1969.

2 The promotion of small industry through cooperative actions is discussed fully in OECD, *Promotion of Small and Medium-sized Firms in Developing Countries Through Collective Actions* (Paris, 1969).

3 An even more severe measure is to reserve certain products and components for the exclusive manufacture of small industry.

4 K. Weddell, *Aiding Small Industry Through Government Purchases* (Menlo Park: Stanford Research Center, 1960) Chapter II and III.

5 These measures were suggested by Senator Kamarul Ariffin, in his paper on "In Defence and Promotion of Small-scale Enterprises". Mimeo.

is a Small Enterprise Employment Tax Credit (SEETC). An SEETC of $200 per full-time worker should be given to all small enterprises. This is to be made deductible from the personal income tax of a sole proprietor or partnership. The measure would encourage greater number of workers being employed full-time while the loss in revenue to the government would be insignificant. The 'saving' obtained by the small entrepreneur could be re-invested in his business or used for expansion.

The second is a Carry Back Relief of Trading Losses. This will allow small enterprises to carry back losses. A small enterprise incurring losses in the Year of Assessment can claim the carry back of losses as a set off against the profits of the previous year which are under taxation. This would assist small enterprises in a difficult position especially in initial trading years or during a period of recession when they are unable to meet the tax incurred for the profits of the previous year.

Finally, another fiscal measure proposed is a Graduated Tax Rate for Small Enterprises. Sole traders and partnerships generally form the bulk of small enterprises. A graduated scale of taxes would assist them to plough back their 'tax saving' into profitable investments. At present a tax rate of 55 per cent is levied on chargeable income exceeding $55,000. It is proposed that a re-scheduled and graduated scale be devised for small enterprises. For example, the government should levy a lower rate of perhaps 30 per cent for every dollar exceeding $55,000 and increase it to 35 per cent for every dollar in excess of $100,000. The scale and the effect of this scheme would have to be further studied with the government authorities.

6.7 Summary and Conclusions

The latest available data show that unemployment in Malaysia is estimated at around 6.0 per cent of the labour force.[1] One way of absorbing this surplus labour is to encourage the establishment of manufacturing industries through a policy of industrialisation. This is the strategy which the Malaysian government has adopted since independence in 1957. The preceding sections have recorded the remarkable growth that has taken place in the manufacturing sector in Malaysia over the last two decades. In the initial stages however, the rapid expansion in the manufacturing sector was not accompanied by a similar increase in industrial employment. This was because the Government's investment incentives tended to encourage the creation of relatively capital intensive industries. Since pioneer status and investment tax credits were dependent on the amount of capital invested, industries with a high capital-output ratio were favoured over relatively labour intensive industries. This was most clearly shown by our analysis of pioneer firms where it was seen, for instance, that up to 1968, the non-wage component of value added was generally higher for pioneer industries. The incentives appeared to subsidize the dollars invested rather than to subsidize

1 Malaysia, *Economic Report 1979/80, op. cit.*

the number of jobs created. It would seem more appropriate for Malaysia, with a large and growing surplus labour to attempt to do the latter. Such a strategy should also attempt to counter the bias for foreign-dominated firms to tend to import technology based on conditions in more developed economies.

Since 1968, the earlier tendency of high growth of relatively capital-intensive firms has been reversed. This could have been due to the encouragement given, and the subsequent development of relatively labour-intensive industries such as electronics, textiles and wearing apparel. But much more perhaps can be done to encourage the development of labour-intensive industries and techniques in Malaysia.

To begin with, there is a need to restructure the protection structure and fiscal incentives given in order to minimize domestic distortions and encourage greater labour-intensity. Teh,[1] for example, has suggested that a lower, uniform, nominal tariff be implemented. Among other things, this would inject an element of foreign competition in many industries monopolised by "pioneer" firms and would be administratively less complex to administer. A uniform tariff would tend to constraint the growth of most goods with a high elasticity of demand, and encourage most the production of goods with a high domestic supply elasticity.

Teh also suggests that the fiscal incentives be replaced with an employment Tax Credit of $ 500 per unskilled worker to be granted to all new and existing manufacturing firms. The aim is to encourage the adoption of more labour intensive techniques.

Another way of increasing labour intensity in the manufacturing sector is to pay greater attention to small-scale industries and the informal sector. Our study, as well as others, have shown that small enterprises generally employ relatively labour-intensive techniques of production and thus provide relatively more employment opportunitites per unit of capital employed.[2] Unfortunately, in the past small industry in Malaysia has been neglected and even discriminated against. The pioneer incentive is an example. Thus there is a need to redress the imbalance against small industry and provide more government assistance to this sector. The promotion of small industry within Malaysia's overall industrial development strategy will help to increase labour intensity in the manufacturing sector.

1 Teh, *op. cit.*

2 It has been established that the technological choice made by small-scale enterprises tends to be systematically more labour-intensive than large. See, for example P.N. Dhar and H.F. Lydall, *The Role of Small Enterprises in Indian Economic Growth* (Asia Publishing House, 1961); J.C. Sandesara, "Scale and Technology in India Industry", *Bulletin of Oxford University Institute of Economics and Statistics,* Vol. XLIII (November 1961); National Council of Applied Economic Research (NCAER), *Study of Selected Small Industrial Units* (New Delhi: 1972); E. Staley and R. Morse, *Modern Small Industry for Developing Countries* (McGraw Hill, 1965); UNIDO, *Small Scale Industry in Latin America,* 1969 and P.L. Chee (1978), *op. cit.*

The Government should also pay some attention to the informal sector which was estimated to employ about 40 per cent of the total industrial labour force in 1970. Perhaps the first step is to undertake research on this sector on which little or no work has been done so far. The development of the informal sector which has been virtually neglected by the Government will not only help to generate substantial employment opportunities but also ensure a more equitable distribution of Government assistance.

Future government policy to encourage informal sector and small-scale activities could include the encouragement of research into techniques and machinery appropriate to small enterprise, the strengthening and extension of the linkages between these sectors and the private formal and government sectors through the provision of greater opportunities for subcontracting to small scale industries, the improvement of the flow of relevant information and imparting relevant managerial and technical skills to informal sector enterprise. Besides, the Government could also re-examine the restrictions imposed by public authorities upon informal sector industrial activities particularly restrictions based upon excessive and irrelevant "quality" requirements which hinder the entry of smll-scale informal sector enterprise.

Our study has also shown that the level of tariff protection has risen in recent years. There is a need to question the wisdom of increasing tariff protection. If protection were granted for a limited number of years, or if tariffs were gradually reduced over time, the "infant" industries would have to face the onslaught of foreign competition. This would ensure that there is an incentive for firms to increase efficiency and perhaps even enter the export market.

Too often protection has been given to individual industries without a realistic appraisal of the industry's long-run growth potential. Priority products such as certain motor vehicle components which are normally manufactured in complicated, highly mechanized and large-scale processes subject to strict quality requirements, are cases spring instantly to mind.

It seems not too much to ask that incentives should only be given to industries that are likely to have a long run comparative advantage. The neglect of long-run growth is exemplified by the experiences of many developing countries which first achieved industrial growth through import substitution and then ran into slower growth periods as the limits of import-substitution were reached. If we neglect this factor, our manufacturing industries will encounter difficulties once they reach the limits of import substitution. In fact, as our study shows, we are fast approaching these limits. Thus it is to the Government's credit that it has already embarked on a programme of encouraging the development of export-oriented industries. Various measures have been taken to promote the exports of manufactured products such as the provision of export refinancing and export credit insurance facilities, the sending of trade missions abroad, organization of and participation in trade fairs overseas and the encouragement of buying missions into Malaysia. In addition, appropriate export incentives have been provided under the Investment Incentives Act of 1968 to

encourage Malaysian manufacturers to expand into overseas markets. As a result of all these measures, the number of export-oriented projects approved (that is, those exporting at least 60 per cent of their output) has increased from 33 in 1971 to 103 in 1975.[1]

Much more however can be done by the Government to promote the exports of locally manufactured products. Firstly the Government should review the export incentives which many local manufacturers feel are inadequate. The export market is extremely competitive and although we are not suggesting that the latter are able to compete on an equal footing with foreign exporters who are often receiving strong Government assistance.

Secondly the Government should encourage small firms to export. A recent study by Knowles[2] indicates that very few small enterprises in Malaysia have succeeded in exporting their products. There is no reason why such firms should not be able to enter the export market. What is needed is Government assistance in encouraging and organising the small enterprises to gear their production and sales to overseas markets. The experience of Hong Kong and Japan have shown that given the appropriate assistance small industry can also play an important role in export expansion.

Thirdly, as one economist has pointed out, a country's success on the export front does not merely depend on its ability to produce exportables at low costs.[3] The organisation of trade and commerce and its linkages with the production economy on the one side and its organisational ability to make concentrated thrusts in the foreign markets on the other are perhaps crucially important for any successful export promotion drive. For this reason Malaysia could perhaps profit from the experiences of Japan and Korea by establishing trading houses to promote exports. These trading houses can also take advantage of the economies of purchase and shipping through bulk buying and extend such economies as well as marketing support to the small firms.

Finally, a promising area for promoting exports is through the system of international subcontracting. At the moment Malaysia is trying to persuade the various assembly industries, particularly the motor vehicle industry, to make use of more local components. So far this strategy has not been very successful because the limited size of the domestic market makes it difficult for the local component manufacturers to achieve economies of scale. As a result, generally local components are only available at high costs.[4] One way of overcoming this

1 Malaysia, *Third Malaysia Plan 1976-1980, op. cit.*

2 W.H. Knowles, "Employment Potential in Small Scale Labour Intensive and Export Oriented Industries in Peninsular Malaysia", (Kuala Lumpur: Economic Planning Unit, 1979). Mimeo.

3 M.K. Datta-Chaudhuri, "Industrialisation and Foreign Trade: An Analysis Based on the Development Experiences of the Republic of Korea and the Philippines," in E. Lee (ed.), *Export-led Industrialisation and Development* (Bangkok: ARTEP, 1981), p. 72.

4 For further details see Chee Peng Lim and Fong Chan Onn, "Project AFDA: First Year Report on the Malaysian Transport Equipment Industry", CAMS Discussion Paper Series No. 77-10 (Quezon City: September 1977).

problem is to incorporate an export element in the local content formula so that component suppliers will have an incentive to export. This measure has been successfully used by the Philippines in its Progressive Car Manufacturing Programme.

In conclusion, Malaysia's long-run comparative advantage clearly lies in labour-intensive manufacturing industries. At the same time, the development of such industries will help to generate adequate employment opportunities for Malaysia's rapidly expanding labour force. However, there is a danger of promoting labour-intensive industries just because they are labour-intensive. The outcome of such a strategy may be a proliferation of inefficient high cost industries operating with excess capacities. A better solution will be to promote export-oriented industries. Such industries will be inclined to capitalise on Malaysia's long-run comparative advantage and thus generate in the process, greater labour intensity in the manufacturing sector. The necessity of adopting an export-led industrialisation strategy is also an imperative in Malaysia's case in view of the fact that it is fast approaching the limits of import substitution. The success of other developing Asian countries such as Korea, Hong Kong and Singapore in pursuing such a policy should encourage Malaysia to follow suit.

APPENDIX TABLE VI-1

Peninsular Malaysia: Value Added and Share in Growth 1959-1973 for Manufacturing (Current Prices)

					Share in Growth (%)				*Annual Growth Rate (%)*		
	1959	*1963*	*1968*	*1973*	*1959-63*	*1963-68*	*1968-73*	*1959-73*	*1959-63*	*1963-68*	*1968-73*
Food	53	65	140	239	7.1	17.6	7.8	10.0	5.2	16.6	11.3
Beverages	10	13	36	61	1.7	5.4	2.0	2.7	6.8	22.6	11.1
Tobacco	11	28	57	131	10.0	6.8	5.9	6.5	26.3	15.3	18.1
Textiles	a	4	20	104	–	3.8	6.7	–	–	38.0	39.1
Footwear and Clothing	a	4	7	36	–	0.7	2.4	–	–	11.8	39.8
Wood Products	33	49	94	304	9.1	10.6	16.6	14.6	10.4	14.0	26.5
Furniture	3	8	10	19	2.9	0.5	0.7	0.9	27.8	4.6	13.7
Paper	a	3	6	18	–	0.7	1.0	–	–	14.9	24.6
Printing	17	29	53	115	7.1	5.6	5.0	5.3	14.3	12.8	16.8
Leather	a	1	1	3	–	–	0.2	–	–	0	24.6
Rubber	15	23	51	81[b]	4.7	6.6	2.4	3.6	11.3	17.3	9.7
Chemicals	15	42	79	175	16.1	8.7	7.6	8.6	29.4	13.5	17.2
Petroleum Products	a	a	41	52	–	a	0.1	–	–	–	4.9
Non-metallic Minerals	13	28	62	122[c]	8.9	8.0	4.7	5.9	21.1	17.2	14.5
Base Metals	a	9	21	135	–	2.8	9.0	–	–	18.5	45.0
Metal Products	9	18	39	66	5.4	4.9	2.2	3.2	19.0	16.7	11.1
Machinery (except electrical)	6	15	25	87	5.4	2.3	5.0	4.4	25.7	10.8	28.3
Electrical Machinery	a	5	21	189	–	3.8	13.4	–	–	33.2	55.2
Transportation Equipment	8	6	19	62	–1.2	3.1	3.5	6.4	–0.7	25.9	26.7
Miscellaneous[d]	11	23	14	62	22.7	7.5	3.8	31.7	–	–	34.7
Total[e]	204	371	797	2,060	100.0	100.0	100.0	100.0	16.1	16.5	20.9

Notes: [a] Included in miscellaneous.
[b] Excluding rubber remilling, latex processing and smokehouses.
[c] Including pottery, china and earthenware.
[d] Excluding off-estate processing.
– means not available.

Source: *Census of Manufacturing Industries, op. cit.*, various issues.

APPENDIX TABLE VI-2

Peninsular Malaysia: Employment in Manufacturing 1959-1973

EMPLOYMENT

Manufacturing Industries	*1959*			*1963*			*1968*			*1973*			*1959-73 Growth Rates*	*1963-73 Growth Rates*	*1968-73 Growth Rates*	*1968-73 Share in Growth*
	F.T.	*P.T.*	*Total*	*F.T.*	*P.T.*	*Total*	*F.T.*	*P.T.*	*Total*	*F.T.*	*P.T.*	*Total*				
Consumer Non-Durables	*19,186*	*2,593*	*21,779*	*31,043*	*3,419*	*34,452*	*45,673*	*4,373*	*50,046*	*97,971*	*6,430*	*104,401*	*11.8*	*11.7*	*15.8*	*36.5*
Foods	9,992	1,403	11,395	13,059	1,516	14,575	17,962	1,949	19,911	29,277	1,910	31,187	7.5	7.9	9.4	7.6
Beverages	1,835	126	1,961	2,186[a]	69[a]	2,255[a]	2,268	90	2,358	2,895	175	3,070	3.3	3.1	5.4	0.5
Tobacco	2,729	852	3,581	3,773	303	4,076	3,864	381	4,245	5,512	3,069	8,581	6.4	7.7	15.1	2.9
Textiles	b	b	b	1,182	364	1,546	4,850	397	5,277	22,067	339	22,406	–	30.7	33.5	11.5
Wearing Apparel	b	b	b	500[c]	364[c]	864[c]	2,649	585	3,234	10,218	148	10,366	–	28.2	26.2	4.8
Footwear	b	b	b	476	164	640	465	125	590	1,590	50	1,640	–	9.7	22.7	0.7
Chemicals	1,289[d]	46[d]	335[d]	2,322	92	2,414	2,223[e]	129[e]	2,352[e]	3,274	125	3,399	18.0	3.5	7.6	0.7
Pottery, China & Earthenware	189	14	203	243	80	323	266	69	335	894	103	997	12.0	11.9	24.4	0.4
Printing & Publishing	4,152	152	4,304	6,773	329	7,102	9,224	571	9,795	13,719	334	14,053	8.8	7.1	7.5	2.9
Plastic	b	b	b	519	138	657	1,872	77	1,949	8,525	177	8,702	–	29.5	34.9	4.5
Consumer Durables	*3,115*	*178*	*3,293*	*2,868*	*411*	*3,279*	*5,464*	*686*	*6,150*	*11,956*	*531*	*12,487*	*10.0*	*14.3*	*15.2*	*4.3*
Furniture	1,108	91	1,199	2,248	365	2,613	2,477	600	3,077	4,640	468	5,108	10.9	6.9	10.7	1.4
Automobile & Bicycles	2,007[f]	87[f]	2,094[f]	620[g]	46[g]	666[g]	2,987[h]	86[h]	3,073[h]	7,316	63	7,379	9.4	27.2	19.1	2.9
Intermediate Goods	*18,037*	*484*	*18,521*	*25,371*	*1,418*	*26,789*	*38,858*	*2,603*	*41,461*	*72,691*	*1,799*	*74,490*	*10.5*	*7.6*	*12.4*	*22.2*
Wood & Cork	8,433	273	8,706	11,765	526	12,291	19,156	760	19,916	39,605	780	40,385	11.6	12.6	15.2	13.8
Paper & Paper Products	b	b	b	557	110	667	1,129	605	1,734	3,376	331	3,707	–	18.7	16.4	1.3
Leather & Leather Products	b	b	b	165	61	226	336	20	356	752	12	764	–	13.0	16.5	0.3
Rubber & Rubber Products	5,448	73	5,521	6,831	104	6,935	8,375	117	8,492	10,516	31	10,547	4.7	4.3	4.4	1.4
Chemicals (Industrial)	1,750	22	335	1,531	329	1,859	2,906	396	3,302	5,961	318	6,279	23.3	12.9	13.7	2.0
Petroleum & Coal	–	–	–	b	b	b	392	8	400	594[n]	7[n]	601[n]	–	–	8.5	0.1
Non-metallic Mineral Products	2,406	116	2,522	4,522	289	4,811	6,564	697	7,261	11,887	320	12,207	22.3	24.2	10.9	3.3
Capital Goods	*5,126*	*209*	*5,335*	*11,442*	*774*	*12,216*	*17,108*	*1,428*	*20,536*	*62,962*	*1,491*	*64,453*	*19.5*	*18.1*	*25.7*	*29.5*
Basic Metals	266	–	266[j]	1,991	152	2,143	4,960	370	5,330	13,363	480	13,843	32.6	20.5	21.0	5.7
Metal Products	2,182	120	2,302	3,903	213	4,116	5,749	386	6,135	10,544	267	10,811	11.7	10.1	12.0	3.1
Non-electrical Machinery	2,181	87	2,268	4,012	337	4,349	5,752	510	6,262	12,586	661	13,247	13.4	11.8	16.2	4.7
Electrical Machinery	b	b	b	615	37	652	2,066	154	2,220	25,317	30	25,347	–	44.2	62.7	15.6
Transport Equipment	497	2	499	921	35	956	581	8	589	1,152	53	1,205	6.5	2.3	15.4	0.4
Miscellaneous[k]	*3,263*[l]	*569*[l]	*3,852*[l]	*1,070*	*147*	*1,117*	*1,175*[m]	*66*[m]	*1,241*[m]	*3,335*	*78*	*3,413*	*–0.9*	*11.8*	*22.4*	*1.5*
Estate Processing	*8,646*	*191*	*8,837*	*9,227*	*370*	*9,597*	*10,529*	*294*	*10,823*	*19,247*	*444*	*19,691*	*5.9*	*7.5*	*12.7*	*6.0*
Total	*57,373*	*4,224*	*61,597*	*69,864*	*17,586*	*87,450*	*120,807*	*9,450*	*130,257*	*268,162*	*10,773*	*278,935*	*11.4*	*12.3*	*16.5*	*100.0*

Note: See Note to Table VI-2 for explanation of footnotes.

Source: Census of Manufacturing Industries, *op. cit.*, various issues.

Note to Table VI-2

This note also explains the various references appearing in a number of Tables. These explanations are necessary to clarify the differences in industrial classification of output between the different Censuses of Manufacturing that have taken place in Peninsular Malaysia.

a Excludes breweries, which have been included in Miscellaneous.

b Included in Miscellaneous.

c Excludes tailors and dressmakers.

d Includes medicinal and pharmaceutical preparations, perfumes, cosmetics and toilet preparations.

e Excludes manufacturing of matches, which is included in Intermediate Chemicals.

f Includes only motor vehicle bodies and motor vehicle repairs. Bicycle manufacture and repair included in Transport Equipment.

g Excludes motor vehicle and bicycle repair shops.

h Excludes motor cycles and scooters, which are included in Transport Equipment.

i Excludes tin smelting industry.

j Included only structural steel shapes.

k Miscellaneous corresponds to SITC major group 39.

l Includes spinning, weaving and finishing of textiles; manufacture of footwear and wearing apparel; manufacture of paper and paper products; re-rolling and drawing of basic steel forms; other non-ferrous metals; manufacture and repair of electrical appliances; manufacture and repair of radio and communications equipment.

m Includes preparation of natural gums and resins.

n Includes petroleum refineries.

APPENDIX TABLE VI-3

Peninsular Malaysia: Production, Imports, Exports And Domestic Market – 1959, 1963, 1968, 1973

(M$ Million)

	(1) PRODUCTION				(2) IMPORTS				(3) EXPORTS[a]				(4) MARKET			
	1959	*1963*	*1968*	*1973*	*1959*	*1963*	*1968*	*1973*	*1959*[b]	*1963*[c]	*1968*[d]	*1973*	*1959*	*1963*	*1968*	*1973*
Consumer Non-durables	*309.9*	*660.3*	*1,297.1*	*2,789.2*	*310.7*	*730.3*	*770.2*	*806.1*	*27.3*	*87.0*	*147.3*	*481.5*	*593.3*	*1,303.6*	*1,839.4*	*3,115.7*
Foods[e]	208.3	321.0	697.4	1,382.1	178.5	441.8	402.3	265.5	13.2	53.9	93.5	202.5	373.6	708.9	1,006.2	1,445.1
Beverages	18.7	25.6[f]	63.9	121.6	13.0	26.8	22.6	39.3	0.2	0.0	4.1	18.7	31.5	52.4	82.4	142.2
Tobacco	49.0	167.6	218.6	343.6	36.0	32.6	32.5	37.1	0.0	0.0	0.1	42.7	85.0	200.2	239.4	338.0
Textiles	g	15.1	72.4	291.9	28.0	118.2	162.4	293.4	6.4	4.2	12.3	62.1	21.6[h]	129.1	221.3	523.2
Wearing Apparel & Made Up Goods	g	7.2[i]	23.5	104.9	16.1	35.9	31.0	23.3	1.5	1.0	9.0	66.3	14.6[h]	42.1	43.2	61.9
Footwear	g	5.1[j]	6.0[j]	18.6	3.1	4.9	3.4	1.6	1.1	7.2	5.0	22.1	2.0[h]	n.a.[j]	n.a.[j]	n.a.[j]
Chemicals[k]	3.8	56.0	86.8[l]	144.8	29.4	40.1	53.4	96.5	4.5	19.3	19.0	43.5	28.7	75.2	112.1	197.8
Pottery, China & Earthenware	1.0	1.4	2.5	11.0	2.4	4.2	5.5	11.6	0.3	0.1	0.1	0.4	3.1	5.5	7.9	22.2
Printing & Publishing	29.1	57.0	104.8	238.0	4.2	25.8	27.0	28.3	0.1	1.3	4.2	8.4	35.2	81.5	126.9	257.9
Plastics	n.a.	4.3	21.2	132.7	n.a.	n.a.	n.a.	9.5	n.a.	n.a.	n.a.	14.8	n.a.	n.a.	n.a.	127.4
Consumer Durables	*20.4*	*26.9*	*102.9*	*289.0*	*42.7*	*104.3*	*119.8*	*54.0*	*3.0*	*4.0*	*2.6*	*38.3*	*60.1*	*127.2*	*218.4*	*304.7*
Furniture	7.4	21.4	30.1	68.0	1.3	4.8	2.9	3.8	0.1	3.9	1.6	8.0	8.6	22.3	30.1	63.8
Automobiles (C.B.U.)	13.0[m]	4.9[m]	70.9[n]	202.4	33.7[o]	78.8	97.0	31.0	2.4[o]	0.1	1.0	27.7	44.3	83.6	166.7	205.7
Bicycles	n.a.	0.6[p]	1.9[q]	18.6	7.7[r]	20.7	19.9	19.2	0.5[k]	0.0	0.0	2.6	7.2[h]	21.3	21.6	35.2
Intermediate Goods	*171.2*	*291.4*	*800.3*	*1,846.6*	*160.7*	*358.3*	*348.8*	*943.3*	*18.4*	*20.7*	*101.5*	*655.0*	*317.3*	*628.5*	*1,027.6*	*2,134.9*
Wood & Cork	85.3	133.0	250.0	824.9	4.9	6.6	4.6	4.5	0.1	1.6	23.2	488.6	90.1	138.0	230.5	340.8
Paper & Paper Products	g	8.1	21.0	62.8	18.3	43.7	70.8	148.0	0.3	0.9	3.1	12.4	18.0[h]	50.8	88.2	198.4
Leather & Leather Products	g	2.7	5.3	11.6	1.5	2.4	1.5	2.1	0.0	0.3	0.3	0.4	1.5[h]	4.8	6.5	13.3
Rubber & Rubber Products	36.3	58.3	110.3	195.8	13.7	19.2	12.6	22.4	3.4	9.9	11.0	36.1	46.6	67.5	104.4	182.1
Chemicals[s]	25.9	36.6	122.9	280.7	45.1	122.5	154.0	384.2	2.7	5.2	12.6	56.0	72.1	153.6	252.9	608.3
Petroleum	–	g	175.3	237.2	63.8	116.8	69.7	322.8	11.0	1.6	41.6	39.2	52.8[h]	115.2	208.5	520.8
Non-metallic Mineral Products	23.7	52.7	115.5	233.6	13.4	47.1	35.6	59.3	0.9	1.2	9.6	22.3	36.2	98.6	136.6	270.6
Capital Goods	*41.2*	*128.5*	*295.1*	*1,242.1*	*142.8*	*461.6*	*605.7*	*1,542.6*	*5.9*	*7.2*	*19.4*	*178.4*	*178.1*	*582.5*	*868.4*	*2,606.3*
Basic Metals[t]	1.8[u]	28.8	87.2	421.6	30.3	101.2	147.2	399.9	1.7	0.8	6.0	51.8	30.4	129.2	224.0	769.7
Metal Products	25.0	47.1	78.9	190.3	20.2	73.1	85.3	141.4	2.0	2.5	5.0	31.4	43.2	117.6	156.8	300.3
Non-electrical Machinery	11.7	32.1	63.3	205.8	38.6	166.4	225.9	639.6	1.6	1.0	2.5	51.9	48.7	197.3	284.0	793.5
Electrical Machinery[v]	g	12.4	57.4	411.4	45.9	106.9	120.3	274.3	0.6	2.8	5.5	38.0	45.3[h]	116.4	168.9	647.7
Transport Equipment	2.7[w]	8.1[w]	8.4[x]	13.0	7.8[r]	14.0	27.0[y]	87.4	0.0	0.1	0.4[y]	5.3	10.5	22.0	34.7	95.1
Miscellaneous[z]	*53.6*	*50.2*	*10.9*	*47.2*	*23.4*	*58.7*	*45.0*	*187.7*	*1.1*	*1.7*	*3.6*	*117.4*	*75.9*	*111.4*	*104.9*	*117.5*
TOTAL	596.3	1,157.3	2,506.3	6,214.1	680.3	1,713.2	1,889.5	3,533.7	55.7	120.6	274.4	1,470.6	1,224.7	2,744.4	4,058.7	8,279.1

N.A. : Not available.

Source: Department of Statistics, *Census of Manufacturing Industries, Peninsular Malaysia*, 1959, 1963, 1968, 1973, Kuala Lumpur; *External Trade of Malaya, 1959*, Kuala Lumpur, 1960; *Annual Statistics of External Trade*, 1964, Kuala Lumpur, 1965; *Monthly Statistics of External Trade*, December, 1968, Kuala Lumpur, 1969; *Annual Statistics of External Trade*, 1973, Kuala Lumpur, 1974.

For explanations of footnotes and Note on Methodology, See Note to Table VI-3.

Note to Table VI-3.

Peninsular Malaysia – Production, Imports, Exports and Domestic Market for Manufactured Products – 1959, 1963, 1968 and 1973

METHODOLOGY

Production Data:

These were obtained from the Censuses of Manufacturing in Peninsular Malaysia for 1959, 1963, 1968 and 1973.

Import Data:

1959 import figures are imports into the Federation of Malaya, as it is not possible to separate imports for consumption from imports intended for re-export, these data are necessarily inflated. Furthermore, it is not possible to distinguish imports by origin and thus imports from Sabah and Sarawak are included. Data for 1963 and 1968 exclude imports for re-export, imports from Sabah and Sarawak, and retained imports for consumption in Sabah and Sarawak. Thus, the data represent "foreign" imports for consumption in West Malaysia. For 1973, the import data only exclude imports for re-export.

Export Data:

1959 export data include re-exports and exports to Sabah and Sarawak, and are thus overstated to this extent. Figures for 1963 and 1968 exclude re-exports and exports to Sabah and Sarawak. The data for 1973 only exclude re-exports.

Market:

The market estimate is obtained on the basis of the formula production plus imports minus exports. Since the estimation requires data for imports and exports from all sources, the market estimates for 1963 and 1968 are not based on the import data presented in the table.

a Excludes Peninsular Malaysia exports to Sabah and Sarawak.

b 1959 figures are from the statistics of the Federation of Malaya, excluding trade with Singapore. No distinction is made between domestic exports and re-exports.

c These are the States of Malaya trade figures, including trade with Singapore.

d Peninsular Malaysia trade statistics, including trade with Singapore.

e Imports and exports exclude dried and salted fish, meats and fruits and vegetables.

f Excludes breweries, which have been included in Miscellaneous.

g Included in Miscellaneous.

h Based only on import and export data.

i Excludes tailors and dressmakers.

j Production data excludes rubber footwear which is included under rubber products. Import and export data, however, include footwear of all types this lack of comparability makes a calculation of the market impossible.

k Includes medicinal and pharmaceuticals preparations, perfumes, cosmetics and toilet preparations.

l Excludes manufacturing of matches, which is included in Intermediate Chemicals.

m Includes motor vehicles of all kinds; parts and accessories.

n Includes motor vehicle bodies and the manufacture and assembly of trucks.

o Includes other motor vehicles and parts.

p Includes bicycles, tricycles and trishaw parts and accessories.

q Includes bicycle parts and accessories; excludes motor cycles and scooters, which are included in transport equipment.

r Includes parts and accessories.

s Excludes vegetables and animal oils and fats.

t Excludes tin smelting industry.

u Includes only structural steel shapes.

v Includes electrical appliances, radios and televisions.

w Includes shipbuilding and boat repairs, motor vehicle parts and accessories.

x Includes motor cycles and scooters and manufacturing of other transport equipment parts and accessories.

y Includes motor vehicles carrying goods only.

z Miscellaneous corresponds broadly to SITC major group 89. But in 1959, miscellaneous includes spinning, weaving and finishing of textiles, manufacture of footwear and wearing apparel; manufacture of paper and paper products; re-rolling and drawing of basic steel forms; other non-ferrous metals; manufacture and repair of electrical appliances, manufacture and repair of radio and communications. For 1963, 1968 and 1973, miscellaneous includes scientific, medical, optical and photo apparatus, photographic and cinematographic supplies, watches and clocks and excludes printed matter, manuscripts, typescripts and articles of plastic materials. However, production data tends to underestimate actual production due to incomplete coverage. Thus, the market estimates are underestimates and we have chosen not to use them.

APPENDIX TABLE VI-4

Peninsular Malaysia: Share of Pioneer and Non-Pioneer Industries in Value Added and Employment, 1968

Industry Group	*Total Value Added ($'000)*	*Percentage Share of Value Added for Group*		*Total Employment*[a]	*Percentage Share of Employment in Group*	
		Pioneer Companies	*Non-Pioneer Companies*		*Pioneer Companies*	*Non-Pioneer Companies*
1. Food Manufacturing	140,083 (2,823)	47.4 (23)	52.6 (2,800)	17,962	16.4	83.6
2. Beverage Manufacturing	36,263 (76)	51.2 (2)	48.8 (74)	2,268	17.9	82.9
3. Textile Manufacturing	19,533 (60)	88.9 (11)	11.1 (49)	4,880	82.6	17.4
4. Wood and Cork Products	94,437 (807)	10.5 (7)	89.5 (800)	19,156	9.3	90.7
5. Chemicals and Chemical Products	79,476 (313)	55.4 (31)	44.6 (282)	5,479	48.3	51.7
6. Products of Petroleum and Coal	40,676 (6)	100.0 (4)	* (2)	392	98.7	1.3
7. Non-metallic Mineral Products	61,760 (322)	11.9 (7)	88.1 (315)	6,830	17.0	83.0
8. Basic metal industries	21,188 (77)	71.1 (5)	28.9 (72)	3,015	74.4	25.6
9. Metal Products	38,987 (1,203)	24.2 (14)	75.8 (1,189)	7,694	21.3	78.7
10. Machinery except Electrical Machinery	25,158 (451)	5.2 (3)	94.8 (448)	5,752	3.4	96.6
11. Electrical Machinery and Appliances	20,781 (314)	72.5 (12)	27.5 (302)	2,066	62.7	37.3
12. Other Industries	295,509 (2,561)	11.2 (27)	88.8 (2,534)	34,784	11.3	88.7
Total	873,851 (9,013)	31.8 (146)	68.2 (8,867)	110,278	20.5	79.5

Note: * Less than 0.1. ( ) Refers to number of establishments.

[a] Excluding off-estate processing.

Source: Department of Statistics, *Census of Manufacturing Industries, 1968* (Kuala Lumpur, Malaysia).

APPENDIX TABLE VI-5

Peninsular Malaysia: Share of Pioneer and Non-Pioneer Industries in Value Added and Employment, 1973

Industry Group	*($'000) Total Value Added*	*Percentage Share of Value Added for Group*		*Total Employment*[a]	*Percentage Share of Employment in Group*	
		Pioneer Companies	*Non-Pioneer Companies*		*Pioneer Companies*	*Non-Pioneer Companies*
Food Manufacturing[b]	239,085 (2,784)	45.9 (38)	54.1 (2,746)	29,277	23.8	76.2
Beverage[c]	61,206 (73)	– (2)	– (71)	2,895	–	–
Textiles[d]	104,221 (240)	74.4 (34)	25.6 (206)	22,067	68.0	32.0
Wood & Cork[e]	304,242 (1,004)	23.9 (37)	76.1 (967)	39,605	29.0	71.0
Chemicals & Chemical Products	175,097 (337)	27.4 (43)	72.6 (294)	9,235	51.2	48.8
Products of Petroleum & Coal	51,876 (10)	99.4 (6)	0.6 (4)	594	95.6	4.4
Non-Metallic Mineral Products[f]	115,978 (366)	31.7 (16)	68.3 (350)	11,887	31.7	68.3
Basic Metal Industries[g]	85,891 (198)	68.0 (17)	32.0 (181)	6,694	52.7	47.3
Metal Products	114,419 (1,489)	36.5 (32)	62.5 (1,457)	17,213	30.0	70.0
Machinery	87,242 (857)	36.0 (17)	64.0 (840)	12,586	23.7	76.3
Electrical Machinery	188,527 (109)	88.6 (49)	11.4 (60)	25,317	88.5	11.5
Other Industries	799,145 (3,593)	16.1 (95)	83.9 (3,490)	90,792	13.5	86.5
Total	2,326,929 (11,060)	37.1 (356)	62.9 (10,742)	268,162	33.2	66.8

Note:
a Only fully-time paid employment considered.
b Excluding off-estate processing for non-pioneer companies only.
c Statistically recorded in "Other Industries".
d Excluding wearing apparel.
e Excluding furniture.
f Includes glass and glass products.
g Pioneer industries exclude 2 firms.
( ) Refers to number of establishments.

Source: *Census of Manufacturing Industries 1973, op. cit.*

APPENDIX TABLE VI-6

Peninsular Malaysia: Wage And Non-Wage Value Added Per Employee of Pioneer And Non-Pioneer Industries By Major Industry Groups, 1968

Industry Group	*Total Value Added ($'000)*	*Wages And Salaries ($'000)*	*Non-Wage Value Added ($'000)*	*Number of Employees (Full-time Equivalent)*	*Wage Value Added Per Employee ($'000)*	*Non-Wage Added Per Employee ($'000)*	*Total Value Added Per Employee ($'000)*
Pioneer Industries							
1. Food Manufacturing	66,394	10,481	55,913	3.,062	3.42	18.26	21.68
2. Beverage Manufacturing	18,584	2,622	15,962	407	6.44	39.21	45.66
3. Textile Manufacturing	17,373	5,590	11,783	4,031	1.38	2.92	4.30
4. Wood & Cork Products	9,945	2,661	7,284	1,782	1.49	4.08	5.58
5. Chemicals & Chemical Products	44,033	9,958	34,075	2,696	3.69	12.63	16.33
6. Products of Petroleum & Coal	40,674	4,499	36,175	390	11.53	92.76	104.29
7. Non-Metallic Mineral Products	7,350	3,489	3,861	1,163	3.00	3.31	6.31
8. Basic Metal Industries	15,069	6,620	8,449	2,244	2.95	3.76	5.71
9. Metal Products	9,416	4,318	5,098	1,647	2.62	3.09	6.62
10. Machinery except Electrical Machinery	1,305	431	874	197	2.18	4.43	6.62
11. Electrical Machinery & Appliances	15,067	3,546	11,521	1,308	2.71	8.80	11.51
Non-Pioneer Industries							
1. Food Manufacturing	73,689	26,721	46,968	15,875	1.68	2.95	4.64
2. Beverage Manufacturing	17,679	4,746	12,933	1,906	2.49	6.78	9.27
3. Textile Manufacturing	2,160	862	1,298	1,048	0.82	1.23	2.06
4. Wood & Cork Products	84,492	38,623	45,869	17,754	2.17	2.58	4.75
5. Chemicals & Chemical Products	35,443	8,175	27,268	3,050	2.68	8.94	11.62
6. Products of Petroleum & Coal	2	2	–	6	0.33	–	0.33
7. Non-metallic Mineral Products	54,410	14,084	40,326	6,050	2.33	6.66	8.99
8. Basic Metal Industries	6,119	1,285	4,834	817	1.57	5.91	7.48
9. Metal Products	29,571	12,252	17,319	6,379	1.92	2.71	4.63
10. Machinery except Electrical Machinery	23,853	11,790	12,063	5,810	2.02	2.07	4.10
11. Electrical Machinery & Appliances	5,714	1,533	4,181	835	1.83	5.00	6.84
All Industries	873,851	266,957	606,894	125,535	2.13	4.83	6.96

Source: Census o· Manufacturing Industries 1968, op. cit.

APPENDIX TABLE VI-7

Peninsular Malaysia: Wage and Non-Wage Value Added per Employee of Pioneer and Non-Pioneer Industries by Major Industry Groups, 1973

Industry Groups	*Total Value Added ($'000)*	*Wages and Salaries ($'000)*	*Non-Wage Value Added ($'000)*	*Number of Employees*[a]	*Wage Value Added Per Employee ($'000)*	*Non-Wage Value Added Per Employee ($'000)*	*Total Value Added Per Employee ($'000)*
Pioneer Industries							
Food manufacturing	109,714	20,066	89,648	6,972	2.88	12.86	15.74
Beverage	–	–	–	–	–	–	–
Textiles	77,509	26,312	51,197	15,012	1.75	3.41	5.16
Wood & Cork products	72,562	19,199	53,363	11,488	1.67	4.65	6.32
Chemicals & Chemical products	88,007	17,811	70,196	4,729	3.77	14.84	18.61
Products of Petroleum & Coal	51,578	6,474	45,104	568	11.40	79.41	90.81
Non-metallic mineral products	36,809	8,634	28,175	3,770	2.29	7.47	9.76
Basic metal industries	58,374	12,203	46,171	3,531	2.46	13.08	16.53
Metal products	41,737	12,606	29,131	5,164	2.44	5.64	8.08
Machinery	31.414	5,093	26,321	2,985	1.71	8.82	10.52
Electrical Machinery & Appliances	167,121	34,502	132,619	22,405	1.54	5.92	7.46
All Pioneers	863,515	193,361	670,154	88,906	2.17	7.54	9.71

APPENDIX TABLE VI-7 (*continued*)

Industry Groups	*Total Value Added ($'000)*	*Wages and Salaries ($'000)*	*Non-Wage Value Added ($'000)*	*Number of Employees*[a]	*Wage Value Added Per Employee ($'000)*	*Non-Wage Value Added Per Employee ($'000)*	*Total Value Added Per Employee ($'000)*
Non-Pioneer Industries							
Food manufacturing	129,371	37,046	92,325	22,305	1.66	4.14	5.80
Beverage	–	10,817	10,817	2,895	3.74	3.74	–
Textiles	26,712	8,560	18,152	7,055	1.21	2.57	3.79
Wood & Cork products	231,680	71,582	160,098	28,117	2.55	5.69	8.24
Chemicals & Chemical products	87,090	17,012	70,078	4,506	3.78	15.55	19.33
Products of Petroleum & Coal	298	79	219	26	3.04	8.42	11.46
Non-metallic mineral products	79,169	21,575	57,594	8,117	2.66	7.10	9.75
Basic metal industries	27,517	8,723	18,794	3,163	2.76	5.94	8.70
Metal products	72,682	23,690	48,992	12,049	1.97	4.07	6.03
Machinery	55,828	23,566	32,262	9,601	2.45	3.36	5.81
Electrical Machinery & Appliances	21,406	6,960	14,446	2,912	2.39	4.96	7.35
All Industries	2,326,929	586,995	1,739,934	268,162	2.19	6.49	8.68

Note: [a] Only full-time paid employees considered.

Source: Department of Statistics, *Census of Manufacturing Industries, Peninsular Malaysia*, 1977, Kuala Lumpur.

APPENDIX TABLE VI-8

Peninsular Malaysia: Selected Changes in Nominal Import Tariff Levels Affecting Manufacturing 1973-1976

	New Rate	*Old Rate*
1973		
Gas operated stoves	45% or $10 each, WTH	35% or $10 each
Airconditioners for road vehicles	50% or $250 each, WTH	40% or $250 each
Batteries for motor vehicles	40-70%, depending on size or 60c/lb., WTH	30-60%, depending on size or 50c/lb., WTH
Electric irons	45% or $5 each, WTH	–
Electric rice cookers	55% or $5 each, WTH	45% or $5 each, WTH
Electric ovenettes	55% or $5 each, WTH	–
Gramaphone records	35 per cent	25 per cent
Flourescent lamp tubes	$1.65 each	$1.60 each
Motor cars	60 per cent	45 per cent
Cameras, projects & apparatus	25 per cent	20 per cent
Gramaphones, dictating machines, record players & related items	30 per cent	25 per cent
Portable transistors fitted with gramaphones & car-radios	30 per cent	25 per cent
Lubricating oil preparations under Heading No. 34.03100	$1.05 per gallon	$1 per gallon
Rubber piping & tubing	35 per cent	30 per cent
Aluminium plates	45 cents per lb.	35 cents per lb.
Refrigerating equipment & parts	35 per cent	20 per cent
Parts of electrical apparatus for use in electric fans	40 per cent	15 per cent
1974		
Unglazed tiles	20% or $72 ton, WTH	25% or $89.60/ton
Spiegeleisen iron, ingots of iron or steel etc.	nil	$50 per ton
Bars & rods of iron & steel & similar items	nil	$100 per ton
1975		
Cigarettes	$15.00 per lb.	$12.50 per lb.
Cigars	$20.00 per lb.	$16.00 per lb.

APPENDIX TABLE VI-8 (*continued*)

	New Rate	*Old Rate*
1976		
Motor cars (non-commercial)	progressive rate 60-100%	60 per cent
Motorcycles	45 per cent	30 per cent
Refrigerators & other refrigerating equipment	45% or $360 each, WTH	35% or $280/unit, WTH
Dish- and clothes-washers	25% & 35% respectively	15% & 25% respectively
Calculating & data processing machines	25 per cent	20 per cent
Perfumery, cosmetics & toilet preparations	60 per cent	50 per cent
Carpets & rugs	50 per cent	35 per cent
Watches	15 per cent	10 per cent
Clocks	30 per cent	20 per cent
Others, subject to higher duties		
Articles made of leather & fur, glassware, & articles made of metals		
1977		
Cigarettes	$16.50 per lb.	$15.00 per lb.
Cigars	$22.00 per lb.	$20.00 per lb.

Note: WTH – whichever is the higher.

APPENDIX TABLE VI-9

Average Wages paid per Annum by Employment Size in Peninsular Malaysia, 1973

Paid Full-time Employment Size Group	*Number of Paid Workers*	*Wages Per Annum ($)*	*Average Wages Per Annum ($)*	*Index for Average Wages Per Annum (500 and over – 100)*
No. paid full-time employees	2,582	1,566	606.5	24.3
1 – 4	9,507	11,688	1,229.4	49.2
5 – 9	9,825	15,424	1,569.8	62.8
10 – 19	15,964	27,724	1,736.6	69.5
20 – 29	14,625	26,257	1,795.3	71.8
30 – 49	23,068	46,442	2,013.2	80.5
Sub-total/Average 0 – 49	75,571	129,101	1,708.3	68.3
50 – 99	35,336	83,840	2,372.6	94.9
100 – 199	40,096	93,341	2,327.9	93.1
200 – 499	57,851	134,662	2,327.7	93.1
500 and over	70,081	146,090	2,084.5	83.4
Sub-total/Average 50 and over	203,364	457,933	2,251.8	100.0
Total/Average for all groups	278,935	586,995	2,104.4	84.2

Source: Calculated from data in *Census of Manufacturing Industries 1973, op. cit.*

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Pattaya, Thailand

I. Introduction

At the start of the seminar Dr. Eddy Lee of the Asian Employment Programme recounted the background of the project of which the present seminar formed a part. He said that the project started in October 1978 when members of an Advisory Committee met in Jakarta to identify industries in each of the ASEAN countries that held promise for making maximum contribution to employment creation in the countries concerned. The committee decided that such industries would have to be those that were labour intensive and had strong linkages with the agricultural sector and large scale enterprises. Thereafter two sets of studies were prepared: one set analysing the impact of policies on industrialisation and employment at a macro level in each ASEAN country and another looking into the potential for employment creation of various specific industries at a micro level.

The seminar on "Export-led Industrialisation and Employment"[1] held in February 1980, was intended to serve as a major input into the present seminar. That seminar tried to discover the reasons why certain countries in Asia (specifically, South Korea, Hong Kong and Singapore) had experienced relatively rapid growth in the last two decades and looked into the relevance of this experience to the countries of ASEAN.

[1] See ARTEP, *Export-led Industrialisation and Employment*, Proceedings of a Symposium (Bangkok: ARTEP, 1980).

The two major ideas that emerged from the debates in the seminar were most interesting. First, the industrialisation of these countries had indeed been fueled by the expansion of manufactured exports and employment had truly been dramatically boosted by this expansion. And secondly, the experience offered no basis for indiscriminate emulation by other countries.

Dr. Lee then reviewed the issues that were raised relative to the second point. How important was the role played by government policies in promoting the expansion of manufactured exports? What was the significance of government intervention? Were not there any pre-conditions to the expansion? In the context of ASEAN countries, how politically feasible were the policies adopted? The seminar felt that the government policies that provided incentives to manufactured exports were important but that these policies were aided by "pre-conditions" and favourable developments abroad. Moreover, their success was relatively short-lived, 10-15 years.

Dr. Lee then summed up the conclusions of the seminar: one, manufactured exports could contribute crucially to employment promotion but there was need to carefully identify what these exports should be; two, policies that were aimed at promoting manufactured exports could also be directed at developing labour intensive and small scale industries and these industries must be selected on the basis of their linkages with other sectors of the economy and their potential for successful development; and three, advanced planning was important, to anticipate problems associated with the post-manufactured exports phase.

Dr. Lee said that the present seminar might want to take these ideas into account in its own deliberations.

II. Discussion of the ASEAN Couutry Experiences

Singapore

The country study from Singapore[1] and the industry case study[2] were presented by Prof. Augustine H.H. Tan. A considerable amount of time was spent discussing the Singapore experience, being the one ASEAN country with a highly successful export-led industrialisation. The comments and discussion of the papers did primarily focus on the general experience of Singapore and only little on the case study, the electronics industry.

Several participants commented on the particular measures undertaken by the Singapore government to ensure labour discipline and wage stability. The measures, which strengthened the powers of management relative to those of unions, were both applauded and highly criticised. The critical participants

1 Pang Eng Fong and Augustine Tan, *Employment and Export-led Industrialisation: The Experience of Singapore* (Chapter 4 in this volume).

2 Pang Eng Fong and Augustine Tan, "Employment in the Singapore Electronics Industry", (ARTEP, 1980). Mimeo.

questioned whether the NTUC (Singapore National Trades Union Congress) was a government controlled union, since it had apparently acquiesced to make such issues as recruitment, promotion, transfer, retrenchment and dismissal non-negotiable. These participants said that they were not sure whether they would like to see such labour-depressive policies being adopted in their respective home countries. Another participant commended the government, employers and workers of Singapore for co-operating to produce industrial discipline but he also noted that this had been possible because of the relative smallness of Singapore.

The smallness of Singapore was also touched upon by a participant who observed that the achievement of Singapore in accelerating growth and promoting employment between 1967 and 1973 would be difficult to match. However, he said, there was a difference between creating jobs for 100,000 workers and solving the unemployment problem of one-half million people.

A participant questioned the effectiveness of Singapore's wage policy, which seemed to assume that the raising of nominal wages would also increase real wages. He saw no reason why this should be so unless other factors were also dealt with. In this context another participant wanted to know whether there were specific measures directed at keeping the price level stable.

Doubts were also expressed about the appropriateness to the ASEAN countries of some of Singapore's fiscal incentives. For instance accelerated depreciation and other tax policies would have the effect of reducing the user cost of capital and thus encouraging capital intensive techniques and industries.

A participant also expressed scepticism on whether other ASEAN countries would favour Singapore's policy of opening up the economy to foreign investment and getting local industries to become mere support producers for foreign investors.

Another participant wanted to know whether Singapore, instead of importing labour from ASEAN countries, had considered sub-contracting some jobs or projects to these countries of which several had free-trade zones.

Finally a participant acknowledged that Singapore did provide lessons on how to deal with unemployment arising from labour-displacing changes in technology. She wanted to raise a number of questions however, some of which had particular relevance to the electronics industries in Singapore. First, what was being done to cushion the vulnerability of the electronics industry to external factors? What specific steps was Singapore taking to prepare for the shift from labour intensive to capital intensive industries? Was Singapore devoting resources for research and development in the electronics field? With whom and how significant were the linkages of the electronics industry? Finally, was not the willingness of women workers to accept lower pay being unduly taken advantage of?

In reply to the questions about Singapore, Prof. Tan acknowledged that Singapore was indeed small but argued that what was important was the proportion of the labour force entrants to the total labour force rather than the ab-

solute number. He also argued that local investors were not being relegated to the background but had, in fact, been growing quite rapidly too.

Reacting to the intensity of the questions on the labour issue in Singapore he said that trade union leaders had been working closely with the goverment for many years. But the officers of the NTUC were indeed elected by workers. When the new legislations on wages and working conditions were enforced, unemployment was high and workers were happy to take any job that was available. He asserted that labour policies in Singapore were characterised by smooth tripartite co-operation. Co-operation did not mean oppression. The NTUC secretary-general was in fact recently named a full-fledged member of the cabinet.

Regarding the incentives to industry he said that those did not encourage capital intensive industries because whatever incentives were given to capital were counterbalanced with incentives to labour, including the creation of the Central Provident Fund, a scheme for worker's retirement, which incidentally also increased the saving rate. Moreover, relative prices of inputs were not too important because Singapore was an open economy. He also explained that it was true that real wages could not be legislated but Singapore took other factors into account, including labour immigration from outside to increase the local supply of labour.

Prof. Tan regretted that the Singapore case study did not have anything on the electronics industry linkages but said that these were going to be presented in another paper scheduled to be completed shortly.

Prof. Tan furthermore said that the only solution to the question of vulnerability of industries to external forces was the diversification both of export products and of foreign markets.

He also said that steps were being taken in Singapore to up-grade industries technologically; for instance, some subsidies were being granted to firms for R and D efforts. The educational system was also being geared to contribute to technological change.

As regards women, he said that they were not being exploited. Their willingness to accept lower pay was a reflection of the fact that they were only secondary workers. The male members of the households were the principal workers.

Finally he declared that Singapore had done a lot of sub-contracting to other ASEAN countries. A few labour intensive factories had been asked to move out of the country.

The Philippines

The country study[1] of the Philippines was presented by Prof. Romeo M. Bautista while the case study[2] was presented by Prof. Gonzalo M. Jurado.

[1] Romeo M. Bautista, *The Development of Labour Intensive Industry in the Philippines* (Chapter 1 in this volume).

[2] Gonzalo M. Jurado and Loreli R. Cataylo, "The Food Processing and Wood Working Industries in the Philippines" (ARTEP, 1980). Mimeo.

On Prof. Bautista's paper a participant could not agree with the measure of skill intensity (the ratio of the average manufacturing wage rate index to the average unskilled workers wage rate index) used in the paper. The measure assumes that the labour market is competitive, which he doubted. He also lamented the absence of reference to foreign investments, saying that this was a serious omission since foreign investments had become a major consideration in the industrialisation programmes of ASEAN countries.

Another participant added a number of observations to the Philippine Government's policies toward labour intensive industries. Citing a paper from the Philippine Ministry of Industry, he said that Philippine policies have four broad objectives; the development of small and medium industries, the regional dispersal of these industries, the promotion of labour intensive manufactured exports, and the horizontal integration of manufacturing activities through sub-contracting complementation and the like. These objectives were being complemented through several specialised agencies.

In reply to issues raised with regard to the Philippine paper, Prof. Bautista made the following observations. The assumption of a freely competitive labour market that underlies the use of the skill intensity index was indeed very strong. However, he said that the use of such an index has become more or less standard. Moreover, he felt that it also yielded fairly accurate results in the context of the long-run. With regard to foreign investments he agreed that they were important but added that they were beyond the scope of the paper. He then elaborated on the argument for labour intensive exports in the ASEAN region, concluding that there was considerable scope for expanded intra-industry trade among ASEAN countries.

Commenting on the Philippine case study a participant asked Prof. Jurado why the furniture industry seemed faced with the problem of uncertainty of raw material supplies when, as the paper indicated, the Philippines was blessed with an abundance of raw materials.

Another participant asked whether it was being proposed that household enterprises ought to be regrouped or phased out. He noted that many of these enterprises were "sweat shops".

Another participant said that he failed to understand how it could be claimed that the prospects were bright for small scale industries. He wondered where the potential for growth lay if, as was shown in the paper, the industry was already overcrowded. He felt that a more realistic view would be that modernization inevitably implied a move away from the low productivity, small scale sector.

Responding to the issues raised, Prof. Jurado said that it was important to distinguish between supply and availability. Although the supply of a raw material was abundant, small firms often could not obtain effective access to it.

He said that he saw assistance to household and small scale enterprises as being essentially transitional. He expected those enterprises to outgrow this assistance over time.

As regards the prospects for the industry, he said that, first, the demand for processed food is likely to increase as urbanisation accelerates domestically and requirements in foreign countries increase. Secondly, in specific reference to household and small scale enterprises, present difficulties were not an accurate indication for future prospects. A structural change would greatly enhance the prospects for small scale industries. A change in income distribution in favour of poorer households would remove the income constraint on demand. Finally, linkages with larger enterprises and government could be improved.

Thailand

The Thailand country overview[1] was presented by Dr. Somsak Tambunlertchai while the case studies of the animal feed industry[2] and the farm machinery industry[3] were presented by their respective authors.

Commenting on Dr. Somsak's presentation of the Thailand overview a participant said he was bothered by one problem. He agreed that small scale, labour intensive and export oriented industries ought to be promoted but we all recognise that exports of these industries were currently facing protectionist policies abroad. What specific measures were being proposed to overcome these constraints?

In reply, Dr. Somsak said that one way to beat protectionist policies abroad was to go into the export of components and parts. There is greater room for these than for finished products in the export market because in general tariffs on inputs are lower than those on finished products.

Another participant deplored the fact that the paper on animal feed did not show that Thailand had comparative advantage in this industry. He said that comparative advantage could only be determined on the basis of 'hard' comparative data.

In reply, Dr. Nipon acknowledged that he did not have data showing explicitly that Thailand had comparative advantage in animal feed production. However, he felt that comparative advantage was fairly easy to determine. Calculations of domestic resource costs (DRCs) already existed for several sectors in most ASEAN countries. Furthermore, the fact that Thailand exported animal feed was a sufficient proxy indication that it had comparative advantage in that industry.

Now turning to Dr. Chesada's paper on the farm machinery industry a participant expressed elation at being reminded that ASEAN countries also had capital-goods producing industries. He felt that these "home-grown" industries deserved to be actively promoted.

1 Somsak Tambunlertchai and Chesada Loohawenchit, *Labour Intensive and Small Scale Manufacturing Industries in Thailand* (Chapter 5 in this volume).

2 Nipon Paopongsakorn, "The Animal Feed Industry in Thailand", (ARTEP, 1980). Mimeo.

3 Chesada Loohawenchit, "The Farm Machinery Industry: A Case Study of a Small Home Growth Industry in Thailand," (ARTEP, 1980). Mimeo.

With respect to the Thai farm machinery industry, however, he called attention to the fact that the industry had rather low industry value added and also used only a low proportion of components produced domestically. It therefore had limited employment generating capacity and was extremely dependent on imports.

He believed that a lesson could be learned from the experience of the rubber processing industry in Malaysia. Initially, the Malaysian industry was also almost entirely dependent on imports but in the course of time became self-reliant. Apparently, it accomplished the transition through technological adaptation and innovation. He argued for strong support of technological research by such agencies as IRRI for the promotion of the Thai farm machinery industry.

The participant also said that since the development of the farm machinery industry was a function of agricultural development, the approach should be to increase the irrigated agricultural areas as a means of creating demand for farm machinery.

In reply, Dr. Chesada said that the value added of the farm machinery industry in Thailand was about 135 million Baht. Regarding capital productivity (0.36 for small scale as opposed to 0.92 for medium size firms) he said that smaller firms usually had a larger proportion of their assets in buildings and land. He himself wanted to promote better access to capital markets for smaller firms in order to put them on an equal footing with larger firms.

He agreed that accelerating rural development would increase the demand for farm machinery but he did not think there was much additional room for such acceleration in the next few years. The planned acreage for irrigation were about the most what could be expected under present circumstances.

Malaysia

The country study from Malaysia[1] and the industry case study[2] were presented by Prof. Chee Peng Lim.

A few participants commenting on the country study wondered whether unemployment in Malaysia, given to be 6 per cent of the labour force as of the latest available data, was really all that serious. Did the figures include the underemployed? Another participant noted that despite the existence of unemployment there was a labour shortage in Malaysia.

It was also pointed out that Dr. Chee's data on factor intensity and productivity did not reflect differences in the quality of labour; nor was there

[1] Chee Peng Lim, Donald Lee and Foo Kok Thye, *The Case for Labour-Intensive Industries in Malaysia* (Chapter 6 in this volume).

[2] Chee Peng Lim, "Case Studies in the Tin Mining, Rubber Processing, and Foundry Industries in Malaysia, (ARTEP, 1980). Mimeo.

any data to show the differences, if any, in the capital labour ratio as between the formal and informal sectors. What empirical proof could be adduced to as demonstrating that the informal sector was prejudiced by past Malaysian policy?

A participant also questioned the idea of promoting the motor vehicles industry in Malaysia. While the promotion of the Malaysian motor vehicles industry might be desirable from the Malaysian point of view, it was not likely to be so from the ASEAN viewpoint considering that there already were motor vehicle complement schemes in the region.

Another participant asked whether labour intensive policy was expected to be a permanent one. It seemed to him that the policy should at best be a policy during a period of transition to capital intensive development. Moreover, it did not appear to him that the allocation of resources during the period of capital intensive industrialisation was really inefficient.

A participant wanted to know whether it would be a wise policy to promote labour intensive industries considering that many of them were inefficient.

With respect to the idea of transition, one participant said that to know whether such a transition was taking place, the proper thing to do was to find out the rate of growth of the labour intensive industry by discovering how many labour intensive enterprises were new and how many were old.

Responding to the questions about the Malaysian country papers, Prof. Chee said that it was true that the 6 per cent unemployment rate was not high but the rate was higher earlier when the promotion of labour intensive industries began to be carried out. Still the 6 per cent rate disguised several important aspects of the unemployment problem. The rate was higher in the rural areas. The figures excluded underemployment which was more serious in the rural areas. Mostly, the unemployed consisted of young, unskilled, male workers.

If there were shortages of supervisory type of workers despite the existence of unemployment, the solution should not be the abandonment of labour intensive industries. It should rather be the provision of a skills fund to support training in supervisory and managerial skills for labour.

Prof. Chee said that there has been little study into the formal sector in Malaysia but he believed that the cost of providing employment in the informal sector was probably less than 10 per cent of that in the formal capital intensive industries.

He agreed that what may appear to be desirable from a national viewpoint may not be so from an ASEAN viewpoint. Hence, he would even go one step further in order to reconcile these differences. He would be in favour of ASEAN countries forming a small industry association.

Prof. Chee also agreed with the idea that the labour intensive promotion policy should be of a temporary duration and that governments should gradually move towards a capital intensive promotion policy.

Finally, one participant said he believed, contrary to the view of Prof. Chee, that the import-substitution strategy in Malaysia also had had advan-

tageous results. It resulted in the promotion of the electronics industry and transport industry. These industries were capital intensive and home-grown. The electronics industry helped to remedy the unemployment problem of Malaysia in the early 1970s. Since its inception some twenty years ago, it had grown in a sustained fashion.

Prof. Chee agreed with that assessment but asked what would happen now that the electronics companies had reached the end of their tax holiday? He clarified that he was not asking for special treatment for home-grown industries but only for equal treatment as in the access to credit, etc.

Turning now to the Malaysian case studies a participant said that it would have been helpful if capital labour ratios were presented for the rubber processing and tin mining industries. This could facilitate the estimation of the employment impact of investments by countries that were interested in looking into the possibilities of promoting similar industries.

Responding, Prof. Chee acknowledged that these were glaring omissions adding, however, that his observation was that these industries were relatively labour intensive. For instance, even the largest rubber processing machinery firm in Malaysia was housed in very simple buildings and used only a few mechanical devices.

Another participant wanted to know where Malaysia would export its rubber processing and tin mining machinery in the event these were promoted.

One participant added that from the Malaysian paper it sounded as if all components were produced locally. What was the import content of the three industries? Another participant replied that certain components of the Malaysian "home-grown" industries were imported but these averaged only some 15-20 per cent of the value of sales.

Indonesia

On behalf of Mr. H. Poot[1] who was not present in the Seminar, Prof. Gonzalo M. Jurado presented salient points of the country overview on Indonesia. The case study on the Indonesian leather industry[2] was presented by the author Mr. Soejatman.

With reference to the first paper, a participant said that he had to express strong disagreement on a number of points. The statement that 'increased competition from large scale enterprises constitutes a formidable threat to small scale firms in many sectors' was not quite true. These firms not only catered to different consumers as was in fact pointed out by the paper but also produced different non-competing products and therefore could continue to co-exist.

1 H. Poot, *The Development of Labour Intensive Industry in Indonesia* (Chapter 3 in this volume).

2 Soejatman, "The Growth and Employment Potential of the Leather Industry in Indonesia," (ARTEP, 1980). Mimeo.

The current effort "to reserve certain product lines to small industries engaged in producing simple consumer goods and handicrafts" was an over-reaction. Why do this at all? Why prevent other enterprises from going into these product lines if they thought it was worthwhile to them?

The discussant disagreed with the argument that "regulations that limit incentives to firms of a certain size or that relate incentives inversely to the size of a firm may be more effective in promoting employment in manufacturing". This kind of policy would discourage firms from expanding and therefore would be counter-productive in the long run.

Finally, he expressed surprise at the conclusion that in general industrial policies should be "promotional" rather than "protectionistic". He said that some of the policies supported or advanced by the paper, including those already referred to, were very "protectionistic", nor was there anything fundamentally wrong with protection.

The issues raised with respect to the Indonesian paper were not discussed further in view of the absence of Mr. Poot.

On the paper on the leather industry in Indonesia, the discussant applauded Mr. Soejatman for having prepared a most instructive paper on Indonesian leather production. He expressed regret however that his lack of familiarity with the industry deterred him from raising questions.

III. General Discussion

Methodology

One participant said that the calculations of factor-intensities presented in the case studies had to be interpreted with caution. The available data did not permit the measurement of value-added per manhour or per machine-hour which would have given better indices of factor-intensities. The limitations of substitute measures should be recognized. Similarly, the existence of part-time work had to be carefully accounted for in measurements of employment and of output per man-year.

Another participant suggested that measures such as domestic resource cost and the effective rate of protection should have been used in the case studies. The DRC, for instance, could serve as a measure of comparative advantage between industries within an economy and the ERP could indicate whether or not there was a case for further promotion of a particular industry.

A different participant pointed out, however, that both of these measures were of limited use because they were partial equilibrium concepts (and hence did not take into account important general equilibrium inter-relationships).

One participant said that the figures for value added and value of capital used in most of the papers were uncorrected for subsidies via the tariff and the exchange rate. If corrections were made by adjusting for effective protection rates and currency overvaluation, value added would be smaller and value of capital would be bigger. This would show that large scale enterprises which are

more dependent on imported capital and tariff protection for their outputs than small scale enterprises were not really all that efficient in the use of capital. The difference in the productivity of capital as between large scale and small scale enterprises in favour of the former would not be as great as suggested by some of the papers.

Another participant suggested that clear distinctions should be made between labour intensive and capital intensive industries, between labour intensive techniques and labour intensive industries, between small scale and large scale enterprises, and finally between domestic oriented and export-oriented industries. There was consistencies and inconsistencies among these definitions and it was important to indicate exactly what type of industries we were discussing.

On the issue of labour intensive vs. small scale industries, one participant said that this relationship was more clear-cut in the past than at present. In the past, the industries that were small scale also tended to be labour intensive whereas this was often not the case under present technological conditions.

One participant objected to the concept of 'neutrality' in policies towards large and small scale industries. He said that the concept was out-of-date and that there was no such thing as neutrality towards capital.

Another participant replied that 'neutrality' did not refer to the treatment of capital or labour as entities but instead referred to neutrality in influencing the relative prices of capital and labour as inputs. Neutrality implied that the relative price should not be biased towards the use of any one factor by more than was warranted by relative factor endowments.

Finally, another participant said that it was important to keep in mind the relation between macro policies and micro issues. For instance it was necessary to deal with a possible conflict between local interest and country-wide interest.

Prospects for small scale industries

Most of the participants agreed that labour intensive small scale industries had good potential for growth, if promoted. These industries, however, face a number of problems: limited access to credit; uncertain access to raw material; limited access to technological knowledge, skilled labour and training facilities; shortages of managerial capability; high tariffs on imported inputs; and severe problems of marketing.

One participant argued emphatically for support to "home-grown" industries based on local ingenuity and high domestic value added; his opinion was that these industries were relatively labour intensive and had also demonstrated their viability by continuing to develop despite the absence of government encouragement and assistance.

Another participant exhorted the seminar not to become emotional about the home-grown industries. He said that e.g. the Malaysian rubber processing machinery industry employed only a few hundred people but the task of governments was to provide employment for thousands of workers.

Yet another participant reiterated a few points in "defence" of home-grown industries. He said that the growth of these industries had been largely costless to the economies concerned. For instance, no foreign exchange had been denied any socially useful activity because it was used by a home-grown industry. Also, the cost of technological innovation had been borne by these home-grown industries. Nor was there anything wrong with "reverse engineering"; there was no need to re-invent the bow and arrow. Furthermore, it was true that their employment was small, but these industries were either just beginning or only starting to expand. He felt that the proper approach was to develop new product lines or discover new markets.

A participant said that one could not look at labour intensive small scale industries without also looking at the problem of poverty especially in rural areas. These industries were low productivity enterprises diffused in the rural areas. The issue that should be resolved was the issue of how to increase the productivity of these enterprises. In this regard, an exchange of experience on how to assist labour intensive small scale industries among ASEAN countries would be most helpful.

Another participant observed that he could not help getting the impression that there was only one path to development, i.e., from small scale to large scale industries. He said that there were other paths. In Japan, there was the co-existence of small and large enterprises. Small scale enterprises also predominated in Germany and Italy where enterprises employing no more than 20 workers typically constituted some 94-98 per cent of all manufacturing enterprises and employed about 60 per cent of manufacturing workers. The difference was in the fact that small scale enterprises in developed countries manufactured specialised products which were easy to sell whereas those in developing countries produced general products which were difficult to market.

One participant said that it was important to analyse the historical development of enterprises. Three types of growth of manufacturing enterprises could be distinguished: one, when a branch of a larger enterprise is made an independent company; second, growth from the service industry, e.g., when a shop for machine-repairs starts producing components etc.; third, growth that was the result of purposeful (in the sense that it might be promoted by government) sub-contracting from large enterprises.

Another participant said that it was important to recognise the problems of small industries and that they represented only one phase in industrial development. The task of helping small industries was also inherently more difficult than that of helping the large scale sector.

The problems that small industries faced in obtaining supplies of raw materials were also commented upon. It was pointed out that it was important to distinguish between supply and availability. Although the supply of a raw material might be abundant, small firms could often not obtain effective access to it. One participant pointed out that uncertainty of local supplies could force large firms to purchase abroad.

Another participant said that a ban on the export of unprocessed raw materials would aid local industries apart from realising the benefit of increasing the domestic value-added in exports.

One participant referred to a successful and innovative case of subcontracting in the Indonesian shoe industry and argued that new systems of management to integrate small industries should be developed.

Another participant, however, counselled caution. He cited the case of the shoe industry in the Philippines where exploitative forms of sub-contracting had been introduced by some financiers.

Yet another participant pointed to the large potential for farming out labour-intensive processes to small firms. He cited the case of the furniture industry where it should be possible for small firms to specialise in refurnishing and maintenance.

Finally several participants pointed out the scope for increased co-operation among ASEAN countries; notably complementarity between the countries was encouraged in the development of labour intensive industry.

Government policies

Throughout the seminar a number of suggestions were given on how to improve government policies to maximise the benefits for the small scale labour intensive industries, among these above all: redressing of the capital using biases in the fiscal incentive structure; improved institutions for credit-giving; the development of marketing channels, and upgrading of technology and product quality in small scale industry.

One participant asserted that government intervention such as price controls could be harmful if they were not based on precise knowledge of demand and supply conditions in an industry.

Another participant said that in a private enterprise economy government exhortations were useless. Businessmen would always choose the most profitable alternatives and their behaviour could only be influenced through manipulating the incentive structure.

On the promotion of small industries, it was pointed out that there was a need to identify priority industries on a highly disaggregated basis. Categories such as "Food processing" were too broad and promotional resources would be spread too thinly.

Another participant said that it was important to consider linkages – both forward and backward – in evaluating the potential of an industry. The question of economies of scale in some industries could not be overlooked and the danger of 'freezing' small industries at their present sizes and levels of technology should be avoided.

A participant said that in a development programme aimed at overall national development, it was inevitable that promotion be both for large scale

as well as small scale industries because of the existence of such other objectives as expansion of foreign exchange earnings in addition to employment creation.

One participant indicated however that support for small scale industries could still be justified because these industries were more efficient in certain activities or product lines.

One participant said that the only way to help small scale industries was to improve their technology and increase their productivity and wages.

To another participant, it seemed that the objectives emerging from the discussions were contradictory: to raise productivity and wages on the one hand and to increase employment on the other. Yet another participant agreed that the issue of how to treat small industries was complicated by this conflict of objectives. Thus, even where household and small industries were less efficient than large industries a dilemma existed for the planner because of the need to do something about the unemployment problem.

One participant called attention to the need to take explicit account of labour in the preparation and implementation of development programmes. He said that labour more than others was interested in employment, adequate wages and decent working conditions. However, people should not rely on the free market to create these. In fact many problems were generated by the free market; inflation, price-fixing, market control.

He felt that what the government should do was to promote development and redistribute income to the mass of the population. The government should increase spending for public health, education, housing. There should be agrarian reforms.

He said furthermore that there was need to concentrate on basic industries because they were the foundations of development. He concluded by arguing that workers must have the right to organise, the freedom of choice, and the freedom to strike when necessary. Trade unions should be directly involved in the making of investment decisions.

Another participant said that recognition should also be given to entrepreneurs because they were important to development. He announced that in Indonesia, entrepreneurs had been trying to contribute their efforts to development programmes through the employers' confederation. The confederation was still small but it was doing its best to expand its operations, especially in the rural areas.

IV. Conclusions and Recommendations

The participants concluded the seminar by approving the following statement:

Representatives of governments, workers' federations, and employers' organisations and academic consultants from member countries of ASEAN, under the auspices of the Asian Regional Team for Employment Promotion of the International Labour Organisation (ARTEP–ILO), held a seminar on "ASEAN Comparative Study on the Development of Labour Intensive Industry"

in Pattaya, Thailand, on 28-30 October 1980.

As a point of departure, the seminar noted that one of the primary objectives of ASEAN countries is to provide full employment. With the exception of Singapore, the ASEAN countries face the problem of creating employment opportunities for a large number of the labour force in the next decade.

Participants then noted the employment creating potential of small scale enterprises and the possible role of these enterprises in employment promotion and industrialisation, and made the following observations:

(1) Small scale enterprises are usually more labour intensive and more efficient users of capital. They are, however, also characterised by backward technology, low productivity, low wages and unfavourable conditions of employment. Priority should be given to up-grading their technology, increasing their efficiency, and expanding their scale of operations where warranted.

(2) Technological up-grading need not always imply increasing capital intensity. Some new technologies can be capital-saving.

(3) The need to increase efficiency should be balanced against the need to generate employment, when such a trade-off exists.

(4) Though small scale enterprises continue to exist in many developed countries and there is no reasons to presume that they must disappear in the course of development, the promotion of small scale enterprises is only one phase in industrial development and should not be unnecessarily prolonged. The danger of perpetuating low productivity industries should be avoided.

(5) Many labour intensive and small scale enterprises have good potential for growth (with cheap sources of raw materials, expanding markets, etc.). They can develop fast if promoted.

The participants noted however that labour intensive and small scale enterprises are faced with a number of problems, including:

(1) Limited access to credit;

(2) Uncertain access to supplies of raw materials;

(3) Limited access to technological knowledge, skilled labour, and training facilities;

(4) Shortage of managerial capability;

(5) High tariffs on imported inputs, and

(6) Severe problems of marketing.

The participants proceeded to explore the character of policies that are needed to promote labour intensive and small scale enterprises. They indicated that:

(1) Small scale enterprises were sometimes unwittingly discriminated against by macro-economic and industrial promotion policies. Capital-using biases in the incentive structure need to be redressed.

(2) Special promotional efforts are required to develop financial institutions and increase the access of small enterprises to finance.

(3) Special efforts should be made to upgrade technology, improve product quality and develop managerial and other skills

(4) Marketing channels should be developed, including special measures to promote exports from small scale enterprises. Co-operatives should be promoted.

(5) New institutional arrangements to increase the linkages between small enterprises and large ones should be developed. Sub-contracting of labour intensive processes and assigning the production of components to small firms should be encouraged.

(6) Indiscriminate promotion of small industries is to be avoided. Priority industries need to be identified and promotional resources should be concentrated on these for maximum impact. "Home-grown" industries based on local ingenuity and with high domestic value added is one category deserving special consideration. On the other hand, small enterprises should not be promoted in industries characterised by decreasing costs and economies of scale.

(7) The promotion of foreign investment in industries which have a large impact on employment may be desirable. However, priority should be given to those that facilitate transfer of technology and have high backward and forward linkages.

(8) Other employment generating activities such as construction and the export of labour should not be overlooked in the context of employment promotion.

(9) The active participation of workers and employers organisations in the planning and implementation of development programmes should be sought and encouraged.

The participants paid special attention to the promotion of co-operation among ASEAN countries. They indicated that:

(1) Complementarity among ASEAN countries should be encouraged in the development of labour intensive industry and, when resources permit, in the establishment of basic industries.

(2) Joint development of markets for labour intensive products from ASEAN countries should be considered.

(3) Increased sub-contracting and relocation of production from labour scarce Singapore to other ASEAN countries should be encouraged.

Some participants suggested that:

(4) The harmonisation of investment policies among ASEAN countries should be effectuated in order to prevent competition among these countries for foreign investments.

Anticipating future need for greater knowledge about the various aspects of employment creation, the participants requested ARTEP to prepare a comparative study of the labour intensive and small scale industries and government policies affecting them in the ASEAN countries on the basis of the individual country papers presented in the seminar. They also requested that the summary of the proceedings of the seminar be given wide circulation among governments in the region.

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