The development labour intensive industry in ASEAN countries: an overview

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

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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

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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]
Philippines	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 co-exist 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.