INDUSTRIAL GROWTH, EMPLOYMENT, AND FOREIGN INVESTMENT IN PENINSULAR MALAYSIA

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Foreword

THIS book is part of a series of fifteen country studies on 'Import Substitution and Export Diversification in the Industrialization of Selected Developing Countries', carried out by the Kiel Institut für Weltwirtschaft under the direction of Juergen B. Donges and Herbert Giersch, with financial support provided by the German Research Foundation (Deutsche Forschungsgemeinschaft, Sonderforschungsbereich 86/IA). The other fourteen country studies are published by the Kiel Institute. They cover Brazil, Colombia, Egypt, Hong Kong, India, Israel, Mexico, Pakistan, Singapore, South Korea, Spain, Taiwan, Turkey, and Yugoslavia.

The basic idea behind the common framework for these studies was to compare and contrast the industrialization experience of developing countries with different policy combinations, to derive and evaluate the conditions for both the need and the success of a spill-over from import substitution to export expansion, and to assess the potential for future flows of manufactures from developing to developed countries. As the countries differ in their industrialization and trade policies as well as in their size, location, and culture, each study must speak for itself.

Like the other studies, it is hoped that this volume on Malaysia by Lutz Hoffmann and Tan Siew Ee will provide a useful source of information for academic development economists and help to stimulate discussion on industrialization and trade policies in Malaysia and elsewhere.

President of the
Institut für Weltwirtschaft
and Chairman of the
Sonderforschungsbereich

HERBERT GIERSCH

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IN undertaking the research for this book the authors have, as usual, received substantial support from various institutions and individuals. We are indebted to the members of the Kiel Institute of World Economics who are in charge of the other country studies[1] and particularly to Juergen Donges, who co-directs the project, and Helmut Reisen for their helpful comments on an earlier draft. We have also benefited from recommendations made by an anonymous reader. Chapter III, Section 2, draws heavily on a study of effective protection in Malaysia by Kurt von Rabenau, while Bernhard Weber was a co-author in Chapter IV, Sections 1–3. Chapter VII could not have been written without the thorough investigations made by Thilo Bode and Thomas Müller-Debus.

On the technical side we profited enormously from the excellent programming and data-handling capabilities of Dietmar Achter, Jürgen Bielka, and Reimar Kaeding. Our colleague Walter Oberhofer was always available for advice whenever we encountered problems with our regressions. Mrs. Ingeborg Kolodie, who typed the entire manuscript including the vast number of tables with much skill and accuracy, deserves our special thanks and appreciation.

The draft manuscript originally included a rather voluminous appendix of tables which has been omitted here. These contained mainly the detailed results of a survey (HEX) of 338 manufacturing establishments in West Malaysia which the authors carried out in 1974 with the collaboration and support of the Economic Planning Unit (EPU), Federal Industrial Development Authority (FIDA), Ministry of Trade and Industry, and the Statistics Department. The invaluable assistance rendered by officials in these departments is highly appreciated. We are also grateful to David Lim for his help in selecting interviewers for our Survey. For those interested, a limited number of copies of the Appendix-Tables of the HEX are available from the authors.

Universität Regensburg,
West Germany,
February 1978

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[1]A list of the other country studies of the Kieler Studien series is given at the end of this book.

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Abbreviations

The following are some of the most frequently used abbreviations cited in this study:

ACTID — Action Committee on Tariffs and Industrial Development
CIC — Capital Investment Committee
ECAFE — Economic Commission for Asia and the Far East
EPU — Economic Planning Unit
ERP — Effective Rate of Protection
FCC — Foreign-Controlled Companies
FIDA — Federal Industrial Development Authority
FLDA — Federal Land Development Authority. It is now written as FELDA
GDP — Gross Domestic Product
HEX — Hoffmann Export Survey 1974
IBRD — International Bank for Reconstruction and Development
I-O — Input-Output
ISIC — International Standard Industrial Classification
LCC — Locally-Controlled Companies
MIC — Malaysian Industrial Classification
NRP — Nominal Rate of Protection
TAB — Tariff Advisory Board
TAC — Tariff Advisory Committee

I Introduction

1. BACKGROUND INFORMATION ON MALAYSIA

MALAYSIA, comprising Peninsular Malaysia[1] (excluding Singapore) and the Borneo territories of Sabah and Sarawak, is a constitutional monarchy with a Parliament modelled on the British example. West Malaysia, with an estimated area of 51,000 sq. miles, is at present more important since approximately 85 per cent of the population resides here and about two-thirds of the country's Gross National Product (1977) originates from here. Geographically, West Malaysia lies to the south of Thailand in the long and narrow Malay Peninsula. To the west, across the narrow Straits of Malacca, lies the Indonesian island of Sumatra and to its immediate south, the independent Republic of Singapore. East Malaysia, with a total area of 76,775 sq. miles, is 400 miles to the east and is separated from West Malaysia by the South China Sea.

Topographically, more than half of the entire country is mountainous and covered with dense tropical forests. The northern part of West Malaysia is divided by mountain ranges with peaks up to 7,000 feet high. The main central range runs parallel and near to the western coastline from the Thai border to Malacca. East Malaysia, apart from the major urban enclaves in or around Kuching, Sibu, Kota Kinabalu, and Sandakan is almost exclusively hilly and covered with thick jungles as in Sabah (Crocker Range), or transversed by rivers and infertile swamplands as in Sarawak.

In both East and West Malaysia the climate is equatorial, with characteristic features of uniform, warm, and very humid temperatures throughout the year with abundant rainfall especially in the monsoon months of October to January. The lightest rainfall is found in the months of June and July in West Malaysia.

Demographically, Malaysia is both interesting and complex. In 1977 the total population of the country was estimated at 12.53 million.[2] The figure for West Malaysia alone was 10.54 million which comprises 5.65 million Malays (53.6 per cent), 3.71 million Chinese (35.2 per cent) and 1.18 million Indians and others (11.2 per cent). The terms 'immigrant' and 'indigenous races' have long been used to distinguish the Chinese and Indians on the one hand and the Malay populace on the other although some observers have their reservations regarding the purity of these two blanket terms.[3]

The ancestors of the present Malays came to Malaya mainly from neighbouring Indonesia, while mass-scale immigration of Chinese and Indians from their respective homelands (especially between 1850 and 1930) provided the counter-movement. The Malays were attracted to the fertile, rice-cultivation tracts of the west coast of Peninsular Malaysia while the thriving tin-mining industry became the focal entry point for the Chinese immigrants. The Indians were, on the other hand, largely imported into Malaya by the British colonialists to work in their rubber plantations. Beginning in the late 1940s, however, such large-scale immigration into Peninsular Malaysia had more or less abated and the present population structure began to take shape. The transient character of the earlier migrant populace thus gave way to a more 'settled' population whose growth depended on the natural rate of reproduction.[4]

2. OUTLINE AND SUMMARY OF MAJOR FINDINGS

The process of economic development is almost universally associated with the expansion of industry, in particular manufacturing, and the relative decline of agriculture. Looking at the more recent history of a large variety of developing countries, it appears that whether a development process can be considered as successful—however success may be defined—is largely dependent on how and under what conditions this structural change takes place. Of the two facets of this process, the progress of industry and the falling behind of agriculture, this study focuses on the first one. The reason is that, apart from the authors' interest and competence in industrialization problems, after Malaysia became an independent nation in 1957, it already possessed a highly productive agricultural sector with a strong foothold in the world market. Though agriculture certainly could still improve—and has done so substantially since then—it was quite apparent that the thrust of further development had to come from industry, which at that time was a very insignificant part of the economy.

Chapter II begins with a description of the emergence of a manufacturing nucleus during the 1950s and its major structural characteristics. It is seen that owing to the absence of an industrialization programme and because of a colonial policy biased against industrial growth, manufacturing made little progress during those years. Though small-scale establishments belonging to individual proprietors and partners were predominant, a relatively small number of primary processing firms accounted for the major part of the output. During the 1960s, the manufacturing sector diversified substantially toward a larger variety of products, and large-scale establishments became even more important in terms of output and employment, though not in number.

Right from the beginning, manufacturing was heavily concentrated in a few west-coast states and this concentration proliferated as industrial growth gained momentum, in spite of declared policy intentions to the contrary.

The experience of several developing countries has indicated that rapid industrial growth implies a set-back for agriculture because resources are transferred from agriculture to industry, new resources are exclusively channelled toward industry, and the government's policy and implementation capacity are largely absorbed by the industrial sector. This study concludes that Malaysia has managed to avoid these problems, and that its policy has been more in line with a balanced growth as advocated in the early 1950s by Arthur Lewis.[5]

Government policy toward industry only began to take shape with the 'Report of the Industrial Development Working Party' which was delivered to the government in 1957. Chapter III describes and analyses in depth how industrial policy has developed since then and how it affected the sector's growth and structure. It is shown that, unlike other developing countries, in particular those in Latin America, Malaysia did not resort to heavy protection in order to get industry off the ground, but favoured, at least in the beginning, various kinds of tax incentives. Until the mid-1960s tariffs served mainly revenue purposes. Only thereafter, when industrial growth had already accelerated, did tariff-making become increasingly protective. By 1974 a cascaded tariff structure was discernible with an average effective rate of about 40 per cent, compared to about zero per cent in 1963/5. Exports were heavily discriminated against in the sense that the effective rate for primary exports was negative all the time and that of other exports close to zero (1974).

The Working Party recommended tax incentives instead of protection because it considered them to be a rather cheap means of industrial policy in terms of social costs. Our *ex-post* evaluation of the incentive system reaches the conclusion that this assumption was grossly erroneous. The subsidy the sector obtained in terms of taxes forgone as well as the opportunity costs of the incentive system in terms of income and employment were high. Furthermore, there are strong indications that the incentives benefited only a few large companies and were largely redundant in the sense that most of the investment would have taken place without them.

If incentives were redundant and protection was low, what, one may ask, was the government's contribution to industrial growth? Apart from such factors as political stability and a generally efficient administration, it was probably a diversified package of supporting measures which went along with the granting of pioneer status, of which the tax incentives were just one part. With pioneer status, a company, whether domestic or foreign, could fully exploit Malaysia's low wages and raw material costs, its market potential, and its various favourable conditions for an export base, without being unduly restricted by government regulations. In fact, toward the end of the 1960s, the urban centres on the west coast of Malaysia were poised for a similar rapid industrial growth as was for instance experienced by Singapore. That this did not come about can partly be explained by the fact that in order to maintain internal stability the government had to ensure that the rural, mostly Malay, population did not lag too far behind the urban, mainly Chinese, populace. It is quite obvious that in a capitalistic economy a distribution policy aiming at raising the rural population to the level of economic well-being of its urban counterpart has its price in terms of growth. This is probably even more true if the urban-rural imbalance has a racial connotation, as is the case in Malaysia.

In most developing countries, much of the early industrial growth stems from import substitution. After a certain period, however, the possibilities for further import substitution become more limited. In a small country such as Malaysia this period can be rather short. In order to sustain high growth rates, the country must produce for export. Which commodities have opportunities for export depend not only on static comparative costs, as defined by the factor endowment theory of international trade, but also on scale economies. The existence of scale economies in the Malaysian manufacturing sector is therefore investigated in Chapter IV. It is found that the majority of the industries operate under scale economies. Constant or decreasing economies of scale appear to exist mainly in industries with medium-size establishments.

Toward the end of the 1960s it became apparent that in spite of a fairly high industrial growth rate, unemployment was on the increase in Malaysia, particularly in the urban sector. The remaining sections of Chapter IV therefore deal with a number of different aspects of the relationship between output, growth, and employment creation. First, estimates of substitution elasticities are presented in order to determine the impact of wage increases and technical progress on employment. It is found that substitution elasticities are generally low and that consequently wage increases would not seriously affect employment. If technical progress is labour augmenting, as one may infer from the relative abundance of capital in Malaysia, the low substitution elasticity implies, on the other hand, a reduction in labour intensity and therefore a negative impact on employment.

A general neo-classical proposition states that the labour absorption of production can be improved by getting prices 'right', which means in most cases a reduction of the wage rate and/or an increase in the price of capital. The underlying assumption is that given a certain technical know-how, technologies are chosen according to relative factor prices. Our test of this hypothesis comes to the conclusion that it is not generally valid. While it describes the behaviour of small firms reasonably well, it seems that the larger firms which have become increasingly important in Malaysia use different criteria for the selection of technologies. The suggestion about getting prices right may not be tenable because it may not be worthwhile to risk a worsening of the income distribution by widening the gap between capital and labour renumeration if the employment effect is uncertain.

The possibility of choosing technologies according to local conditions such as domestic factor prices is, of course, also dependent on the availability of technical options which again depends on such factors as technology transfer, adaptation of transferred technologies, and research and development expenditures. It is found that the transfer mechanism differs considerably from industry to industry, the reasons for which are not fully understood. With regard to adaptation and research expenditures, our results do not support the view frequently encountered that developing countries make little effort to adapt and develop technologies. In Malaysia various forms of technological adaptation are practised, and research and development expenditures are quite comparable to those in developed countries.

Given a certain technology, the production and employment resulting from its application depends on the utilization of the capital installed. Various measures of capital utilization used in our investigation indicate that capital is, on average, used at fairly high rates in Malaysia compared with other developing countries. The utilization rate is highest in large and capital-intensive establishments. This explains why foreign companies which are generally larger and more capital intensive than local ones were found by Lim[6] to make better use of their capital than their local counterparts.

As kind of a prelude to the analysis in subsequent chapters, the final section of Chapter IV deals with the question of inter-industry linkages. This rests on the familiar assumption that growth and employment generation in an economy depends substantially on how final demand expansion affects the various sectors of the economy through inter-industry relationships. It is shown that manufacturing's overall input coefficient is high because of the dominance of primary processing industries. However, compared to 1965 it has become smaller, indicating that other industries have been growing faster.

The primary processed commodities are largely exported. Hence, it is not surprising that a high proportion (more than 80 per cent) of manufacturing output is supplied to final demand which includes exports. Due to the dominating relationship between manufacturing and the primary sectors, the latter's output goes, on the other hand, mainly to intermediate demand. From these observations one cannot, however, conclude that an increase of final demand, in particular exports, for primary processed commodities would necessarily have a substantial positive effect on growth and employment. What may happen is that higher exports of processed commodities would only substitute for unprocessed exports because demand for as well as supply of, primary commodities is usually rather inelastic. A policy that attempts to utilize the growth and employment potential of industries with high inter-industry relationships will therefore have to concentrate on other industries, some of which have been identified in this book.

Chapter V continues with a further discussion of manufacturing growth by first presenting recalculations of the authors'[7] earlier estimates of the sources of growth. These recalculations represent a significant improvement over the previous investigations for the following reasons: an almost complete coverage; a reclassification of the data according to the input-output nomenclature; a separate treatment of primary processing industries; a more adequate classification into consumption, intermediate, and investment goods industries; and an extension of the analysis into the first half of the 1970s.

For the primary processing industries, the preponderance of export expansion is obvious. For some of them, however, in particular wood mills and petroleum refining, domestic demand expansion has become increasingly important. The latter holds good also for the other manufacturing industries, which until 1968 relied mainly on what may be called free-trade import substitution and, especially in the earlier years, on export expansion. It appears that the boom conditions which prevailed in the early 1970s owing to such factors as the rise in commodity prices and the acceleration of urban construction exceeded domestic manufacturers' supply capacity, leaving no room for further import substitution and export expansion. The increase in protection may also have contributed to this.

The problem of employment creation is taken up again in Chapter VI by making use of alternative analytical approaches. The first approach attempts to assess how the sources of growth compare in terms of factor absorption. It appears that export expansion absorbed significantly more labour per unit of output as well as capital than import substitution and domestic demand expansion, in particular after 1967 when the government began to focus its attention on a higher rate of labour absorption in manufacturing through promotion of labour-intensive export industries. The period after 1968 witnessed not only the establishment of a number of labour-intensive industries, but also—and partly as a result of this—a considerable reduction in the growth of labour productivity. All these led to a job creation between 1968 and 1971 that exceeded the employment growth over the previous five years by more than 70 per cent, whereas the change in output was only 18 per cent higher.

The strategic role which manufacturing export production played in the sector's shift toward a higher labour intensity is analysed more thoroughly with the use of a slightly modified version of a model applied by Banerji[8] to India. This model makes it possible to distinguish between the employment effect of export growth as such and that of structural change within manufactured exports. By applying an input-output table one can further separate direct employment effects from the indirect ones, as they result from inter-industry relations. The empirical estimates of the model strongly confirm the hypothesis that structural change was an important determinant of the increase in export manufacturing. The structural effect was found to be substantially higher than the growth effect, even more so if indirect employment creation is also considered. Banerji obtained just the opposite result for India.

The relatively high labour intensity of export expansion suggests that Malaysia traded according to its static comparative advantage as defined by the factor proportions theory. A more thorough test of this hypothesis is the so-called Leontief test which considers direct as well as indirect factor absorption. An approximation of this test has been performed here for the manufacturing trade. The hypothesis that Malaysia exports labour-intensive products and imports capital-intensive ones is confirmed for all three test years, i.e. 1963, 1968, and 1971.

Leontief's test has been much criticized on methodological as well as on empirical grounds. However, only a few proposals for improvement have been made. One of them is the Fels test[9] which basically relates an industry's export surplus per labour unit to its capital intensity, whereby capital can be measured in a variety of ways. Performing the Fels test for Malaysia leads to the conclusion that in 1963 the trade pattern conformed to the factor proportions theory, whereas for the other two years the result is inconclusive.

As is in several other developing countries, Malaysia's modern sector, whether in agriculture or in manufacturing, has been largely created and dominated by foreign investment. In the economy as a whole, as well as in manufacturing, the majority of the capital stock, apart from land, is owned by foreigners. An analysis of industrial development that does not explicitly account for foreign ownership would consequently be rather incomplete. For the analysis in Chapter VII data were utilized which are rarely available for most developing countries and which permitted a very high coverage of all foreign investment activity in Malaysia during the 1960s. The question at issue is whether foreign-controlled companies (FCC) contributed to growth and employment roughly in proportion to their economic (and political) influence derived from their majority command over the country's productive capital.

Over the entire 1960s the contribution of FCC to growth was rather modest at about 18 per cent, although the contribution increased from 8 per cent during the first sub-period to 29 per cent during the second. Compared to this, FCC performed much better in manufacturing where their growth contribution was 52 per cent over the entire period, and a high 75 per cent in the second sub-period. However, there are strong indications that the expansion of FCC led to displacement of local companies. Four industries, in which displacement of local by foreign companies is quite certain, accounted for nearly one-third of the FCC's growth contribution.

Some experts hold that one of FCC's most important development contributions is their tax payment, which enables the government to place public investments according to its development priorities. For Malaysia this view is clearly valid. About 45 per cent of all tax collections came from FCC during the observation period. Their tax contribution was not only in absolute but also in relative terms (per unit of output or capital) higher than that of their local counterparts.

In terms of employment creation, on the other hand, the FCC performed rather unsatisfactorily. During the 1960s, as little as 6 per cent of all jobs were created by FCC. Here again, manufacturing with a contribution of 25 per cent coming from FCC showed far better results, although this might still be considered as grossly insufficient if compared with the pattern of ownership. Also in terms of employment one can observe considerable displacement of jobs in local companies. If this is taken into account, the FCC's employment contribution becomes very small indeed.

Probably the most controversial problem is the FCC's impact on the host country's balance of payments. The detractors of foreign investment hold that their transfers of investment income ultimately would result in a net loss of resources to the host country, whereas their advocates argue to the contrary by pointing to exchange gained from exports. This study reaches the conclusion that, as far as Malaysia is concerned, both are right. The outflow of resources was tremendous. The net export of investment income was more than double the net import of long-term capital. Even in manufacturing where the rapid expansion might raise expectations to the contrary, the excess of transferred investment income over capital import was substantial.

That the outflow of resources did not lead to a balance of payments disaster was due to the very impressive trade surplus achieved by FCC, which in fact exceeded the surplus of the country as a whole. The exchange earned by FCC was more than three-and-a-half times as high as the comparable balance for Malaysia. The FCC in manufacturing contributed most prominently to this surplus.

In the last section of the chapter an attempt is made to relate the study of foreign investment to the analysis of the sources of growth as discussed in Chapter V. The most interesting result is that import substitution and export expansion, for which competitiveness on the home or the export market is decisive, are important sources of FCC's growth, whereas locally-controlled companies rely nearly entirely on domestic demand expansion. This shows on the one hand that a growth strategy that emphasizes competitiveness and trade could benefit from foreign investment. It carries on the other hand the danger that locally-controlled companies are outstripped by FCC, for which further empirical evidence is provided in this section.

Having shown several instances of the importance of exports for Malaysia's further growth and employment creation, Chapter VIII tries to assess the country's future export prospects. It is seen that a mere continuation of past trends and a lack of fresh policy initiative would lead to relatively low growth rates of manufacturing during the second half of the 1970s with domestic demand expansion featuring most prominently. Whether a faster growth through accelerated export expansion is possible depends on the existing market potential, domestic supply elasticity, and the sectors' international competitiveness.

With regard to the first it is argued that a small supplier like Malaysia faces hardly any limitation of its export markets, with maybe a few exceptions, as for instance textiles. There is still ample room for much higher exports to the country's traditional markets in North America, the EEC, and Japan; and the companies themselves foresee substantial future export markets in East and South-East Asia, the Middle East, and Australia. However, adequate market information seems to be a severe bottle-neck in the way of utilizing this potential. Most companies do not undertake systematic market exploration in foreign countries, but obtain their information rather accidentally from such sources as their foreign customers or from export agents.

Domestic supply does not seem to have been restrained by shortages of capital or skilled labour, although the companies complained about shortages and high costs of raw materials. The exporters apparently also face transport problems. Shipping facilities and ports are considered either inadequate or too costly.

In terms of international competitiveness the manufacturing industries seem to fare very well. However, for increasing exports further cost reductions are deemed necessary. Also very important is the improvement of the product quality and capacity expansion which enable the companies to supply the lot sizes demanded on the international markets. Hence, future industrial policy should try to act on these factors. If this is done competently and successfully there should be no problem for Malaysia to achieve similar high export growth rates as, for example, in Singapore, Taiwan, or South Korea.

1. Malaya gained political independence from Great Britain in 1957, while Sabah and Sarawak did likewise in 1963. The term West Malaysia is used interchangeably with the Federation of Malaya (excluding Singapore) or Peninsular Malaysia.

2. Of this 12.53 million, approximately 1.12 million and 0.87 million inhabitants reside in Sarawak and Sabah respectively. In these two states, the majority groups are the native migratory tribes, i.e. Dayaks and Ibans in Sarawak, and Kadazans in Sabah. Malays, Chinese, and other racial groups make up the rest of the population. See *Economic Report 1977/78*, Ministry of Finance, Malaysia, Kuala Lumpur, p. 7.

3. The term 'Malays' is used today to incorporate all Malays and native tribes, i.e. Senoi, Negritos, Ibans, etc. as well as immigrants of indigenous ethnic stock from Indonesia and Philippines. See J. C. Caldwell, 'The Demographic Background', in T. H. Silcock and E. K. Fisk (eds.), *The Political Economy of Independent Malaya*, Eastern Universities Press Ltd., 1963, pp. 59–61, and also, Department of Statistics, *1970 Population and Housing Census—Community Groups*, Kuala Lumpur, 1972.

4. The average rate of natural population growth in the mid-1970s was placed at 2.7 per cent. In the 1960s the rate was even higher at over 3 per cent.

5. Arthur W. Lewis, *The Theory of Economic Growth*, Unwin University Books, London, 1954.

6. David Lim, 'Capital Utilization of Local and Foreign Establishments in Malaysian Manufacturing', *The Review of Economics and Statistics*, Vol. LVIII, 1976.

7. Lutz Hoffmann and Tan Siew Ee, 'Patterns of Growth and Structural Change in West Malaysia's Manufacturing Industry 1959–68', and 'Employment Creation through Export Growth: A Case Study of West Malaysia's Manufacturing Industries', both reprinted in David Lim (ed.), *Readings on Malaysian Economic Development*, London, Oxford University Press, 1975.

8. R. Banerji, *Exports of Manufactures from India—An Appraisal of the Emerging Pattern*, Kieler Studien No. 130, Tübingen, J. C. B. Mohr, 1975.

9. G. Fels, *The Choice of Industry-Mix in the Division of Labour between Developed and Developing Countries*, Weltwirtschaftliches Archiv, Vol. 108, 1972.

II The Growth of Manufacturing

MALAYSIA'S development performance until the early 1970s has been generally regarded as successful.[1] With reasonably high real growth rates of Gross Domestic Product averaging more than 5 per cent per annum over the decade of the 1960s, a high *per capita* income relative to her Asian neighbours of M$2,280 (1977) (about US$912),[2] a mostly favourable balance of payments, and relatively stable prices, Malaysia may indeed be described as a showpiece of successful economic development. In addition, there has been considerable structural diversification with the gradual decline of the primary-oriented activities and the rapid catch-up in the more modern secondary sector activities, particularly manufacturing. Moreover, a substantial portion of the country's natural resources is as yet unexploited, and with the recent discovery of rich and extensive oil-fields off the coasts of both East and West Malaysia, the future indeed holds bright promise.

In the following, our analysis of the industrial development performance of Malaysia will, of necessity, be chiefly confined to West Malaysia. This is unfortunate but unavoidable owing to the inadequacy and incompatibility of data on East Malaysia.

1. INDUSTRIAL GROWTH IN WEST MALAYSIA—AN OVERVIEW

The West Malaysian experience with industrialization in the years following its Independence (1957) has evoked reactions which have oscillated between salutory optimism and guarded enthusiasm. There are several reasons for this. Judged by traditional indices such as the growth rate of manufacturing output, exports, etc., the performance of the West Malaysian economy has undoubtedly been impressive, thus raising the hopes of economic policy makers with regard to the capacity of the manufacturing sector to sustain or even to improve upon its post-Independence growth. The rate of manufacturing output growth was 11.5 per cent per annum between 1960 and 1970, and 21 per cent between 1970 and 1974. The share of manufacturing in Gross Domestic Product rose from 8.5 per cent in 1960 to 15 per cent in 1970 and 19 per cent in 1974.[3] Moreover, during the 1960s, the high output and value-added growth had been attained in an environment of exceptionally stable internal prices. Retail prices rose by only about 1 per cent annually during that period. The external trade balance was mostly favourable. Only in the early 1970s, when inflation accelerated world-wide, did prices step up also in Malaysia. Although the Malaysian export prices increased rapidly during the world-wide commodity boom years, the trade balance became slightly negative in the most recent years.[4]

On these counts therefore, West Malaysian industrial performance compares favourably with those of many other developing countries. Admittedly it has the good fortune to have plentiful natural resources and a gifted entrepreneurial class. Through heavy investment in infrastructural amenities, transport, utilities and the standard of health reached high levels compared to other countries in Asia. These factors in combination with a fairly well-educated population—the adult literacy rate in 1970 was 68 per cent—gave Malaysia a special advantage over several other developing partners.

However, the industrial performance has some disappointing facets. While industries have grown at a steady pace, they have not been able to overcome certain pressing issues—the problems of high urban unemployment, unequal income distribution, and regional imbalance in development. This has led to a controversial debate regarding the appropriate industrialization strategy, to which this study attempts to make a contribution through a more thorough investigation of the factors shaping industrial growth. To begin with, we will briefly outline the major features of industrial growth and place them in historical perspective.

2. THE EMERGENCE OF A MANUFACTURING NUCLEUS

Historically, West Malaysia was a typical dependent colonial economy concentrating on exporting primary raw materials in exchange for its manufactured imports. Despite the unpalatable consequences of greatly lopsided economic development and unfavourable terms of trade, this trade pattern brought relatively high income and living standards to the country and especially to those fortunate few who had their stake in the export sector. While industrial growth lagged behind, the primary export sector enjoyed high growth rates as Malaysia's exports succeeded in capturing a rapidly increasing share of the world market. Nevertheless, this expansion of the agricultural and primary sector gave impetus to the simultaneous growth of the transport, banking, communication, and other tertiary activities. Given the absence of National Accounts data prior to 1955 and industrial surveys prior to 1959, the stage of industrial development or, more appropriately, the backwardness of the industrial sector in the 1940s and 1950s may be deduced from the data in Tables AII.1 and AII.2 in the Appendix which give the occupational distribution of the working population.

As is typical of a primary export-oriented economy, in 1947 more than two-thirds of the total active labour force were engaged in agriculture, mostly rubber cultivation. The tertiary sector (excluding defence), provided 22.5 per cent of total employment opportunities with commerce and services ranking predominantly. However, the mining sector—mainly the tin industry—employed only 2.5 per cent of the working population in 1947 despite Malaysia's unbeatable position as the world's largest tin producer and exporter. This rather low employment is due to dramatic productivity increases occurring in this industry in the past as well as the highly capital-intensive methods of production used in part of the tin-mining industry. While output has increased many times between 1947 and 1970, the employment share of this sector increased only very marginally over the same period. Manufacturing, subsisting mainly on local demands, also offered negligible employment opportunities, although by the 1947 Asian standards its 6.7 per cent employment share may be regarded as modest.

Until 1957 this employment structure remained virtually unchanged except for the quite rapid growth of the construction and power sectors, both of which may partly be attributed to the resettlement of rural populace in new 'Resettlement Areas'—suburbanized villages which were part of the authorities' strategy to contain the communist insurgency. The preoccupation of the Government with the containment of the rebellious forces is also clearly reflected in the substantial increase in defence expenditure and manpower absorption of this sector. Nevertheless, there was by then a perceptible drop in the employment share of the agricultural sector arising largely from declining rubber prices after the Korean war boom. Still, in absolute terms, employment in the agricultural sector increased by 0.3 per cent over this decade. Manufacturing—already diminutive—also suffered a set-back in 1957 in terms of employment generation capacities. Its employment share fell to 6.4 per cent although in absolute terms the number of workers increased by almost 7.5 per cent to reach a figure of 135,700 employees.

The data in Table AII.1 are at best only approximate measures of the degree of industrialization but they do indicate the relative backwardness and insignificance of this sector in the immediate post-war period. The authorities hardly encouraged industrial development and could in fact be held responsible for the slack pace at which industry developed. It has been frequently experienced that in the early stages of industrial development, a dynamic and widespread industrial sector is unlikely to expand rapidly without a concentrated industrial programme being orchestrated by the public authorities. Until independence in 1957 such a programme was not only non-existent, but on the contrary, official colonial policy in effect discriminated against industrial growth. The convenience and economic worth of colonial Malaya to the British were two-fold: first, to serve as a captive market for manufactured exports from Britain, second, and much more important, to be a reliable and cheap source of primary raw materials for British industries. Given such interests, the tactical strategy of the British was vigorously to encourage greater investment in the primary-based sectors, i.e. rubber, tin, etc., and not to encourage local industries because they inevitably posed a threat to British manufacturers and exporters. Thus, on the whole, this policy resulted in a relative discouragement of manufacturing.

The discrimination against the industrial sector was reinforced by the 'open system'—introduced by the British—which permitted the liberal inflow of commodities from abroad while, on the other hand, (potential) Malaysian exports faced severe import restrictions in the industrialized countries. This effectively discouraged the growth and expansion of local industrial investment. Under such circumstances, the transformation of the industrial sector from one of predominantly small-scale production units serving only rudimentary indigenous needs to that of a modern internationally competitive sector was hardly possible without the assistance of the government. Besides, the transference of development from the primary export sector to the industrial sector was contained largely by the extremely low linkages between agricultural export production and industrial output.

Thus it is understandable why the major industries operating then were those with decisive margins of 'natural protection' from foreign competition by virtue of high transportation costs and advantages of location. Such enterprises were represented mainly by primary processing industries—the processing of agricultural, mining, and forestry products—and by import substituting industries, i.e. food products, printed materials, furniture, rubber products, building supplies such as bricks and cement, and light engineering goods. Handicrafts were also commonly practised, and also repairs services.

In 1947 the leading industries were the food, footwear and wearing apparel, wood products, handicrafts, and engineering industries. All had employment shares exceeding 10 per cent with an aggregate share of about 70 per cent. In 1957, apart from the substantial decline in the small-scale handicraft industries such as rattan factories, the same industries still commanded a strong lead in terms of employment shares. Together, the group of industries listed continued to hold a high aggregate employment share of over 68 per cent.

According to the classification used by the IBRD, the handicraft industries were evidently the most widespread activities, flourishing largely on local skills and expertise. They accounted for about 20 per cent of the total industrial labour force.[5] But a substantial part of their work-force were own-account or family workers. These industrial units are typically small, employing the minimal amount of capital and are geographically well-distributed.

The next most important industrial group consisted of primary processing activities. Rubber milling, tin smelting, oil-palm milling, and sawmilling activities are traditional, and in 1947 these industries accounted for approximately 25 per cent of total industrial employment.

The advantages of proximity to local markets as well as the availability of raw materials were the basic determinants for the outcrop of the food, beverages, and tobacco industries, though for the latter, exemption from excise duties seems to have been instrumental in its success. Again, small-scale operational units were the rule here and technological standards or requirements were not high.

Engineering activities were varied. They ranged from simple blacksmithing and tinsmithing to major engineering tasks such as the construction of ships, railway stocks, and steel moulds. Repairing is a significant activity within this group. Individual establishment sizes, however, varied as much as the activities themselves.

Finally, the remaining group of industries embraced a diverse conglomeration of industrial activities which, for economic cost considerations, had to be carried out locally. Hence, domestic markets for bulky materials such as bricks, glass products, cement, and other constructional inputs were almost entirely locally supplied. Similarly, products such as footwear, cycle tyres and tubes, furniture and fixtures, all of which require unsophisticated production techniques, were predominantly locally produced.

Altogether, such diverse industries offered employment to only 6.7 per cent of the active labour force in West Malaysia in 1947 and this had hardly changed a decade later. In fact, for 1957, the Census of Population reported that 6.4 per cent of the (then) larger labour force were engaged in manufacturing activities—a relative decline which could be explained largely by the increase in size of the tertiary sector. By comparison, the share of manufacturing in Gross Domestic Product was an estimated 7.8 per cent in 1957, indicating that the labour productivity in manufacturing hardly exceeded the national average. Nevertheless, despite these low percentage shares, the presence and success of the wide range of industrial activities, especially against a backdrop of government indifference, offered substantial scope for further industrial development in West Malaysia.

3. STRUCTURAL CHARACTERISTICS OF THE EARLY MANUFACTURING INDUSTRIES

A. SIZE DISTRIBUTION

The IBRD noted in its Report[6] that small-scale enterprises were the rule rather than the exception in the decades of the 1940s and 1950s. These industrial units may be defined as employing up to twenty workers. Approximately 40 per cent of the employed were own-account workers or unpaid family helpers. In terms of racial distribution, and except for the European-owned plantations or tin mines, between 80 and 90 per cent of the industrial employers-cum-workers were Chinese. The same held good for ownership shares of industrial capital. This ownership pattern can be largely explained by the coherence and thrift-

TABLE II.1
DISTRIBUTION OF EMPLOYMENT BY SIZE OF ESTABLISHMENTS

1959

Size of Group in terms of Full-time Employment	*Establishments* (*No.*)	%	*Gross Output* (*M$'000*)	%	*Paid Employees* (*No.*)	%	*Salaries & Wages* (*M$'000*)	%
0	1,026	20.50	9,115	0.72	874	1.41	410	0.44
1–4	1,916	38.28	60,345	4.78	5,705	9.26	6,166	6.92
5–9	753	15.04	97,301	7.72	5,525	8.96	7,051	7.82
10–19	639	12.76	124,978	9.91	9,603	15.59	13,153	14.63
20–29	275	5.49	90,582	7.18	6,729	10.92	9,995	11.17
30–49	183	3.65	119,829	9.50	7,177	11.65	10,324	11.50
50–99	133	2.65	267,119	21.19	9,149	14.85	14,927	16.64
100–199	49	0.97	222,603	17.66	6,417	10.41	10,408	11.62
200–499	25	0.49	232,776	18.46	7,325	11.89	11,405	12.73
500+	5	0.09	35,472	2.80	3,093	5.02	5,710	6.36
Total	5,004	100.00	1,260,120	100.00	61,597	100.00	89,549	100.00
Under 20 employees	4,334	86.58	291,739	23.13	21,707	35.22	26,780	29.81
Over 100 employees	79	1.57	490,851	38.94	16,835	27.33	27,523	30.73

Source: *Census of Manufacturing, Federation of Malaya*, 1959.

1968

Size of Group in terms of Full-time Employment	*Establishments* (*No.*)	%	*Gross Output* (*M$'000*)	%	*Paid Employees* (*No.*)	%	*Salaries & Wages* (*M$'000*)	%
0	3,347	37.14	41,629	1.35	1,823	1.40	1,639	0.61
1–4	2,738	30.38	106,792	3.47	8,526	6.53	9,182	3.44
5–9	937	10.62	107,961	3.51	7,725	5.93	9,916	3.71
10–19	738	8.19	194,750	6.31	11,455	8.79	17,850	6.69
20–29	394	4.37	169,477	5.51	10,425	8.00	17,270	6.47
30–49	334	3.71	255,965	8.31	13,188	10.12	25,706	9.63
50–99	273	3.15	390,256	12.68	19,186	14.73	41,962	15.72
100–199	133	1.48	726,215	23.59	18,662	14.33	49,023	18.36
200–499	77	0.85	584,502	18.99	22,597	17.36	50,709	18.99
500+	20	0.22	500,975	16.27	16,670	12.80	43,679	16.38
Total	9,013	100.00	3,078,523	100.00	130,257	100.00	266,957	100.00
Under 20 employees	7,760	86.33	451,132	14.64	29,529	22.64	38,587	14.45
Over 100 employees	230	2.55	1,811,692	58.85	57,929	44.49	143,411	53.73

Source: *Census of Manufacturing, Federation of Malaya*, 1968.

TABLE II.1 (continued)

1971

Size of Group in terms of Full-time Employment	*Establishments*		*Gross Output*		*Paid Employees*		*Salaries & Wages*	
	(*No.*)	%	(*M$'000*)	%	(*No.*)	%	(*M$'000*)	%
0	65	1.93	3,494	0.08	75	0.05	41	0.02
1–4	201	5.96	19,491	0.47	860	0.51	949	0.26
5–9	671	19.90	89,827	2.16	5,168	3.05	7,525	2.07
10–19	803	23.81	263,042	6.32	11,953	7.06	19,342	5.33
20–29	434	12.87	189,653	4.55	11,230	6.64	18,777	5.17
30–49	447	13.26	348,259	8.36	17,377	10.27	32,531	8.96
50–99	384	11.39	521,680	12.53	26,852	15.87	57,474	15.84
100–199	199	5.90	829,481	19.92	27,746	16.40	69,039	19.03
200–499	136	4.03	1,157,259	27.79	42,201	24.94	91,209	25.14
500+	32	0.95	741,962	17.82	25,740	15.21	65,981	18.18
Total	3,372	100.00	4,164,149	100.00	169,202	100.00	362,867	100.00
Under 20 employees	1,740	51.60	375,854	9.03	18,056	10.67	27,857	7.68
Over 100 employees	367	10.88	2,728,702	65.53	95,687	56.55	226,229	62.35

Source: *Survey of Manufacturing, West Malaysia*, Vol. 1, 1971.

iness of the Chinese business society and also by their proverbial business ingenuity.

To a large extent, the growth and success of the local industries were attributable to the ability of the local entrepreneurs to improvise, and this also explains the enormous variety of production techniques prevailing then. But again, due to the great preponderance of miniscule operational units, the failure of individual enterprises, measured by the 'turn-over rate'[7] was unduly high, although it is clear that most of those industrial units that failed would often make a come-back under a newly registered business name, which serves to demonstrate the resilience and determination of the local—predominantly Chinese—business community.

If the employment of twenty or less full-time paid employees may be accepted as criterion for a small-scale enterprise, then it is all too clear that even in 1959 and 1968, small-scale establishments were as predominant as in the 1940s and 1950s. Thus in both years about 87 per cent of all manufacturing establishments belonged to this group. However, these establishments accounted for rather low and even declining gross output and employment shares. While in 1959 these shares amounted to 23 and 35 per cent respectively, by 1968 they were only 15 and 23 per cent. Less than 2 per cent of the firms can be described as reasonably big establishments (with 100 or more employees). In contrast to the small-scale establishments, their output and employment shares are much higher and rapidly increasing as they stand to reap the benefits of higher capital intensity, advanced technologies, and economies of scale. These trends are confirmed by the 1971 Survey data which are broadly comparable with the earlier Census data as far as output, employment, and wages are concerned, but not with regard to the number of establishments.

As one may expect, productivity and wage rates differed substantially between large and small establishments. The relatively low labour productivity of small-scale establishments is reflected by the fact that their share in gross output was significantly lower than their share in employment. While in 1959 this difference of 12 percentage points was very large indeed, it gradually declined over the years to 8 percentage points in 1968, and less than 2 in 1971. The large-scale establishments, on the other hand, enjoyed a comfortable lead in productivity and were able to maintain it over the years. The difference between their shares in gross output and employment was 11 percentage points in 1959, 14 in 1968, and 9 in 1971. As the small-scale establishments managed to pull up while the large ones kept their lead, there must have been losers among the medium-sized establishments. As Table II.1 indicates, the establishments with 50–99 employees suffered a dramatic set-back between 1959 and 1968. There is no clear-cut explanation for this. One reason could be that low productivity industries had moved into this group or that high productivity industries had moved out. A comparison of the Census data for the years 1963 and 1968 suggests on the other hand that this size group is typically dominated by labour-intensive industries with little technical progress, such as primary processing of estate-type agricultural products, simple food processing, saw-mills, rattan and cork products, preparations of local medicines, perfumes and cosmetics, pottery and china, and simple metal working.

The differences in productivity are mirrored by similar differences in wage rates. The small-scale establishments pay relatively low wage rates. Their share in the total wage bill was in 1959 lower by 16 percentage points than their employment share. Again, this difference decreased over the years to 3 percentage points in 1971. The lead of the large-scale establishments in terms of wage rates was in 1959 surprisingly small compared to their lead in terms of productivity. However, over the years this lead had increased. The difference between their share in the wage bill and their employment share rose from 3 percentage points in 1959, to 7 in 1968, and 8 in 1971. Most likely, in 1959 the large establishments reaped extra profits by not paying their employees the wage differential justified by their high productivity, although in the later years this was remedied to some extent.

B. LEGAL ORGANIZATION

The predominance of small-scale establishments is also reflected in the large number of firms belonging to individual proprietors or partners. Large-scale establishments are usually organized as limited companies. In fact, the share of firms under individual proprietorship or partnership (85 per cent), is nearly equal to the share of small-scale establishments. Judging from the data for 1959 and 1968 the structure of establishments according to legal organization does not appear to have changed very much over that period.

The picture looks different if we investigate the output and employment shares. Whereas in 1959 individual proprietorships and partnerships together accounted for more than one-third of total output, this share declined to 23 per cent in 1968 and 16 per cent in 1971. In terms of employment their share of 52 per cent in 1959 was even higher. This declined, however, to 39 per cent in 1968 and 26 per cent in 1971. Private limited companies held their share in output nearly constant at around 55 per cent, though they increased their employment share significantly. The major gainers were public limited companies which were of minor importance in 1959. Their output share increased from 5 per cent in 1959 to 23 per cent in 1968 and 29 per cent in 1971. In comparison, the increase in terms of employment from 7 per cent in 1959 to 11 per cent in 1968 and 14 per cent in 1971 was less pronounced. Co-operatives and Government-owned establishments were insignificant.

If we see individual proprietorships and partnerships in connexion with small-scale establishments it is obvious that firms with these legal organizations should operate with low labour productivity and pay wages below the average. This is indeed borne out by the data of Table II.2. However, the difference between the employment share and the output share has surprisingly not narrowed down as much as for small-scale establishments. This reveals, what is also apparent from the 1959 Census, that a number of medium-sized establishments fall into this group, in particular as partnerships. One may therefore venture the conclusion that small scale does not necessarily confine a firm to the lower end of the productivity ladder. More important could be its legal organization as individual proprietorship or partnership which places it at a disadvantage with regard to productivity-raising investments because of limited access to capital markets and productivity-raising technologies. Our hypothesis that these firms also pay low wages is confirmed for the years 1968 and 1971. Changes cannot be observed as wage data classified by legal status are not available for 1959.

Some interesting changes can be observed among limited companies. Private limited companies were leading in productivity by a substantial margin in 1959, whereas the then insignificant public limited companies operated at relatively low productivity. This situation had drastically changed by 1968 and even more by 1971. While the productivity of private limited companies still slightly exceeded the average, the public limited companies which had more than quintupled their output share by 1971 showed now an impressive lead in productivity. Here

TABLE II.2
SUMMARY STATISTICS OF MANUFACTURING INDUSTRIES OFF-ESTATES BY LEGAL STATUS OF ESTABLISHMENTS

1959

Legal Status	*Establishments*		*Gross Output*		*Paid Employees**	
	(*No.*)	%	(*M$ '000*)	%	(*No.*)	%
1. Individual Proprietorships	2,908	58.11	150,843	11.97	13,957	22.65
2. Partnerships	1,357	27.11	300,259	23.82	18,082	29.35
3. Private Ltd. Companies	450	8.99	734,506	58.28	23,719	38.50
4. Public Ltd. Companies	58	1.15	62,434	4.95	4,283	6.95
5. Co-operatives	225	4.49	5,437	0.43	952	1.54
6. Government	6	0.11	6,641	0.52	604	0.98
Total:	5,004	9.99	1,260,120	99.97	61,597	99.97
1 & 2	4,265	85.22	451,102	35.79	32,039	52.00
Others	739	14.78	809,018	64.21	29,558	48.00

Source: *Census of Manufacturing*, 1959, op. cit.

1968

Legal Status	*Establishments*		*Gross Output*		*Paid Employees**		*Salaries & Wages*	
	(*No.*)	%	(*M$ '000*)	%	(*No.*)	%	(*M$ '000*)	%
1. Individual Proprietorships	5,785	64.18	263,776	8.56	21,601	16.58	29,101	10.90
2. Partnerships	1,948	21.61	448,312	14.56	28,811	22.12	43,874	16.43
3. Private Ltd. Companies	791	8.80	1,642,242	53.34	62,848	48.25	137,164	51.38
4. Public Ltd. Companies	77	0.85	710,139	23.06	14,309	10.98	51,816	19.41
5. Co-operatives	399	4.42	4,075	0.13	1,320	1.01	1,093	0.41
6. Government	13	0.14	9,978	0.35	1,368	1.06	3,908	1.47
Total:	9,013	100.00	3,078,523	100.00	130,257	100.00	266,957	100.00
1 & 2	7,733	85.79	712,088	23.13	50,412	38.70	72,975	27.33
Others	1,280	14.21	2,366,435	76.87	79,845	61.30	193,982	72.67

* Includes part-time employees but not unpaid employees.

Source: *Census of Manufacturing*, 1968, op. cit.

TABLE II.2 (continued)

1971

Legal Status	*Establishments*		*Gross Output*		*Paid Employees**		*Salaries & Wages*	
	(No.)	%	*(M$'000)*	%	*(No.)*	%	*(M$'000)*	%
1. Individual Proprietorships	1,027	30.46	220,869	5.30	16,079	9.50	24,076	6.63
2. Partnerships	1,178	34.93	461,256	11.08	30,802	18.20	48,085	13.25
3. Private Ltd. Companies	1,019	30.22	2,252,434	54.09	94,329	55.75	198,705	54.76
4. Public Ltd. Companies	125	3.71	1,205,322	28.95	26,032	15.39	86,225	23.70
5. Co-operatives	9	0.27	762	0.02	74	0.04	87	0.02
6. Government	14	0.41	23,505	0.56	1,886	1.12	5,689	1.58
Total:	3,372	100.00	4,164,148	100.00	169,202	100.00	362,867	100.00
1 & 2	2,205	65.39	682,125	16.38	46,881	27.71	72,161	19.89
Others	1,167	34.61	3,482,023	83.62	122,321	72.29	290,706	80.11

Source: Survey of Manufacturing, 1971, op. cit.

again the access to capital markets and advanced technologies may have forced companies which planned for large-scale productivity-raising investments to go public. The wages paid by these companies were also substantially higher than those of all other establishments.

C. REGIONAL DISTRIBUTION

Economic activity has for centuries been more marked on the west coast of the Malaysian Peninsula than on the east coast. Consequently, urban centres and infrastructural amenities developed first and are most pronounced in a number of west-coast states like Penang, Perak, Selangor, and Johor.[8] Therefore these four states also attracted the lion's share of investment in manufacturing. As can be seen from Table II.3, more than 70 per cent of all establishments and more than 75 per cent of output and employment were concentrated in these four states in 1959. Another west-coast state, Kedah, also had in the early years a sizeable share of about 10 per cent.

What is probably more disturbing is that over the years and despite the professed government intention to reduce the acceleration of 're-gional disparities', there seems to have been no abatement of the strong agglomerative pull. On the contrary, by 1971 the four states had increased their share in output and employment to more than 80 per cent. However, even among the four states regional agglomeration had intensified sharply. By 1971 Selangor alone, which contains also the

TABLE II.3

WEST MALAYSIA—REGIONAL DISTRIBUTION OF MANUFACTURING ESTABLISHMENTS AND OTHER SELECTED DATA

1959

States	*Establishments*		*Gross Output*		*Paid Employees**		*Salaries & Wages*	
	(*No.*)	%	(*M$'000*)	%	(*No.*)	%	(*M$'000*)	%
1. Johore	610	12.19	238,782	18.94	10,387	16.86	15,742	17.57
2. Kedah	517	10.33	126,175	10.01	4,990	8.10	6,794	7.59
3. Kelantan	194	3.87	18,841	1.49	2,211	3.58	2,081	2.32
4. Malacca	178	3.55	55,245	4.38	1,786	2.89	2,494	2.78
5. Negri Sembilan	257	5.13	69,504	5.51	2,809	4.56	4,345	4.85
6. Pahang	259	5.17	17,633	1.39	1,393	2.26	2,113	2.35
7. Penang	724	14.46	158,361	12.56	7,333	11.90	10,054	11.22
8. Perak	1,113	22.24	238,153	18.89	10,785	17.50	14,134	15.78
9. Perlis	44	0.87	7,053	0.55	353	0.57	466	0.52
10. Selangor	1,077	21.52	326,540	25.91	18,879	30.64	30,576	34.14
11. Trengganu	51	1.01	3,833	0.30	553	0.89	750	0.83
West Malaysia	5,004	100.00	1,260,120	100.00	61,597	100.00	89,549	100.00
Urbanized states (−) 1	2,914	58.22	723,054	57.36	36,997	60.04	54,764	61.14
7 + 8 + 10 (+) 1	3,524	70.41	961,836	76.30	47,384	76.90	70,506	78.71
Other states	1,480	29.59	298,284	23.70	14,213	23.10	19,043	21.29

Source: Census of Manufacturing, 1959, op. cit.

1968

States	*Establishments*		*Gross Output*		*Paid Employees**		*Salaries & Wages*	
	(*No.*)	%	(*M$'000*)	%	(*No.*)	%	(*M$'000*)	%
1. Johore	1,125	12.48	433,802	14.09	22,419	17.21	39,578	14.83
2. Kedah	774	8.60	132,138	4.30	5,365	4.12	8,333	3.12
3. Kelantan	357	3.96	50,647	1.65	3,733	2.87	4,096	1.53
4. Malacca	412	4.57	82,519	2.68	3,409	2.62	5,511	2.06
5. Negri Sembilan	409	4.54	270,003	8.77	4,999	3.84	13,034	4.88
6. Pahang	403	4.47	56,682	1.84	3,748	2.88	9,645	3.61
7. Penang	1,351	14.99	335,771	10.91	15,828	12.15	27,340	10.24
8. Perak	1,693	18.78	358,339	11.64	19,131	14.69	31,051	11.63
9. Perlis	83	0.92	8,328	0.27	321	0.25	507	0.19
10. Selangor	2,118	23.50	1,339,083	43.50	49,811	38.24	125,168	46.89
11. Trengganu	288	3.19	11,209	0.35	1,493	1.13	2,674	1.02
West Malaysia	9,013	100.00	3,078,523	100.00	130,257	100.00	266,957	100.00
Urbanized states (−) 1	5,162	57.27	2,033,193	66.04	84,770	65.08	183,559	68.76
7 + 8 + 10 (+) 1	6,287	69.75	2,466,995	80.14	107,189	82.29	223,137	83.59
Other states	2,726	30.25	611,528	19.86	23,068	17.71	43,820	16.41

* Includes part-time employees.

Source: Census of Manufacturing, 1968, op. cit.

TABLE II.3 (continued)

1971

States	Establishments		Gross Output		Paid Employees*		Salaries & Wages	
	(No.)	%	(M$'000)	%	(No.)	%	(M$'000)	%
1. Johore	457	13.56	566,884	13.6	28,521	16.8	53,034	14.61
2. Kedah	178	5.27	158,781	3.8	5,906	3.5	9,855	2.72
3. Kelantan	109	3.24	46,156	1.1	3,519	2.1	4,509	1.24
4. Malacca	103	3.05	92,287	2.2	3,736	2.2	5,803	1.60
5. Negri Sembilan	118	3.49	295,309	7.1	5,198	3.1	14,374	3.96
6. Pahang	129	3.83	86,977	2.1	7,140	4.2	14,592	4.02
7. Penang	473	14.03	471,545	11.3	20,285	12.0	34,251	9.44
8. Perak	576	17.08	423,561	10.2	24,476	14.5	41,574	11.46
9. Perlis	11	0.32	9,192	0.2	231	0.1	371	0.10
10. Selangor	1,167	34.60	1,993,902	47.9	68,025	40.2	180,651	49.78
11. Trengganu	51	1.51	19,554	0.5	2,165	1.3	3,852	1.07
West Malaysia	3,372	100.00	4,164,149	100.0	169,202	100.0	362,867	100.00
Urbanized states (—) 1	2,216	65.71	889,919	69.4	112,786	66.6	256,476	70.68
7 + 8 + 10 (+) 1	2,673	79.27	3,455,892	83.0	141,307	83.5	309,510	85.29
Other states	699	20.73	708,257	17.0	27,895	16.5	53,357	14.71

Source: *Survey of Manufacturing Industries*, 1971, Vol. 1, Kuala Lumpur.

nation's capital, accounted for nearly half of all output and for 40 per cent of total manufacturing employment.

In spite of the pronounced regional disparities, differences in productivity among the states were fairly small in 1959. Of the urbanized states, only Johor, Penang, and Perak slightly exceeded the productivity average, whereas Selangor ranked significantly below it. The opposite was true in 1968 and 1971. Now Selangor had taken the lead in productivity while the other urbanized states lagged behind.[9] Apparently, the rapid agglomeration in Selangor coincided with fast productivity increases. Whether productivity increases induced agglomeration or vice versa is hard to ascertain. Plausible hypotheses are easily found for both interpretations.

The regional wage structure only partly reflected the productivity structure. In Perak, for instance, wage rates were low in 1959 compared to productivity. Selangor on the other hand had relatively high wage rates, whereas productivity was low. In 1971 these divergencies had disappeared. A clarification of the question whether the wage structure had adapted to the productivity structure or vice versa must be left for further studies.

D. MAJOR INDUSTRY GROUPS

Before we enter into a discussion on the structure of manufacturing by major industrial groups, a few words must be said about the data to be referred to. Manufacturing Censuses have been conducted and published for the years 1959, 1963, and 1968. In between, annual Surveys have been undertaken which from 1970 onwards are broadly comparable with the earlier Censuses for most items, with the notable exception of the number of establishments. For example, the coverage used for the 1971 Survey accounted for 95 per cent of value added and 84 per cent of total employment in 1968 according to the 1968 Census, whereas in terms of the number of establishments the coverage was less than 40 per cent. However, even the Censuses did not cover all industries and apparently missed out a number of establishments. Deliberately not covered were the processing of agricultural products in factories on estates (except for the 1959 and 1963 Censuses), abattoirs, tailoring and dressmaking, tin smelting, repair of cycles and motor vehicles, manufacturing of jewellery, gold-, silver- and plate-ware, and finally the very small manufacturers who do not hire employees, such as household craftsmen and open-air repairers. Comparing the results of the Censuses with the National Accounts and the official employment estimates leads to the conclusion that the Census covered in 1959 about half of all value added and somewhat less of total employment, in 1963 more than 80 per cent of value added and more than half of employment and in 1968 over 90 per cent of value added and over 55 per cent of employment. This makes clear that the actual output structure is, at least for the later years, fairly well represented by the data in Table II.4, while the data on the employment structure and the wage structure do not reflect the actual pattern though they can be used for comparisons within that table.

Bearing these data limitations in mind, the following conclusions can be drawn from the table. Processing of estate-type agricultural products off estates accounted for more than half of all output, though less than 4 per cent of the establishments. If we include on-estate processing which was in 1959 only 8 per cent lower than off-estate processing and if we add further tin smelting with an output value close to M$500 million in 1959—produced basically by only two establishments—it becomes quite apparent that at this juncture manufacturing was heavily dominated by primary processing activities with relatively large establishments. This impression is reinforced if one considers that the two industries which rank next in terms of output size are also mainly primary processing (grain and oil-milling in the case of food, and saw-milling in the case of wood products), though their establishments are substantially smaller. Of course, the weight of these industries is less if measured by value added, because the value-added ratio of primary processing is typically low, but together they still have a very sizeable share in the total value added created by manufacturing.

The high labour productivity and the high wage rate of agricultural processing in 1959 is remarkable. The output share is more than triple the employment share which again is lower than the wage share. However, even more impressive is the rate at which this industry lost its dominating position during the 1960s. Hence by 1968 the food industry had a larger output share than off-estate processing. This decline has to do on the one hand with a relative increase of on-estate processing and on the other, with a drastic reduction of the heavy agricultural bias of the Malaysian economy (see section II.4). With the relative decline of this industry its strong lead in productivity decreased also. In 1968 the wages paid were already below the average of the manufacturing sector and even more so in 1971.

The food industry with its relatively large number of establishments achieved its increase in output share with substantial increases in productivity as indicated by the falling employment share. The same happened, though less pronounced, in the beverages, the tobacco, and the rubber products industry. Industries which increased their output share as well as their employment share produced textiles, footwear and apparel, wood products, and electrical machinery. They all paid wages near to or below the average wage of the manufacturing sector. In terms of broad categories the output of these industries can be classified as either non-durable consumer goods or intermediate goods.

Other industries which gained in importance in terms of output without clearly increasing or decreasing their employment share were the industries manufacturing chemicals, petroleum and coal products (oil refineries), non-metallic mineral products, basic metals, metal products, non-electrical machinery, and transport equipment. Most of these industries paid wages above the average. They produced mainly intermediate products, durable consumer goods or investment goods.

For manufacturing as a whole the growth during the 1960s accompanied a steady increase in the degree of processing as indicated by the overall value-added ratio. This resulted partly from rising value-added ratios in individual industries (agricultural products, tobacco products, textiles, rubber products) and partly from the declining weightage of the agricultural products industry which has the lowest value-added ratio of the entire sector. The overall result would have been even more marked if the value-added ratio had not fallen in a number of industries such as food products, furniture and fixtures, non-electrical machinery, and transport equipment.

4. COMPETITIVE VERSUS COMPLEMENTARY GROWTH

It was argued above that as late as 1957 the Malaysian economy was still a typical colonial economy with a heavy bias towards primary products. Manufacturing growth and structural change gained momentum only in the 1960s when official policy, disillusioned by a steady worsening of the country's terms of trade, turned its attention to the develop-

TABLE II.4
STRUCTURE OF MANUFACTURING BY INDUSTRY, 1959–1971

Major Group	*Number of Establishments*				*Gross Output*			
	1959	*1963*	*1968*	*1971*[b]	*1959*	*1963*	*1968*	*1971*
Processing of estate type agricultural products in factories off-estates	3.8	3.5	3.1		51.8	30.3	18.5	15.5
Food manufacturing industries	38.3	34.0	31.3		16.5	19.0	22.7	21.3
Beverage manufacturing industries	1.7	1.1	0.8		1.5	1.5	2.0	2.0
Tobacco products manufacturing	2.6	1.5	1.3		3.9	9.9	7.1	6.9
Manufacturing of textiles	n.a.	0.5	0.7		n.a.	0.9	2.4	2.8
Manufacture of footwear (except rubber footwear), other wearing apparel and made-up textile goods	n.a.	5.7	4.7		n.a.	0.7	1.0	1.5
Manufacture of wood, rattan, mengkuang, attap and cork products except furniture and footwear	10.7	9.2	8.9		6.8	7.9	8.1	8.5
Manufacture of furniture and fixtures	4.4	7.7	7.3		0.6	1.3	1.0	0.7
Manufacture of paper and paper products	n.a.	0.9	1.2		n.a.	0.5	0.7	0.9
Printing, publishing and allied industries	4.2	3.7	4.1		2.3	3.4	3.4	3.7
Manufacture of leather products except footwear and wearing apparel	n.a.	0.3	0.4	Data not comparable	n.a.	0.2	0.2	0.2
Manufacture of rubber products	2.8	2.3	2.6		2.9	3.4	3.6	3.1
Manufacture of chemicals and chemical products	2.7	3.4	3.5		3.2	6.7	6.8	7.1
Manufacture of products of petroleum and coal	n.a.	n.a.	0.1		n.a.	n.a.	5.7	4.8
Manufacture of non-metallic mineral products, except petroleum and coal products	3.4	3.6	3.6		2.0	3.2	3.8	3.9
Basic metal industries	n.a.	0.4	0.9		n.a.	0.8	1.9	2.9
Manufacture of metal products except machinery and transport	6.3	13.5	13.3		2.1	3.7	3.6	4.1
Manufacture of machinery except electrical equipment	4.5	4.0	5.0		0.9	1.9	2.0	2.0
Manufacture of electrical machinery, apparatus, appliances and supplies	n.a.	2.1	3.5		n.a.	0.7	1.9	2.7
Manufacture of transport equipment	6.0	1.1	1.4		1.3	0.8	2.5	3.6
Miscellaneous manufacturing industries	8.7	1.4	2.5		4.1	0.3	1.1	1.8
Total %	100.0	100.0	100.0		100.0	100.0	100.0	100.0
absolute[a]	5,004	8,856	9,013		1,260,120	1,689,435	3,078,525	4,164,149

n.a. = not available.

Sources: *Census of Manufacturing Industries*, 1959, 1963 and 1968; *Survey of Manufacturing Industries*, 1971.

TABLE II.4 (continued)

Employment				*Salaries and Wages*				*Value added Share of Gross Output*			
1959	*1963*	*1968*	*1971*	*1959*	*1963*	*1968*	*1971*	*1959*	*1963*	*1968*	*1971*
14.4	11.0	8.3	8.2	17.1	10.7	7.5	6.9	13.8	9.6	13.6	20.6
18.5	16.7	15.3	12.0	16.5	15.1	13.8	11.7	25.6	20.1	20.1	20.4
3.2	2.6	1.8	1.6	3.8	2.9	2.8	2.3	54.1	51.1	56.8	54.8
5.8	4.7	3.3	2.8	4.1	3.7	3.8	3.4	22.8	16.9	26.1	31.1
n.a.	1.8	4.0	6.0	n.a.	1.1	2.4	3.6	n.a.	26.8	27.0	30.7
n.a.	1.7	2.9	4.7	n.a.	0.9	1.3	2.2	n.a.	32.1	26.1	34.4
14.1	14.1	15.3	17.4	15.1	15.9	15.5	15.6	38.7	37.0	37.8	34.2
1.8	3.0	2.4	1.6	1.6	2.2	1.6	1.2	46.2	37.3	34.3	33.3
n.a.	0.7	1.3	1.3	n.a.	0.6	0.7	1.1	n.a.	37.8	29.6	28.2
7.0	8.1	7.5	6.9	8.1	10.1	8.7	8.3	57.5	51.4	50.2	50.9
n.a.	0.3	0.3	0.5	n.a.	0.1	0.2	0.3	n.a.	24.6	18.8	22.2
9.0	7.9	6.5	5.2	7.5	6.7	6.7	5.5	40.5	39.5	46.2	48.0
3.5	4.9	4.6	4.5	4.3	5.7	6.8	7.0	36.1	37.3	37.9	36.0
n.a.	n.a.	0.3	0.3	n.a.	n.a.	1.7	1.5	n.a.	n.a.	23.2	22.0
4.4	5.9	5.8	5.5	4.4	5.9	6.6	6.2	52.0	50.9	52.3	53.6
n.a.	0.8	2.4	2.0	n.a.	1.0	2.9	2.9	n.a.	26.6	37.3	32.5
4.2	6.3	6.4	5.9	4.1	6.0	6.2	6.2	34.6	36.4	35.7	31.9
3.7	5.0	4.8	4.3	3.8	5.4	4.6	4.4	55.6	45.9	39.8	40.7
n.a.	0.7	1.7	2.2	n.a.	0.8	1.9	2.8	n.a.	37.9	36.2	36.0
4.2	1.9	2.8	3.1	4.4	2.2	2.7	3.9	43.1	43.6	22.8	25.5
6.2	2.0	2.3	4.0	5.2	3.0	1.6	3.0	20.6	41.8	39.0	37.3
100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	23.4	24.9	28.4	30.4
61,597	87,450	130,257	169,202	89,549	153,729	267,957	362,867				

[a]Establishments and employment are in number while output and salaries and wages are in M$'000.

The value-added share are the averages of the entire sector.

[b]Data on number of establishments for 1971 is not shown because of incomparability to 1959, 1963 and 1968 data.

ment of manufacturing. This structural diversification found its expression also within the manufacturing sector itself as has been shown in the previous section. A more thorough discussion of the policy measures adopted and their impact on the manufacturing sector will be given in Chapter III. Here we will briefly consider the question whether the acceleration of manufacturing growth was complementary to that of other sectors or was competitive in the sense that it retarded the growth of other sectors of the economy.

Except for cases of outright absolute output decline, such a question is difficult to answer in principle. If all sectors grow, how can one judge *ex-post* whether one sector has grown too much at the expense of others? One way of dealing with this question is the attempt, however inadequate it may be, to investigate whether the flow of resources has been increasingly directed towards the fast-growing sectors and eventually withdrawn from other sectors. As a kind of background to this investigation we may at first see how Malaysia's development compares with the 'normal' pattern of growth as it has been derived in various empirical studies. This at least provides some clues as to whether the structural change in favour of manufacturing and at the expense of agriculture was exceptional to, or more or less in line with, structural changes normally observed in this phase of development.

A number of studies have been undertaken in the recent past which aim at a derivation of what may be called a normal pattern of structural change during the process of economic growth as measured by the rise of *per capita* income. Though the basic idea originated in the works of Colin Clark, Hoffmann, and Kuznets,[10] the more recent studies by Chenery and the Kiel Institute[11] were those which, through the use of large-scale computers and a huge mass of data, obtained results which may be considered as representative averages of various types of countries. In the following we will make use of the computations by the Kiel Institute as their data permit us to distinguish between manufacturing and other industrial production whereas Chenery lumps all the industrial activities into one group. In fact, both sets of data produce for Malaysia almost identical results. According to World Bank Staff Working Paper No. 154 by N. G. Carter which contains tabulations of the Chenery equations, Malaysia's ratio of industrial output to GDP is expected to be at 0.225 or 22.5 per cent in 1965.[12] The Kiel equations produce for the same year a share for manufacturing of 17.7 per cent and for construction of 4.8 per cent which together amount also to a 22.5 per cent industrial output share as defined by Chenery.

Table II.5 compares the structure of the Malaysian economy as predicted by the Kiel equations[13] with the actual structure over the period 1955 to 1975. The table clearly confirms the hypothesis that in the 1950s the Malaysian economy was still heavily biased towards the production of primary commodities. The bias was most pronounced in agriculture where the rubber plantations played the major role. The tin industry is responsible for the bias in mining and construction as the

TABLE II.5

WEST MALAYSIA—SHARES IN GROSS DOMESTIC PRODUCT AT FACTOR COST

	Manufacturing		*Agriculture*		*Mining & Construction*		*Utilities & Services*	
	Actual	*Expected*	*Actual*	*Expected*	*Actual*	*Expected*	*Actual*	*Expected*
1955	8.0[a]	16.0	40.5	25.5	9.6[a]	6.4	41.9	52.1
1960	8.5	16.1	40.7	25.6	9.1	6.3	41.7	52.0
1965	10.4	17.7	31.5	23.4	13.1	6.7	45.0	52.2
1970	15.0	19.1	29.1	21.8	10.0	6.8	45.9	52.3
1975[b]	20.4	19.3	33.3	21.5	9.0	6.9	37.3	52.3

[a] Own estimates.

[b] Preliminary. For the shares of the new SNA see Section II.1.

Sources: Expected values: own calculations.
Actual values: Department of Statistics, Kuala Lumpur, *National Accounts*, various issues; The Treasury, Kuala Lumpur, *Economic Report*, various issues.

share of construction alone was by more than one percentage point lower than expected. The 'underdeveloped' sectors were manufacturing on the one hand, and utilities and services on the other. During the 1960s and the early 1970s the actual pattern rapidly approached the normal pattern. Most dramatic is the falling behind of agriculture—the increase in 1975 must be considered as temporary, resulting from an abnormal price situation for sawn timber and palm oil—and the rapid catching up of manufacturing. It is therefore between these two sectors that the problem of competitive growth could eventually have arisen.

Though quantitatively manufacturing seems to have more than compensated for what agriculture lost, in qualitative terms the changes in these two sectors differed markedly. The heavy set-back in agriculture between 1960 and 1965 was mainly due to a sharp decline in the price of rubber. The unit value of Malaysian rubber exports fell over that period by more than 35 per cent.[14] In spite of this, rubber production continued to expand and thus lessened the decline in output value. As the rubber acreage actually tapped remained more or less constant, the output increase resulted from a rise of the yield per acre which in turn was due to a shift of rubber tapping from areas planted with unselected seedlings to new ones with high yielding stands.[15] The planted area, however, increased by more than 10 per cent, which was even more than in the previous five-year period. In addition, the area planted with oil palm, which in 1960 was still a minor crop, expanded rapidly. Similarly for rice, another major crop, there was a sizeable expansion of the cultivated area. Altogether one may draw the preliminary conclusion that the flow of resources into agriculture does not appear to have been drastically hampered either by the fall of the rubber price or the expansion of manufacturing. This conclusion holds good also for the second half of the 1960s which witnessed a further expansion of the area under cultivation. A few qualifications which slightly modify the picture must, however, be added.

The increase of the acreage planted with rubber was only due to the expansion of smallholdings which was supported by Government policy. The estates actually reduced their planted acreage, even more so between 1965 and 1970. As the growth of the smallholdings acreage tapered off during the second half of the 1960s, the accelerated reduction of estate acreage led to a decline of total acreage under rubber cultivation. But this was more than counterbalanced by the increase in the acreage planted with oil palm and rice. Thus, the change of the price structure within the agricultural sector induced changes in the structure of plantations. As for rubber, the reduction of estate acreage reflected partly a shift to oil palm planting and partly a disengagement from agriculture altogether, especially by foreigners. An indication of the latter is the extremely low reinvestment rate in this sector, as will be shown in Chapter VII. Part of the profits not reinvested in agriculture were obviously directed into manufacturing establishments as can be readily observed in a few instances, for example in the rubber products industry. In that sense, manufacturing has competed with agriculture for financial resources. However, it is doubtful whether this can reasonably be labelled competitive growth. In a country with free capital inflow and outflow, financial capital is not a scarce resource in the first place. If there were good investment opportunities in manufacturing they would have been seized anyway, sooner or later. Furthermore, the extent to which financial resources were diverted from agriculture to manufacturing is unknown. The answer to the question whether this was of a sizeable magnitude must be left for further research.

Whereas the drop in the agricultural share during the 1960s was due to falling prices—as increasing prices caused the rise from 1973 onwards—the growth of the manufacturing share reflected largely real output growth. The domestic price level increased by roughly 1 per cent per annum over the 1960s. The manufacturing growth rate was not only high on average but accelerated from period to period. Over the four five-year periods between 1955 and 1975 it rose from 4.6 per cent to 9.9 per cent and then to 12.9 per cent and 14.6 per cent respectively.[16]

It was argued above that the fast-growing manufacturing sector is unlikely to have competed with agriculture for private investment funds. We must now briefly consider whether the same holds for other complementary resources. As far as labour is concerned, this can be answered in the affirmative. The unemployment statistics reveal that skilled as well as unskilled labour was not scarce for the country as a whole. The highest unemployment rates were recorded for the young and educated sections of the population. For the age group below 25 years the unemployment rate was in 1967 around 15 per cent for the rural and over 20 per cent for the urban labour force.[17] In West Malaysia, although there has been considerable movement of labour out of the rural areas to the urban sector, this cannot be regarded as being detrimental to the rural area's production capacity as was the case in India and some Latin-American countries, since most of the populace moving out of the Malaysian rural areas were largely either unemployed or underemployed. Moreover, manufacturing's share in total employment was too low to be able to create jobs to an extent which could seriously hinder the large agricultural sector.

Another important complementary factor is government policy and its investment activities. Where infrastructural investment is a precondition to growth, the allocation of public funds and the government's implementation capacity become crucial determinants of a sector's growth potential. In the same way it can be quite important whether the government puts its skills and energy into agricultural reforms or into the design of a suitable policy for industrial growth. Many governments in developing countries do not have the capacity to achieve both satisfactorily at one and the same time, not to speak of being able adequately to monitor an adopted policy.

In Malaysia it is quite apparent, as has already been pointed out, that in colonial times government policy and investment were exclusively geared towards the fostering of agriculture. A change in attitude began to emerge towards the end of the 1950s, the first clear sign being the Pioneer Industries Ordinance which was passed in 1958. Whereas the First Malaya Plan (1956–1960) concentrated on public utilities, on transport facilities, and on the more directly productive kinds of investment in agriculture, the Second Malaya Plan (1961–1965) formulated already as one of its objectives: '... giving every reasonable encouragement to industrial expansion which in the long-term offers perhaps the greatest promise for sustained development and diversification of the Federation economy'.[18]

This new attitude, however, did not lead—as in several other countries—to a neglect of agriculture. On the contrary, the government rightly recognized that in the short and medium run the dilemma of falling rubber prices could only be dealt with by an all-out effort to increase productivity in the rubber sector and by effective programmes for agricultural diversification. Thus, the new development strategy aimed at a proper balance between agriculture and manufacturing which would gradually correct the colonial bias towards agriculture. This is also reflected by the composition of Public Development Expenditures (see Table II.6). The share of expenditure for agriculture and rural development dropped only during the Second Malaya Plan and was drastically raised again during the First Malaysia Plan. The lower share in the Second Malaya Plan was due to high expenditure for roads and bridges (Transport) and for education (Social Services). The first benefited almost exclusively the agricultural sector, as the main objective of the road construction programme was to link rural communities to the highway network.[19] The second was for the good of agriculture as well as other sectors.

The structure of development expenditure makes it apparent that the government's financial commitment to industrial development was neg-

TABLE II.6

WEST MALAYSIA—PUBLIC DEVELOPMENT EXPENDITURES

1956–1975

Sectors	*First Malaya Plan 1956–60*		*Second Malaya Plan 1961–65*		*First Malaysia Plan 1966–70*		*Second Malaysia Plan 1971–75*	
	M$ million	%	*M$ million*	%	*M$ million*	%	*M$ million*	%
1) Agriculture and rural development	227.5	23.61	411.1	17.53	911.2	30.74	1,835.6	27.77
2) Mining	n.a.	n.a.	0.9	0.03	0.4	0.01	0.5	0.01
3) Industrial development	12.1	1.25	59.1	2.52	137.0	4.62	1,159.7	17.55
4) Transport	230.1	23.90	588.5	25.10	355.9	12.00	1,036.7	15.69
5) Communications	51.6	5.35	113.3	4.83	159.5	5.38	357.1	5.40
6) Utilities	238.6	24.75	527.4	22.49	646.8	21.82	831.0	12.57
7) Social services	138.8	14.40	520.5	22.22	644.7	21.75	1,093.9	16.55
8) Government administration	65.0	6.74	123.6	5.27	109.0	3.68	294.5[a]	4.46
Total economic expenditure	963.7	100.00	2,344.4	100.00	2,964.5	100.00	6,609.0	100.00
9) Defence (non-economic)	43.3		307.3		645.7		1,050.5	
Economic and non-economic expenditure	1,007.0		2,651.7		3,610.2		7,659.5	

[a]Includes M$33.5 million for feasibility studies.

Sources: *First Malaysia Plan, 1966–1970*, pp. 28–9, 69–70; *Second Malaysia Plan, 1971–1975*, pp. 68–71; *Mid-Term Review of the Second Malaysia Plan, 1971–1975*, pp. 98–101.

ligible during the First Malaya Plan. In relative terms, however, the expenditure for this sector increased very rapidly from plan to plan period. The biggest jump came with the Second Malaysia Plan when the share of this expenditure reached nearly 18 per cent of the total. But even so the expenditure share of agriculture remained at a high level. This convincingly confirms our earlier conclusion that there was hardly any competition for scarce resources between these two sectors. Agriculture and manufacturing grew complementarily.

It is quite obvious that agriculture acted as a stimulus for manufacturing, especially the manufacturing of processed agricultural products. The reverse was definitely less important, because Malaysia's agricultural export commodities which have a strong stand in the world market did not need domestic manufacturing as an outlet.

1. See for example Wolfgang Kasper, *Malaysia—A Study in Successful Economic Development*, Washington, D. C., American Enterprise Institute for Public Policy Research, 1974.

2. Using an exchange rate of US$1 = 2.5 Malaysian Ringgit. See Economic Report 1977/78, op. cit., p. 7 and p. 147.

3. The Treasury, Malaysia, *Economic Report, 1974–75*, App. pp. vi, vii. According to the recently introduced new System of National Accounts (SNA) the share of manufacturing in GDP was 17 per cent in 1970, 21 per cent in 1974, and 20 per cent in 1975. See Department of Statistics, *Preliminary National Accounts—Peninsular Malaysia, 1970–1975*, September 1977.

4. Department of Statistics, op. cit.

5. See International Bank for Reconstruction and Development, *Report on the Economic Development of Malaya*, Johns Hopkins Press, Baltimore, 1955.

6. IBRD, op. cit.

7. According to the figures released by the Registrar of Businesses in 1956, an annual average of 10,000 new businesses were registered, while in the same year about 4,000 businesses withdrew. See also 'Working Party Report 1959' for more details.

8. Johor may, with some reservation, be regarded as an urbanized state because of its long association with the industrially advanced neighbour Singapore—an association which also gave rise to its own extensive industrial complexes in the causeway area facing Singapore.

9. The high productivity in Negri Sembilan in 1968 and 1971 is due to the operation of two oil refineries which accounted for two-thirds of the state's gross output.

10. Colin Clark, *The Conditions of Economic Progress*, London, 1940; W. G. Hoffmann, *Stadien und Typen der Industrialisierung*, Kiel, 1931, translated: *The Growth of Industrial Economies*, Manchester, 1958; S. Kuznets, 'Quantitative Aspects of the Economic Growth of Nations', *Economic Development and Cultural Change*, various issues since October 1956.

11. H. B. Chenery and M. Syrquin, Patterns of Development 1950–1970, Washington 1975; G. Fels, K. W. Schatz, F. Wolter, 'Der Zusammenhang zwischen Produktionsstruktur und Entwicklungsniveau', *Weltwirtschaftliches Archiv*, Vol. 106 (1971), pp. 240–78.

12. IBRD, Bank Staff Working Paper No. 154, prepared by N. G. Carter, June 1973, mimeo, p. 52. With a population close to eight million in 1965, a real *per capita* income of about US$340, and a ratio of capital inflow to GDP of −0.03 column 2 of the Table shows a ratio of 0.225 for industrial output.

13. The expected values of manufacturing, agriculture, and mining and construction have been derived from the equations, whereas that of utilities and services is obtained as residual.

14. Department of Statistics, *Monthly Statistical Bulletin of West Malaysia*, Kuala Lumpur, various issues.

15. K. A. M. Ariff, *Export Trade and the West Malaysian Economy—An Enquiry into the Economic Implications of Export Instability*, Kuala Lumpur, 1972, Appendix.

16. 14.6 per cent is the annual real growth rate according to the Index of Industrial Production (13.6 per cent) between 1970 and 1974 plus one percentage point for price increase in order to obtain comparability with the earlier subperiods. See Department of Statistics, *Monthly Industrial Statistics Peninsular Malaysia*, Kuala Lumpur, various issues.

17. Department of Statistics, *Socio-Economic Sample Survey of Households—Malaysia, 1967/68*, Kuala Lumpur.

18. Apart from the Plan documents see also: *Interim Review of Development in Malaysia under the Second Five Year Plan*, Kuala Lumpur, 1963, pp. 12 and 20.

19. *First Malaysia Plan*, op. cit., p. 141.

III Government Policy towards Industry and its Impact

THE expenditure for industrial development mentioned in the previous chapter was, of course, only part of the government's programme to stimulate industrial growth. Especially during the 1960s the main emphasis was on all kinds of incentives. As for development expenditure, the allocation was mostly for site development (over 90 per cent) in the First Malaya Plan. In the Second Malaya Plan, 40 per cent was for site development and the remainder for industrial financing organizations. Under the First Malaysia Plan the amount allocated to site development had fallen to less than 15 per cent whereas financing organizations continued to receive the major part of expenditure for this sector. The big expenditure increase during the Second Malaysia Plan was due to substantial direct government engagement in manufacturing and related activities. All these financial activities of the government must, however, be seen in the context of its entire industrialization policy which will be described and evaluated in the following sections.

1. TAX INCENTIVES

The first policy measures taken for the stimulation of industrial development in the Federation of Malaya[1] were tax incentives. Their origin can be traced to the 'Report of the Industrial Development Working Party'[2] delivered to the Malaysian government in 1957 after a World Bank mission[3] had in 1955 made some rather general recommendations for industrialization. Whereas the World Bank mission stressed tariff protection and depreciation allowances as effective incentives, the Working Party came out in favour of tax concessions for 'pioneer companies'. The reasons given were that the cost of tax exemption was small compared to the gains from increased investment, and that tax concessions were more attractive to profit-oriented investors than capital allowances.[4] This belief was, however, not substantiated by any empirical evidence.

A. PIONEER LEGISLATION

The Working Party's recommendations led to the Pioneer Ordinance in 1958 which granted a two-year income tax exemption to any new manufacturing establishment approved as 'pioneer'. The exemption period was extended to three years for a fixed capital expenditure of more than M$100,000 but less than M$250,000 and to five years for expenditure exceeding M$250,000. When Malaysia was formed in 1963 four different incentive acts existed in the four regions, namely the Federation of Malaya, Singapore, Sarawak, and Sabah. The attempts to harmonize these separate acts resulted in the introduction of the Pioneer Industries Act, 1965, which stipulated higher investment amounts in order to qualify for an extended exemption period. The amount required for one additional year was fixed between M$250,000 and M$500,000, for two additional years between M$500,000 and M$1 million, while altogether five years could be granted if the investment was in excess of M$1 million. Losses incurred during the tax relief period could be carried forward to the post-relief period. This schedule was also adopted by the Investment Incentives Act of 1968 which extended, however, the coverage to non-manufacturing establishments. The Act was subsequently amended in 1969, 1971, and 1973. Apart from other incentives which will be dealt with later, the Incentives Act granted one additional exemption year each for manufacturing a 'priority' product or for establishing a 'priority' industry and for incorporating into the products the percentage of Malaysian content specified by the government. A maximum exemption period of ten years was granted for investing in an area declared by the government to be a development area.

Pioneer companies were further allowed the following concessions. Dividends paid out of the exempted income were free from tax in the hands of shareholders. The initial capital allowance of 20 per cent and the annual allowance of 10 per cent was notionally calculated for the relief period and carried forward to the post-relief period. The qualifying conditions for pioneer status were so broadly defined that practically any new company became eligible. Only in more recent years has a somewhat more selective approach been adopted.

B. GROWTH AND STRUCTURE OF THE PIONEER SECTOR

The number of companies which received pioneer status and entered commercial production increased from 18 in 1959 to 399 in 1974. Table III.1[5] gives some summary statistics of the pioneer sector up to 1971. Compared to the total number of manufacturing establishments, the number of companies which acquired pioneer status remained rather small over the entire period. The absolute number of approvals of pioneer companies was of course greater, ranging between 150 and 180 per annum over the last three years. However, many approved companies never came into being. According to (unpublished) annual sur-

TABLE III.1
GROWTH OF THE PIONEER SECTOR, 1959–1971

	No.	*% of Manuf.*	*Output (M$'000)*	*% of Manuf.*	*Value Added (M$'000)*	*% of Manuf.*	*Fixed Capital (M$'000)*	*% of Manuf.*	*Employment No.*	*% of Manuf.*	*Salaries & Wages (M$'000)*	*% of Manuf.*
1959	18	0.4	10,671	0.8	4,305	1.5	n.a.	n.a.	1,296	2.1	1,656	1.8
1963	85	1.0	195,424	11.6	72,328	17.2	n.a.	n.a.	7,171	8.2	16,586	10.8
1968	146	1.6	895,126	29.3	278,274	32.2	449,027	50.4	23,115	17.7	63,255	23.7
1971	246	n.a.	1,393,361	33.5	450,933	35.6	699,947	54.3	43,624	28.8	106,866	29.5

Manufacturing excludes on-estate processing.
Manuf. = manufacturing.
n.a. = Not available.

Sources: *Census of Manufacturing Industries, West Malaysia*, 1968; *Survey of Manufacturing Industries*, 1971.

veys undertaken by the Federal Industrial Development Authority (FIDA) since 1968 only about half of all approved companies actually went into production. Even if there had been many more applications it is doubtful whether the number of pioneer companies could have grown much faster. There were many complaints about long delays and unco-ordinated action in the processing of applications, indicating that the administrative machinery was already overburdened. It is quite possible that this has discouraged a number of companies, especially medium-sized and smaller ones, from applying for pioneer status.

Though small in number, the pioneer companies acquired in time a very substantial share in manufacturing's output, employment, and capital stock. By 1971 they produced more than one-third of manufacturing's output and value added and commanded more than half of the sector's capital stock. These figures are only slightly lower if the National Accounts definition of manufacturing is applied. But it must be noted that the actual employment share is lower than indicated in the table because of the under-enumeration of employees by the Censuses and the Surveys. The large differences between the employment shares and those of the other indicators confirm the hypothesis that mainly large establishments acquired pioneer status. Apart from the administrative barriers for small-scale establishments already mentioned,[6] this was almost certainly due to the inherent bias in the incentive system towards the larger establishments. Clearly it paid those companies with big investments more than the small establishments to go through the approval procedures. They were also less reluctant to reveal their accounts and investment plans to the government, since being mostly limited companies they were anyway obliged to face a certain degree of publicity. For public limited companies this is obvious, but even private limited companies have in Malaysia—as in a few other former British colonies—to file their accounts and balance sheets with the Registrar of Companies, where anybody can inspect them on payment of a small fee. In terms of number, in 1971 all but two pioneer firms were limited companies. Three-quarters were private limited companies. In terms of output and value added, however, private and public limited companies ranked equal. Public limited companies were by far the biggest. On average the public limited companies had a gross output per establishment of about M$12 million and the private limited companies of nearly M$4 million. Though we have no capital data by legal status, the big difference in labour productivity between public and private limited companies indicates that the former are far more capital intensive than the latter.

The heavy weight of limited companies in the pioneer sector is one reason why the pioneer sector as a whole is much more capital intensive than the non-pioneer sector. The capital share of the pioneer sector was more than treble its employment share in 1968. This had changed quite a bit by 1971 when the capital share was only double the employment share, the main reason being the rapid expansion of labour-intensive industries, for instance, textiles and electronics, following an extensive promotion campaign by the government. In accordance with the high capital intensity, labour productivity and wage rates were also higher in the pioneer sector than among non-pioneers.

Table III.2 shows the industrial structure of the pioneer sector which had emerged by 1972 compared with the structure of the entire manufacturing sector. Though pioneer companies had a sizeable share in most industries, nearly three-quarters of the pioneer industries' fixed capital and gross output were accounted for by only six industries, namely food products, textiles, wood products, chemical products, petroleum and coal products, and basic metals. With the exception of food products these are all intermediate goods industries. A dominating position of pioneer industries defined as a capital share of the respective industries[7] in excess of 70 per cent existed in textiles (82 per cent), chemical products (73 per cent), petroleum and coal products (99 per cent), basic metals (93 per cent), and electrical machinery (73 per cent). The first and the last industries belong to those which have been actively promoted by the government in the recent past as labour-intensive industries. At least for the pioneer sector, the labour intensity of these industries is indeed apparent as their employment shares are significantly higher than their capital shares. Correspondingly, their labour productivity and wage rates are below the sector's average. The textile industry on the whole is on the other hand not so clearly labour intensive. The reasons for this are difficult to trace as detailed data about the textile industry are scanty. The remaining three industries are typically capital-intensive industries with a high intake of technological know-how. Because of these characteristics they usually belong in many developing countries to the foreign-dominated sector, while textiles and electrical machinery have only more recently become a focal point of multi-national corporations' investment activity in developing countries. Though we will treat these problems more extensively in Chapter VII, it may be mentioned here that the observed concentration of the pioneer sector's investment activity resembles the foreign ownership pattern, indicating that a substantial portion of the tax incentives has been granted to foreigners.

C. THE OPPORTUNITY COSTS OF PIONEER STATUS

From the data presented it is evident that a large portion of the manufacturing sector was granted pioneer status and thus was exempted from paying income tax for a couple of years. This raises the question whether the pioneer system was not a rather expensive way of promoting industrial growth and whether the tax incentives were necessary at all or, at least, to such an extent. In other words, what were the costs and the benefits of the liberal tax incentives for the Malaysian economy? Do we have to assume that the lopsidedness of the economy inherited from the colonial era would not have been reduced without such incentives or, on the contrary, that the incentives were largely

TABLE III.2

STRUCTURE OF PIONEER SECTOR COMPARED WITH TOTAL MANUFACTURING, 1972 (in per cent)

	Gross Output		*Value Added*		*Fixed Capital*		*Employment*		*Salaries & Wages*	
	Manuf.	*Pioneers*	*Manuf.*	*Pioneers*	*Manuf.*	*Pioneers*	*Manuf.*	*Pioneers*	*Manuf.*	*Pioneers*
Food products	20.3	28.5	12.2	17.8	11.1	11.2	10.7	9.3	10.4	12.7
Beverages	1.9	2.1	3.2	4.0	3.0	2.9	2.0	0.9	2.4	2.4
Textiles	3.3	7.9	3.4	7.7	9.0	15.8	7.2	18.7	4.1	11.1
Wood products	10.5	5.5	12.1	6.7	11.8	10.2	17.3	16.2	16.5	10.3
Chemical products	6.9	11.3	8.6	15.1	9.4	13.7	4.5	7.7	7.0	13.5
Petroleum & coal products	4.4	12.3	3.3	9.0	4.6	9.1	0.3	1.1	1.5	4.8
NM mineral products	4.4	3.1	7.9	5.2	7.8	5.3	5.5	5.2	6.1	4.8
Basic metals	3.2	6.8	3.3	7.5	6.8	12.4	2.2	6.0	3.2	8.7
Metal products	4.2	4.4	4.2	4.2	4.8	5.4	5.4	6.4	5.6	6.3
Non-electrical machinery	2.0	1.0	3.0	1.0	1.2	0.6	4.2	0.9	5.1	0.8
Electrical machinery	3.6	7.9	4.8	10.9	3.4	4.8	4.4	11.1	3.6	8.7
Other industries	35.3	9.2	34.0	10.9	27.0	8.7	36.3	16.6	34.5	15.9
Total %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
absolute[a]	4,689	1,679	1,436	522	1,609	816	198.5	56.1	412	126

[a]All items in M$ million except employment which is in '000.
Manuf. = Manufacturing.

Source: Department of Statistics, Kuala Lumpur.

redundant? A full-fledged evaluation of the pioneer system cannot be undertaken within the context of this study. However, available data does permit some useful calculations from which certain conclusions can be drawn, giving some hints as to the answers which may be expected.

The social costs of scarce resources are usually measured by their opportunity costs. Depending on the society's objective function, the opportunity costs are the commodities not produced or the manpower not employed because the resources are not used. Similarly, the social costs of a tax incentive system can be measured by the tax revenue forgone and by the output and employment which could have been created if the taxes had been collected and the revenue invested. The first item which has to be estimated is therefore the taxes forgone.

In 1968 the Inland Revenue Department made calculations on the additional taxes which would have been collected in the absence of pioneer legislation. Table III.3 shows in the first column the yearly totals of the amounts worked out by the Department. In 1966 the total capital stock of the companies concerned was valued at about M$250 million. Thus, by that time the taxes forgone amounted to a subsidy of roughly 20 per cent of the capital stock. If we assume that the taxes, if collected, would have been invested at an interest rate of 10 per cent, the amount lost by the Malaysian Treasury would rise to over M$57 million.

TABLE III.3

TAXES FORGONE DUE TO PIONEER STATUS

	Actual (M$'000)	*Estimated (M$'000)*	*Difference in % of actual*
1963	4,571	2,180	−52
1964	10,176	10,911	−7
1965	14,986	15,025	<1
1966	22,433	22,076	2
Sub-total	52,166	50,192	−4
1967		28,132	
1968		32,587	
1969		40,521	
1970		47,270	
1971		54,091	
Sub-total		202,601	
Total		252,793	

Source: Unpublished summary statistics and own calculations.

Note: The tax rate was 40 per cent up to 1966. On 1 January 1967 a 5 per cent development tax was added. As the business year differs from the calendar year for most companies, a 42.5 per cent rate was assumed for 1966 and 45 per cent thereafter.

In order to find a formula by which the taxes forgone during the later years could be estimated, a gross profit was calculated from the Statistics Department's sales figures for pioneer companies[8] by applying a 12 per cent profit rate.[9] From the capital stock data supplied by the Inland Revenue Department depreciation was estimated by assuming a 10 per cent depreciation rate.[10] Deducting depreciation from gross profits and applying the relevant tax rate yields the estimated taxes forgone shown in the second column of the table. For the years for which actual data are available the relative error of the estimates is given in the third column. With 4 per cent for the entire period, this relative deviation is surprisingly small and hence it seems quite reasonable here to estimate with the same formula the notional taxes for the subsequent years. The growth of the capital stock was derived from the unpublished FIDA surveys of pioneer companies. As these surveys commenced only in 1968 the capital stock for 1967 was obtained by interpolation.

Noting the above-mentioned estimation procedures, it can be concluded that the estimated taxes forgone for the period 1967–71 exceeded M$200 million, thus bringing the amount for the entire period since 1963 to over M$250 million. With a capital stock close to M$700 million by the end of 1971 the notional taxes amounted to a 36 per cent subsidy of the pioneer sector's capital stock. If the tax revenue were invested at a 10 per cent interest rate the amount forgone would come to M$332 million or 47 per cent of the capital stock in 1971. Thus, the Working Party's optimism in 1957 that granting pioneer status would be a cheap way of promoting industrial growth was by no means justified. It should be noted that the data on notional taxes presented here are almost certainly underestimates and that, therefore, the capital subsidy is probably even larger. A comparison of the number of companies covered by the Inland Revenue Department with those listed by FIDA and the Statistics Department as pioneer companies indicates that the Inland Revenue Department missed out quite a few. Furthermore, the 12 per cent profit rate is probably too low for the later years. It can be seen from the Statistics Department's data that the profit rate had increased over the years. This is quite plausible, because more and more of the early established companies must have come into a profit phase, after the usual losses during the first two or three years. Finally, we have entirely neglected the taxes forgone during the years 1959–62, though this amount was certainly rather small.

The opportunity costs of the pioneer system would ideally be determined within the context of a growth model which takes due account of all the secondary effects of the hypothesized investment of the tax revenue, such as the additional savings out of income generated by the investment as well as their re-investment and so on. The usual procedure of cost-benefit analysis would be to discount the future net output stream generated by the investment in order to obtain its present value. We will, however, confine ourselves to a more straightforward and sim-

TABLE III.4
OPPORTUNITY COSTS IN 1971 OF PIONEER TAX INCENTIVES

	Effects of M$252 million public investment resembling that of		
	Public Corporations	*Malaysian Establishments*	*Manufacturing Sector*
Gross output (M$'000)	477, 536	865,310	817,023
Value added (M$'000)	166,843	243,187	248,243
Employment number	38,326	50,713	33,194

pler method by considering only the direct output and employment effects which could have resulted from the investment at a particular point of time. Even this simple approach can produce widely varying results as it requires an assumption regarding the type of investment the government would have undertaken. The values shown in Table III.4 have been calculated on the alternative assumptions that the investment of the M$252 million would have produced by 1971 an output, value added, and employment resembling that of all public corporations, all Malaysian establishments or of the entire manufacturing sector. It can be seen that in terms of value added the opportunity costs range between 167 million and 248 million Ringgit.[11] This value added would be additional in 1971 if it could be assumed that in the absence of the pioneer system, the M$252 million taxes would have been actually collected which is equivalent to assuming that the tax incentives were 100 per cent redundant. The value added of manufacturing as defined by the National Accounts could under these assumptions have grown between 1963 and 1971 at an annual rate of 14.5 per cent or 15.2 per cent respectively as compared with the actual rate of 12.9 per cent. The question whether we have to deduct from these amounts a certain portion if the incentives were only partly redundant will be handled in the next section.

Though growth is an important objective of Malaysian policy, the creation of jobs ranks higher because of the high unemployment rates in certain sections of the labour force. It is therefore reasonable to express the opportunity costs also in terms of jobs forgone. As the table shows, the number of jobs that could have possibly been created with a 252 million Ringgit investment ranges between approximately 33,000 and 51,000. If we assume again that the incentives were totally (100 per cent) redundant, the unemployment rate of West Malaysia could have been reduced from 8 per cent to 6.9 per cent or 6.3 per cent respectively. Manufacturing employment could have grown between

1963 and 1971 at an annual rate of 9.3 or 10 per cent respectively, as compared with the actual rate of 7.9 per cent. As has been mentioned above, these data lie closer to the lower than to the upper range of the error margin of our calculations. It can therefore be concluded that the opportunity costs of the pioneer system were quite substantial in the past and are likely to increase rapidly in the future if the pioneer sector continues to expand at the high rate of the most recent years. According to the latest statistics, gross output and employment of pioneer companies rose between 1972 and 1974—in the midst of a world-wide recession—at an annual rate of about 50 per cent and 27 per cent respectively.

D. BENEFITS VERSUS REDUNDANCY OF THE PIONEER SYSTEM

Several reasons support the view that investing in manufacturing in Malaysia is very attractive to local as well as to foreign entrepreneurs and that therefore tax incentives are largely redundant. However, the assumption of 100 per cent redundancy made above will be unacceptable to most experts. This raises the question how costs and benefits have to be calculated in the presence of partial redundancy. As to the costs one may first ask whether the data presented above have to be corrected according to the degree of redundancy.

In an EPU-paper it was argued that, to reckon as costs the taxes forgone from investments which actually have materialized owing to the presence of incentives, and which would not have been realized otherwise, is unjustified because the taxes could not have been collected in the absence of the incentive system.[12] Only taxes forgone from investment, which would have come about also without the incentives (called redundant investment), should be counted as costs.[13] The benefits are the jobs created by investment actually attracted through the incentives (called non-redundant investment). To see the implications of these definitions we may construct the following example.

Assume a potential foreign investor approaches FIDA for approval of a proposed investment and the granting of pioneer status, making it clear that he would choose Malaysia as the location for his plant only under the condition that his application for pioneer status is successful. Following the EPU definition, FIDA would have to grant pioneer status without hesitation so long as the new plant creates at least one additional job, because the taxes forgone would cost nothing. On the contrary, there might even be a gain if the company pays taxes after its pioneer status expires, making the investment even more attractive to FIDA. One can imagine that a critical government official may have some second thoughts about a decision along these lines. He may argue that this definition of costs implies a peculiar understanding of the role taxation has to play in an economy. Profit taxes are treated as a kind of windfall gain which the government is lucky to obtain if it is able to stimulate private investment successfully. Though he may concede that profit taxes can contain a windfall element, as for instance when the tax rate is excessively high, he probably would also maintain that taxes have to be seen primarily as a lump-sum remuneration for the supply of infrastructural amenities and other services by the government. Thus, if the government exempts a company from taxes this is equivalent to granting a subsidy because the services are supplied free of charge. The tax exemption is therefore a cost item to the government, whether the tax exemption was a precondition for the investment or not.

This way of arguing means of course that one departs from the pure opportunity cost concept and takes into account actual costs. However, it highlights the fact that the opportunity cost concept may not, in all cases, lead to meaningful decision rules. In this case it would at least be necessary to use, in addition to the EPU formula, a measure which reflects the total taxes forgone. This is even more important as the redundancy rate is very hard to determine within a reasonable margin of error. Furthermore, this very shaky figure significantly affects costs as well as benefits of the EPU ratio, thus making this measure extremely sensitive to even minor errors. For the investments granted incentives in 1973 EPU attempted to calculate the cost per job created for various redundancy rates. For a 95 per cent, 90 per cent and 80 per cent redundancy rate, they obtained costs of M$40,800, M$17,200, and M$5,300 respectively. While the last amount might be acceptable to the government the first two might not. But in reality, it is very unlikely that the redundancy rate can be determined within such a narrow range of 10 to 15 percentage points, therefore making it doubtful whether the formula can be used as an operational base for policy purposes.

The difficulty in ascertaining the actual redundancy rate with sufficient exactness can be circumvented by approaching the problem from the opposite side, i.e. by calculating the critical redundancy rate beyond which the tax incentives are considered as inefficient. To take an example, if the pioneer sector as a whole produces a value added of M$451 million, as happened in Malaysia in 1971, and if the total costs of the pioneer system in terms of value added are M$167 million as calculated above, then the critical rate beyond which the costs outweigh the value added actually created is calculated as[14]

$$CR = \left(1 - \frac{167}{451}\right) \cdot 100 \approx 63$$

The critical rate (CR) is 63 per cent. Applying this formula, Table III.5 shows critical redundancy rates in terms of output, value added and employment for the three alternative investment options discussed above. The table reveals that as far as income growth was the major goal of industry promotion, i.e. value added being here the relevant criterion, the critical redundancy rate was fairly high, ranging from 45 to 63 per cent for the three alternatives. However, for the employment goal the rate was extremely low with a negative rate for one option and

TABLE III.5
CRITICAL REDUNDANCY RATES OF PIONEER TAX INCENTIVES, 1963–1971

	Critical rate if public investment resembles that of		
	Public Corporations	*Malaysian Establishments*	*Manufacturing Sector*
Gross output (M$'000)	66	58	41
Value added (M$'000)	63	46	45
Employment (M$'000)	12	–16	24

a maximum of 24 per cent for another. Having formed an idea of the magnitude of the critical redundancy rates we may now venture to explore how large the actual redundancy rates might have been. There are several reasons for assuming that it has been quite high for the pioneer sector as a whole, though not necessarily for certain individual industries.

A first hint as to whether a high or a low redundancy rate has to be expected is discernible from a survey of US-investment in South-East Asia prepared for FIDA in 1971.[15] The thirty-eight companies surveyed placed incentives offered by the government and tax structure only in the tenth and the eleventh rank respectively among various factors considered as important for a decision to invest in South-East Asia. Only two companies mentioned tax incentives as a reason for the initial attraction of South-East Asia to US investors. And typically, it was an electronics company which commented: 'We were attracted to South-East Asia because of the government, the wages and the tax holiday....' Apparently, this survey points more to a high redundancy rate than to a low one.

An interesting calculation has been undertaken by EPU in the aforementioned paper. First, the EPU computed for various internal rates of return after tax, the equivalent long-run rates of return before tax with no tax holiday (T_1) and then the same with a six-year tax holiday (T_2).[16] The EPU then classified 66 pioneer firms for which it was able to calculate rates of return for the years 1958–72 (44 companies for the period 1958–67 and 22 for 1968–72) into three groups. Group 1 comprised companies with a long-run rate of return in excess of T_1, group 2 those with rates of return between T_1 and T_2 and, finally, group 3 all companies whose rate of return was less than T_2. For internal rates of return of 10 per cent and 15 per cent, which seem to be representative for British and US investment,[17] EPU obtained the following percentage distributions:

Target rate	*Share of companies with a long-run rate of return of*			
r	$>T_1$	$<T_1, >T_2$	$<T_2$	Total
10%	42	12	46	100
15%	24	15	61	100

The concept of redundancy refers to the investment decision and therefore to the *ex-ante* or expected rates of return. What can be observed are, however, *ex-post* rates of return. In order to draw inferences from *ex-post* rates on *ex-ante* rates one has to make an assumption about the relationship between the two. Following the EPU, one may distinguish between various alternative assumptions. The first is that *ex-post* rates and *ex-ante* rates are equal. This means that the *ex-ante* rates of 42 per cent and 24 per cent respectively for all companies would have exceeded the target rate, i.e. the critical minimum rate below which a company would not have invested. These percentages represent the redundancy rates for the two alternative target rates, because, by definition, the companies in this group expected and realized even in the absence of the incentives, a long-run rate of return in excess of their target rate. A comparison of the redundancy rates with the critical rates of Table III.5 indicates that in terms of growth the incentive system had in all cases but one a net benefit while in terms of employment creation the reverse was true.

The assumption that all expectations were realized is of course unrealistic. It is much more reasonable to assume that those companies which ended up with a rate of return below T_2 expected not to do so, but to be somewhere above T_2. If we assume again for the other two groups that they met their expectations we can calculate the redundancy rates by dividing the number of companies in the first group by the number in the first plus the second. This yields redundancy rates of 78 and 62 per cent. Thus, only with the second rate can the incentive system be said to have provided a small benefit in terms of growth if the hypothetical public investment would have resembled that of public corporations, but in all other cases not. In terms of employment the system turns out to have been grossly inefficient.

Again another assumption would be that the firms with rates of return below T_2 had either expected to end up above T_1 or had invested irrationally. The corresponding redundancy rates would be the sum of the shares of groups 1 and 3. Of course, all these and other assumptions which could be made are purely speculative. What is nevertheless clear from the calculations is that the tax incentive system does not appear to have provided any sizeable benefits to the Malaysian economy, if any at all.

Another related investigation of the redundancy problem is the earlier work done by EPU in connexion with investigations of the Inland Revenue Department which did not, however, attempt to arrive at redundancy rates. One of the major findings was that only ten of the investigated ninety-two companies accounted for 78 per cent of the taxes forgone during 1963–6. Thirty-three pioneer firms did not benefit at all because they either reported consistent losses or their profits in each year were too low to give rise to any notional tax liability. For all but one, the average annual rates of return of the ten companies exceeded 10 per cent. Six had rates of return in excess of 25 per cent. These data suggest that the redundancy rates calculated by EPU would be even higher if, instead of the number, the investment or output shares of the firms in group 1 were used as the basis of the calculations.

As for the redundancy rate, a similar though somewhat more differentiated conclusion to the one derived by EPU emerges, if the rate is estimated from the results of a survey which the authors conducted in 1974 among a sample of 338 West Malaysian manufacturing establishments.[18] In this survey which tried primarily to investigate the export potential of Malaysian manufacturers, the question was asked whether government promotion in the form of granting pioneer status had any impact on the firms' export performance. Since only the answers of those companies which actually did export were evaluated, they should reflect reasonably well the incentive effect of the pioneer system.

For the sample as a whole, the share of companies which considered pioneer status as unimportant was 62 per cent unweighed, and 73 per cent if the firms' answers are weighed with their gross output shares. The difference between the percentages indicates that large companies in particular felt that the tax incentives did not affect them. If we add the share of companies which attached 'little importance' to the pioneer system, then the shares would rise to 68 and 82 per cent respectively. It is remarkable to observe that one highly capital-intensive industry which accounted for 29 per cent of the taxes forgone during 1963–6 felt that the tax incentives were either unimportant or of little importance. If the shares are interpreted as redundancy rates, the figures do not diverge markedly from those derived by EPU under the second assumption. Quite interesting is the fact that there are four to five industries for which the reverse is true, i.e. these industries have very low redundancy rates. They produce textiles, footwear, plastic products, glass products, and electrical machinery. A common feature of these industries is that they have significantly increased the export share of their sales value more recently, mostly due to the establishment of new export-oriented companies. They all seem to be clustered in the state of Perak because this region is the only one in Malaysia where the redundancy rate is very low. For Perak the weighed rate is only 17 per cent and for the state's major urban centre, Ipoh, it is 31 per cent. Thus, if there was some net benefit from the pioneer system, it has been attained from only a few industries and accrued to only one state. For the economy as a whole it is not unlikely that these benefits have been outweighed by losses in other industries and regions.

E. PIONEER STATUS AS COMPARED TO OTHER TAX INCENTIVES

The Investment Incentives Act of 1968 provided, in addition to an extension of the pioneer system, other incentives, such as investment tax credit and accelerated depreciation allowances for companies which were not granted pioneer status. In 1971 a Labour Utilization Relief was introduced in order to counterbalance the bias towards capital-intensive establishments inherent in the provisions of the Incentives Act. However, none of these incentives ever gained much importance compared to pioneer status. In terms of number of companies the share of pioneer approvals in total approvals was very high in 1969 with over 80 per cent while all the other incentives were negligible (Table III.6). What is interesting is that the share of pioneer approvals has declined continuously, reaching a low 32 per cent in 1974. It was not that other incentives gained in importance, but that the share of approvals without incentives increased very rapidly. The significance of this change can, however, only be assessed if these data are compared with the shares in terms of proposed called-up capital. As the table shows, the capital share of pioneer approvals did not decline very much but fluctuated around two-thirds of all approvals. Of some importance was the investment tax credit with a share of some 10 to 15 per cent, while the labour utilization relief and the other incentives, including the accelerated depreciation allowance, remained unimportant.

The story behind these figures is that apparently the smaller companies increasingly realized that the pioneer system for them was unattractive and therefore they preferred to obtain approval without incentives. This agrees exactly with the observation discussed above that in the past the big companies gained the lion's share of the taxes forgone and with our conclusion that the pioneer system is biased towards large

TABLE III.6

PERCENTAGE DISTRIBUTION OF NUMBER AND PROPOSED CALLED-UP CAPITAL OF ALL APPROVED FIRMS

(in per cent)[a]

	Pioneer Status		*Investment Tax Credit*		*Labour Utilization Relief*		*Other Incentives*[b]		*No Incentives*	
Year	*No.*	*Capital*	*No.*	*Capital*	*No.*	*Capital*	*No.*	*Capital*	*No.*	*Capital*
1969	83	92	3	3	0	0	0	0	14	5
1970	52	70	9	12	0	0	1	0	38	18
1971	48	54	7	19	0	0	6	17	39	10
1972	45	69	3	11	2	3	2	1	48	16
1973	38	69	5	9	4	2	3	2	50	18
1974	32	60	6	13	3	1	1	1	58	25

[a] Figures add up horizontally to 100 for No. and Capital respectively.

[b] Includes accelerated depreciation allowances.

Sources: FIDA, *Annual Report*, various issues; Bank Negara Malaysia, *Quarterly Economic Bulletin*, Vol. 8 (December 1975), Table VI. 7.

establishments. The question arises, however, why the smaller companies did not react more intensively to any of the other incentives. Part of the answer is probably that these incentives were again biased towards larger companies. This is most obvious for the labour utilization relief according to which a company can be granted tax exemption for a period of two to five years if it employs a specified number of employees. The schedule ranges from two years for 51–100 employees to five years for more than 351 employees. Thus, all companies with fifty employees and less are excluded. If the assumption is correct that the 1968 Census of Manufacturing has fairly well covered the larger establishments but under-enumerated the smaller ones then the labour utilization relief excludes about two-thirds of all jobs in the manufacturing sector. Furthermore, the capital intensity for the larger establishments is clearly higher than for the smaller ones, even within the range of size groups covered by the relief. The capital-labour ratio of the size group 100–199 employees is for instance about twice as high as that of the 50–99 size group. One can therefore quite safely conclude that the labour utilization relief favours the big and capital-intensive firms and is not very attractive to the small establishments.

The Investment Tax Credit has not such an obvious bias. However, if one considers that a tax reduction which depends on the amount invested has a greater impact on costs and profits if the share of capital costs in total costs is higher than if it is not, it is again quite clear that the capital-intensive establishments which are mostly also the large ones are favoured. The same holds true for the Accelerated Depreciation Allowance. In the Incentives Act this allowance is listed under the export incentives because a qualifying company must export at least 20 per cent of its sales value. Here again one can safely assume that only the larger companies are able to compete on the world market and can therefore export a sizeable portion of their output.

On the whole it appears quite understandable that only very few of the smaller companies showed any active interest in the tax incentives offered by the government. In the light of this it is rather surprising that in the HEX it was the smaller rather than the larger firms which considered tax incentives as important for their export activity. It could well be that the large companies did not consider that the incentives had a decisive influence on their activity but nevertheless reaped their benefits, whereas the small companies rightly or wrongly believed that the incentives could influence their decisions if they could qualify for them.

F. SOME GENERAL CONSIDERATIONS CONCERNING TAX INCENTIVES

The empirical evidence that tax incentives are largely redundant and benefit primarily a few large companies with high rates of return is fairly strong for Malaysia. Similar conclusions would probably be reached for other countries if the data were available. One is therefore tempted to advocate that tax incentives be abandoned in those countries. One seemingly powerful argument against such a proposal is that tax incentives, though their net benefit might be doubtful, are nevertheless necessary because many countries compete with each other for foreign investment and tax incentives is one weapon in this game. A country which does not provide tax incentives could, according to this argument, be at a significant disadvantage.

Other things being equal, this argument is a truism. However, the countries which look for foreign investment differ widely in all kinds of aspects important for the foreign investor. There is first the problem of tax-sparing agreements. Where such an agreement does not exist between the home and the (potential) host country of the foreign investor the tax incentive is ineffective because the investor has to carry the full tax burden in his home country. Assume a Malaysian subsidiary of a company from a developed country makes a M$10 million profit which would be untaxed in Malaysia because the subsidiary qualifies for the tax incentive. If there is a tax-sparing agreement, this profit would add fully to the company's overall profits net of taxes. Without a tax-sparing agreement, however, the profit of the subsidiary would be taxed at the home-country's rate which generally is higher than the 45 per cent Malaysian rate. The tax incentive would therefore have no positive impact on the company's net profit. Malaysia now has tax-sparing agreements with many European countries, Singapore, Japan, and a few others, but not the United States. Most of these agreements came into force only in the early 1970s. As far as foreign investment is concerned, it is probable that for this reason alone the tax incentives granted during the 1960s were largely redundant.

Whether tax incentives can really be attractive to an investor depends on their impact on net profits. Take an investor who intends to build a plant which produces for the domestic market. Assume that his profits before tax have a share of 17.8 per cent in total sales, which was the average ratio of the Malaysian pioneer sector in 1970. In this case the price of his product has to be higher by 12.4 per cent if he pays taxes than if he does not, in order to obtain the same net profit in both situations. Such a relatively minor price increase will in most cases be easily made by a foreign investor either because he has a quasi-monopolistic position in the domestic market or because he has obtained tariff protection. There is hardly any developing country, including Malaysia, where the authorities would refuse to grant tariff protection to such a relatively minor extent. If protection is granted beyond the period for which in the alternative case the company would be exempted from tax payments, the price increase and the tariff rate could be lower, because the company obtains an additional net profit after that period.

The situation is different if the new company intends to produce for the export market. Then it has to compete in the world market and will in general be unable to raise its prices to cover the taxes it has to pay.

If it is a multinational corporation it may be able to reduce the tax burden through transfer pricing, a practice which according to an expert from the International Monetary Fund seems to have spread rapidly.[19] However, even if transfer pricing is not possible, the taxes are only one factor which influences net profits and in many cases probably not a very important one. Assume for instance that raw materials account for two-thirds of the company's sales value—which again reflects the situation in the Malaysian pioneer sector in 1970—then a price increase for the raw materials of not more than 12 per cent would have a greater impact on net profits than a 45 per cent profit tax. A similar argument holds good for wages. Considering the substantial differences between raw material prices and between wage rates in various developing countries it becomes quite obvious that profit taxes are seldom a decisive factor in an investment decision. Do these arguments contradict the observation that foreign companies make intensive use of tax incentives in developing countries such as Malaysia? Apart from the fact that a profit-oriented investor will of course utilize any possibility which permits net profits to increase without additional costs, the answer lies probably in the following remark by D.S. Pearson, a former adviser to FIDA:

> We found that industrialists generally attached considerable importance to obtaining pioneer status, not because of the tax relief... [but because it was felt that] ...applications for tariff protection, duty exemption, import licenses, work permits, and even power and telephone connexions would be more sympathetically and expeditiously dealt with when received from a pioneer than from a non-pioneer firm.[20]

2. PROTECTION FROM FOREIGN COMPETITION

At the beginning of this chapter it was mentioned that in the colonial era manufacturing commodities could move freely into Malaysia, imported mainly from Britain or other Commonwealth countries. Many of the foreign suppliers succeeded in establishing their branch names firmly in the Malaysian market, making it rather difficult for domestic producers to compete at equal or even lower prices.[21] The import duties which existed in the 1940s and the early 1950s served exclusively revenue purposes. As can be seen from Table III.7, in 1947, the first year for which comparable data are available, more than 80 per cent of the revenue from import duties came from the import of petrol, spirits, malt liquors, and tobacco products. All import duties together accounted for about half the total tax revenue, one-quarter came from export duties, and the remainder from minor taxes or fees, like stamp duties and transport licences.

A. FROM REVENUE TARIFFS TO TARIFF PROTECTION

The World Bank Mission which came to Malaysia in 1954 proposed to promote industrialization through the use of import duties. There

TABLE III.7

STRUCTURE OF REVENUE FROM IMPORT DUTIES FOR SELECTED YEARS

(in per cent)

		1954: IBRD Mission		*1959: Tariff Advisory Committee*		*1963: Tariff Advisory Board*		*1967: Commonwealth Preferences Repealed 1968: Incentives Act*	
	1947	*1954*	*1956*	*1959*	*1960*	*1963*	*1964*	*1967*	*1970*
Petrol	15.5	17.9	16.7	22.5	20.1	19.0	8.0	8.4	8.3
Heavy fuel oils	—	—	—	—	5.1	6.3	3.6	6.7	6.8
Spirits	10.2	7.3	6.8	5.1	4.8	5.9	6.4	6.1	5.9
Malt liquors	5.5	9.2	9.4	7.4	7.1	3.4	4.1	1.7	2.0
Textiles & apparel	10.1	6.3	6.4	7.0	6.1	5.3	6.4	6.0	7.7
Tobacco & tobacco products	49.9	45.5	37.8	33.6	29.5	31.1	35.6	31.4	26.6
Sugar	0.6	3.7	5.9	5.3	5.6	6.0	6.7	10.8	6.7
Others	9.0	10.1	17.0	19.1	21.8	22.8	29.1	28.9	36.0
Total in %	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0	100.0
Total in M$ million	83.4	205.9	276.0	300.7	353.5	351.4	367.4	422.8	492.0

Source: The Treasury, Tax Division, Kuala Lumpur.

was some immediate reaction to this proposal. Between 1954 and 1956 the collection of duties from 'others' (see Table III.7) more than doubled, increasing their share in total import duty revenue from 10.1 per cent to 17.0 per cent. However, the protective effect on manufacturing was negligible. More than two-thirds of the revenue collected from this group was accounted for by only one commodity, namely motor vehicles, which at that time were not produced in Malaysia.

There were several reasons for the weak reaction to the World Bank proposal. First, as long as Malaysia was a colony—until 1957—it was firmly tied to the Commonwealth system and could not pursue an independent trade policy. Second, it was feared that the introduction of tariffs for a variety of commodities or an increase of existing tariffs might in the medium term lead to reduced imports and thus deprive the government of an important source of tax revenue. Third, it was argued that tariff protection would benefit the urban Chinese at the expense of the rural Malays. The income distribution would be further shifted in favour of the already more prosperous Chinese, thereby intensifying racial tensions. Fourth, there was strong opposition from the foreign import agencies which feared a loss of business and also from the mainly foreign plantation owners who were concerned about rising costs of living for the plantation workers which might lead to wage hikes. Finally, the Working Party's report came out in favour of tax incentives instead of tariffs.

However, their report of 1957 was not unanimously accepted. The first departure from its policy guidelines came in 1959 when a Tariff Advisory Committee (TAC) was established, the tariff schedule was reclassified and a number of Commonwealth preferences were eliminated. Though the TAC is generally described as a relatively inactive institution which granted tariffs to only a few pioneer industries,[22] it must have had some immediate impact as can be seen from the revenue from other import duties. This revenue increased between 1959 and 1960 by 34 per cent after it had risen by only 7 per cent per annum over the previous three years. Nevertheless, the TAC remained rather ambiguous with regard to the question of protection and its actions were still significantly influenced by revenue considerations. This is clearly demonstrated by the 'Notes for the Guidance of Applicants for Tariff Concessions' issued in 1961 in mimeographed form. Paragraph 3 of the Notes states: 'In considering an application for exemption or protection the government will also bear constantly in mind the interests of the consumer and the effect of tariff charges on the public revenue and the balance of payments position of the Federation.... [I]t will not grant tariff concessions to industry to an extent which would materially affect public revenue.' In 1962 the TAC actually abolished a number of tariffs.

When in 1962 the merger of the Federation of Malaya, Sabah, Sarawak, and Singapore was being considered, the Federation and Singapore governments jointly requested the World Bank to provide a mission to report and make recommendations on the economic aspects of the merger.[23] The mission, under the chairmanship of Jacques Rueff, delivered its report in early 1963. It strongly recommended the establishment of a common market as well as the introduction of protective tariffs. Page 56 of the report says: 'To give effect to that arrangement, an independent Tariff Board should be set up as soon as practicable, whose advice would be required on the establishment of protective tariffs, and the determination of the level of such tariffs.' Very soon after the submission of the report a Tariff Advisory Board (TAB) Act came into force and the TAB was subsequently fully constituted. This event must be considered as the final turning-point from a tariff policy for revenue purposes to one for tariff protection.

The impact of the TAB was again immediately visible in the revenue from other import duties. Between 1963 and 1964 the revenue of this group increased by 33 per cent after an increase of less than 2 per cent per annum over the previous three years. The share of the group in total import duty revenue rose from 22.8 per cent in 1963 to 29.1 per cent in 1964. It should be noted, however, that the TAB's first actions concerned mainly tariffs *vis-à-vis* non-Commonwealth countries. This is important, because it meant that the tariffs could affect domestic prices only insofar as commodities were imported, before the tariff, from other countries at lower prices than could have been obtained from Commonwealth countries. It was only in 1966 that a large number of Commonwealth preferential rates were repealed and by 1967 these preferences had disappeared altogether.

After 1965 the TAB was supported by the Action Committee on Tariffs and Industrial Development (ACTID) which primarily considered individual applications for exemption from duty for imported inputs and quota imposition. When exemptions were granted, ACTID also specified the period of exemption and the permissible quantities of materials eligible. In most cases, the period covered only six months, subject to review on re-application at the end of the period. Exemptions were only considered for raw materials or components which were not then manufactured locally. The imposition of quotas or specific licences was in general regarded as only a temporary measure, to be removed and superseded by a tariff as soon as local productive capacity was in a position to meet a significant portion of the domestic market.[24] This intention was, however, not always realized. For example, of the fifty-four quotas which were effective in July 1974 more than one-third came into existence prior to 1970 (see Table AIII.1).

The years after 1967/8 are usually considered as the period in which Malaysia approached the familiar pattern of a medium to high protected developing country. An important event was the Investment Incentives Act of 1968. Although the Act focused on tax incentives and depreciation allowances, as detailed above, it gave impetus to a rapid proliferation of the approval of companies—pioneers as well as non-pioneers—which almost without exception were granted tariff protection. The task of handling all the incoming applications soon exceeded the administrative capacity of the TAB and it was gradually handed over to FIDA which was established under the Ministry of Commerce and Trade by an Act of June 1966. In 1970 the TAB was finally abolished.

Two events which may be regarded as reflecting this new protective wave may be considered. One was the 2 per cent surtax levied in 1967 on all imports, which superseded the 2 per cent single-stage turnover tax. The other was the increase of the import duty on passenger cars from 5 to 35 per cent, parallel to a reduction of the registration fee for passenger cars from 25 to 10 per cent *ad valorem*. In 1970 the registration fee was abolished and the import duty raised to 45 per cent. The new and increased tariffs led again to a sudden rise in revenue collected from other import duties. Whereas the revenue increased at an annual rate of 4.5 per cent between 1964 and 1967 the growth rate, with over 13 per cent, was nearly three times as high between 1967 and 1970. The share of this group in total import duty revenue which had fallen slightly since 1964 rose from about 29 to 36 per cent. The surtax alone amounted in 1967 to M$43 million which was about 10 per cent of total import duty revenue and one-third of the duty revenue from other imports.

A further step towards extending the protective policy was taken with the establishment of the Capital Investment Committee (CIC) in 1969. According to FIDA, the CIC's policy could be described as follows:

> In the present context of creating more employment opportunities as a national objective, tariff policy should be radically modified to give positive assurance and encouragement not only to existing industries but more particularly to industries not yet established but possessing good prospects for becoming viable.... When translated into action, the CIC's positive tariff policy became equivalent to the immediate imposition of a protective duty on products which were not yet produced, or for which no productive equipment had yet been installed.[25]

This was a considerable change in attitude. The CIC was not prepared to wait with the imposition of a tariff until an investor applied for protection, but selected areas itself which it considered suitable for domestic production, then imposed a quota or a tariff and in a number of cases made concrete project proposals either to private investors or the government.

Summing up, it can be said that Malaysia's tariff policy changed under the influence of foreign experts, notably from the World Bank, from tariff making for revenue purposes to active protection. It appears that the World Bank officials themselves were the first to have some doubts about the long-term effects of the turn-around in policy recommended by the Bank. In 1968 the Bank sent John Power to Malaysia to examine the structure of protection and its impact on Malaysia's industrialization prospects. Because of data limitations, Power could only investigate the protection which existed in 1963 and 1965. But in those years the recommended policy could not yet have taken effect. It is therefore no surprise that he reached rather positive conclusions. In essence, he found that there was little discrimination among the principal sectors of the economy. Though there was some bias in favour of import substitution, in particular of non-durable consumer goods, and against exports, capital goods and intermediate goods, it was of a lesser magnitude than in most developing countries.[26]

Another study on the structure of protection in Malaysia was undertaken in 1971 by Panchamukhi[27] under the auspices of the Economic Commission for Asia and the Far East (ECAFE) for 1969. This study arrived at similar conclusions to those of Power. Its results are however of only limited use as it was conducted on a rather aggregated level and employed the 1965 input-output table which appears to be very unreliable. Furthermore, its methodology was not sufficiently spelled out, making it impossible to assess and compare the results.

Four further studies on the subject were prepared during 1974/5. With the exception of two, they referred to different years, and employed varying methods and data, thereby making it difficult to compare the results. Ariff studied the protection in 1970, obtaining the input-output structure from the 1970 Survey of Manufacturing Industries.[28] Edwards made his calculations for the years 1962, 1966, 1969, and 1972, using as data sources the 1963 and 1968 manufacturing censuses as well as various surveys which appeared in the years between in order to derive the relevant input-output structures.[29] In the context of the present study, von Rabenau investigated the tariff structure for the year 1974, making use of an adjusted version of the preliminary (743 commodities by 97 industries) input-output table for 1970 prepared by the Department of Statistics, Kuala Lumpur.[30] The Economic Planning Unit (EPU) finally did its own calculations for the same year with the data collected by von Rabenau, employing however the unadjusted version of the input-output table.[31] We will now look at the results of these studies and attempt to assess the effects of the tariff policy which evolved during the 1960s. In order to get an impression of the methodological as well as the specific Malaysian problems we will first explain the approach and the results of the von Rabenau investigation,[32] which seems to be the most detailed study, and then make comparisons with the other studies.

B. NOMINAL TARIFF PROTECTION OF DOMESTIC SALES

In order to calculate nominal tariffs on an industry level consistent with the classification of the input-output (I/O) table, they have first to be reclassified from the Brussels Tariff Nomenclature into the I/O-table classification. Specific and mixed tariffs which amounted to about 50 per cent of total non-zero tariffs have been transformed into *ad valorem* tariffs, using value and quantity data from the Malaysian trade statistics.[33] Tariffs on individual items were averaged up to the commodity level of the I/O-table classification by using equal weights. The commodity tariffs obtained in this way were aggregated into industry tariffs using domestic sales (domestic production minus exports) as weights.[34] The I/O-table employed was the preliminary 743 commodities by 97 industries table from the Department of Statistics, Kuala Lumpur, June 1974. It covers the year 1970 and the territory of West Malaysia. From the 67 traded goods' industries, 2 were then non-existent in West Malaysia—coal mining and crude petroleum. They have been included in the input-output table because of sizeable imports of commodities belonging to these industries. Unfortunately, the time point of the evaluated trade restrictions, 1 January 1974, and the time covered by the input-output table do not coincide. With regard to the purposes for which the input-output table has been used, mainly to obtain value-added ratios and to derive weighting schemes for averaging tariffs, excises, export duties, nominal and effective rates of protection, this time span is not likely to have led to considerable deviations from the results which would have been calculated with a 1973 or 1974 input-output table.

From 1957 till at least 1965, nominal import tariffs were low compared with other developing as well as developed countries. In 1963, very few industries enjoyed a nominal tariff protection higher than 30 per cent. These were tobacco products, where the average tariff was, according to Power,[35] 177 per cent, tinned pineapples (100 per cent, 85 per cent),[36] alcoholic preparations for beverages (50 per cent), some input items for the preparation of perfumes (50 per cent), perfumes and cosmetics (50 per cent, 25 per cent), battery parts and accumulators (30 per cent, 15 per cent), and aluminium plates (30 per cent).[37] If one follows Power, it appears that the tariffs increased only slightly between 1963 and 1965. The notable exception is beverages for which the average tariff moved up from 22 per cent to 73 per cent. However, the new Malaysian Trade Classification and Customs Tariff[38] which became effective in November 1966 showed already significantly higher rates for a number of items. For such commodities as imitation leather, plastic fabrics, a number of rubber products, footwear, and various electrical appliances, the rate had been raised from the earlier 15–20 per cent to 30–40 per cent or even 50 per cent. For imports from Commonwealth countries the increase was even higher as most preferential rates had been abolished.

In 1974 nominal tariffs were again substantially higher than in 1965 and 1966. Besides beverages and tobacco products which were protected by 152 per cent and 146 per cent respectively, more than nine out of a total of thirty-one industry groups had nominal average tariffs above 30 per cent: clothing (34 per cent), footwear (42 per cent), furniture (35 per cent), chemical products (37 per cent), products of petroleum and coal (81 per cent), rubber and rubber products (32 per cent), plastic products (35 per cent), glass products (41 per cent), transport equipment (43 per cent). The increase concentrated on the non-food manufactures which were protected on average by 28 per cent, whereas in 1965 the average rate was only 12 per cent.[39] The level of nominal tariff protection of food industries (36 per cent) was even higher than that of non-food manufacturing industries. This resulted mainly from the extremely high tariffs on tobacco products and beverages.

Nominal tariffs of 1974 had the familiar 'cascaded' structure, i.e. they were rising with the stage of production. Primary industries, for example, which according to the Malaysian statistics exclude all kinds of processing, were the least protected (7 per cent). This is not surprising because they are low-cost industries in Malaysia and enjoy natural protection through high transport costs. Within the manufactured commodities, intermediates—including products of petroleum and coal—received much less nominal tariff protection (20.8 per cent) than final consumer goods (37.4 per cent). Investment goods' industries, such as industrial machinery, other non-electrical machinery and shipbuilding, were protected on average by only 10.4 per cent. The 1974 level of nominal tariff protection for the manufacturing sector as a whole (32 per cent) cannot be regarded as low—at least not by the standards of industrialized countries. For instance, the nominal average rate of West German manufacturing was 7.3 per cent in 1972.[40] Compared to the respective rates in developing countries it is still moderate but not low. According to the protection study of Balassa and Associates,[41] the average nominal tariff rate of manufactures was in

Brazil	48 per cent (1967)
Chile	111 per cent (1961)
Mexico	25 per cent (1960)
Pakistan	59 per cent (1963/4)
Philippines	52 per cent (1965)

It may be noted that a surtax of 2 per cent on all imports had been introduced in Malaysia in 1967, and this was increased to 4 per cent in 1971. As this surtax is equivalent to an additional tariff, it is generally included in the tariffs presented here. Since intermediate products were exempted from the duty increase in 1971, their additional protection in 1974 was only 2 per cent.

C. NOMINAL VERSUS REALIZED TARIFFS: THE REDUNDANCY PROBLEM

One major problem in determining the protective effect of a nominal tariff is the so-called 'redundancy problem'. Nominal tariffs may have only a potential but no realized effect on domestic prices. They are then called redundant. In other cases they may protect domestic sales from foreign competition but not lead to price differentials equal to the full extent of the tariff rates. Those tariffs are called prohibitive. The only satisfactory way to identify such tariffs is to carry out price comparisons, which is extremely difficult and time-consuming for non-homogeneous goods. With the exception of the quota products stated in section 2E, price comparisons have not been undertaken in this study.

Instead, the following rule has been applied in a first approach. Nominal tariffs of I/O-commodities which met the following three conditions: import share lower than 5 per cent, non-existence of a quantitative restriction, tariff rate equal to or lower than 25 per cent, have been considered as redundant and set equal to zero or to the excise tax rate if applicable. The rationale behind this procedure is that with non-homogeneous products a tariff can be considered redundant even if some imports occur, provided the amount of imports as well as the tariff are small. If the first and the second conditions were fulfilled but not the third, the tariff was considered prohibitive.

Only seventeen I/O-commodity tariffs—imposed mainly on primaries and foodstuffs—could be described as redundant according to these criteria. Setting these tariffs equal to zero led to slightly smaller industry and industry group tariffs which are called estimated realized tariffs or adjusted tariffs (see Table III.8, column (1) and Table III.9, column (2)). For fifteen I/O-commodities import shares were lower than 5 per cent and no quantitative restriction was imposed, but nominal tariffs were higher than 25 per cent. They were probably prohibitive. With one exception, all commodities under consideration had export shares lower than 10 per cent, indicating that they are perhaps not competitive at international standards and hence need protection. On the other hand, the low import shares may show that nominal tariffs are too high to reflect full international price differentials. The respective industry tariffs are classified as prohibitive if the share of a commodity with a prohibitive tariff in the industry's sales was higher than 20 per cent. Within this category were the following seven industries: canning of fruit and vegetables, bakeries, spirits and wine, breweries and soft drinks, furniture and fixtures (wooden), chemical products n.e.c., cutlery, tools, and furniture and fixtures primarily of metal.

In a second approach, we have assumed, in addition, that tariffs have not been fully realized if: export shares were higher than 10 per cent (and less than 90 per cent), structures of domestic and foreign sales were fairly equal, and the value-added ratio attributable to exports was less than the wage share in total sales. The reasons for this are as follows: the industries for which the assumptions apply have already passed the first stages of infancy and were able to export a certain amount of their production. Even if the prices charged on the domestic market are higher than those abroad—a price behaviour confirmed by the HEX[42]—value added of exports should not fall short of a certain limit. This limit is determined by the variable or marginal production costs which can be approximated by the labour costs. In some cases, however, the value-added ratio of exports computed from the input-output data and the estimated realized tariffs fell short of the average wage share in total sales. This can be explained by a too high

TABLE III.8

NOMINAL AND EFFECTIVE TARIFFS BY INDUSTRY GROUPS, 1974

Industry Codes		Adj. Tariffs P(K) (1)	Excises U(K) (2)	Exp. Duties V(K) (3)	ERP Dom. Sales SDW(K) OR SDP (K) (4)	ERP Exports SEW(K) (5)
111–116	Agriculture & livestock	0.056	—	0.017	1.055	0.981
120	Forestry & logging	0.104	—	0.138	1.107	0.842
130	Fishing	0.040	—	0.050	1.022	0.925
213	Metal mining	0.020	—	0.102	0.995	0.843
311–322	Food products	0.128*	0.036	0.091	1.152*	0.585
316	Grain mills	0.041	—	0.013	1.098	0.937
323	Animal feeds	0.020	—	0.033	1.149	0.760
325, 326	Wines, breweries & soft drinks	1.515*	0.433	—	4.068*	0.966
329	Tobacco products	1.460*	0.059	—	2.571*	—
331–333	Textiles	0.279*	—	—	1.387*	0.997
334	Wearing apparels excl. footwear	0.340*	—	—	1.268*	0.983
335	Leather & leather products	0.239	—	—	2.118	0.981
336	Footwear excl. rubber & plastic footwear	0.417	—	—	1.602	0.997
341, 343	Wood mills, wood & cork products	0.055	0.008	0.046	1.122	1.072
344	Furniture & fixtures excl. metal furniture	0.350*	—	—	2.572*	1.256
345	Paper & paper products	0.075	—	—	1.125	0.985
346	Printing & publishing	0.040	—	—	1.007	0.997
351	Industrial chemicals	0.113	—	—	1.176	0.989
352–355	Paints, drugs, perfumes, soaps & misc. chemical products	0.394*	0.026	—	1.872*	0.985
356	Petroleum & coal products	0.815	0.562	—	2.738	0.946
357, 358	Rubber processing & rubber products	0.206	0.008	0.201	1.460	0.398
359	Plastic products	0.349*	—	—	3.683*	0.952
361	Pottery, china & glass products	0.408	—	—	1.903	0.940
362–364	Clay, cement & other NM mineral products	0.062	0.012	0.049	1.040	0.881
371	Iron & steel basic metal products	0.117	—	0.005	1.389	0.990
372	Non-ferrous basic metals	0.153	—	0.188	3.031	0.329
373–375	Metal prod. incl. metal furniture	0.155*	—	—	1.518*	1.009
381, 382	Non-electrical machinery	0.100	0.003	—	1.142	1.003
383–385	Electrical machinery	0.235	0.026	—	1.688	1.003
386–389	Transport machinery	0.436	0.156	—	2.676	0.983
391	Scientific instruments & misc. mfigs.	0.118	—	—	1.467	1.326
411–569	All economic services excl. defence	—	—	—	0.968	0.994

Note: To obtain the ERP as a percentage, the figures of the two last columns have to be subtracted by 1. All dashes here and in the following series of tables represent zero values.

*Tariffs are not fully utilized. ERPs overstate actual protection.

TABLE III.9
NOMINAL TARIFFS BY INDUSTRY, 1974
(in per cent)

	Industry Code	Tariffs $T(J)$ (1)	Adj. Tariffs $P(J)$ (2)	Excises $U(J)$ (3)	Exp. Duties $V(J)$ (4)	Val.-Added Ratio (5)
111	Agriculture (smallholdings etc.)	0.275	0.185	—	0.009	0.903
112	Rubber planting	0.020	0.020	—	0.032	0.883
113	Oil palm estates	0.020	0.020	—	0.050	0.846
114	Coconut estates and smallholdings	0.020	0.020	—	0.100	0.959
115	Tea estates	0.040	0.040	—	—	0.763
116	Livestock	0.096	0.040	—	0.030	0.550
118	Hunting, trapping & animal husbandry	0.040	0.040	—	—	1.000
120	Forestry and logging	0.125	0.103	—	0.138	0.900
130	Fishing	0.040	0.040	—	0.049	0.881
211	Coal mining	0.040	0.040	—	—	1.000
212	Crude petroleum & natural gas	0.040	0.040	—	—	1.000
213	Metal mining	0.020	0.020	—	0.102	0.734
214	Other mining	0.020	0.020	—	0.008	1.000
311	Slaughtering & meat preparation	0.047	0.047	—	—	0.425
312	Dairy products	0.149	0.149	0.010	—	0.238
313	Fruits & vegetable canning	0.570	0.570•	—	—	0.270
314	Fish canning	0.078	0.078	—	—	0.322
315	Vegetable & animal oils & fats	0.076	0.076	—	0.129	0.141
316	Grain milling	0.041	0.041	—	0.012	0.258
317	Bakeries	0.221	0.221•	—	—	0.326
318	Cocoa, chocolate & confectionery	0.430	0.360	—	—	0.220
321	Ice factories	0.020	0.020	—	—	0.637
322	Other food preparations incl. sugar	0.343	0.240	0.159	—	0.244
323	Animal feeds	0.020	0.020	—	0.033	0.110
325	Spirits & wines	1.996	1.996•	0.180	—	0.676
326	Breweries & soft drinks	1.481	1.481•	0.471	—	0.541
329	Tobacco products	1.460	1.460•	0.058	—	0.308
331	Spinning & weaving of textiles	0.265	0.265•	—	—	0.143
332	Knitting mills	0.357	0.357	—	—	0.580
333	Other textiles	0.261	0.261	—	—	0.771
334	Wearing apparels except footwear	0.340	0.340•	—	—	0.272
335	Leather & leather products	0.239	0.239	—	—	0.303
336	Footwear except rubber & plastic	0.418	0.417	—	—	0.648
341	Sawmills & other wood mills	0.201	0.054	0.008	0.047	0.360
343	Other wood & cork products	0.156	0.066	—	—	0.294
344	Furniture & fixtures excl. metal furniture	0.350	0.350•	—	—	0.306
345	Paper & paper products	0.075	0.075	—	—	0.278
346	Printing & publishing	0.040	0.040	—	—	0.509
351	Industrial chemicals	0.113	0.113	—	—	0.424
352	Paints, varnishes & lacquers	0.232	0.232	—	—	0.364
353	Drugs & medicines	0.049	0.049	—	—	0.518
354	Cleaning preparations & cosmetics	0.492	0.492	0.038	—	0.539
355	Chemical products n.e.c.	0.341	0.341•	0.019	—	0.150
356	Petroleum & coal products	0.814	0.814	0.561	—	0.238
357	Rubber processing	0.040	0.040•	—	0.205	0.199
358	Tyres & other rubber products	0.567	0.567	0.025	—	0.429
359	Plastic products	0.349	0.349•	—	—	0.306
361	Pottery, china & glass products	0.408	0.408	—	—	0.493
362	Structural clay products	0.146	0.146	—	0.049	0.559
363	Cement, lime & plaster	0.165	0.020	0.024	0.050	0.619

TABLE III.9 (continued)

	Industry Code	*Tariffs* $T(J)$ (1)	*Adj. Tariffs* $P(J)$ (2)	*Excises* $U(J)$ (3)	*Exp. Duties* $V(J)$ (4)	*Val.-Added Ratio* (5)
364	Other non-metallic products	0.153	0.075	—	0.047	0.425
371	Iron & steel basic metals	0.117	0.117	—	0.004	0.310
372	Other non-ferrous basic metals	0.152	0.152	—	0.187	0.045
373	Cutlery, tools & metal furniture	0.323	0.323*	—	—	0.600
374	Structural metal products	0.181	0.181	—	—	0.341
375	Fabricated metal products excl. machinery	0.105	0.105	—	—	0.295
381	Industrial machinery non-electric	0.020	0.020	—	—	0.432
382	Business & household machines non-electric	0.238	0.238	0.009	—	0.830
383	Radios, TV & communication equipment	0.315	0.315	0.031	—	0.377
384	Electrical appliances & housewares	0.407	0.407	0.023	—	0.350
385	Other electrical appliances & machinery	0.157	0.157	0.024	—	0.342
386	Shipbuilding & repair	0.053	0.053	—	—	0.722
387	Motor vehicles	0.478	0.478	0.166	—	0.269
388	Motor-cycles & other cycles	0.317	0.317	0.159	—	0.281
389	Other transport equipment	0.024	0.024	—	—	0.471
391	Scientific equipment & misc. manufactures	0.118	0.118	—	—	0.240
411	Electric power & gas	—	—	—	—	0.670
412	Water supply	—	—	—	—	0.713
421	Residential buildings	—	—	—	—	0.084
422	Other buildings	—	—	—	—	0.340
423	Railways	—	—	—	—	1.000
424	Telecommunication lines, etc.	—	—	—	—	0.150
425	Electrical transmission systems	—	—	—	—	0.764
426	Other engineering construction	—	—	—	—	0.311
431	Wholesale & retail trade	—	—	—	—	0.772
432	Hotels & restaurants	—	—	—	—	0.896
441	Railway transport	—	—	—	—	0.522
442	Other land transport	—	—	—	—	0.645
443	Water transport	—	—	—	—	0.822
444	Air transport	—	—	—	—	0.382
445	Other transportation services	—	—	—	—	0.784
446	Communication	—	—	—	—	0.863
449	Aggregate of industries 441–444	—	—	—	—	0.646
451	Monetary institutions	—	—	—	—	0.775
452	Other financial institutions	—	—	—	—	0.564
453	Insurance	—	—	—	—	0.658
461	Real estates	—	—	—	—	0.891
480	Business services	—	—	—	—	0.820
541	Schools, universities & other educational services	—	—	—	—	0.768
542	Research & scientific institutes	—	—	—	—	1.000
543	Medical & other health services	—	—	—	—	0.646
551	Movies & other entertainment services	—	—	—	—	0.899
552	Radio & TV broadcasting	—	—	—	—	0.052
559	Libraries, museums & other cultural institutions	—	—	—	—	0.806
561	Repair of motor vehicles & motor-cycles	—	—	—	—	0.216
562	Other repair services n.e.c.	—	—	—	—	0.150
563	Laundry & cleaning services	—	—	—	—	0.909
569	Other personal services	—	—	—	—	0.890

*Tariffs are not fully utilized. See footnote, Table III.8.

estimate of the realized tariff, because these tariffs are supposed to reflect international price differentials and hence they increase the value-added ratio of domestic sales and lower the value-added ratio of exports.[43]

From the results of the HEX one is tempted to conclude that the realized tariffs were rather low. Firms were asked what margin of price-cut would enable them to enter foreign markets or to expand their sales abroad. On average their answer was 7.4 per cent. Compared to the average nominal tariff of manufacturing industries (32 per cent), this low percentage seems to be an underestimate. On the other hand, the answer raises some doubts concerning the protective effect of the nominal tariffs. Apart from this, the second approach reveals that the nominal industry tariffs of cocoa, chocolate and sugar confectionery, tobacco products, spinning, weaving, etc., of textiles, wearing apparel, and plastic products n.e.c. have also not been fully realized. The adjusted tariffs and effective rates of protection of these twelve industries are therefore marked with an asterisk.

D. SALES AND EXCISE TAXES

In this chapter we are mainly concerned with protective measures directed at producers. Therefore we have to investigate which measures, other than tariffs, influence domestic producer prices. The Malaysian sales tax has no or at least no sizeable effect on producer prices because it is imposed on both imported and domestically-produced goods, with raw materials and investment goods being tax free.[44] The excise tax, however, is only levied on domestically-produced goods. It lowers the domestic producer price relative to the c.i.f. import price plus the tariff. It has therefore been subtracted from the estimated realized tariff. The resulting vector is called nominal rate of protection (NRP) because it shows the combined effect of tariffs and excise taxes on domestic producer prices.

Malaysian excise taxes are imposed primarily on consumption goods and predominantly on luxury goods, though a few intermediate goods are also taxed. The average tax on products of petroleum and coal was 56 per cent, malt liquors and soft drinks 46 per cent, spirits and wine 18 per cent, motor vehicles 17 per cent, motor-cycles 16 per cent, other food preparations including sugar 16 per cent.[45] These relatively high taxes did not, however, alter very much the overall structure of nominal protection. The most protected industry was still the food industry (30 per cent), owing to high nominal rates of protection for beverages and tobacco products. The non-food manufacturing sector was protected on average by 20 per cent. This seems to be not too high although it must be noted that this average includes some much more highly protected industries. The average protection of primary commodities (5 per cent) was not affected.

E. QUANTITATIVE IMPORT RESTRICTIONS

The most severe protective measures are quantitative import restrictions. Three types exist in Malaysia: specific licensing, quota, and nil issue (import ban). Under specific licensing, imports are allowed only on the issue of a specific licence and this is normally granted since it practically serves only special information needs of FIDA. This kind of information procurement seems to be very costly in terms of time consumed by private firms and of control efforts by the Customs Department. The real quantitative import restrictions, i.e. quotas and bans, which were in existence in July 1974, covered a broad range of traded goods. As mentioned above, they are generally granted on a temporary basis and in several cases seem to have had no great effect on prices. This is particularly true in those cases where the quotas exceeded the imports of recent years, like the quota on oil filters. Most important were probably the quotas for the motor-car and motor-cycle assemblies. Amounts equivalent to only 1 per cent of the 1966 motor-car imports and to 20 per cent of the 1968 motor-cycle imports were allowed to enter the country. A comparison with quantitative import restrictions enforced in November 1968[46] shows that the number of quota products has increased substantially (from twenty-five to more than eighty items). Of the 1968 restrictions which applied mainly to imports of air-conditioning machines, motor vehicles, towels and cotton terry fabrics, and intermediate iron and steel products, only the motor-car restrictions were still in force in 1974, though there were eight quotas of still older vintage.

Due to the formidable difficulties of international price comparisons for non-homogeneous commodities, such comparisons have been tried for only a limited number of fairly homogeneous goods. Price differentials in excess of nominal tariffs were identified for the following four quota commodities:

BTN-Code		*Description*	$\frac{\textit{Domestic Price}}{\textit{C.I.F. Price}} - 1$	*Nominal Tariff*
21.06	100	Active natural yeast	0.45	0.25
25.01	100	Table salt		
	200	Rock salt and salt liquors	0.58	0.0
	900	Other salt		
38.11	410	Wood preservatives	0.38	0.20
	430			
39.01	911	Rigid laminated plates and sheets	0.61	0.50

Sources: Department of Statistics, *Monthly Statistics of External Trade, Peninsular Malaysia*, March 1973, Kuala Lumpur. FIDA Reports, 'Trade Classification and Customs Tariff—1969, Incorporating all Amendments up to 31 December 1973', Kuala Lumpur. Information by wholesale enterprises. Computations by the Economic Planning Unit, Kuala Lumpur.

Unfortunately, the protective effect of quotas on imports of motor vehicles and cycles could not be assessed. This would have been most important because of their size and duration.

F. NOMINAL PROTECTION OF EXPORTS

Export duties are levied in Malaysia mainly on the export of some crude and processed primaries. Most important were the export duties on rubber (20.5 per cent), tin (18.8 per cent), palm oil (15.2 per cent), saw logs (15 per cent) and sawn timber, veneer sheets and plywood (5 per cent). The estimated export duties' share in total tax revenue of the Federal Government amounted to 14.4 per cent in 1973 and 22 per cent in 1974. Of this, rubber and tin duties were about 83 and 72 per cent respectively.[47] Some export duties are expressed as a certain percentage of the export price (e.g. the duties on logs and sawn timber) while others vary on a progressing scale (e.g. the duties on rubber, tin, and palm oil). Hence the duty rates of the latter vary greatly during the trade (and price) cycle. The rates stated above are based on the average prices of the last quarter of 1973 and the first quarter of 1974. Information on relevant prices as well as the export duty surcharges on rubber and tin was provided by the Customs Department. Industry duty rates are weighted means of commodity duty rates. Export values served as weights. Table III.8 shows the export duties on an aggregate basis. The average taxation of exports (15 per cent) seems to be very high at first sight because only a few industries were affected by export duties. The reason is that the average figure is a weighted mean with exports being the weights, and West Malaysia's 1970 exports consisted mainly of taxed primaries.

The taxation of crude and processed primaries cannot be regarded as an impediment to employment creation and growth since these industries' exports are unlikely to increase if the duties were abolished. The limiting factors here are not high production costs but inelastic world demand and, at least in the short run, inelastic supply, although the supply elasticity may recently have increased somewhat because stocking capacities have been enlarged. An indirect discrimination against exports in general has, however, taken place through the protection of domestic sales. Whereas the production for the domestic market is greatly protected by direct price-influencing measures, no equivalent support is given for export production. It seems very unlikely that the export incentives granted by the Investment Incentives Act of 1968 and a number of other measures, like the creation of free trade zones, etc., outweigh the bias against exports.

Quantitative export restrictions were a very rarely used tool. The list of specific export licences contained only four items up to 20 December 1973. In order to secure domestic supply during the economic boom in 1973, restrictions on building materials and several kinds of foodstuffs were imposed at the end of 1973 and in June 1974. Specific licences seemed to have been applied on an *ad hoc* basis and were of a temporary nature. The same is true for a part of products which were prohibited from any export (nil issue), such as sugar, wheat flour, kerosene, fertilizers and disinfectants, insecticides, fungicides, and weed-killers. The price effect of some of the licences—such as the one on animal feeds—might have been offset by import quotas imposed on the same commodities. The export bans on basic iron and steel bars and products, as well as cement and cement clinker, have been in force since 1970 and 1971 respectively. They have undeniably imposed restrictions on the expansion of those industries and are hard to justify in the light of the employment and export growth targets stated in the Second Malaysia Plan.

G. EFFECTIVE PROTECTION: CONCEPTS AND MEASUREMENT

While nominal rates of protection show the percentage increase of domestic producers' prices, effective rates of protection show the increase of value added. This recently developed concept[48] covers protection effects on the output side as well as taxation effects on the input side of domestic production. Since value added represents production costs of a single stage of production, it may be said that the concept of effective protection focuses on the production costs of one industry rather than on total production costs occurring in a variety of industries involved in producing a certain commodity. The effects of a protective system on social production costs in terms of profits, wages, and depreciation are most important for questions concerning the allocation of productive factors, the costs of protection, and the efficiency of domestic industries.

The concept of effective protection rests, *inter alia*, on the assumption that physical intermediate input coefficients are constant and the elasticities of foreign supply and demand of traded goods are infinite (small-country assumption). If these assumptions are fulfilled, value added in the free trade situation—characterized by the non-existence of any trade distortive measures—can be calculated from the actual prices, the price differentials caused by protection, and the input cost structure of the actual situation. Empirically, the former assumption does not seem to be too restrictive, as for many products the structure of material inputs appears to be fairly constant. The latter assumption requires that world market prices do not vary if the domestic protective system is abolished. This assumption seems to be defensible for most Malaysian manufactures. For Malaysia's main export products, however, the small-country assumption is not likely to hold good. The reader should therefore interpret the results for the primary industries with care.

Formula (1) was used for the calculation of effective rates of protection of domestic sales (ERP_j^D).[49] This formula is based on (2) and yields the same results as (2). Since the latter is more familiar and is easier to comprehend, the analysis will be given in terms of Formula (2).

(1)

$$1 + \mathrm{ERP}_j^D = \frac{o_j^d - \sum_i a_{ij} - \sum_n a_{nj}}{\dfrac{o_j^d}{1 + t_j - s_j} - \sum_i \dfrac{a_{ij}}{1 + t_i - u_i} - \sum_i \sum_n \dfrac{a_{in}\, a_{nj}}{1 + t_i - u_i} - \sum_n (1 - \sum_i a_{in}) a_{nj}}$$

(2)

$$1 + \mathrm{ERP}_j^D = \frac{1 - \sum_i a_{ij}^d - \sum_n a_{nj}^d}{\dfrac{1}{1 + t_j - s_j} - \sum_i \dfrac{a_{ij}^d}{1 + t_i - u_i} - \sum_i \sum_n \dfrac{a_{in} a_{nj}^d}{1 + t_i - u_i} - \sum_n (1 - \sum_i a_{in}) a_{nj}^d}$$

where:

$$o_j^d = d_j + (1 - d_j) \frac{1 + t_j - s_j}{1 - u_j}$$ ('modified unit price' of domestic sales)

t_j : estimated realized tariff on commodity bundle j

s_j : excise tax rate on commodity bundle j

u_j : export duty rate on commodity bundle j

t_i : estimated realized tariff on commodity i

u_i export duty rate on commodity i

a_{ij}, a_{nj} : domestic value input coefficients of traded and non-traded inputs on the basis of total sales

a_{ij}^d, a_{nj}^d : domestic value input coefficients of traded and non-traded inputs on the basis of domestic sales.

Formula (2) is an extension of the so-called Balassa formula of the ERP. It relates value added per unit of output in the protection situation to value added in the free trade situation. Value added includes depreciation and excludes indirect taxes, e.g. sales tax and the excise tax, on the output side. Actual input costs are, however, inclusive of excises and tariffs. Free-trade value added is derived by deflating the standardized producer's price of 1 by the nominal rate of protection. Furthermore, input costs of direct and indirect[50] traded inputs are deflated by the estimated realized tariff and inflated by export duties. It is assumed that export duties—which lessen the producer's price of exports relative to the world market price—lead also to lower domestic prices. More specifically, it is assumed that the following relation holds: $p_i^f = p_i^* - u_i p_i^*$, where p_i^f is the domestic producer's and user's price of taxed products and p_i^* is the world market price. An abolition of export duties would then lead to higher input prices for users in the free-trade situation. Direct and indirect value added on non-traded inputs, i.e. the last term of the denominator of (2), is assumed to remain approximately constant in price. This assumption may be justified in the case of Malaysia because the overall increase in value added of all industries producing traded goods—which reflects the general increase in factor prices—was about zero (+ 1.8 per cent). For the sake of comparison, the ERPs in Table III.10 have also been calculated by a formula which includes the non-traded inputs into value added—an approach generally attributed to Corden.[51]

As separate trade distorting measures apply to exports, ERPs for exports (ERP_j^F) have been calculated according to the following formula:

(3)

$$1 + ERP_j^F = \frac{o_j^f - \sum_i a_{ij} - \sum_n a_{nj}}{\dfrac{o_j^f}{1-u_j} - \sum_i \dfrac{a_{ij}}{1+t_i-u_i} - \sum_i \sum_n \dfrac{a_{in}a_{nj}}{1+t_i-u_i} - \sum_n \left(1 - \sum_i a_{in}\right) a_{nj}}$$

This formula yields the same results as formula (4) which is much easier to understand but more difficult to compute.

(4)

$$1 + ERP_j^F = \frac{1 - \sum_i a_{ij}^f - \sum_n a_{nj}^f}{\dfrac{1}{1-u_j} - \sum_i \dfrac{a_{ij}^f}{1+t_i-u_i} - \sum_i \sum_n \dfrac{a_{in}a_{nj}^f}{1+t_i-u_i} - \sum_n \left(1 - \sum_i a_{in}\right) a_n^f}$$

where $o_j^f = 1 - d_j + d_j \dfrac{1-u_j}{1+t_j-s_j}$ ('modified unit price' of exports)

a_{ij}, a_{nj} : domestic value input coefficients of traded and non-traded inputs on the basis of total sales.

a_{ij}^f, a_{nj}^f : domestic value input coefficients of traded and non-traded inputs on the basis of foreign sales.

The free-trade export price in (4) is derived by deflating the standardized output price by $1 - u_j$, assuming that exporters have to bear the export duty. Exporters are—in contrast to import competitors—not protected by the Malaysian system of tariffs, taxes, and quantitative restrictions. They are, however taxed by export duties. Generally, costs of raw materials for export production were not increased by tariffs on inputs.[52] The exceptions were petroleum products. An incentive measure to exports as well as domestic sales which some industries enjoy are the indirect effects of export duties on intermediary goods which lower input costs of the user-industries. Cases in point are, for example, canning of fish, sawmills and other wood mills, other products of wood and cork, tyres and tubes, and other rubber products.

Formula (4) assumes that physical input coefficients of domestic sales and exports are equal. This condition requires, strictly speaking, an equal commodity composition of domestic sales and exports. With industries which export less than 10 per cent of their production this assumption is not guaranteed. Therefore their ERP^Fs are shown with an asterisk in Table III.11. For the remaining industries an inspection of the I/O-table showed that the commodity compositions of domestic

TABLE III.10

EFFECTIVE RATES OF PROTECTION BY INDUSTRY, 1974

(in per cent)

Ind. Code	PDT(J) (1)	PDU(J) (2)	PDP(J) (3)	PDW(J) (4)	PEW(J) (5)	SDT(J) (6)	SDU(J) (7)	SDP(J) (8)	SDW(J) (9)	SEW(J) (10)
111 Agriculture (smallholdings etc.)	1.295	1.295	1.195	—	0.989	1.300	1.300	1.198	—	0.989
112 Rubber planting	1.010	1.010	1.011	—	0.961	1.011	1.011	1.011	—	0.959
113 Oil palm estates	1.007	1.007	1.007	—	0.941	1.007	1.007	1.007	—	0.932
114 Coconut estates and smallholdings	1.016	1.016	1.016	—	0.895	1.016	1.016	1.016	—	0.894
115 Tea estates	1.019	1.019	1.020	—	0.989	1.021	1.021	1.022	—	0.987
116 Livestock	1.181	1.181	1.078	—	0.970	1.207	1.207	1.088	—	0.967
118 Hunting, trapping & animal husbandry	—	—	—	—	—	—	—	—	—	—
120 Forestry and logging	1.125	1.125	1.102	—	0.848	1.130	1.130	1.106	—	0.842
130 Fishing	1.021	1.021	1.021	—	0.928	1.022	1.022	1.022	—	0.925
211 Coal mining	—	—	—	—	—	—	—	—	—	—
212 Crude petroleum & natural gas	—	—	—	—	—	—	—	—	—	—
213 Metal mining	0.994	0.994	0.995	—	0.862	0.994	0.994	0.994	—	0.847
214 Other mining	—	—	—	—	—	—	—	—	—	—
311 Slaughtering & meat preparation	1.153	1.153	1.153	—	1.071	1.164	1.164	1.164	—	1.076
312 Dairy products	1.179	1.150	1.208	1.271	0.992	1.272	1.225	1.319	1.429	0.987
313 Fruits & vegetable canning	1.757	1.757	1.776	2.514	1.004	1.942	1.942	1.969	3.107	1.006
314 Fish canning	1.259	1.259	1.259	1.261	1.084	1.344	1.344	1.344	1.347	1.113
315 Vegetable & animal oils & fats	1.238	1.238	1.259	1.241	0.696	1.471	1.471	1.473	1.478	0.376
316 Grain milling	1.084	1.084	1.085	—	0.945	1.096	1.096	1.098	—	0.937
317 Bakeries	1.408	1.408	1.448	—	0.982	1.577	1.577	1.641	—	0.973
318 Cocoa, chocolate & confectionery	2.139	2.139	1.892	1.933	0.979	4.313	4.313	3.126	3.290	0.554
321 Ice factories	0.990	0.990	0.999	—	0.971	0.986	0.986	0.985	—	0.962
322 Other food preparations incl. sugar	1.413	0.970	0.777	—	0.987	1.577	0.962	0.735	—	0.982
323 Animal feeds	1.080	1.080	1.081	—	0.881	1.147	1.147	1.149	—	0.760
325 Spirits & wines	3.402	3.116	3.144	3.240	0.994	4.379	3.869	3.917	4.080	0.989
326 Breweries & soft drinks	4.492	2.782	2.851	—	0.982	10.299	3.907	4.067	—	0.965
329 Tobacco products	1.874	1.803	2.087	—	1.015	2.208	2.095	2.571	—	1.009
331 Spinning & weaving of textiles	1.225	1.225	1.225	1.241	0.956	1.421	1.421	1.421	1.455	1.226
332 Knitting mills	1.383	1.383	1.383	1.397	0.996	1.442	1.442	1.442	1.458	0.995
333 Other textiles	1.266	1.266	1.266	1.281	0.998	1.785	1.285	1.285	1.302	0.998
334 Wearing apparels except footwear	1.236	1.236	1.236	—	0.987	1.268	1.268	1.268	—	0.982
335 Leather & leather products	1.480	1.480	1.480	1.667	0.989	1.747	1.747	1.747	2.117	0.981
336 Footwear except rubber & plastic	1.530	1.530	1.532	—	0.997	1.600	1.600	1.602	—	0.997
341 Sawmills & other wood mills	1.493	1.488	1.095	—	1.052	1.711	1.670	1.123	—	1.071

TABLE III.10 (continued)

Ind. Code	PDT(J) (1)	PDU(J) (2)	PDP(J) (3)	PDW(J) (4)	PEW(J) (5)	SDT(J) (6)	SDU(J) (7)	SDP(J) (8)	SDW(J) (9)	SEW(J) (10)
343 Other wood & cork products	1.157	1.157	1.066	—	1.052	1.232	1.232	1.094	—	1.080
344 Furniture & fixtures excl. metal furniture	1.663	1.663	1.818	—	1.068	2.181	2.181	2.572	—	1.256
345 Paper & paper products	1.030	1.030	1.089	—	0.989	1.041	1.041	1.124	—	0.985
346 Printing & publishing	1.004	1.004	1.006	—	0.997	1.005	1.005	1.007	—	0.996
351 Industrial chemicals	1.129	1.129	1.126	1.138	0.991	1.163	1.163	1.160	1.176	0.988
352 Paints, varnishes & lacquers	1.397	1.397	1.401	1.444	0.944	1.589	1.589	1.595	1.670	0.915
353 Drugs & medicines	1.013	1.013	1.015	—	0.996	1.017	1.017	1.019	—	0.994
354 Cleaning preparations & cosmetics	1.740	1.668	1.668	1.737	0.999	2.140	2.008	2.007	2.134	0.999
355 Chemical products n.e.c.	1.950	1.838	1.838	2.314	0.945	59.334	12.440	12.494	-6.870	1.089
356 Petroleum & coal products	-3.352	2.234	2.234	2.248	0.962	-2.065	2.714	2.714	2.738	0.945
357 Rubber processing	1.056	1.056	1.055	—	0.577	1.080	1.080	1.079	—	0.391
358 Tyres & other rubber products	2.537	2.422	2.423	2.518	1.156	3.503	3.252	3.252	3.460	1.290
359 Plastic products	1.754	1.754	1.756	2.091	0.981	2.501	2.501	2.507	3.682	0.951
361 Pottery, china & glass products	1.617	1.617	1.622	—	0.959	1.894	1.894	1.903	—	0.939
362 Structural clay products	1.167	1.167	1.195	—	0.898	1.201	1.201	1.237	—	0.876
363 Cement, lime & plaster	1.165	1.133	0.949	—	0.898	1.206	1.165	0.939	—	0.879
364 Other non-metallic products	1.246	1.246	1.129	1.137	0.911	1.315	1.315	1.161	1.172	0.889
371 Iron & steel basic metals	1.210	1.210	1.210	1.262	0.993	1.305	1.305	1.306	1.389	0.989
372 Other non-ferrous basic metals	2.702	2.702	2.702	—	0.455	3.030	3.030	3.030	—	0.328
373 Cutlery, tools & metal furniture	1.447	1.447	1.437	1.505	1.001	1.525	1.525	1.512	1.597	1.001
374 Structural metal products	1.314	1.314	1.321	1.400	0.991	1.494	1.494	1.506	1.655	0.985
375 Fabricated metal products excl. machinery	1.126	1.126	1.127	1.262	1.015	1.182	1.182	1.184	1.403	1.024
381 Industrial machinery non-electric	0.984	0.984	0.985	1.015	0.995	0.980	0.980	0.981	1.019	0.993
382 Business & household machines non-electric	1.265	1.254	1.254	1.268	1.005	1.278	1.266	1.266	1.281	1.005
383 Radios, TV & communication equipment	1.401	1.339	1.339	1.547	0.992	1.686	1.563	1.563	2.011	0.985
384 Electrical appliances & housewares	1.684	1.622	1.622	1.943	0.988	2.567	2.361	2.362	3.696	0.965
385 Other electrical appliances & machinery	1.218	1.163	1.163	1.264	1.005	1.315	1.230	1.231	1.388	1.008
386 Shipbuilding & repair	1.038	1.038	1.051	1.056	0.997	1.042	1.042	1.057	1.062	0.997
387 Motor vehicles	35.029	3.185	3.197	—	0.985	-17.587	3.943	3.963	—	0.976
388 Motor-cycles & other cycles	2.292	1.348	1.348	1.448	0.992	3.056	1.445	1.445	—	0.989
389 Other transport equipment	0.988	0.988	0.996	—	1.001	0.987	0.987	0.995	—	1.001
391 Scientific equipment & misc. manufactures	1.217	1.217	1.215	1.253	1.139	1.392	1.392	1.387	—	1.326
411 Electric power & gas	0.931	0.931	0.931	—	0.942	0.923	0.923	0.923	—	0.936
412 Water supply	0.982	0.982	0.983	—	0.984	0.978	0.978	0.980	—	0.981
421 Residential buildings	0.727	0.727	0.888	—	1.147	0.511	0.511	0.757	—	1.485
422 Other buildings	0.868	0.868	0.918	—	1.027	0.835	0.835	0.895	—	1.036

TABLE III.10 (continued)

Ind. Code	PDT(J) (1)	PDU(J) (2)	PDP(J) (3)	PDW(J) (4)	PEW(J) (5)	SDT(J) (6)	SDU(J) (7)	SDP(J) (8)	SDW(J) (9)	SEW(J) (10)
423 Railways	—	—	—	—	—	—	—	—	—	—
424 Telecommunication lines etc.	0.669	0.669	0.669	—	0.994	0.541	0.541	0.541	—	0.990
425 Electrical transmission systems	0.968	0.968	0.968	—	0.999	0.967	0.967	0.967	—	0.998
426 Other engineering construction	0.866	0.866	0.877	—	0.998	0.823	0.823	0.838	—	0.998
431 Wholesale & retail trade	0.986	0.986	0.986	—	0.991	0.984	0.984	0.984	—	0.990
432 Hotels & restaurants	0.995	0.995	0.995	—	0.996	0.995	0.995	0.995	—	0.995
441 Railway transport	0.955	0.955	0.962	—	0.970	0.939	0.939	0.947	—	0.958
442 Other land transport	0.941	0.941	0.941	—	0.960	0.932	0.932	0.932	—	0.953
443 Water transport	0.988	0.988	0.989	—	0.992	0.987	0.987	0.988	—	0.991
444 Air transport	0.918	0.918	0.918	—	0.932	0.890	0.890	0.890	—	0.908
445 Other transportation services	0.989	0.989	0.989	—	0.996	0.987	0.987	0.987	—	0.996
446 Communication	0.994	0.994	0.994	—	0.997	0.993	0.993	0.993	—	0.997
449 Aggregate of industries 441–444	0.950	0.950	0.951	—	0.966	0.941	0.941	0.942	—	0.960
451 Monetary institutions	0.987	0.987	0.988	—	0.995	0.985	0.985	0.986	—	0.994
452 Other financial institutions	0.986	0.986	0.987	—	0.990	0.978	0.978	0.978	—	0.984
453 Insurance	0.991	0.991	0.991	—	0.996	0.989	0.989	0.989	—	0.995
461 Real estates	0.997	0.997	0.997	—	0.999	0.997	0.997	0.997	—	0.999
480 Business services	0.996	0.996	0.996	—	0.999	0.996	0.996	0.996	—	0.998
541 Schools, universities & other educational services	0.976	0.976	0.977	—	0.998	0.973	0.973	0.974	—	0.998
542 Research & scientific institutes	—	—	—	—	—	—	—	—	—	—
543 Medical & other health services	0.987	0.987	0.987	—	0.997	0.985	0.985	0.985	—	0.997
551 Movies & other entertainment services	0.994	0.994	0.994	—	0.996	0.993	0.993	0.994	—	0.995
552 Radio & TV broadcasting	0.940	0.940	0.940	—	0.986	0.547	0.547	0.547	—	0.850
559 Libraries, museums & other cultural institutions	0.991	0.991	0.992	—	0.998	0.990	0.990	0.990	—	0.997
561 Repair of motor vehicles & motor-cycles	0.794	0.794	0.795	—	0.989	0.695	0.695	0.696	—	0.983
562 Other repair services n.e.c.	0.688	0.688	0.688	—	0.991	0.496	0.496	0.496	—	0.981
563 Laundry & cleaning services	0.982	0.982	0.982	—	0.996	0.981	0.981	0.982	—	0.996
569 Other personal services	0.984	0.984	0.984	—	0.999	0.983	0.983	0.984	—	0.999

PDT(J) : Effective protection, Corden, for domestic market, nominal tariffs
PDU(J) : Effective protection, Corden, for domestic market, tariffs and excises
PDP(J) : Effective protection, Corden, for domestic market, with redundant tariffs
PDW(J) : Effective protection, Corden, for domestic market, with tariff waivers
PEW(J) : Effective protection, Corden, for exports, with tariff waivers

SDT(J) : Effective protection, Balassa, for domestic market, nominal tariffs
SDU(J) : Effective protection, Balassa, for domestic market, tariffs and excises
SDP(J) : Effective protection, Balassa, for domestic market, with redundant tariffs
SDW(J) : Effective protection, Balassa, for domestic market, with tariff waivers
SEW(J) : Effective protection, Balassa, for exports, with tariff waivers

Note: To obtain ERP as a percentage, the above figures have to be subtracted by 1.
Dashes represent zero values

and export sales were roughly equal so that export ERPs are meaningful. An exception was the metal mining industry which delivered tin ores mainly to domestic users and sold iron ores predominantly abroad.

For the ERP calculations the I/O-table had to be slightly modified. First, two new commodities, a transport and a distribution commodity, and one new industry, an aggregate transport industry (449), were introduced. This was necessary because transport and distribution costs of inputs appeared as price mark-ups and not as separate I/O-commodity inputs as it was needed for the calculations. Second, the value-added ratios of a number of industries differed considerably from those stated in the Surveys of manufacturing industries. As the I/O-table was preliminary, the published Surveys' value-added ratios appeared in general more reliable. Therefore, the value-added ratios of the I/O-table have been adjusted in twenty cases by changing the output, under the condition that the definitions of industries and the covered outputs were identical (see Table AIII.2). It is basically in this respect that the data input of EPU's calculations and those presented here differ.

H. EFFECTIVE PROTECTION OF DOMESTIC SALES

As was to be expected, effective rates of protection turned out to be considerably higher than nominal rates of protection (NRP) (Table III.8). This was especially true for non-food manufacturing industries where the average effective rate was more than double the nominal rate (42 per cent in contrast to 20 per cent). Higher ERPs than NRPs result from nominal tariff escalation. Since tariffs on primaries were generally lower than tariffs on intermediate products and since tariffs on the latter were on average lower than those on finished manufactures, value added of Malaysian industries was generally more protected than can be deduced from the nominal rate of protection. Another general feature was that effective rates varied much more than nominal rates. While nominal rates varied within the range of 0 and 182 per cent, effective rates varied between −26 and +308 per cent. This, in turn, was more pronounced in the manufacturing than in the primary sector.

Primary industries were least protected. Their average nominal rate equalled their average effective rate (5 per cent). They are probably the most competitive industries in Malaysia and were neither protected on the output side nor very much taxed on the input side.

Though the food industries, with two exceptions (ice factories and other food preparations including sugar) had higher ERPs than NRPs, the average ERP was only four percentage points higher than the average NRP. This can partly be explained by the different modes of aggregation. In contrast to the NRP averages, ERP averages are calculated with free-trade value-added weights. As free-trade value added is derived by deflating actual value added with 1 + ERP, highly protected industries receive a relatively small weight. Furthermore, the weight of other food preparations including sugar had a considerable influence on the

TABLE III.11

EFFECTIVE PROTECTION BY INDUSTRY, 1963/65 AND 1974

I/O Code	Industries	Value Added under Protection 1963	Value Added under Free Trade 1963	ERP 1963/65	ERP of Domestic Sales 1974	ERP of Exports 1974
		M$'000	M$'000	%	%	%
A	*Consumer Goods*					
311	Slaughtering & meat preparation	81*	70	16 (R)	16	8
312	Dairy products	6882	5294	30 (E69)	43 w	–1
314	Canning of fish	3669	2718	35 (R)	35 w	11
316	Grain mills (excl. animal feeds)	15631	14887	5 (P65, E66)	10	–6
317	Bakeries	12232	9786	25 (A)	64•	–3
318	Cocoa, chocolate & confectionery	1219	506	141 (P65)	229•w	–45•
322	Other food preparation incl. sugar	18531	12606	47 (P63)	–26	–2
325	Spirits & wines	557	398	40 (E66)	308•w	–1
326	Breweries & soft drinks	17964	9980	80 (E66)	307•	–3
329	Tobacco products	28257	13456	110 (E66)	157•	1
332	Knitting mills	404*	277	46 (R)	46 w	0
333	Other textiles	45*	35	29 (R)	29 w	0
334	Wearing apparels except footwear	1985	1418	40 (E66)	27•	–2
335	Leather & leather products	665	432	54 (P65)	112 w	–2
336	Footwear excl. rubber & plastic footwear	11936	7021	70 (P65)	60	0
343	Other wood & cork products	3402	3209	6 (P63)	9	8
344	Furniture & fixtures (wooden)	6974	4055	72 (P65)	157•	26•
353	Drugs & medicines	3897	3821	2 (R)	2	–1
354	Cleaning preparations & cosmetics	22191	20174	10 (E66)	113 w	0
359	Plastic products n.e.c.	1851	959	93 (P65)	268•w	–5
361	Pottery, china & glass products	1645	1382	19 (P65)	90	–6
383	Radio, TV & communication	3145	1700	85 (E62, 66)	101 w	–1
384	Electrical appliances & housewares			105 (A)	270 w	–3
387	Motor vehicle assembly	1880	1880	0 (nd)	296	0
388/9	Cycles & other transport equipment	632	607	4 (P65)	33 w	–1
	Total for subgroup A	165675	116671	42	50	1

TABLE III.11 (continued)

I/O Code	Industries	Value Added under Protection 1963	Value Added under Free Trade 1963	ERP 1963/65	ERP of Domestic Sales 1974	ERP of Exports 1974
		M$'000	M$'000	%	%	%
B	*Intermediate Goods*					
321	Ice factories	4229	4452	−5 (P63)	−1	−4
323	Animal feeds	2876	3027	−5 (A)	15•w	−24
331	Spinning, weaving etc. of textiles	3592	2460	46 (R)	46•w	23•
345	Paper & paper products	3066	2576	19 (P65)	12	−1
346	Printing & publishing	29293	29003	1 (R)	1	0
351	Industrial chemicals	4981	4331	15 (E62)	18 w	−1
352	Paints, varnishes & lacquers	4647	3077	51 (P65)	67 w	−8
355	Chemical products n.e.c.	1102	755	46 (A)	nva•	9•
356	Petroleum & coal products	1968[a]	1968	0 (E66)	174 w	−5
358	Rubber products	23019	10608	170 (E66)	246 w	29
363	Cement, lime & plaster	17693	17518	1 (P65, A)	−6	−12
364	Other non-metallic minerals	213	182	17 (R)	17 w	−11
375	Fabricated metal products n.e.c.	18244	17050	7 (P65)	40 w	2
	Total for subgroup B	114923	97007	25	37	−2
C	*Capital Goods*					
362	Structural clay products	7482	7126	5 (A)	24	−12
371	Iron & steel basic industries	2686	2558	5 (E66)	39 w	−1
373	Cutlery, tools & metal furniture	1196	1087	10 (P65)	60•w	0
374	Structural metal products	6269	5224	20 (E66)	66 w	−1
381	Industrial machinery non-electric	13136	14125	−7 (P65)	2 w	−1
382	Business, household machines non-electric	1610	1769	−9 (A)	28 w	1
385	Other electrical machinery	1557	502	210 (E66)	39 w	1
386	Shipbuilding & repair	3454	3258	6 (R)	6 w	0
	Total for subgroup C	37390	35649	5	28	−1

TABLE III.11 (continued)

I/O Code	Industries	Value Added under Protection 1963	Value Added under Free Trade 1963	ERP 1963/65	ERP of Domestic Sales 1974	ERP of Exports 1974
		M$'000	M$'000	%	%	%
D	*Exports of primary-based industries*					
313	Canning of fruits & vegetables	10248	10787	−5 (E66)	211•w	1
315	Vegetable & animal oils/fats	1513	3982	−62 (R)	48 w	−62
341	Sawmills	46749	47703	−2 (P65)	0	7
357	Rubber processing	115521[a]	210038	−45 (P65)	0	−61
372	Non-ferrous basic metals	6503[a]	19706	−67 (R)	0	−67
	Total for subgroup D	180534	292216	−38	15	−56
	Grand total	498522	541543	−8	39	−51

[a] = Own estimates.
• = Tariff probably prohibitive and not fully utilized, ERP^D therefore overestimated and ERP^F incorrect.
R = Estimates from V. Rabenau.
E = Estimates from C. Edwards.
P = Estimates from J. Power.
A = Estimates from M. Ariff.
nd = No data available.
nva = Negative value added.
w = Tariff waiver.

average. The six highest ERPs within the food industries were probably overstated because their NRPs are likely to have been over-estimated. These industries are:

325	Spirits and wine	308 per cent
326	Breweries and soft drinks	307 per cent
318	Cocoa, chocolate and sugar confectionery	229 per cent
313	Canning of fruit and vegetables	211 per cent
329	Tobacco products	157 per cent
317	Bakeries	64 per cent

Industries discriminated against were other food preparations including sugar—the latter constituting the major sub-commodity of this industry. The ERP was −26 per cent resulting from a high input tariff on raw sugar (49 per cent). Sugar refining seemed therefore to be an efficient industry in West Malaysia. Because of the world-wide sugar shortage, exports were, however, forbidden by an export ban in January 1973.

Non-food manufacturing industries received the highest protection in effective terms. The average rate was 42 per cent. Most protected were chemical products n.e.c. which had a negative free-trade value added. This resulted from a high NRP (32 per cent), lower tariffs on inputs, and one of the lowest value-added ratios (15 per cent). Valued at world market prices, this industry used more inputs than it produced output. Even if considerable productivity increases for this industry are expected, a thorough examination of their protective measures, including the exemption of import duties on imported raw materials, is advisable. Nine other non-food manufacturing industries having an ERP exceeding 100 per cent are the following:

387	Motor vehicles	296 per cent
384	Electrical appliances and houseware	270 per cent
359	Plastic products n.e.c.	268 per cent
358	Tyres and tubes, and other rubber products	246 per cent
356	Products of petroleum and coal	174 per cent
344	Furniture and fixtures	157 per cent
354	Cleaning preparations, cosmetics, etc.	113 per cent
335	Leather and leather products	112 per cent
383	Radio, television and communication equipment	101 per cent

All these industries profited from tariff escalation. Generally, they had low value-added ratios, low production values and also negligible exports. Most were new industries destined to develop behind a shelf of high tariffs.

The second most protected industry after chemical products n.e.c. was the motor vehicles industry. Though relatively large in terms of output—the 1970 gross production value at producer's prices amounted to M$216 million—it was small compared to what is considered a profitable scale of operation in industrialized countries. From the viewpoint of static social costs the assemblies worked at a loss in 1974. Production costs (value added) were about four times as high as in the free trade situation. Industry 358, tyres and tubes, and other rubber products can also not be regarded as a small industry with its gross output value of about M$107 million in 1970. Here, the high rate of nominal protection (57 per cent), as well as the low or even negative input tariffs on raw materials secured a high level of effective protection. Since exports of M$28 million exceeded imports in 1970 it is also possible that the nominal tariffs were not fully realized on the domestic market. Tariffs should be revised accordingly.

Non-food manufacturing industries with ERPs below 20 per cent were identified as follows:

363 : Cement, lime, plaster	−6 per cent
346 : Printing and publishing	1 per cent
381 : Industrial machinery not electric	2 per cent
353 : Drugs and medicines	2 per cent
386 : Shipbuilding and repair	6 per cent
343 : Other products of wood and cork	9 per cent
341 : Sawmills and other wood mills	12 per cent
345 : Paper and paper products	12 per cent
351 : Industrial chemicals	16 per cent
364 : Structural metal products	16 per cent

All these industries are characterized by low nominal rates of protection. Apart from the very competitive resource-based sawmill's industry, these industries were rather small in 1970. Only printing and publishing had a gross production value of more than M$100 million. With the exception of printing and publishing, and drugs and medicines, all industries produced predominantly intermediate and investment goods. Printing and publishing may have been protected at a low rate because it does not need tariff protection due to its natural protection (language barrier) and its labour intensiveness. Nominal tariffs on drugs and medicines and hence ERPs were probably kept low by the government in order to support national health. These industries demonstrate what is called the natural process of import substitution that can take place, even without protection, in the course of industrialization. In some cases they had already made considerable progress in exporting. An example is the cement, lime, and plaster industry which in 1970 exported about one-quarter of its production but was prevented by an export ban from exporting after November 1971. In 1970, seven industries on the list exported more than 10 per cent of their total production. With their efficiency they have a real chance to move strongly into export expansion. This overspill into exports could be supported by the provision of better public transport and communication services as well as special export incentives.

A number of manufacturing firms were exempted from the payment of import duties on specific inputs even for their domestic sales. These tariff waivers, which do not include the (reduced) 2 per cent surtax, are granted by FIDA. From the total of 53 manufacturing industries, firms in 30 industries were exempted,[53] involving a total of 84 I/O-commodities.[54] All ERPs discussed up to now are calculated on the assumption that all firms of the waiver industries got exemptions. A comparison with the results on the opposite assumption, i.e. that no exemptions are allowed for, can be drawn by looking at columns (8) and (9) of Table III.10.[55] In most cases the difference was only minor, apart from those where ERPs without duty exemptions were already high. Nine industries would have had ERPs of nearly 100 per cent or higher, even without tariff exemptions on imported inputs. As the benefits of these exemptions were either negligible or were bestowed upon the heavily protected industries, it is questionable whether the exemptions were really needed. In cases where an abolition of these privileges is feared to be damaging to the economy, a slight increase of nominal tariffs could do the same job and would involve lower administrative cost than the approving and monitoring of tariff exemptions.

I. EFFECTIVE PROTECTION OF EXPORTS

A fairly general feature of the export ERPs is the negative sign, indicating that exports were not only unprotected, but, on the contrary, were discriminated against (Table III.8 column 5). The average ERP of primaries was −13 per cent, of food industries −39 per cent, and of non-food manufacturing industries −45 per cent. This resulted from a negative escalation effect of export duties: they were lower on crude primaries than on processed primaries. Primary industries, which are defined in the Malaysian statistics as those without any processing, sold their products predominantly on the domestic market, namely to the primary processing industries. In 1970 only two of them had export shares greater than 10 per cent.

Of the fourteen industries within the food manufacturing sector, one-half in 1970 had export shares lower than 10 per cent. Their export rates are therefore shown with an asterisk in Table III.11. Of the remaining industries, industry 315 (vegetable and animal oils and fats), had the lowest ERP (−62 per cent), resulting from the export duty on palm oil. Cocoa, chocolate and sugar confectionery had an ERP of −45 per cent. This ERP is, however, rather meaningless as the nominal import tariff on domestically sold products created such a big price difference between domestically sold and exported products that the calculated export value-added ratio fell under the wage ratio to only 0.004 per cent. The same is true for tobacco products where the calculated value-added ratio of exports was even negative.

In 1970, of the 39 non-food industries, 17 had export shares lower than 10 per cent. The ERPs of the remaining industries lay predominantly in the range of −10 to +10 per cent. Industries 331, spinning, weaving, etc., of textiles, and 355, chemical products, had negative export value-added ratios which means that the estimated realized tariffs were over-stated.

Two industries were found to have ERPs significantly lower than −10 per cent: non-ferrous metal basic industries (−67 per cent) and rubber processing (−61 per cent). These negative rates arose from the export duties on the output of these industries.[56] It might, however, be misleading to present these rates, as the prices of latex and tin ore are not independent from the prices of rubber and tin, though latex and tin ore are tradables.

J. EFFECTIVE PROTECTION—BOGUS OR REALITY: A COMPARISON OF ALTERNATIVE STUDIES

Hardly anyone would object to the proposition of the theory of effective protection that the impact of tariffs and other trade restrictions on an industry's activity can only be properly assessed if the restrictions on the output commodities as well as those on the input commodities are taken into account. However, to accept this proposition is fairly easy, but to quantify the impact in a generally satisfactory way is much more difficult. This lesson is borne out by the vast number of empirical protection studies which have been produced over the last decade and is reconfirmed by the various studies for Malaysia mentioned above. A quick glance at the results of these investigations suffices to confirm that most of the effective rates calculated by the different authors are hardly consistent with each other. As Shepherd rightly remarked in a recent paper:[57]

> While we have no quarrel with the conclusions of all the recent effective protection studies for Malaysia ... we do not have equal confidence in the estimates of effective protection for individual industries. Indeed, except for the EPU and von Rabenau studies... industry rankings of effective protection rates calculated in the studies bear almost no discernible correlation.

The reasons which are responsible for this rather disturbing conclusion have to be sought, first, in differing methodologies, second, in incomplete information on government measures and their exact application and, third, in varying assumptions about input structures. Except for the first, the authors can hardly be blamed for omissions, as precise information on government measures is hard to come by and the most detailed—and probably most accurate—statistics on input structures, the 1970 input-output table, was previously not generally accessible. On all these accounts the von Rabenau and the almost similar EPU studies are probably the least defective. However, we cannot rely exclusively on the von Rabenau study. Its results are most likely to be affected by the recent acceleration of tariff making. In order to see whether effective protection had an impact on the pattern of industrialization which emerged in Malaysia it is also desirable to have an idea on the structure of protection as it existed at some point of time in the early 1960s. This kind of information, can, however, only be obtained from the other studies.

With regard to the methodology, the studies by Power and Ariff are similar. Neither author takes into account excise taxes, but basically only tariffs. The redundancy problem is not considered at all and prohibitive tariffs are only assumed to have been in existence in two industries in each of the years studied. Power identified such industries as tobacco products and refined coconut oil in 1963, and joineries and soft drinks in 1965, whereas Ariff assumed prohibitive tariffs for tobacco products and soft drinks in 1970. Though we do not agree with the proposition of Edwards[58] that '... in the Malaysian context, *all* tariffs are likely to be prohibitive, ...', it appears very unlikely that so few tariffs should have been prohibitive. Tariff averages were calculated by Power[59] using total supply of importables as weights, whereas with Ariff[60] the output shares were the weights. Neither Power nor Ariff allowed for tariff exemptions and Commonwealth preferences which—contrary to a statement by Power (p. 209)—were still quite widespread in 1963. Non-traded inputs were treated by Edwards according to the Balassa approach, EPU employed the Corden approach (non-traded inputs are included in value added), while the other authors used both approaches. Except for EPU and von Rabenau, none of the authors calculated separate ERPs for domestic sales and exports.

Edwards strongly criticizes Power for basing his calculations on too few direct price comparisons. It is true that in a competitive economy the domestic price should, apart from transport costs, differ from the world market price only by the differential created by trade restrictions, provided the imported and the domestically-produced goods are absolutely identical. In those cases where this assumption of homogeneity is fulfilled, direct price comparisons can therefore adequately indicate the size of protection. The assumption of homogeneity implies, however, that one cannot reasonably compare motor vehicles with motor vehicles, or lorries with lorries, or even passenger cars with passenger cars, but only motor vehicles, lorries, or cars of a precisely specified type. As the latter is usually impossible to do for the entire commodity spectrum, most authors confine themselves to only a few price comparisons and try to check the effectiveness of the trade restrictions by such procedures as have been described above. Edwards, however, discards this approach and compares, instead, unit values of domestic production with import unit values. It is quite obvious that such a procedure does not accord with the theoretical considerations suggesting price comparisons. Furthermore, it appears not unlikely that it systematically pushes the protection rates upwards. A quite frequently observed trade and production pattern of developing countries is to import semi-finished goods and to add the finishing touches by domestic industries before the commodities are sold in the domestic market. Where this takes place, unit values of imports must by necessity be lower than those of domestic production, even if imports are completely unrestricted. Thus it is not surprising that Edwards' rates tend to be generally higher than those calculated by the other authors. For fairly aggregated industries with a wide range of heterogeneous products, like textiles or rubber products, unit value comparisons are, of course, even more dubious, as one eventually compares unit values of entirely different commodity bundles.

As far as the input structures are concerned, Power, Ariff, and Edwards used basically the same sources, namely the manufacturing censuses and surveys. Only von Rabenau and EPU were able to work with the new and detailed 1970 input-output table. Von Rabenau further cross-checked the input-output table with the 1970 survey and adjusted the value-added ratios in a number of cases. The ERPs were then calculated with the adjusted and, for control purposes, also with the non-adjusted input-output table. In order to identify redundant and prohibitive tariffs additional information was necessary, some of which was not readily available. Apparently, Edwards could not always obtain the full or the right information as the detailed industry data in the appendix of his report reveal. For breweries, for instance, he assumes that the tariff was effective for only a small portion of the imports, because according to his calculation the notional tariff revenue (imports multiplied by the listed duty) of M$9.9 million in 1969 substantially exceeded the figure he states as the actual tariff revenue (M$1.5 million). However, unpublished Treasury statistics show that the actual revenue was M$7.7 million and the taxed portion of imports consequently much higher. The ERP for breweries calculated by Edwards is therefore far too low.

The coverage in terms of value added differs substantially from study to study. Compared with the value added of the manufacturing sector as stated in the National Accounts, only the EPU and the von Rabenau study covered about 100 per cent of manufacturing. The coverage of the Power study was 53 per cent for 1963 and 43 per cent for 1965. Edwards covered 54 per cent in 1962, 61 per cent in 1966, 75 per cent in 1969, and 72 per cent in 1972, whereas Ariff achieved a coverage of 78 per cent in 1970. This varying coverage alone makes it difficult to compare the results on an aggregated level.

Bearing in mind the differences in approach and data input, we have attempted to extract from the various studies those ERPs which according to our judgement were most likely effective in the mid-1960s. The rates which are shown in Table III.11 can, of course, be only rough orders of magnitude. The value-added structure used was that of the 1963 Census, as the surveys of 1964 to 1966 were less complete. The notations in brackets behind the rates indicate the source from which the respective rate is obtained. All rates shown are calculated according to the Balassa approach.

It was argued above that protection was not very substantial in Malaysia until about 1967. This proposition has also been expressed by Lim[61] and other authors who might have based their judgement *inter alia* on the study by Power. Edwards has challenged this hypothesis by pointing to his results which show an increase of the overall ERP of manufacturing from 15 per cent in 1962 to 45 per cent in 1966 and 55 per cent in 1972. Hence, he argues, protection increased most rapidly between 1962 and 1966, and at a slower pace until 1972. Looking at consumer goods and intermediate goods alone our rates shown in Table III.11 could be considered as a confirmation of this argument, as the aggregate rates of these two commodity categories are rather high at 42 and 25 per cent.

Nevertheless, there are several reasons why it appears difficult to accept Edwards argument. First, Power's study relates to the years 1963 and 1965, while Edwards' calculations for 1966 make use of the new tariff schedule issued in November 1966 which probably became effective only in 1967. Second, Edwards does not distinguish between revenue tariffs and protective tariffs. Though it cannot be denied that those tariffs which were originally introduced for revenue purposes also protected the respective industries, their strong impact on the aggregate ERPs clearly overstates the protective effect of the tariff system as a whole. Cases in question are the tariffs on tobacco products and malt liquors (breweries) among the consumer goods. Without these two industries, the ERP of consumer goods for the mid-1960s is 28 per cent instead of 42 per cent and the 1974 ERP of domestic sales comes down from 50 per cent to 35 per cent. Among the intermediates are rubber products which heavily influence the average rate. The high rate of this industry is largely due to the tariff on primary rubber exports which is clearly a revenue duty. If this industry is omitted, the ERP of intermediate goods is reduced from 25 to 6 per cent for the mid-1960s and from 37 to 23 per cent for 1974. Also among capital goods there are one or two industries which unduly influence the aggregate rate. Here, however, it is not so much a problem of specific duties for revenue purposes, but more a classification problem. The dividing line between intermediaries and capital goods is faint, and the distinction from consumer goods is not always clear-cut, as some of the industries produce capital goods as well as durable consumer goods. Examples for the first case are structural metal products and for the second, other electrical machinery. Omitting either of these two industries reduces the ERP of capital goods for the mid-1960s from 6 to 2 per cent. The 1974 ERP is, however, not much affected. Only the exclusion of structural metal products brings a moderate reduction from 28 to 24 per cent. Finally, it should be remembered that Edwards does not distinguish between protection of domestic sales and that of exports. The share in manufacturing of the industries whose exports were negatively protected declined, particularly during the first half of the 1960s. Hence, the increase of the ERP for total manufacturing between 1962 and 1966 is largely due to this structural change and not so much the result of increasing tariff rates.

A number of important though not unexpected facts come out very clearly from Table III.11. The ERPs show a pronounced cascaded structure at both points of time. Bearing in mind the qualifications made above, it can be said that on the domestic market the protection system is biased in favour of consumer goods and against intermediate and capital goods. However, most discriminated against are exports of primary-based industries. Though the export ERPs of the other industries have to be interpreted with care, as has been argued in section 2G, their generally low or even negative values nevertheless indicate that there is also a strong bias against manufactured exports in general. Among consumer goods are most of those industries where the tariff was probably prohibitive and consequently not fully utilized in 1974. It is therefore not absolutely certain that the protection of this industry group increased over the years. Apparently, the rise in protection concentrated on intermediate goods and, even more, on capital goods. It could well be that the data still understated this trend, as tariff exemptions for intermediate and capital goods were only taken into account in the calculations for 1974 but not in the earlier studies. The question whether this change in the structure of protection had an impact on the allocation of resources will be discussed in subsequent chapters.

3. OTHER INCENTIVES AND GOVERNMENT ASSISTANCE

Tax incentives and protection were the two pillars on which government policy towards industry rested. However, there were also a few other measures—most of them only recently introduced for the promotion of manufactured exports—which have been hardly explored up to now with regard to their costs and benefits. As for the benefits, we may draw some tentative conclusions from the HEX where the surveyed companies were asked to state the importance of governmental promotion measures for their export activity. Table III.12 shows how many per cent of the firms considered the individual measures as quite important or very important. The percentages are also given for those industries where 61 per cent or more of the firms—weighed or unweighed—considered the measure as either quite important or as very important.

It is interesting that only two types of measures—duty-free imports and the reimbursement of duties—which both raise the ERP, are widely acknowledged as important across the industries.[62] All other measures, including tax incentives, find much less approval and then only from a few industries. Four industries, grain milling, wood products, printing and publishing, and rubber products (which include rubber processing), did not attach much importance to any of the measures. Four other industries, animal feeds, tobacco products, furniture and fixtures, and professional equipment, did not reply to these questions because they considered them to be irrelevant for their own firms. In most cases this can probably be interpreted in the same way as if the firms had declared the measures as unimportant. Of these eight firms, five are engaged in the processing of agricultural raw materials. With the exception of professional equipment, they are all long established in Malaysia. It is quite obvious that they have a strong comparative advantage either because of their raw material intensity or due to special factors (e.g. language barrier in the case of printing).

The industry which showed greatest interest in the various incentives is the footwear industry. It is important to note that this industry includes only the relatively small leather footwear production, while the footwear most commonly used in Malaysia, rubber and plastic footwear, and wooden clogs, are classified under rubber products, plastic products, and wood products respectively. Hence, this is an industry whose market is limited to the relatively small high-income group of the population if it does not succeed in tapping foreign markets. Its interest in export incentives is therefore quite understandable. Also very interested in the incentives are the industries producing plastic products and textiles. For the latter this is obvious because large parts of it were established for the purpose of export production. The plastic products industry is relatively young in Malaysia, but nevertheless has become very much export oriented recently. The firms in the sample increased their export share in total sales from zero in 1968 to 12.6 per cent in 1970, and 22 per cent in 1973. Apparently, this industry sees further growth potential in export expansion and is therefore keen on government export support. A similar argument holds good for the industries producing glass products, clothing, and electrical machinery, which rank next in terms of revealed interest in governmental export incentives.

In order to see the relative importance attached to the various incentives by all firms together, it is convenient to add the percentages of firms which checked 'quite important' with those which checked 'very important'. Though the weighed percentages are generally lower than the unweighed, because the large establishments give less weight to the incentives than the small ones, the rankings are approximately the same. Duty-free imports and reimbursement of duties are valued substantially higher than the three next ranking measures, which are the tax relief for the processing of raw material,[63] the export allowance,[64] and the accelerated depreciation allowance (ADA). In the sixth rank comes information provided by government agencies, and only in the seventh pioneer status. The double deduction of export promotional expenses and governmental promotion missions sent abroad follow next with nearly equal weight attached to both. As for the remaining incentives, it is probably worthwhile to draw attention to the low ranking of

TABLE III.12

VALUATION OF GOVERNMENT PROMOTION MEASURES BY PRIVATE FIRMS

Promotion Measures	*Percentage of firms which consider measures as:*			
	quite important		*very important*	
	unweighed %	*weighed* %	*unweighed* %	*weighed* %
1. PIONEER STATUS				
All firms	4.8	2.2	27.5	15.5
Textiles	9.1	8.3	63.6	59.7
Footwear	0	0	50.0	68.2
Plastic products	0	0	83.3	92.6
Glass products	0	0	100.0	100.0
Electrical machinery	11.1	3.6	66.7	79.9
2. LABOUR UTILIZATION RELIEF				
All firms	13.8	7.5	9.0	5.4
Clothing	25.0	44.2	25.0	31.8
Footwear	50.0	68.2	0	0
Paper products	50.0	60.4	0	0
Glass products	100.0	100.0	0	0
3. SPECIAL INCENTIVES				
All firms	4.8	2.0	13.2	8.8
Footwear	0	0	50.0	68.2
Plastic products	16.7	18.5	50.0	59.1
Electrical machinery	0	0	55.6	77.9
4. TR* FOR RAW MATERIAL PROCESSING				
All firms	11.1	7.8	28.6	27.8
Textiles	0	0	54.5	71.6
Clothing	25.0	11.0	50.0	44.8
Footwear	0	0	100.0	100.0
Plastic products	16.7	7.4	83.3	92.6
Glass products	0	0	100.0	100.0
NM mineral products	16.7	0.9	33.3	76.3
Metal products	0	0	57.1	74.9
Machinery	50.0	74.5	0	0
5. ADA*				
All firms	20.6	12.8	15.9	10.7
Textiles	27.3	33.8	36.4	37.2
Footwear	50.0	68.2	0	0
Plastic products	33.3	25.9	50.0	59.1
Glass products	100.0	100.0	0	0
NM mineral products	33.3	6.3	33.3	76.3
Steel	66.7	81.5	0	0
6. EXPORT ALLOWANCE				
All firms	9.5	5.6	27.5	20.6
Clothing	25.0	11.0	75.0	89.0
Plastic products	33.3	25.9	50.0	59.1
Earthware	0	0	66.7	61.2
Steel	22.2	4.6	55.6	80.1
NF basic products	0	0	66.7	5.1
7. DOUBLE DEDUCTION				
All firms	9.0	7.2	14.8	9.1
Clothing	0	0	50.0	76.1
Footwear	0	0	50.0	68.2
Chemicals	20.0	81.0	20.0	6.5
8. FREE TRADE ZONE				
All firms	1.1	0.8	7.4	5.5

TABLE III.12 (continued)

Promotion Measures	Percentage of firms which consider measures as: quite important unweighed %	weighed %	very important unweighed %	weighed %
9. MANUFACTURING WAREHOUSE				
All firms	4.2	0.9	6.3	9.9
10. LOCATION ALLOWANCE				
All firms	11.6	8.3	9.5	4.6
Textiles	9.1	8.3	54.5	56.1
Chemicals	40.0	88.9	0	0
Transport equipment	25.0	61.8	0	0
11. PROMOTION MISSIONS				
All firms	12.7	6.5	10.1	10.6
Textiles	27.3	30.1	27.3	34.8
Footwear	50.0	68.2	0	0
12. DUTY FREE IMPORTS				
All firms	13.2	19.5	40.7	46.5
Food	15.8	23.7	42.1	52.6
Beverages	50.0	78.4	50.0	21.6
Textiles	27.5	36.3	63.6	55.3
Clothing	25.0	11.0	50.0	76.1
Leather products	100.0	100.0	0	0
Footwear	0	0	100.0	100.0
Chemical products	0	0	75.0	41.0
Petroleum products	50.0	99.6	0	0
Plastic products	16.7	7.4	66.7	77.7
Glass products	0	0	100.0	100.0
NM mineral products	16.7	5.4	33.3	88.5
Steel	0	0	77.8	79.0
NF basic products	0	0	66.7	95.7
Metal products	28.6	36.1	42.9	42.5
Electrical machinery	0	0	77.8	83.5
13. REIMBURSEMENT OF DUTIES				
All firms	14.3	12.7	32.3	45.9
Food	5.3	4.8	36.8	62.4
Beverages	50.0	78.4	50.0	21.6
Textiles	27.3	18.5	36.4	34.0
Footwear	0	0	100.0	100.0
Petroleum products	0	0	50.0	99.6
Plastic products	0	0	66.7	66.5
Glass products	0	0	100.0	100.0
NM mineral products	16.7	5.4	33.3	72.3
NF basic products	0	0	66.7	95.7
Metal products	42.9	70.9	14.3	4.0
Machinery	16.7	24.3	50.0	65.5
Electrical machinery	22.2	14.0	33.3	48.7
14. GOVERNMENT INFORMATION				
All firms	21.7	13.3	10.1	10.9
Footwear	0	0	50.0	68.2
Plastic products	66.7	81.2	16.7	11.4
Metal products	42.9	40.1	28.6	38.5

Source: L. Hoffmann, *Interim Report* ..., op. cit., Table 17.

Note: For the weighed percentages gross output data were taken as weights.
TR* = Tax Rebates.
ADA* = Accelerated Depreciation Allowances.

free trade zones and licensed manufacturing warehouses[65] which have aroused so much discussion over the recent years. Our findings suggest that their importance for the attraction of new investment, especially from foreign sources, has probably been overstated in the debate. In Malaysia not even one industry gave these incentives much weight.

1. The Federation comprised the area now called West Malaysia or Peninsular Malaysia.

2. Federation of Malaya, *Report of the Industrial Development Working Party*, Kuala Lumpur, Government Printers, 1957.

3. International Bank for Reconstruction and Development (IBRD), *Report on the Economic Development of Malaya*, Baltimore, 1955.

4. See the *Report*, pp. 37–8, and for a discussion T. N. Tan, 'Import Substitution and Structural Change in the West Malaysian Manufacturing Sector 1959–1970', University of Malaya, Kuala Lumpur, 1973 (mimeo), pp. 32ff.

5. The Table includes companies whose pioneer status has already expired.

6. It may be added that in order to apply for pioneer status the applicants had to complete many detailed forms. This required familiarity with accounting practices and proper investment planning which many of the smaller local entrepreneurs did not possess. Furthermore, these entrepreneurs, mostly Chinese, had to deal with a number of only loosely co-ordinated Malay-dominated Government institutions. There were language difficulties as well as reluctance to apply, especially during periods of political tension, as for instance during and after the 1969 racial riots.

7. These shares are not shown in the table.

8. Department of Statistics, *Census of Manufacturing Industries–West Malaysia, 1968.*

9. This 12 per cent profit rate is the average rate for the years 1963–6. It was very stable during that time, varying by less than one percentage point.

10. 10 per cent was roughly the average rate in the manufacturing sector from 1968 onwards, when capital stock data became available for the first time.

11. Ringgit is the official denomination of the Malaysian currency, also called the Malaysian dollar.

12. Economic Planning Unit, 'Tax Incentives for Industry', mimeo draft, Kuala Lumpur, December 1974.

13. To these are added service cost of non-redundant investment minus tax gain on non-redundant investment after the end of the tax holiday.

14. It could be argued that only the value added additionally created by the incentives should be taken into account. However, the problem here is that the redundancy rate has again to be determined beforehand. Secondly, it is more reasonable to balance total costs against total value added rather than against the value-added increment.

15. Research & Forecasts Inc. (New York), 'A Survey of US-Investment in Southeast Asia', Kuala Lumpur, 1971 (mimeo).

16. Under the assumption that cost and benefits just balance over the first two years and that the third year brings a net benefit of about half the value of all subsequent years we have:

$$T_1 = \frac{2(1+r)^3 r}{0.45(2+r)} \qquad \text{and} \qquad T_2 = \frac{(1-0.069)\,2\,(1+r)^3 r}{r + 2r \sum_{n=1}^{3} \frac{1}{(1+r)^n} + \frac{2 \cdot 0.45}{(1+r)^3}}$$

where r is the internal rate of return after tax, 0.45 the tax rate and 0.069 the present value at 10 per cent of delaying the start of depreciation on each dollar of capital expenditure until the end of a six-year tax holiday.

17. W. B. Reddaway in collaboration with S. J. Potter and C. T. Taylor, 'Effects of

UK Direct Investment Overseas, Final Report', *Survey of Current Business*, various issues.

18. See L. Hoffmann, 'Interim Report on Methodology and Results of the HEX', Regensburg, 1974 (mimeo).

19. M. Casanegra de Jantscher, 'Steueroasen—Pro und Contra', Finanzierung und Entwicklung (*Finance and Development*), Vol. 13, No. 1 (March 1976), p. 31.

20. D. S. Pearson, 'Review of Project Processing Procedures and Policies', FIDA, Kuala Lumpur, 1970 (mimeo).

21. D. Lim, *Economic Growth and Development in West Malaysia, 1947–1970*, Kuala Lumpur, 1973, p. 270.

22. See for instance T. N. Tan, op. cit., p. 250.

23. IBRD, *Report on the Economic Aspects of Malaysia*, p. 111.

24. FIDA, 'Tariffs: Structure for an Efficient Utilization of Resources for 1971–1975', Kuala Lumpur, 1970 (mimeo).

25. FIDA, Tariffs ..., pp. 7–8.

26. J. Power, 'The Structure of Protection in West Malaysia', in *The Structure of Protection in Developing Countries*, ed. by B. Balassa and Associates, Baltimore, 1971, p. 219.

27. V. K. Panchamukhi, 'Effective Protection and Intraregional Trade—A Case Study of Malaysia', ECAFE Secretariat, 1972 (mimeo).

28. K. A. M. Ariff, 'Protection for Manufactures in Peninsular Malaysia', *Hitotsubashi Journal of Economics*, Vol. 15, No. 2 (1975), pp. 41–53.

29. C. Edwards, 'Protection, Profits and Policy—An Analysis of Industrialization in Malaysia', University of East Anglia, Norwich, July 1975 (draft report, mimeo).

30. K. von Rabenau, 'Trade Policies and Industrialization in a Developing Country: The Case of West Malaysia', *Malayan Economic Review*, Vol. XXI, No. 1, April 1976.

31. EPU, 'Effective Protection and Industrialization Policies, April 1975' (mimeo).

32. With the permission of von Rabenau, deliberate use is made in the following of the cited paper and unpublished computer print-outs without further quotation.

33. Department of Statistics, *Monthly Statistics of External Trade, Peninsular Malaysia*, March 1973, Kuala Lumpur.

34. On the problem of tariff averaging see K. von Rabenau, 'Empirical Problems of Effective Rates of Protection: An Evaluation of Past Experience', *The Pakistan Development Review*, Vol. XIV, No. 2, Summer 1975, pp. 162–3.

35. Power, op. cit., p. 212. Unfortunately, Power did not describe the averaging procedure used for the calculation of industry tariffs.

36. The second rate is the Commonwealth preferential rate.

37. Malayan Trade Classification and Federation of Malaya Customs Tariff—effective 1 January 1962.

38. Malaysia Trade Classification and Customs Tariff, 1966—effective 1 November 1966.

39. Calculated from Table 9.5 of Power's study using 1963 output data as weights and excluding commodities listed under exports.

40. See U. Hiemenz and K. von Rabenau, *Effektive Protektion*, Tubingen: Mohr und Siebeck, 1973, p. 163. This rate includes tariffs on mining products.

41. See Balassa and Associates, op. cit., pp. 123, 162, 195, 249, 279. It should be noted that the above-stated rates are adjusted neither for redundancy nor overvaluation of currency.

42. The HEX revealed that 30.1 per cent of the surveyed companies are forced to sell their products on foreign markets cheaper than on the domestic market. L. Hoffmann, 'Interim Report on Methodology and Results of the HEX', op. cit., Table 20.

43. An underlying assumption here is that input cost structures of domestic and foreign sales are approximately equal. This should be ensured if the first two conditions are fulfilled.

44. The Treasury of Malaysia, 'Sales Tax in Malaysia', Kuala Lumpur, 1972, pp. 4, 6.

45. Malaysian excises are predominantly specific taxes. They were transformed into *ad valorem* taxes on the basis of c.i.f. import unit values and averaged by the use of domestic sales weights.

46. Panchamukhi, op. cit.

47. See The Treasury of Malaysia, 'Economic Report 1974–75', Kuala Lumpur, November 1974.

48. The following section is considered to spell out the methodology in this study. For a general introduction to the theory of effective protection see W. M. Corden, 'The Structure of a Tariff System and the Effective Protective Rate', *Journal of Political Economy*, Vol. 74, June 1966, pp. 221–37, and W. Ethier, 'General Equilibrium Theory and the Concept of Effective Protection', in H. G. Grubel and H. G. Johnson (eds.), *Effective Tariff Protection*, Geneva, 1971, pp. 17–43. The empirical problems are more explicitly dealt with in Kurt von Rabenau, 'Empirical Problems of Effective Rates of Protection', op. cit.

49. For a detailed description and discussion of the formula see von Rabenau, 'Empirical Problems of Effective Rates of Protection'.

50. Only the traded inputs in the non-traded inputs of j are considered.

51. Corden, op. cit.

52. Often tariffs on raw materials have to be paid first and are reimbursed later. This information was given by officials of FIDA and the Treasury. However, according to the HEX, a number of exporters are complaining about import duties on imported raw materials. It may be that they find the application procedure too cumbersome or the reimbursement too slow.

53. The corresponding industries are marked with a W in Table III.11.

54. This information was provided by FIDA.

55. It is to be noted that tariff exemptions or the reimbursement of import duties increase the ERPs for all benefiting industries, irrespective of whether they are import-substituting or export-oriented industries.

56. It should be noted that the export duty on tin is actually imposed on tin ore. As only about 1 per cent of the tin ore production is exported, this duty was treated as an export duty on smelted tin.

57. G. Shepherd, 'Industrial Growth During the First and Second Malaysian Plans', IBRD, 1975 (mimeo, draft), p. 29.

58. Edwards, op. cit., p. 93. Edwards justifies this statement by pointing to the low transport costs within Malaysia and the alleged practice of the government of imposing tariffs until the domestic manufacturer supplies the whole of the domestic market. The latter could be misunderstood. More correctly one should say that the government rarely repealed a tariff, irrespective of the market share of domestic producers. The first argument implicitly assumes linear homogeneous production functions, a hypothesis which is refuted by our calculations presented in the next chapter. It further assumes complete homogeneity of imported and domestically-produced goods, which is obviously quite unrealistic.

59. Power, op. cit., p. 218.

60. Ariff, op. cit., p. 45.

61. Lim, *Economic Growth and Development in West Malaysia*, p. 225; Kasper, op. cit., p. 27.

62. It should be noted that the HEX tables are on a higher aggregation level than the ERP data discussed in the previous section. See also pp. 78–9, above.

63. To encourage the processing of domestic raw materials, including agricultural produce, the government provides for an additional one year tax relief or an additional investment tax credit of 5 per cent for companies achieving the specified local content of at least 50 per cent. For this purpose certain products based on the utilization of domestic raw materials have been gazetted as 'priority' products.

64. According to the export allowance the following amount is deductible for income tax purposes:

$$\frac{\text{Value of exports in assessment year} - \text{Average export of three preceding years}}{\text{Gross sales in assessment year}} \times \text{M\$0.20}$$

65. A variation of the Free Trade Zone is the provision of Licensed Manufacturing Warehouses, whereby factories producing goods wholly for export, but not located within Free Trade Zone Areas, can still enjoy all the facilities accorded to factories in Free Trade Zones.

IV The Anatomy of Manufacturing in the Early 1970s[1]

It has been shown in the previous chapters that manufacturing grew rapidly during the 1960s and that the government used a number of policy instruments with varying emphasis to foster this growth. Whereas industrialization was promoted in the beginning in order to reduce the lopsided structure of the economy through diversification, in the later years, the government placed much more weight on employment creation and on the restructuring of society towards a more equal participation of all ethnic groups in the modern, non-agricultural sector of the economy.

When manufacturing growth began to spread to a larger variety of industries, this meant of necessity some substitution of previously imported commodities. But it is to be expected that the gradual policy shift from using mainly tax incentives as promotional devices to more protective practices has led to an acceleration of import substitution which, in some cases, may have exceeded what appears reasonable from a static efficiency point of view. We will come back to this question in the next chapter. However, one point is clear. In a country with a small domestic market, such as Malaysia, import substitution can be a means of growth for only a short period. When the possibilities for further import substitution are exhausted, the manufacturing growth rate cannot exceed that of domestic demand for such commodities, unless it is sustained by export expansion. Assume a real GDP growth rate of about 5 per cent, as was actually achieved in Malaysia during the 1960s, and an income elasticity for manufactures of, let us say, 1.5, then growth without export expansion is limited to an annual rate of about 7.5 per cent in the long run. With a 3 per cent population growth, this is neither a sufficient contribution of the economy's most dynamic sector to the economic well-being of the population nor can it help very much to achieve the policy objectives. As roughly half the manufacturing growth is usually due to increases in labour productivity, manufacturing employment would grow by little more than the population growth rate. Employment in the manufacturing sector is still small in absolute terms and such a low growth rate would therefore hardly contribute to a reduction of unemployment. It also leaves no room for giving those groups of the population, until now predominantly engaged in the traditional sector, a chance for greater participation in the modern sector, as postulated by the government.

Apparently, the government began to realize this problem towards the end of the 1960s. In the Second Malaysia Plan the government for the first time expressed its commitment to the encouragement and active promotion of manufactured exports and the domestic production contributing to it. In the light of this interdependent set of policy objectives, i.e. growth, employment creation, restructuring of society, and export expansion, we will examine the anatomy of the manufacturing sector as it emerged from the 1960s.

I. SCALE ECONOMIES

Established theorems of the theory of international trade state that, with constant or decreasing returns to scale, a country's optimal pattern of production and trade is determined by its factor endowment. Given certain domestic and foreign demand conditions, the ranking of industries according to their factor intensities indicates the product-mix a country should produce under a free trade régime. With increasing returns to scale, this conclusion is not valid any more, as Matthews[2] first demonstrated. Cost reductions through scale economies can swamp a country's initial disadvantage in the production of certain commodities. Many different industry rankings and consequently multiple equilibria with widely differing patterns of production and trade are possible. The actual pattern is principally indeterminate and depends basically on historical accidents which can originate from or at least be influenced by policy measures. Hence, the knowledge of whether and in which industries scale economies exist becomes of paramount importance for policy makers.

In this section we present and discuss estimates of scale elasticities for Malaysia's manufacturing industries. The estimates were undertaken in order to see whether Malaysia may opt between alternative industrialization patterns, without recourse to a continuation and, eventually, further acceleration of trade restrictions. In some ways, scale economies are of greater strategic significance for small countries than for large ones. Limited resources and a small domestic market make a small country more dependent on foreign trade than a large one. However, if certain lines of production are governed by scale economies, a small country has either to abstain from the production of those commodities, or it has to develop a substantial export drive in order to realize the scale economies. The estimates presented may be considered quite reliable. They are based on establishment data for fairly homogeneous industries and, therefore, avoid most of the usual shortcomings resulting from aggregation.

A. THE DATA

The data underlying the statistics presented below were collected by the Malaysian Department of Statistics for its 1970 Survey of Manufacturing Industries, West Malaysia. Of the 3,192 companies surveyed,[3] about 2,750 were included in the evaluation. The rest belonged to small industries for which calculations seemed meaningless from a methodological point of view. For reasons of confidentiality, the basic calculations were done by the Department of Statistics with the assistance of the authors.

The information evaluated covers gross value of output, cost of materials consumed, full-time employment, value of fixed assets, and salary and wage payments.[4] The data were taken as supplied by the respondents. This of course involves some errors. However, because of the size of the sample, it can be expected that most errors cancel out and that the basic trends are not obscured. The only exception is probably the data on fixed assets since depreciation mostly does not correctly reflect the wear and tear of equipment. As long as all companies overstate depreciation and therefore understate the value of their assets by more or less the same percentage, this does not distort our analysis.[5] The basic statistical parameters, like the coefficients of regression and correlation, would remain unaffected. Only the absolute values would be biased downwards, a fact that should be kept in mind if the sample statistics are compared with data from other sources.

B. THE ESTIMATION PROCEDURE

Usually, the proper estimation of scale economies suffers from data insufficiencies. Where only time series are available, changes in capital utilization over time and technical progress obscure the scale effect. In the absence of establishment data, cross-section estimates have to rely on regionally disaggregated industry data. In this case, there may not be enough regions to provide statistically significant estimates, or the commodity composition of the industries may differ systematically between regions. The cross-section estimates from establishment data discussed here avoid these shortcomings as they are based on sufficient numbers of observations and the low level of aggregation guarantees a fairly homogeneous product mix within each industry.

Two different estimation procedures were employed. The first starts from the familiar Cobb-Douglas production function and obtains the scale elasticity (ν) as the sum of the output elasticities of labour (α) and capital (β):

(1) $\nu = \alpha + \beta$

where α and β are estimated from:

(2) $\ln V = \gamma + \alpha \ln L + \beta \ln C.$[6]

The second approach starts from the non-linear homogeneous CES-production function. The scale elasticity is estimated directly from the following equation:

$$(3) \quad \ln V = \ln \gamma + \nu \ln L + \nu\delta \ln \frac{C}{L} - \frac{\rho\nu\delta(1-\delta)}{2} \left(\ln \frac{C}{L}\right)^2$$

which is obtained through a linearization of the logarithmic form of the CES-function.[7]

C. THE ESTIMATED ELASTICITIES

The two approaches produce in our sample remarkably similar estimates of the scale elasticity. This suggests on the one hand that the estimated elasticities can be considered as fairly reliable, and on the other that equation (2) is for most industries a sufficient description of the relationship between primary factors and value added.[8]

Tables IV.1a, b, and c show the scale elasticities for industries with increasing, constant, and decreasing returns to scale respectively. The close similarity of the estimates is supported by the following regression which was calculated for the two columns of Tables IV.1a, b, and c:

$$(4) \quad \nu_{KMENTA} = \underset{\begin{pmatrix}-0.1346\\ 0.0368\end{pmatrix}}{-0.0489} + \underset{\begin{pmatrix}0.9514\\ 1.1182\end{pmatrix}}{1.0348}\ \nu_{CDF} \qquad R^2 = 0.92$$

The constant term in (4) is close to zero and the gradient not significantly different from 1.[9] The two series of scale elasticities can therefore be considered as equivalent.

From the tables it is immediately clear that the majority of manufacturing industries in Malaysia operates under increasing returns to scale. The common proposition of traditional trade theory that constant or decreasing returns to scale are the rule cannot apparently be accepted for Malaysia. Thirty-one out of the 55 industries show increasing returns, only 6 can be considered as having constant returns, while the remaining 18 operate under decreasing returns. There are a few cases where the classification according to these three categories is ambiguous, because one elasticity value is larger while the other is smaller than one. However, this does not affect the general impression that increasing returns are more common than constant or decreasing returns.

D. SCALE ELASTICITY AND ESTABLISHMENT SIZE

A well-known hypothesis states that increasing returns appear predominantly in big companies which can establish a more efficient division and organization of labour than small companies.[10] This argument has led to the quite common proposition that scale economies typically occur in industries where the average size of the establishments is large. The general validity of this proposition is, however, dubious. First, it is obvious that what is a large establishment in one industry need not be a large one in another. If a large textile company is compared with a small oil refinery, the first may be found to realize scale economies while the second does not, though the textile company is absolutely smaller than the refinery. Second, measuring size in terms of average

TABLE IV.1a

INDUSTRIES WITH INCREASING RETURNS TO SCALE, 1970

No.	M.I.C.	Industry	ν_{CDF}	ν_{KMENTA}
34	4191	Soaps, washing & cleaning compounds	1.494	1.484
7	3055	Large rice mills	1.339	1.346
15	3140	Soft drinks & carbonated beverages	1.321	1.310
31	4111/2/3	Compressed liquefied gases, industrial chemicals & fertilizers	1.314	1.273
4	3021/9	Dairy products	1.280	1.207
35	4192	Medicinal & pharmaceutical products	1.256	1.253
50	4739/99	Radio communications, electrical equipment manufacturing & repairs	1.225	1.157
14	3098	Prepared animal feeds	1.213	1.212
2	1122	Rubber smokehouses off-estates	1.193	1.144
47	4569	Other stamped, pressed, coated & miscellaneous metal products	1.161	1.159
43	4520	Architectural metal products	1.161	1.160
26	3613	Metal household furniture	1.152	1.153
16	3200	Tobacco products	1.145	1.060
10	3080	Cocoa, chocolate & confectionery	1.143	1.144
39	4350	Cement & concrete products	1.141	1.147
36	4194	Perfumes, cosmetics & toiletries	1.111	1.000
29	3800	Printing, publishing & allied industries	1.110	1.094
38	4330	Pottery, china & earthenware	1.103	0.844
52	4831/2	Motor vehicle bodies & assembling	1.088	1.038
33	4130	Paints, varnishes and lacquers	1.082	1.084
8	3061	Biscuit manufacturing	1.079	1.101
49	4630	General engineering & machinery repairs	1.069	1.082
27	3721	Paper boxes, bags and containers	1.064	1.062
46	4563	Brass, copper, pewter & aluminium products	1.058	1.063
17	3300	Textile manufacturing	1.055	1.059
25	3611	Household furniture of wood or unstated materials	1.054	1.051
21	3511	Sawmills	1.052	1.061
45	4561	Tin cans & metal boxes	1.048	1.043
3	1331	Crude coconut oil mills off-estates	1.046	1.050
44	4530	Wire and wire products	1.029	1.145
42	4510	Fabricated structural shapes	1.021	1.022

Source: Department of Statistics, Kuala Lumpur, *Survey of Manufacturing Industries*, 1970.

TABLE IV.1b

INDUSTRIES WITH CONSTANT RETURNS TO SCALE, 1970

No.	M.I.C.	Industry	ν_{CDF}	ν_{KMENTA}
48	4623	Industrial machinery and parts	1.006	1.008
32	4121/9	Vegetable and animal oils and fats	1.005	1.005
6	3054	Sago & tapioca	1.002	1.009
40	4410/29	Primary iron & steel milling & steel shapes	0.992	1.011
12	3096	Coffee factories	0.978	1.010
22	3512	Plywood & particle board mills	0.934	1.163

TABLE IV.1c

INDUSTRIES WITH DECREASING RETURNS TO SCALE, 1970

No.	*M.I.C.*	*Industry*	ν_{CDF}	ν_{KMENTA}
9	3062	Bakery products	0.967	0.966
54	4851/2	Manufacture & assembly of bicycles, trishaws, parts & accessories	0.943	0.888
30	4010/90	Rubber products	0.911	0.888
37	4310	Structural clay products	0.900	0.902
55	4940	Plastic products	0.887	0.893
5	3032	Pickles & sauces	0.869	0.867
18	3411	Footwear, other than rubber & wooden	0.869	0.876
51	4811/2	Shipbuilding, boatbuilding & repairs	0.853	0.894
1	1121/3	Rubber remilling & latex processing off-estates	0.843	0.840
19	3432	Clothing factories	0.816	0.806
41	4421	Iron foundries	0.809	0.795
24	3531	Wooden boxes, cases & crates	0.762	0.611
53	4834	Motor vehicle parts & accessories	0.709	0.709
23	3513	Planing mills, window & door mills, joinery works	0.637	0.636
28	3729	Articles of paper n.e.c.	0.611	0.640
20	3439/40	Miscellaneous wearing apparel and made-up textiles	0.580	0.575
13	3097	Ice factories	0.423	0.411
11	3091	Meehoon, noodles & related products	0.300	0.037

Source: As per Table IV.1a.

output or employment makes the measure dependent on the degree of capital utilization, a problem of particular relevance in developing countries. Third, there is the more technical aspect that the establishments included in the sample of an industry may not cover that output range in which the (technically possible) scale economies materialize.

More reasons could be brought forward. However those mentioned may suffice to justify a test of the proposition. A first rough inspection of the data indeed gives the impression that large and medium-sized establishments are more frequently encountered among the industries with increasing rather than among those with decreasing returns. This impression is supported by a serial correlation over the fifty-five industries between size—measured by an industry's average value added—and scale elasticity which produces a significantly positive Spearman correlation coefficient of 0.50.[11] For Malaysia, it seems, therefore, to be generally true that scale economies are realized mainly in industries where the establishments are on average sufficiently large.

E. CAPITAL INTENSITY AS A DETERMINING FACTOR

If the result obtained in the previous paragraph is accepted, the question arises whether the coincidence of scale economies and big establishments also means that scale economies appear mainly in capital-intensive industries. Orthodox economic theory does not provide a cogent argument in favour of this proposition. But from empirical evidence it is well-known that size and capital intensity are frequently positively correlated. If this is so in our case, the industries with increasing returns to scale should also be rather capital intensive.

In order to test this hypothesis one has first to decide on an appropriate measure of capital intensity. Recent theoretical and empirical work leads to the conclusion that the simple capital-labour ratio obtained by relating the total value of capital to the total number of employees or man hours is, for certain purposes, an inadequate indicator as it neglects the human capital. If we relate scale economies—as Chamberlin does—to the degree of labour division and organization we probably can expect that scale economies are correlated with skills. Industries with high scale economies should therefore rank higher in terms of capital intensity if human capital is included—as in the Lary-measure—than if it is not.

i. *Three Measures*. These considerations suggest alternative tests with different indicators. The first indicator is the traditional capital-labour ratio:

$$(5) \quad \frac{C}{L} = \frac{\text{Value of fixed assets}}{\text{Number of paid full-time employees}}$$

The second is the Lary-measure which, according to Lary[12] incorporates human capital:

$$(6) \quad \frac{V}{L} = \frac{\text{Value added}}{\text{Number of paid full-time employees}}$$

The relationship between (5) and (6) is easy to establish by writing (6) as

$$(7) \quad \frac{V}{L} = \frac{V}{C} \cdot \frac{C}{L}$$

Apparently, the two measures will rank equally only if the capital productivity V/C is constant over time or is invariable between industries and can therefore be considered as a mere scale factor.

The Lary-measure may be interpreted in the following way. Given a certain state of technology, the capital productivity can differ between establishments for two reasons. Either the other factor, labour, varies in quantity or it varies in quality. The first would principally affect V/L only marginally, as a rise of V/C due to an increase in L is checked by a decrease of C/L. There remain therefore differences in the quality of labour which do not affect C/L, but V/C.[13]

A third measure may be constructed, following a recent suggestion by Morawetz.[14] He proposes a capital-labour ratio in which the various categories of capital and labour are weighed with accounting prices. As our data do not permit a disaggregation of labour and capital as postulated by Morawetz, we can only consider accounting prices for each factor as a whole. Without entering into extensive discussion on accounting prices, we will for the moment consider only the classical proposal that accounting prices should be determined according to allocative efficiency. This means that, in general, the accounting prices should equal the factors' marginal productivities. With this rule, capital intensity may be calculated as the ratio of the output elasticities of capital and labour which in turn are derived from production functions:[15]

(9) $K = \frac{\beta}{\alpha}$

(9) ranks an industry higher than (5) whenever the industry in question uses capital with a relatively high marginal productivity and labour with low marginal productivity. (9) reflects, therefore, the industries' specific relative scarcities of labour and capital.

ii. *Comparison of the Measures*. Table IV.2 shows the capital intensities according to the three measures for the 55 industries of Table IV.1. Though we are primarily interested in the relationship between scale economies and capital intensity, we may first go briefly over the different rankings of industries following the three measures. A quick look at the table reveals immediately that the rankings differ substantially. However, all three rankings are positively correlated with one another, though the correlations between β/α and C/L and between β/α and V/L are very low and statistically insignificant. If one assumes that a factor's marginal productivity varies positively with its quality, one could expect a higher correlation between β/α and V/L rather than be-

TABLE IV.2

CAPITAL INTENSITY BY INDUSTRY, 1970

No.	*M.I.C.*	*Industry*	C/L	V/L	$K = \beta/\alpha$
31	4111/3	Compressed, liquefied gases, chemicals and fertilizers	94.5862	22.3095	0.0699
52	4831/2	Motor vehicle bodies assembling	46.8608	3.8746	0.0636
40	4410/29	Primary iron & steel milling & steel basic shapes	34.2937	11.7412	0.5518
13	3097	Ice factories	18.4564	8.2230	0.1318
4	3021/29	Dairy products	16.3718	19.3194	0.7146
32	4121/29	Vegetable & animal oils & fats	13.3408	3.9873	0.2146
50	4739/99	Radio communications, electrical industrial mftgs. & repairs	12.8497	6.5591	0.0494
33	4130	Paints, varnishes & lacquers	11.3792	16.6819	1.5888
39	4350	Cement & concrete products	10.3078	8.6085	0.2343
36	4194	Perfumes, cosmetics & toiletries	10.1300	25.7005	1.1263
54	4851/2	Mftg. & assembly of bicycles, trishaws & parts	10.0376	7.8064	0.8537
51	4811/2	Shipbuilding, boatbuilding & repairs	10.0040	5.0632	0.3739
34	4191	Soaps, washing & cleansing compounds	9.1715	26.8833	0.2137
38	4330	Pottery, china & earthenware	9.0112	5.5576	0.0536
16	3200	Tobacco products	9.0066	21.5126	0.3697

TABLE IV.2 (continued)

No.	M.I.C.	Industry	C/L	V/L	$K = \beta/\alpha$
27	3721	Paper boxes, bags & containers	8.2757	6.4019	0.3756
42	4510	Fabricated structural shapes	8.0407	6.3461	0.2298
22	3512	Plywood & particle board mills	7.3384	3.2516	−0.0594
45	4561	Tin cans & metal boxes	7.1713	5.8639	0.5295
7	3055	Large rice mills	7.0157	8.0766	0.1907
14	3098	Prepared animal feeds	6.5185	10.0199	−0.1300
44	4530	Wire & wire products	6.4656	5.2822	0.4834
17	3300	Textiles	6.1480	3.3768	0.3101
15	3140	Soft drinks & carbonated beverages	5.8454	8.5071	0.3473
47	4569	Stamped, pressed, coated & misc. metal products	5.5568	5.3080	0.1723
30	4010/90	Rubber products	5.4494	6.0746	0.0275
3	1331	Crude coconut oil mills off-estates	5.0842	9.0200	0.2049
29	3800	Printing, publishing & allied industries	4.8824	6.6292	0.2015
55	4940	Plastic products	4.7662	3.3957	0.4354
46	4563	Brass, copper, pewter & aluminium products	4.5342	5.4129	0.1349
10	3080	Cocoa, chocolate & confectionery	4.3797	4.7018	0.2735
26	3613	Metal household furniture	4.3783	4.4826	0.1850
37	4310	Structural clay products	4.2565	3.2243	0.2094
1	1121/23	Rubber remilling & latex processing off-estates	3.7490	10.3145	0.4397
53	4834	Motor vehicle parts & accessories	3.7381	3.1627	0.4692
21	3511	Sawmills	3.7239	5.3587	0.1361
35	4192	Medicinal & pharmaceutical products	3.5231	9.8102	0.2399
2	1122	Rubber smokehouses off-estates	3.0770	5.0341	0.2006
43	4520	Architectural metal products	2.9489	6.0054	0.3220
12	3096	Coffee products	2.7376	4.3982	0.0490
20	3439/40	Miscellaneous wearing apparel & made-up textiles	2.6729	1.6669	0.5971
23	3513	Planing mills, window & door mills & joineries	2.6374	2.5564	−0.0288
5	3032	Pickles & sauces	2.6116	4.2613	0.0565
8	3061	Biscuit manufacturing	2.4388	3.0461	0.1735
28	3729	Articles of paper n.e.c.	2.3520	2.6606	0.3368
9	3062	Bakery products	2.3392	3.2130	0.2008
18	3411	Footwear, other than rubber & wooden	2.2442	3.0466	0.3349
6	3054	Sago & tapioca	2.1396	4.7689	0.0829
49	4630	General engineering & machinery repairs	1.7971	4.7362	0.1862
11	3091	Meehoon, noodles & related products	1.6385	2.3965	0.2018
25	3611	Household furniture of wood or unstated material	1.6032	3.4196	0.2875
48	4623	Industrial machinery & parts	1.5117	3.8147	0.1063
41	4421	Iron foundries	1.3810	3.0626	0.3897
24	3531	Wooden boxes, cases & crates	1.3493	2.6360	0.0460
19	3432	Clothing factories	0.8772	2.3621	0.6237

Source: As per Table IV.1a.

tween β/α and C/L. Though such a difference can in fact be observed, it is statistically insignificant. The Spearman correlation coefficient is in the first case 0.14 and in the second 0.12 (Table IV.3).

Assuming, as usually, a falling marginal productivity curve for capital, it may be said that a very low marginal productivity occurs when capital has been employed very extensively. A high marginal productivity of labour, on the other hand, may under a corresponding assumption reflect a rather low employment of labour[16] and/or the employment of highly skilled labour. If the β/α-ratio is very low compared to the C/L-ratio, it is quite unlikely that this can be explained entirely by the employment of highly skilled labour. In most cases the employment of too little labour on too much capital will be responsible for part of the rank difference between a low K-coefficient and a high C/L-ratio.[17]

This will definitely be the case if other indicators do not confirm that the industry in question is skill intensive. Following Lary, an indicator for skill intensity could be the wage rate. Our data show combinations of a high capital-labour ratio, a low K-coefficient and a low wage rate in the industries producing cement and concrete products (4350), pottery, china and earthenware products (4330), vegetable and animal oils and fats (4121/29), and ice (3097).[18] One may suspect therefore, that the aforementioned industries employ too little labour compared to their capital input.

It is interesting to note that deviations in the other direction—a low rank according to the C/L-ratio and a high rank according to the K-coefficient—are both less extreme and less frequent. One of the few examples of this kind is the miscellaneous wearing-apparel producing industry (3439/40). It therefore appears legitimate to conclude that the employment of too much labour on the given capital occurs less frequently than the alternative case.

iii. *Scale Economies and Capital Intensity*. Turning now to the relationship between scale economies and capital intensity, it can be inferred from Table IV.3 that industries with increasing returns to scale tend to be capital intensive whereas industries with decreasing returns are more labour intensive. This is particularly true if capital includes human capital. The correlation between the scale elasticity and the capital intensity is higher for the Lary-measure ($r_s = 0.64$) than for C/L ($r_s = 0.42$).

If economies of scale are positively correlated with capital intensity on the one hand and with firm size on the other, it follows that, on average, big companies should be more capital intensive than small ones. Table IV.3 shows that there is in fact a positive rank correlation between size and capital intensity. Here again the correlation is higher with the Lary-measure than with the capital-labour ratio.

Summing up, it can be said that, according to our estimates, the majority of West Malaysia's manufacturing industries operates under increasing returns to scale. The country's comparative advantage in

TABLE IV.3

MATRIX OF RANK CORRELATION COEFFICIENTS

	$\frac{V}{N}$	$\frac{C}{N}$	$\frac{L}{N}$	^{v}CDF	$\frac{C}{L}$	$\frac{V}{L}$	K	$\frac{L}{V}$	α	σ $ACMS$	σ $DIWAN$	σ VES
V/N	1	0.85 (11.80)	0.84 (11.09)	0.50 (4.19)	0.62 (5.75)	0.73 (7.74)				0.42 (3.35)		
C/N		1	0.74 (8.04)	0.34 (2.67)								
L/N			1	0.18 (1.34)								
^{v}CDF				1	0.42 (3.38)	0.64 (6.00)						
C/L					1	0.69 (6.92)	0.12 (0.89)			0.22 (1.68)		
V/L						1	0.14 (1.07)			0.33 (2.52)		
K							1					
L/V								1	−0.32 (−2.46)			
α									1			
σ ACMS										1	0.21 (1.57)	0.79 (9.29)
σ DIWAN											1	
σ VES												1

manufacturing production and trade is therefore not rigidly determined, but may be modelled by a carefully designed policy according to the national objectives. This freedom of choice has, however, its price. The scale economies can be realized only with relatively big and capital-intensive establishments. This contains the dangers of oligopolistic market structure and low employment generation capacity, whenever an industry confines itself to the domestic market. Neither danger should be underrated. Unemployment is already one of Malaysia's major socio-economic problems and oligopolistic supply tends to aggravate other similarly undesirable problems like uneven income distribution, high-cost production, and political influence of powerful economic interest groups, including foreign ones.

2. FACTOR SUBSTITUTION

We may now turn to a parameter which is important for an evaluation of the impact of industrial growth on employment and income distribution, the elasticity of substitution. Though the estimation of substitution elasticities has become a kind of standard routine in many empirical studies, it still poses substantial methodological problems. We do not intend to discuss these problems here, as this has been done extensively in the literature.[19] It may only be mentioned that our estimates which have been made on a fairly disaggregated level are likely to have a low aggregation bias. As small-scale establishments are not included in our sample the mis-specification bias should also not be too large.

The impact of the substitution elasticity (σ) upon the factor composition and the factor shares is well-known. Nevertheless, two problems may be spelt out briefly. In the process of growth with technical progress the labour absorption depends crucially on the substitution elasticity.[20] In the case of $\sigma = 1$ neither labour- nor capital-augmenting technical progress affects the labour intensity.[21] However, if $\sigma > 1$, a labour-augmenting progress increases the labour intensity and consequently the demand for labour while a capital-augmenting progress reduces the labour absorption. The reverse holds for $\sigma < 1$.

The second problem relates to the question whether the substitution elasticity provides a reliable measure of the change in income distribution due to factor price changes. It is argued below that estimated elasticities can be quite reliable in this respect, provided the proper estimation procedure has been chosen. They do not necessarily depend on specific assumptions of the marginal productivity theory of distribution, though the literature seems to convey this impression.

A. THE ESTIMATION PROCEDURE

Four alternative approaches were applied. The first has been used most frequently in the literature because it requires the least amount of information. The estimation equation as developed by Arrow, Chenery, Minhas and Solow[22] is:

(10) $\ln\left(\frac{V}{L}\right) = a + \sigma \ln\left(\frac{W}{L}\right)$

The second equation is a modified version of the one developed by Diwan:[23]

(11) $\ln\left(\frac{C}{L}\right) = b + \sigma \ln\left(\frac{W}{L}\right)$

The third is derived from the VES-function as stated by Lu and Fletscher:[24]

(12) $\ln\left(\frac{V}{L}\right) = c + d \ln\left(\frac{W}{L}\right) + e \ln\left(\frac{C}{L}\right)$

The fourth, finally, is equation (3) given above.

While in (10) and (11) the elasticity is estimated directly, for (12) and (3) it has to be calculated from the estimated parameters.[25] In the latter case the problem arises that minor estimation errors of the parameters may add up to a substantial error in the elasticity.[26] Another problem with (12) is that the two independent variables are those which are regressed on one another in (11). If (11) produces a good fit, the parameters of (12) must be unreliable because of intercorrelation between the independent variables. Finally, considering (11) and (12) as equivalent rests on the implicit assumption—inherent in our transformation—that the capital productivity is constant. This follows from the simple tautology in (7) above. If this assumption does not hold, (11) will have a downward or upward bias depending on whether the capital productivity (V/C) increases or decreases.

For the same reasons it is only equation (10) that estimates a σ which correctly indicates distribution changes due to factor price changes—whether we call this parameter a substitution elasticity or not. This is again easily demonstrated by a simple tautology:

(13) $$\frac{W}{V} = \frac{\frac{W}{L}}{\frac{V}{L}}$$

or in growth rates:

(14) $$\frac{\dot{W}}{V} \approx \frac{\dot{W}}{L} - \frac{\dot{V}}{L}$$

Apparently, the wage share in value added does not change if the labour productivity growth equals the growth of the wage rate and therefore $\sigma = 1$. If the estimated elasticity turns out to be greater than 1, the wage share in value added must increase, while it decreases if σ is smaller than 1. The σ estimated with (11) does not permit this interpretation, as an expansion of tautology (13) shows:

(15) $$\frac{W}{V} = \frac{\frac{W}{L}}{\frac{V}{C} \cdot \frac{C}{L}}$$

or in growth rates:

$$(16) \qquad \frac{\dot{W}}{V} \approx \frac{\dot{W}}{L} - \frac{\dot{V}}{C} - \frac{\dot{C}}{L}$$

For an analysis of the distributional impact of factor price changes we would have to assume again that the capital productivity is constant or we would have to correct the estimated σ according to the observed changes in capital productivity.

In conclusion it may be said that (10) probably produces quite reasonable estimates of σ, if distributional problems are to be analysed. The problems of collinearity posed by the other approaches are compounded by the fact that capital stock data are usually quite shaky and, most likely, even less reliable in developing countries where valuation and depreciation practices are frequently rather haphazard.

B. THE ESTIMATED SUBSTITUTION ELASTICITIES

The estimated values of the substitution elasticity are reproduced in Table IV.4. In view of the above-mentioned short-comings of the estimation procedures it is amazing that—apart from the Kmenta-approach—the alternative estimates do not produce substantially different results. The values obtained with equations (10) and (12) are remarkably similar. There are only few cases where these two estimates contradict each other with regard to the question whether the elasticity is greater or smaller than one.

Of the 55 industries, the majority 35 can be said to have an elasticity of less than 1, for 17 the elasticity is greater than 1 and only for 3 is it approximately equal to 1.[27] The impression that low substitution elasticities are more common in Malaysia's manufacturing industries than high ones is reinforced by the following considerations. Equation (10) has been derived from a linear homogeneous production function. It is implicitly assumed that productivity increases due to wage increases result only from the substitution process and not from a realization of scale economies. If scale economies are present this assumption is not valid and the estimated elasticity is biased upwards. As about half of the industries with substitution elasticities of greater than 1 operate under increasing returns to scale, it appears likely that the number of industries with a substitution elasticity of less than 1 is even greater.

It was mentioned above that the estimation equations have been derived under the assumption that the reward of a factor equals its marginal productivity. If this assumption does not hold, the substitution elasticity is biased again. From the estimation equations (10) and (11) it is immediately clear that the estimated elasticities are biased upwards if the wage is lower than its marginal productivity, and downwards if the reverse is true.

For Malaysia it can be shown that the wage is generally lower than the marginal productivity[28]—particularly in industries with increasing returns to scale—and that the estimated substitution elasticities are therefore biased upwards. This confirms the impression that the number of industries with an elasticity of less than 1 could even be greater.

These qualifications seem to be correct from a theoretical point of view. Of more practical importance is, however, the question whether the labour productivity (or capital intensity) increases at all to the measured extent and thereby reduces the labour absorption per unit of output (or capital). A politician may also be concerned about certain distributional changes that result from the wage increase. For all this, the elasticity as measured by (10)—without any qualification—is of interest.

We may summarize our findings as follows. The rather low substitution elasticities in Malaysia's manufacturing industries suggest that in most industries wage increases would not drastically affect employment. A caveat has, however, to be added immediately. Our statement is valid only for a given point of time and for a given range of technologies available at that time. It is quite possible that wage increases have some impact on the implementation of productivity-raising technologies. In time, the trade-off between wages and employment may therefore be higher. In view of the elastic supply of capital in Malaysia, it is reasonable that labour-augmenting technical progress is more frequently encountered than capital-augmenting progress. In this respect Malaysia would be at variance with what is generally assumed for developing countries. If this hypothesis is correct, the low elasticity of substitution in most industries would mean that the technical progress reduces the labour intensity and consequently the demand for labour. This would point to another trade-off between technical progress and employment. As far as the income distribution between labour and capital is concerned it seems that wage increases do not in most industries induce substitution of labour by capital to such an extent that the wage share is reduced. Apart from other factors which may influence the wage share, the limited substitution activity is more likely to act in favour of an increasing wage share.

C. SUBSTITUTION ELASTICITY, CAPITAL INTENSITY, AND ESTABLISHMENT SIZE

From time series data which are not reproduced here, one can observe for practically all industries in Malaysia an increase of capital intensity and average establishment size over time. This raises the question whether the substitution elasticity is likely to increase or decrease with increasing capital intensity and establishment size. If it increases, the rise in capital intensity and establishment size over time will probably accelerate. This would reduce the employment creation and add to the development of oligopolistic market structures. A rising substitution elasticity also would make it more difficult to increase the share of labour income.

i. *Rising Capital Intensity and Substitution.* With regard to the relationship between capital intensity and substitution elasticity, the following

TABLE IV.4

ELASTICITIES OF SUBSTITUTION BY INDUSTRY, 1970

No.	M.I.C.	Industry	σ_{ACMS}	σ_{DIWAN}	σ_{VES}	σ_{KMENTA}
47	4569	Stamped, pressed, coated & miscellaneous metal products	1.6207	−0.4658[a]	1.6646	1.0562
26	3613	Metal household furniture	1.5285	0.2647[a]	2.0617	1.4791
31	4111/13	Compressed, liquefied gases & industrial chemicals & fertilizers	1.5228	2.1736	1.5283	0.9522
20	3439/40	Miscellaneous wearing apparel & made-up textiles	1.3426	0.3010[a]	1.2137[a]	1.4102
38	4330	Pottery, china & earthenware	1.3213	−0.1914[a]	1.6642	0.9393
36	4194	Perfumes, cosmetics & toiletries	1.3089	1.0885	1.6263	0.9509
22	3512	Plywood & particle board mills	1.2891	0.2192[a]	0.9572[a]	0.9910
35	4192	Medical & pharmaceutical products	1.2417	1.0469	1.4973	0.8133
16	3200	Tobacco products	1.2305	1.7834	1.1552	0.8931
40	4410/29	Primary iron & steel milling & steel basic shapes	1.1978	2.9100	0.2263	1.1355
1	1121/23	Rubber remilling & latex processing off-estates	1.1746	0.9160	1.2627	0.9764
34	4191	Soaps, washing & cleaning compounds	1.1217	1.0615	1.1462	0.9557
11	3091	Meehoon, noodles & related products	1.0700	0.7293[a]	1.2140	1.0325[c]
6	3054	Sago & tapioca factories	1.0583	1.3253	1.0569[b]	0.8178
30	4010/90	Rubber products	1.0553	0.4097[a]	0.7956	1.2262
45	4561	Tin cans & metal boxes	1.0477	2.0745	0.8929	0.8800
4	3021/29	Dairy products	1.0371	0.8860	1.5370	0.8871
3	1331	Crude coconut oil mills off-estates	1.0115	0.4509[a]	1.0093	0.8977[a]
15	3140	Soft drinks & carbonated beverages	1.0049	1.3418	1.0157	0.9118
13	3097	Ice factories	0.9993	0.4746[a]	1.0204	0.9446[c]
54	4851/2	Manufacturing & assembly of bicycles, trishaws & accessories	0.9305	1.3330	1.1163	0.9532
46	4563	Brass, copper, pewter & aluminium products	0.9242	0.9702	0.9081	0.9442
27	3721	Paper boxes, bags & containers	0.9189	1.4058	0.9183	0.9400
10	3080	Cocoa, chocolate & confectionery	0.9165	1.0040	0.9411	0.9039
12	3096	Coffee factories	0.9130	−0.0038[a]	0.9491	0.9357[a]
2	1122	Rubber smokehouses off-estates	0.8657[a]	1.6324	0.5971[a]	0.9110
17	3300	Textiles	0.8647	0.4507	1.1332	0.9155
9	3062	Bakery products	0.8546	0.6881	0.7864	−1.2184
39	4350	Cement & concrete products	0.8499	1.3175	0.8106	0.9302
55	4940	Plastic products	0.8359	0.7437	0.9214	1.2244

TABLE IV.4 (continued)

No.	M.I.C.	Industry	σ_{ACMS}	σ_{DIWAN}	σ_{VES}	σ_{KMENTA}
19	3432	Clothing factories	0.8263	0.2984[a]	1.3139	3.9481
37	4310	Structural clay products	0.8012	0.7334	0.7514	0.4160
21	3511	Sawmills	0.7939	0.2213[a]	1.0029	0.8547
28	3729	Articles of paper n.e.c.	0.7927	0.0414[a]	1.0744	1.0300[c]
29	3800	Printing, publishing & allied industries	0.7620	0.0820	1.0205	0.8941
24	3531	Wooden boxes, cases & crates	0.6884[a]	0.8453[a]	0.3490[c]	1.1866[a]
53	4834	Motor vehicle parts & accessories	0.6422	0.5480[a]	0.6668[c]	0.6931
25	3611	Household furniture of wood or unstated materials	0.6387	0.4901	0.8615	0.8571
33	4130	Paints, varnishes & lacquers	0.6373[a]	0.8171	0.8875	0.6710
43	4520	Architectural metal products	0.6369	0.3649[a]	0.9263	0.8618
23	3513	Planing, window & door mills & joineries	0.6209	0.2251[a]	0.3934	0.8314
49	4630	General engineering & machinery parts	0.5880	0.2341[a]	0.7277	0.9107[a]
50	4739/99	Radio communications, electrical industrial equipment manufacturing and repairs	0.5791[a]	1.5220[a]	0.5782	0.8354
52	4831/32	Assembling of motor vehicles, bodies & lorries	0.5686	0.3853[a]	0.6657	0.8971
44	4530	Wire & wire products	0.5502	0.5383[a]	0.6956	1.0564
42	4510	Fabricated structural shapes	0.5180	0.7669[a]	0.5596	0.9320
8	3061	Biscuit manufacturing	0.5071	0.5397[a]	0.6195	−3.3364
48	4623	Industrial machinery & parts	0.5063	0.0946[a]	0.5982	0.8318
18	3411	Footwear other than rubber & wooden	0.4968	0.5807	0.5473	0.9457
14	3098	Prepared animal feeds	0.4933[a]	0.1420[a]	0.4509[c]	0.9738[a]
7	3055	Large rice mills	0.4358[a]	0.7270	0.4178	0.9418
32	4121/29	Vegetable and animal oils & fats	0.2553[a]	1.3977	0.3005	1.0709
51	4811/2	Shipbuilding, boatbuilding repairs	0.2347[a]	1.3649	0.0516[c]	0.6989
5	3032	Pickles & sauces	0.0853[a]	0.1338[a]	0.6465	0.9394[a]
41	4421	Iron foundries	−0.0387	−0.6823	0.2886[a]	0.7509

[a] = one parameter not significant above zero.
[b] = two parameters not significant above zero.
[c] = R^2 not significant.

Source: As per Table IV.1a.

two tests may be conducted. The first measures the correlation between an industry's average capital intensity and its substitution elasticity. The second starts from the elasticity formula for the VES-function. As has been pointed out by Fleck, Finkbeiner, and Casutt,[29] the VES substitution elasticity decreases if the sum of the estimated parameters d and e is greater than 1 and increases if it is smaller than 1.

Both tests show in our case that the substitution elasticity increases with rising capital intensity. In the first test we found a positive serial correlation between capital intensity and substitution elasticity. Measuring capital intensity according to (6), r_s is at 0.33 significantly different from zero. As for the second test, we found, among the 45 industries with a statistically significant VES estimate, 32 where the substitution elasticity increases with rising capital intensity. The elasticity remains constant in one industry and decreases in only 12.

It is remarkable that all except three of the 32 industries with increasing substitution elasticity have an elasticity value of less than 1. In case of the CES estimate with equation (10) they are the metal boxes, rubber products, and steel industry (4561, 4010/4090 and 4410/4429). One can therefore expect that with rising capital intensity the number of industries with substitution elasticities of greater than 1 will increase at the expense of those with elasticities of less than 1. One may conclude that, with rising wages, the employment possibilities as well as the chances for a higher share of labour income would worsen.

ii. *Substitution and Establishment Size.* If capital intensity and substitution elasticity are positively correlated it can be concluded from what has been said above that a positive correlation must also exist between establishment size and substitution elasticity. Indeed, the serial correlation coefficient with 0.42 is significantly different from zero, if size is measured by average value added. On average one would therefore expect that the substitution possibilities are greater in big establishments than in small ones.

This conclusion as well as the one concerning the relationship between capital intensity and substitution elasticity should, however, be tempered with some reservations. The calculations discussed above showed that on the one hand capital intensity and establishment size are positively correlated with the scale elasticity and, on the other, the scale elasticity biases the estimated substitution elasticity upwards if it is greater than 1 and downwards if it is smaller than 1. We can therefore not exclude the possibility that the correlations found in the last two sections are mainly due to the bias in the substitution elasticities.

Another conclusion follows immediately from our results. Industries wherein the substitution elasticity rises with increasing capital intensity will on average have rather small or medium-sized establishments, since they have the characteristically low substitution elasticities of this type of industries. Indeed, of the 32 industries mentioned above there are only five where the establishment size is larger than the average of the entire manufacturing sector.

D. THE IMPLICATIONS FOR EMPLOYMENT CREATION AND INCOME DISTRIBUTION

The possibilities for substitution between labour and capital appear in most industries rather limited. However, with rising capital intensity the scope for substitution seems to increase. The practical significance of this result is not immediately clear. While the economist's interest in substitution possibilities in developing countries stems from the idea that there might be ways and means of employing more labour per unit of capital, empirical estimates like ours merely indicate the possibility of supplanting one factor by the other, and not the direction in which this substitution will take place. In our case, for instance, the increase in the substitution elasticity with rising capital intensity may imply that a firm tends to substitute more readily capital for labour—and not vice versa—the more capital intensive it becomes. As capital intensity is closely correlated with size one may also say that with increasing size, firms increasingly substitute capital for labour.

The still generally low substitution elasticity has on the other hand a positive distributional impact. If wage increases do not induce a drastic replacement of labour by capital, part of the wage rise will take place at the expense of capital income. The rise in the substitution elasticity with increasing firm size leads, however, to the conclusion that bigger companies are less prepared than small ones to accept such a redistribution.

If the hypothesis holds that the elastic supply of capital in Malaysia tends to favour labour-augmenting technical progress, the low substitution elasticity in most industries means that the technical progress reduces the labour intensity and consequently the demand for labour. On the whole, therefore, our estimates do not provide a very optimistic outlook on manufacturing employment possibilities and it underscores the need for a more cogent employment-oriented industrialization policy.

With regard to the estimation techniques it may be said that our estimates of scale elasticities can be considered as fairly reliable. The estimates of substitution elasticities are, on the other hand, biased by several factors. However, the most simple estimation technique produces quite reliable estimates of the elasticity, if the impact of wage increases on income distribution is to be investigated. The more sophisticated techniques are, in general, less trustworthy, as the estimated parameters are affected by collinearity between the independent variables and inaccuracies of capital stock data.

3. SCALE ECONOMIES AND SUBSTITUTION IN THE SMALL-SCALE SECTOR

In 1974 a survey of small-scale establishments was conducted by Chee Peng Lim of the University of Malaya. The survey covered 19 industries and 399 establishments. The data were used by G. T. O'Mara[30] for the estimation of scale elasticities and substitution elasticities. This gives us the opportunity to check whether our major findings are also valid for the small-scale sector or whether this sector differs systematically from manufacturing as a whole with respect to the production conditions.

A. SCALE ELASTICITIES

For the purpose of comparison it is fortunate that O'Mara employed the same type of equation for the estimation of scale elasticities, i.e. the Cobb-Douglas function and the Kmenta approximation of the CES-function. His Cobb-Douglas version differs only formally. It can be written as:

$$(17) \qquad \ln \frac{V}{L} = \gamma' + (\alpha + \beta - 1) \ln L + \beta \ln \left(\frac{C}{L}\right)$$

The parameter of $\ln L$ is then the scale elasticity minus one. The CES-version is transformed in a comparable way, so that $\ln V/L$ appears as dependent variable instead of $\ln V$. The basic difference to (17) is that a squared term of the capital-labour ratio is added.

There is, however, a difference to our approach with regard to the definition of labour and capital. For both, two alternative definitions were used. One method converts all workers to a full-time equivalent basis but otherwise treats labour as homogeneous. This conversion is important because—different from our sample—part-time workers and unpaid family workers play an important role in the small-scale sector. The alternative method weighs labour inputs by their relative wages, assuming that relative wages reflect skill differences. In the following, L denotes labour according to the first method and L^* if the second method is employed.

As for capital, we have used in our calculations the value of fixed assets under the implicit assumption that the flow of capital services is proportional to this measure of the capital stock. We have noted above that this approach poses problems in so far as it neglects differences in the composition and the utilization of the capital stock. O'Mara has attempted to deal with these problems in the following manner. He distinguishes between services from machinery and equipment, and those from buildings and construction. Then the competitive equilibrium service flow (SK) from a fully utilized capital stock is:

$$(18) \qquad \begin{aligned} SK &= (0.08 + 0.1)\, KME + (0.02 + 0.1)\, KC \\ &= 0.18\, KME + 0.12\, KC \end{aligned}$$

0.08 is the depreciation rate for machinery and equipment (KME) and 0.02 that for buildings and construction (KC) according to the Malaysian Income Tax Ordinance of 1967. 0.1 is the assumed market rate of return. It can be seen that this approach amounts basically to giving the value of machinery and equipment a 50 per cent higher weight than that of buildings and construction. In a second step SK is multi-

TABLE IV.5

SCALE ELASTICITIES OF THE ENTIRE SMALL-SCALE SECTOR

Definition of *Labour*	*Capital*	*Cobb-Douglas*	*CES (Kmenta)*
L	SK	1.279 (0.045)	1.277 (0.045)
L*	SK	1.327 (0.051)	1.327 (0.052)
L	ESK	1.220 (0.047)	1.224 (0.047)
L*	ESK	1.275 (0.053)	1.277 (0.054)

Source: O'Mara, op. cit., Tables 4, 6, 11, 13.

Note: Numbers in parentheses are standard errors.

plied by a ratio of actual output to the desired one as reported by the surveyed firms, in order to take account of the capital utilization. The product is denoted by ESK.

Table IV.5 shows the scale elasticities of the small-scale sector as a whole for alternative definitions of labour and capital. In all cases significant positive scale economies are observed. It is interesting to note that the consideration of capital utilization leads to a lower elasticity while the inclusion of skill variations increases the elasticity. However, both effects together approximately balance out. The impression that positive scale economies dominate is confirmed by the estimates for eight industry groups shown in Table IV.6. Some of the scale elasticities are even higher than the largest values found in our sample. On the whole, therefore, O'Mara's results do not differ from ours, namely that the majority of Malaysian manufacturing industries produces under increasing returns to scale.

With regard to the variation of the scale elasticity with the establishment size, O'Mara obtained, however, a different result from ours. In Chee's sample it seems to be the small firms which produce under increasing returns whereas for the larger firms constant returns are estimated. This conclusion follows from estimates for a data set partitioned by firm size. Since most likely Chee's and our sample hardly overlap in terms of establishment size, it could well be that the scale elasticity is a U-shaped function of the establishment size. Indivisibilities in personnel and basic equipment could be responsible for scale economies in the very small firms, as is also assumed by O'Mara, whereas the very big ones may derive economies of scale from the employment of huge production aggregates.

B. SUBSTITUTION

For estimating the elasticity of substitution, O'Mara uses equation (10) stated above which assumes constant returns to scale (CRS-version) and the following equation for the case of non-constant returns

$$\text{(19)} \quad \ln \frac{V}{L} = a + b \ln \frac{W}{L} + c \ln L$$

TABLE IV.6

VALUE-ADDED PRODUCTION FUNCTION ESTIMATES BY INDUSTRY GROUPS

(Entire Sample, $n = 397$)

Coefficients of	*Selected Food Products*	*Foundries, Blacksmiths*	*Misc. High Wage Mfg.*	*Misc. Low Wage Mfg.*	*Furniture*	*Ind. Mchry &Parts*	*Sawmills*	*Plastics*
Cobb-Douglas Function								
$\ln L^*$	.23145	.34568	.26780	.46032	−.22861	.62475	.1701	−.13589
	(.10551)[a]	(.091545)	(.11170)	(.135885)	(.141408)	(.14963)	(.2398)	(.3249)
$\ln \frac{(ESK)}{(L^*)}$	.39812	.455413	.407265	.358355	.22482	.23959	.68965	−.092547
	(.06509)	(.101067)	(.121180)	(.105823)	(.076805)	(.14155)	(.2297)	(.3608)
Constant	4.7494	4.2373	5.10577	4.17344	7.33775	4.455	4.1234	8.9074
	(.41912)	(.50911)	(.560511)	(.54274)	(.52589)	(.9174)	(1.2373)	(2.4689)
R^2	.457	.438	.376	.339	.255	.245	.243	.013
S.E.E.	.8495	.5229	.8848	1.1587	.8684	1.0858	1.3140	1.8159
C.E.S. Approx. (Kmenta)								
$\ln L^*$	.22392	.33843	.277147	.47920	−.12640	.623453	.011221	−.17134
	(.10591)	(.092589)	(.112337)	(.141178)	(.13800)	(.152064)	(.21715)	(.3409)
$\ln \frac{(ESK)}{(L^*)}$	.23433	−.17781	.697205	.190312	−.26091	.28280	7.45102	−1.85379
	(.18448)	(.88993)	(.40082)	(.33332)	(.20950)	(.6166)	(2.01934)	(4.0592)
$\left[\ln \frac{(ESK)}{(L^*)}\right]^2$	.021423	.073217	−.0378115	.025493	0.7352	−.00499	−.64454	.155105
	(.022653)	(.10223)	(.049802)	(.047920)	(.02980)	(.06938)	(.191329)	(.356006)
Constant	5.0090	5.588	4.611	4.3254	7.5605	4.3713	−12.3371	13.882
	(.50734)	(1.954)	(.8613)	(.61601)	(.04978)	(1.4832)	(5.0072)	(11.692)
R^2	.465	.444	.384	.342	.374	.245	.424	.019
S.E.E.	.8503	.5256	.8892	1.1652	.8084	1.0958	1.1615	1.8503
Sample size	61	49	46	68	36	58	40	25

[a] Numbers in parentheses are estimated standard errors of the respective coefficients.

Source: O'Mara, op. cit.

with the substitution elasticity being

(20) $\sigma = \frac{b}{1 + c}$

However, (19) produces inconsistent estimations of the scale elasticity and the substitution elasticity. That is why we have omitted this approach from our calculations. One should therefore interpret the results with care.

For the entire sample of 248 establishments O'Mara obtained a substitution elasticity of 0.49 with equation (10) and 0.35 with (19). The elasticities for the eight industry groups are shown in Table IV.7. Most values are very low. In fact, except for sawmills, all elasticities turn out to be smaller than unity. Thus, O'Mara's estimates confirm again our results that the substitution elasticities are generally rather low in Malaysia's manufacturing industries.

4. TECHNOLOGIES IN OPERATION

Scale and substitution elasticities provide useful indications of potential effects on production and employment resulting from factor expansion and the influence of changing factor prices which affect the substitution between labour and capital. After the early enthusiasm with the scientific elegance of these indicators and their measurement, it has, however, meanwhile been widely recognized that they have several short-comings, some of which have been discussed above already, and that they obscure a number of important technological problems. It cannot be emphasized enough that it is only 'potential effects' which the elasticities indicate and even this only if there is some constancy in entrepreneurial behaviour, institutional set-up, technological change, and all other circumstances which have an impact on the implementation of technologies. Furthermore, little is known empirically as to which factors actually determine the choice of technology and where technological bottle-necks exist. We will deal with some of the relevant problems in the following sections, using as empirical basis the results of the HEX.

A. THE CHOICE OF TECHNOLOGY

Orthodox economic doctrine states that the choice of technology is determined by the prices of the factors of production. This is not a wisdom based on empirical evidence, but the logical conclusion derived from an application of the profit maximization principle to the ordinary neo-classical two-factor model. According to this doctrine a labour-rich country like Malaysia should employ labour-intensive techniques of production and export commodities which can be produced with relatively little capital per labour unit. If the techniques actually in operation do not comply with this postulate, it is usually assumed that the factor prices are 'wrong'. The policy conclusion is that factor prices have to be adjusted through subsidies or taxation. Surprisingly, the

TABLE IV.7
ESTIMATES OF THE LABOUR MARGINAL PRODUCTIVITY CONDITION BY INDUSTRY GROUPS: SMALL-SCALE INDUSTRY
(Reduced Sample, $n = 248$)[a]

Coefficients of	Selected Food Products	Foundries, Blacksmiths	Misc. High Wage Mfg.	Misc. Low Wage Mfg.	Furniture	Ind. Mchry & Parts	Sawmills	Plastics
C.R.S. Version								
$\ln \frac{W}{L}$	.30626 (.29293)[b]	.272774 (.184473)	.6791 (.330455)	.760804 (.292152)	−.090266 (.253565)	.286431 (.19591)	1.03997 (.36070)	.90793 (.61490)
Constant	6.08174 (1.33272)	6.07568 (.833526)	4.7182 (1.6072)	4.26533 (1.3277)	8.27853 (1.15861)	6.5793 (.911178)	3.20976 (1.7392)	4.04636 (2.8261)
R^2	.030	.062	.135	.179	.006	.047	.316	.114
S.E.E.	.9250	.5530	.8606	.7785	.7572	.6172	.6261	.5823
N.C.R.S. Version								
$\ln \frac{W}{L}$	.26959 (.29714)	.200708 (.206135)	.496354 (.330579)	.63393 (.31045)	−.128571 (.291627)	.400493 (.169366)	1.00105 (.3505)	.90591 (.63432)
$\ln L^*$	.118225 (.139873)	.107087 (.133642)	.227184 (.120855)	.16187 (.13956)	.0621765 (.215717)	.39291 (.095009)	.2345 (.1591)	.0092678 (.126817)
Constant	5.8597 (1.36373)	6.04499 (.838958)	4.80999 (1.53745)	4.1981 (1.3216)	8.25691 (1.18849)	4.61183 (.91125)	2.4896 (1.7545)	4.02042 (2.9341)
R^2	.050	.081	.239	.215	.011	.323	.393	.114
S.E.E.	.9288	.5561	.8229	.7742	.7752	.5265	.6066	.6001
Sample size	37	35	29	33	22	45	20	19
δ	.241087	.1812938	.403808	.15456	−.12104	.2875	.810895	.89759
V	.16189	.133977	.45505	.442183	.055093	.655389	223.333	.098499

Source: O'Mara, op. cit.

[a] Firms that were non-responsive to the question asking for the wage paid to unskilled labour, were removed from the sample.

[b] Numbers in parentheses are estimated standard errors of the respective coefficients.

model itself is rarely questioned. It is not unlikely that in a world which is distant from the ideal conditions of a perfectly competitive market, considerations other than factor prices decisively influence the choice of technology.

In order to test this hypothesis, the firms surveyed in the HEX were asked which factors were important for them in the choice of technology. Table IV.8 shows the weighed and the unweighed percentages of all companies which considered the alternative factors as either quite important or as very important. The factors are ordered according to the sum of the weighed percentages for 'quite important' and 'very important'. If one looks through the list, it becomes immediately apparent that a number of factors other than labour and capital costs are considered by the firms as very important for technological decisions. It is remarkable that the quality of the product ranks highest, with a notable distance to the next factor. This reveals, firstly, that the quality of the product is crucially dependent on the technology employed, an argument very much neglected in economic literature. Secondly, Malaysian entrepreneurs seem to be convinced that a product with a low quality standard does not sell and therefore need not be produced in the first place. Thirdly, as quite a few of the companies surveyed did not export, or did so only very marginally, the high percen-

TABLE IV.8
FACTORS DETERMINING THE CHOICE OF TECHNOLOGY

Factors	*Percentage of Firms which Consider Factors as:* Quite Important		Very Important	
	Unweighed	*Weighed*	*Unweighed*	*Weighed*
1. Quality of the product	16.8	11.8	65.9	73.1
2. Volume of annual production	25.3	16.6	56.7	58.2
3. Raw material costs	20.7	28.3	43.9	36.2
4. Price of the machines	29.9	23.8	39.9	36.5
5. Familiarity with a technology from experience in other countries	20.4	23.2	27.4	35.6
6. Labour costs	26.8	25.5	31.1	24.9
7. Average batch size of production run	27.4	21.3	27.7	22.5
8. Interest on capital	23.8	21.6	23.6	14.6
9. Usage of technology by competitor	21.3	14.9	14.0	19.2
10. Trade mark of equipment	19.5	27.4	7.3	6.3
11. Elimination of labour for other reasons than labour costs	20.1	17.7	9.1	11.5
12. Other factors	0.6	0.2	4.6	15.6

tages indicate that quality is not only essential for exports but also for the domestic market. This confirms the view expressed by Lim[31] that the Malaysian market has become very brand-conscious under the dominating influence of foreign companies during colonial times. It also suggests that the market is fairly competitive, because only in a competititve market does low quality production reduce the sales volume.

On average, the quality factor does appear to be more or less equally important for small and for large establishments. However, there are differences by industry. For instance, the large establishments of the non-metallic mineral products industry do not weigh quality high in their technological choice, whereas the small ones do. The opposite is the case in the industry producing chemicals. Most likely these differences are due to the fact that the small establishments typically produce other commodities than the larger ones.

The second most important factor affecting the choice of technology is, according to the companies' replies, the volume of the annual production. Apparently, a greater volume of production is more efficiently produced with a different technology than by simply adding more production units of the kind presently in use. This suggests that the scale economies observed above for a number of industries are due to the fact that the technologies employed vary systematically with the establishment size measured by output volume. There are only two industries where the volume of production does not appear to be an important determinant of the technology, at least for the large establishments. These are the leather products and the petroleum products industries. For the latter the explanation is probably that the technology is considered as fixed, i.e. not variable with the production volume for technical reasons.

The costs of raw materials are stated as the third most important factor for the choice of technology. Small establishments attach somewhat more weight to this factor than the larger ones. The fact that raw material costs are given so much importance is interesting in the light of the above-mentioned model which implicitly assumes that raw materials are not substitutable for other inputs and that their costs are therefore irrelevant for technological considerations. The survey results suggest that this assumption is not correct. If this is the case, then the raw material costs must indeed be of considerable importance, as their share in total costs is on average much larger than that of labour costs or capital costs. For the sample as a whole, the share of raw material costs in gross value of output was 64 per cent in 1973 whereas the share of labour costs was only 6 per cent. The pure capital cost may have had a share of 10 to 15 per cent. Thus, total costs are obviously much more sensitive to changes in raw material costs than to changes of any other cost item. The industries for which the raw material costs seem to be of little or no importance for technological considerations produce animal feeds, footwear, paper products, and chemical products.

As for the remaining factors shown in Table IV.8, it can be said that the smaller establishments attach more weight than the larger ones to such factors as price of machines, labour costs, average batch size of production run, and interest on capital, while the reverse is true for the familiarity with a technology from experience in other countries and the trademark of the equipment. It may be concluded that the large establishments were primarily those whose behaviour did not tally with the familiar assumptions about the entrepreneurial choice of technology. With regard to policy, our results may be considered as a warning against too simple prescriptions. A policy which attempts to bring the individual choices of technology in accordance with national objectives, for instance the employment objective, may not get very far if it confines itself to getting factor prices right. If these choices are at all amenable to policy measures, it may require a more comprehensive policy programme to achieve the desired results.

B. THE TRANSFER OF TECHNOLOGY

The choice of a certain technology does not, of course, depend only on the factors mentioned above, but also on the range of technologies actually accessible to the entrepreneur. In a country which does not produce its own technologies, as is the case in many developing countries, the range of available technologies is crucially dependent on the mechanism by which technologies are transferred from other, technologically more advanced countries. It is therefore of considerable interest to know how, and under what conditions, this transfer takes place.

In the HEX the companies were asked whether they co-operate technologically with foreigners through the utilization of licences, employment of foreign personnel, technical co-operation agreements, or common research. Among these four alternatives, the employment of foreign personnel was mentioned most frequently (39 per cent of the companies). Next came common research (29 per cent) and technical co-operation agreements (27 per cent), whereas licences (18 per cent appeared to be of minor importance. However, when the companies were asked what they considered the best way to transfer technology, it became apparent that the former question had missed out an important alternative, namely the training of its personnel overseas. Thus it may be said that, on average, training overseas and employment of foreign personnel are seen as the best ways to transfer technologies. However, some individual industries put more emphasis on one of the other alternatives, as can be seen from Table IV.9. For instance, licences seem to be more important than any of the other possibilities for the machinery industries and quite a few more industries made substantial use of licences. A similar argument holds for technical co-operation agreements which are apparently of primary importance in the industries producing electrical machinery and transport equipment. Common research, on the other hand, seems to be practised equally or

TABLE IV.9
THE TRANSFER OF TECHNOLOGY BY SELECTED INDUSTRIES

	Percentage of Firms importing Technology through			
	Licences	Foreign Personnel	Technical Co-operation Agreements	Common Research
All Firms	*17.7*	*38.7*	*26.8*	*29.3*
Food products	25.0	60.7	32.1	42.9
Beverages	40.0	60.0	50.0	40.0
Textiles	5.9	64.7	5.9	23.5
Paper products	—	40.0	40.0	20.0
Chemicals	20.0	40.0	40.0	40.0
Chemical products	25.0	62.5	43.8	62.5
Petroleum products	50.0	50.0	50.0	50.0
Plastic products	27.3	54.5	18.2	45.5
Earthenware	—	50.0	25.0	50.0
Glass products	—	66.7	33.3	33.3
NM mineral products	9.5	38.1	42.9	38.1
Steel	7.1	50.0	42.9	35.7
NF basic products	50.0	75.0	25.0	100.0
Metal products	25.0	50.0	43.8	25.0
Machinery	62.5	50.0	50.0	37.5
Electrical machinery	41.7	66.7	75.0	41.7
Transport equipment	46.2	46.2	61.5	38.5

relatively more than the other possibilities in the industries producing chemicals, chemical products, petroleum products, earthenware, and non-ferrous basic products. One should, therefore, be careful with generalizing conclusions. Our results suggest that the transfer mechanism differs considerably from industry to industry, the reasons for which are as yet little explored.

An important feature of technological transfer contracts is the revision clause. A contract which is subject to periodical revisions at relatively short intervals is usually less rigid and leaves more room for technological flexibility on the part of the receiving partner than contracts of long duration. In Malaysia, a surprisingly low percentage (9 per cent) of such contracts contained any revision clause at all, though there were a few industries where this share was substantially higher. To these belonged the industries producing machinery (38 per cent), non-metallic mineral products (29 per cent), plastic products (27 per cent), electrical machinery (25 per cent), metal products (19 per cent), steel (14 per cent) and textiles (12 per cent). However, these clauses can in most cases be said to stipulate not excessively long revision periods. In 45 per cent of the contracts the period is less than five years, in 48 per cent it lies between five and ten years and in only 7 per cent is it longer than ten years. Long periods of over ten years occur only in the food and electrical machinery industries.

A smooth technology transfer is generally seen as a good thing for the receiving country. Though little is known, even in theory, about the benefits a country may reap from such a transfer, it is quite obvious that the transfer has disadvantages which can be quite substantial in certain circumstances. A familiar example is the case where an advanced technology replaces indigenous technologies and thereby creates unemployment. A considerable cost item can also be conditions in the contract which restrict the receiving partner's freedom of action. From a policy point of view such conditions are particularly harmful if they run counter to national policy objectives. Export restrictions, for instance, limit the industry's growth potential, especially in a small country. Conditions which inhibit the receiving partner from purchasing know-how from sources other than his contract partner, or which prescribe the selling prices for his products, or force him to buy his inputs from the contract partner, all have a tendency to reduce the competitiveness of the receiving partner, thereby leading to inefficiency with all its negative consequences for employment and growth.

Table IV.10 shows that for the total of the firms which were surveyed in the HEX and had foreign capital participation, licences, or some other kind of technical co-operation, such restrictions were on average not very important. However, this is very different for certain industries. Export restrictions were frequently used in the industries producing tobacco products, petroleum products, chemical products, transport equipment, and plastic products. The purchase of know-how was substantially restricted in the industries producing leather products, plastic products, machinery, and beverages. Input buying restrictions played a major role in the transport equipment, beverages, and

TABLE IV.10

RESTRICTIVE CONDITIONS IN TECHNICAL CO-OPERATION AGREEMENTS BY SELECTED INDUSTRIES

	Percentage of Firms with Technical Co-operation Agreements which:			
	Cannot Export to Certain Countries	*Cannot Buy Know-how from Other Sources*	*Have to Buy Inputs from Specified Sources*	*Have to Charge Prescribed Prices*
All Firms	*15.7*	*14.3*	*11.4*	*11.9*
Beverages	25.0	37.5	37.5	37.5
Tobacco products	100.0	—	—	—
Leather products	—	100.0	—	100.0
Wood products	11.1	22.2	—	11.1
Printing & publishing	—	18.2	—	—
Chemical products	42.9	21.4	28.6	7.1
Petroleum products	50.0	—	—	50.0
Plastic products	33.3	50.0	16.7	16.7
NM mineral products	16.7	8.3	8.3	16.7
Steel	12.5	12.5	25.0	12.5
NF basic products	—	25.0	—	—
Metal products	27.3	18.2	18.2	—
Machinery	20.0	40.0	20.0	40.0
Electrical machinery	9.1	27.3	18.2	9.1
Transport equipment	36.4	27.3	54.5	27.3

chemical products industries, while selling price prescriptions occurred mainly in the leather products, petroleum products, machinery, and beverages industries. These data suggest that certain industries are particularly affected by certain restrictive measures. In a number of cases the results are quite plausible. For instance, it is probably not an unexpected result that the tobacco products and the petroleum products industries which are largely in the hands of foreign multinational companies cannot export to countries where affiliates of the same company already exist. It is also not surprising that the car assemblies in the transport equipment industry have to buy their inputs from specified sources, and so on. A more comprehensive explanation of the pattern emerging from our data is, however, not possible without further research in this still largely unexplored area.

The transfer problem, it must be stressed, is not just a matter of getting technological know-how into the country, but also of disseminating it within the country. This became apparent from the answers to the open-ended questions of the HEX. Various measures to speed up the spread of know-how were suggested, a few examples of which may be mentioned here. One proposal was to provide training through government agencies, like specialized departments within the ministries, the Standards Institute of Malaysia, or the National Productivity Centre. A seafood exporter, for instance, complained that the government prescribes that exported shrimps should not have a bacteria count of more than 100,000 but does not show how it could be done. In other industries, for instance the iron and steel and the structural metal products industry, there were establishments which considered a mutual exchange of know-how within the same industry as beneficial. The non-ferrous basic metals industry (mainly tin), on the other hand, suggested the organization of common research, eventually with government support.

C. RESEARCH AND THE ADAPTATION OF TECHNOLOGY

It was argued above that most developing countries obtain their technological know-how from more advanced countries. The firms surveyed in the HEX mentioned as sources the USA, the industrialized countries of Europe, in particular Germany, and also Japan, Taiwan, and the Philippines. Several times it was expressly stated that technologies employed in the latter three countries fit Malaysian circumstances better than the more advanced technologies of the highly industrialized countries. This is interesting because it casts some doubts on the validity of the common prejudice that entrepreneurs in developing countries are not receptive to the employment of intermediate technologies but strive always for the most up-to-date ones.

How far the hypothesis is correct that Malaysian firms do little to develop their own techniques of production is very difficult to say. What seems to be pretty clear, however, is that domestic firms undertake considerable efforts to modify or to adapt imported technologies. In a few industries the expenditures for research and development cannot be said to be low if compared with experiences of industrialized countries. The firms surveyed in the HEX spent on average 2.4 per cent of their sales value on research and development. As Table IV.11 shows, some of the industries known to be research intensive in industrialized countries also spend relatively much on research and development in Malaysia. These are the industries producing chemicals, plastic products, and machinery. In industrialized countries other industries which belong to this group are the electrical machinery and the transport

TABLE IV.11

EXPENDITURE ON RESEARCH AND DEVELOPMENT AS PERCENTAGE OF TOTAL SALES VALUE BY SELECTED INDUSTRIES—MALAYSIA (1974) AND FEDERAL REPUBLIC OF GERMANY (1973)

	Malaysia	*Fed. Rep. of Germany*
Food products	0.9	
Grain milling	0.4	
Beverages	2.9	0.2
Tobacco products	0.7	
Animal feeds	0.4	n.a.
Textiles	1.0	0.4
Clothing	0	
Leather products	6.8	1.4
Footwear	0	
Wood products	2.9	0.4
Paper products	0	n.a.
Printing & publishing	0.2	n.a.
Chemicals	4.4	4.4
Chemical products	1.1	
Petroleum products	0	n.a.
Rubber products	1.8	2.8
Plastic products	2.9	4.1
Earthenware	2.0	1.0
Glass products	1.0	
NM mineral products	1.5	0.8
Iron & steel products	3.1	0.6
NF basic products	5.6	0.6
Metal products	1.6	0.9
Machinery	4.3	3.1
Electrical machinery	2.2	5.8
Transport equipment	0.4	3.1
Total	2.4	2.9

Sources: L. Hoffmann, 'Interim Report on Methodology and Results of the HEX', op. cit., Table 28; H. Echterhoff-Severitt, 'Forschung und Entwicklung in der Wirtschaft', *Wirtschaft und Wissenschaft*, H. 4 (1975), Beilage; unpublished material of the Stifter-ver band für die Deutsche Wissenschaft.

equipment industries. At least for the latter, the research and development expenditure is very low in Malaysia. This is probably explained by the fact that the Malaysian automobile industry consists only of assembly plants which by their nature do not develop new models. A similar argument holds good for the electronics industry which is part of the electrical machinery industry. The high share for wood products and non-ferrous basic products, two of Malaysia's major export industries, is remarkable. To this group belongs also the rubber products industry though its revealed share is significantly lower, probably because much of this industry's research needs are covered by special research institutions, such as the Malaysian Rubber Research Institute. It appears likely that the success of these three industries on the world market is not only due to their raw material intensity, as the factor proportions theory of international trade would suggest, but is also the result of substantial research efforts made to gain a competitive edge through the supply of high quality products. The remaining high shares in Table IV.11, such as for leather products, beverages, and steel, are probably due to special factors which may be only temporary. Arguments which support this assumption can be found in all three cases. We shall not, however, go into such details here.

The way in which Malaysian firms adapt advanced technologies to meet local conditions can be seen from IV.12. The replies obtained by the HEX refer to the following five alternatives:

1. Breaking up an automated line into individual stations.
2. Using less expensive, lower production-capacity equipment at multiple shift production in combination with highly productive equipment at single shift.
3. Changing the man-machine ratio compared to the usual ratio followed in highly industrialized countries.
4. Upgrading an inexpensive universal machine to a special machine by means of attachments.
5. Increasing the running speed of the equipment to obtain more output per unit of time.

Increasing the running speed (alternative 5) was most frequently mentioned. Forty-one per cent of all firms employ this method. A parallel to developments in other countries seems to exist here. Japan, for instance, has been frequently cited as a country which improved its international competitiveness by running second-hand machinery imported from the industrialized countries, in particular the USA, at higher speed and with more shifts. In Malaysia, industries producing plastic, glass, chemical, paper, food, and steel products all appear to make substantial use of this method.

Nearly one-third of all firms (31 per cent) change the man-machine ratio which has to be interpreted as the employment of more labour per unit of capital. This method is of particular interest in the light of the attempts by the government to reduce unemployment. The industries which resort to this device most frequently produce machinery, trans-

TABLE IV.12

ALTERNATIVE MEANS OF TECHNOLOGY ADAPTATION BY SELECTED INDUSTRIES

	Percentage of Firms using Alternative				
	1	2	3	4	5
All Firms	*21.4*	*26.3*	*31.2*	*30.3*	*41.0*
Food products	28.6	39.3	32.1	35.7	57.1
Grain milling	23.1	30.8	23.1	15.4	30.8
Animal feeds	—	—	33.3	33.3	33.3
Beverages	20.0	20.0	40.0	10.0	40.0
Tobacco products	—	23.1	30.8	15.4	23.1
Textiles	—	23.5	41.2	35.3	47.1
Clothing	25.0	—	25.0	50.0	50.0
Leather products	—	—	—	33.3	33.3
Footwear	—	—	50.0	—	—
Wood products	19.4	22.6	38.7	35.5	45.2
Paper products	20.0	20.0	40.0	60.0	60.0
Printing	5.3	10.5	—	10.5	21.1
Chemicals	30.0	10.0	30.0	40.0	40.0
Chemical products	25.0	31.3	43.8	18.8	62.5
Petroleum products	—	—	—	—	—
Rubber products	9.1	9.1	13.6	13.6	18.2
Plastic products	45.5	63.6	45.5	72.7	72.7
Earthenware	50.0	25.0	25.0	25.0	50.0
Glass products	33.3	33.3	33.3	33.3	66.7
NM mineral products	28.6	33.3	28.6	28.6	47.6
Steel products	28.6	50.0	35.7	78.6	57.1
NF basic products	25.0	25.0	25.0	—	25.0
Metal products	31.3	31.3	31.3	37.5	43.8
Machinery	25.0	25.0	62.5	25.0	37.5
Electrical machinery	25.0	25.0	33.3	33.3	33.3
Transport equipment	46.2	53.8	53.8	38.5	38.5

port equipment, footwear, plastic products, chemical products, and textiles.

Alternative 4 (the upgrading of inexpensive universal machines) seems to be of slightly less importance. This method is widely used in the steel, plastic products, paper products, and the clothing industries.

The combination of multiple shifts with highly productive single shift equipment and the breaking up of automated lines (alternatives 2 and 1) were less frequently mentioned. The first was of major importance only in the industries producing plastic products, transport equipment, and steel, whereas the latter played a significant role in the earthenware, transport equipment, and plastic products industries.

In conclusion it may be said that our results do not support the view that, first, manufacturing industries in developing countries make no or only little financial effort to improve their production methods and product quality through research and development and, second, that little adaptation of imported technologies takes place. In Malaysia, substantial adaptation efforts seem to have been made, though the method varies from industry to industry. This general statement does not, of course, exclude the fact that there are also industries which, for whatever reason, do not adapt at all (petroleum products) or only very little, like printing and publishing and the rubber products industries. In the petroleum products industry little scope for adaptation may exist, whereas the rubber products industry, for instance, produces largely with techniques developed in, or for, Malaysia.

5. CAPITAL UTILIZATION

The question what kind of technology should optimally be chosen in a developing country has for long been discussed under the tacit assumption that once a certain technology is installed, the capital employed will be fully utilized. In the late 1960s, this assumption has increasingly come under attack, after a number of country studies came to the conclusion that in the developing countries investigated the utilization rate was lower than in the industrialized countries. Little, Scitovsky, and Scott,[32] for instance, concluded in their comparative study that 'the chronic under-utilization of manufacturing capacity is as common among developing countries as urban unemployment', though they admitted that 'statistics are few and not very reliable'.

Reliable evidence on capital utilization in developing countries is, indeed, very scanty. The World Bank has recognized this problem and has therefore launched a number of country studies, one of which relates to Malaysia.[33] The results which have since been published will serve in the following as a basis of comparison with our own results obtained with the HEX.

A. ALTERNATIVE MEASURES OF CAPITAL UTILIZATION

The difficulty of getting useful information on capital utilization is not only a matter of data scarcity but also one of concepts. Full capacity may on the one hand be objectively defined as the technologically maximal producible output, given a certain capital stock, and on the other, subjectively, as what in a specific society is considered as the maximum output, taking into account social, cultural, and religious constraints. For instance, the social laws may prohibit a full utilization of textile plants on a three-shift basis because women are not permitted to work on night shifts. Such constraints are surely more frequently encountered in developing countries than in developed countries. Their impact on the feasible utilization of capital is, however, difficult to assess. With reference to the two alternative possibilities of defining full capacity, we will distinguish in the following between objective and subjective measures of capital utilization.

The first objective measure expresses the number of days a plant was in operation in 1973 as a percentage of the number of total available days (365) in the year. The percentages shown in column (1) of Table IV.13 are weighed averages for the various industries. For reasons stated below, total sales were used as weights for all measures in Table IV.13.[34] The second objective measure is the number of hours

TABLE IV.13

CAPITAL UTILIZATION OF MANUFACTURING INDUSTRIES

(in per cent)

	(1) Objective Utilization	(2)	(3)	(4)	(5)	(6)
	Days	Hours	(1) x (2)	Subjective Utilization (Hours)	(1) x (4)	Subjective Daily Capacity (Hours)
Food products	80.5	79.2	63.8	87.2	70.2	21.8
Grain milling	87.4	68.5	59.9	85.6	74.8	22.2
Animal feeds	34.0	59.2	20.1	94.4	32.1	15.1
Beverages	80.4	55.0	44.2	60.4	48.6	21.8
Tobacco products	89.3	64.7	57.8	97.6	87.2	16.0
Textiles	95.0	99.0	94.1	99.1	94.1	24.0
Clothing	81.0	70.7	57.3	100.0	81.0	17.0
Leather products	83.5	55.9	46.7	82.7	69.1	16.1
Footwear	75.3	53.2	40.1	84.1	63.3	15.3
Wood products	76.3	57.7	44.0	78.4	59.8	18.4
Furniture	—	—	—	—	—	—
Paper products	82.1	68.6	56.3	86.3	70.9	19.8
Printing	92.3	37.3	34.4	59.0	54.5	17.4
Chemicals	86.1	90.7	78.0	93.4	80.4	23.5
Chemical products	81.7	55.1	45.0	84.1	68.7	17.7
Petroleum products	99.9	99.7	99.6	99.7	99.6	24.0
Rubber products	88.9	82.3	73.2	93.0	82.7	21.6
Plastic products	86.6	88.7	76.8	88.7	76.8	24.0
Earthenware	75.1	71.2	53.5	81.0	60.8	20.1
Glass products	96.6	94.1	90.9	100.0	96.6	24.0
NM mineral products	94.3	95.6	90.2	104.1	98.2	22.2
Steel products	91.4	81.8	74.8	89.0	81.3	22.4
NF basic products	97.7	99.7	97.4	99.7	97.4	24.0
Metal products	83.8	64.9	54.4	96.2	80.6	16.1
Machinery	76.8	50.4	38.7	73.7	56.6	17.1
Electrical machinery	81.9	64.2	52.6	87.1	71.3	18.6
Transport equipment	70.7	52.1	36.8	105.4	74.5	13.5
Professional equipment	—	—	—	—	—	—
Others	82.6	85.4	70.5	85.4	70.5	24.0
Total	87.6	80.1	70.2	92.2	80.8	21.2

Source: L. Hoffmann, 'Interim Report of HEX', op. cit.

the plant operated on average per day as a per cent of twenty-four hours (column (2)). Column (1) multiplied by column (2) gives the number of the yearly operation hours as a per cent of all 8,760 (24 × 365) available hours. These percentages which are shown in column (3) indicate by how much actual output fell short of the technological maximum output. It should be realized that all three measures are unsatisfactory as they account for capital utilization in terms of running time only and not in terms of running intensity or running speed. However, as the running speeds are likely to differ from machine to machine, it is hardly possible to obtain more adequate information without looking at each unit separately. The estimates presented here should therefore be considered as approximate indicators of capital utilization.

In order to arrive at subjective measures, the firms were first asked what they themselves consider as full capacity in terms of daily operation hours (subjective daily maximum). The answers are given in column (6). A similar question in terms of days was not raised because it can be assumed that holidays are the same for all firms and that their consideration would, consequently, affect only the utilization level but not its structure. The actual daily operation hours were then calculated as a percentage of the subjective daily maximum. If these percentages which are given in column (4) are multiplied with column (1), one obtains the yearly operation hours as a percentage of the subjective yearly maximum (column (5)).

B. THE OBSERVED UTILIZATION

For manufacturing as a whole, our data confirm the conclusion drawn by David Lim[35] from his own survey, that capital utilization in Malaysian manufacturing is high, and substantially higher than in many other developing countries for which data are available. Both the objective as well as the subjective measures indicate high utilization rates with the latter, assuming generally higher values than the former ones. The respondents' perception of their capacity in terms of daily operation hours is quite high, with more than twenty-one hours per day. Consequently, the daily utilization as seen by the respondents (column (4) of Table IV.13) is on average not very much higher than the objective daily utilization (column 2) although there are substantial differences for individual industries. One may conclude that Malaysian manufacturers not only regard an operation at more than two-and-one-half shifts on average as feasible but also practise it, as the objective daily utilization corresponds to more than nineteen actual operation hours per day.

This first, quite optimistic, impression that one gets from Table IV.13 must, however, be qualified in various respects. The year 1973 to which the data refer was an exceptionally good one in Malaysia, due to the world-wide commodity boom. It could well be that under more normal conditions capital utilization would be lower than the data indicate. Furthermore, the utilization rates of Table IV.13 are significantly influenced by the weighing scheme applied for obtaining industry specific and overall average rates.

In this study, sales values, as an approximation for output, were used as weights. The reason is that the utilization rates are supposed to indicate how much of potential output (X_p) was actually produced (X_a). For the aggregate, the utilization rate can therefore be conceived as X_a/X_p. Disaggregating this ratio for $i = 1, 2 \ldots n$ industries yields:

$$\frac{X_a}{X_p} = \sum_i^n \frac{X_{ai}}{X_{pi}} \cdot \frac{X_{pi}}{X_p}$$

with $\sum_i^n \frac{X_{pi}}{X_p} = 1$

It is seen that the appropriate weights are the full-capacity output values. As these values were not directly available, actual outputs (sales) were used as weights.

The calculations by Lim show that large establishments generally have higher utilization rates than smaller ones. Weighing with sales values leads therefore to average rates which are higher than unweighed averages. Lim, who used alternatively value of fixed assets, value added, and employment as weights, obtained overall utilization rates in terms of yearly operation hours—comparable to column (3) of Table IV.13—of 74.9 per cent, 64.7 per cent and 65.9 per cent respectively, as compared with an unweighed rate of 54.6 per cent. Thus, the difference between the weighed and the unweighed averages is quite high, which means that the utilization rates of large and small establishments differ significantly.

The high overall rates, finally, are partly due to the heavy weight which primary processing industries, such as tin and rubber processing, have in the Malaysian industry mix. Omitting the tin industry reduces the overall rate of column (3) from 70.2 to 63.3 per cent. If, in addition, the rubber industry is excluded, the overall rate comes down to 61 per cent. It should also be noted that of the twenty-seven industries for which utilization rates could be computed, the majority (sixteen) utilized less than 60 per cent of their objective capacity (column (3)) whereas one-third remained below the 50 per cent line. All these qualifications point to the fact that, despite high overall rates, there is still ample scope in Malaysian manufacturing to increase output and to produce more efficiently through a better utilization of capital.

6. LINKAGES AND VERTICAL INTEGRATION OF INDUSTRIAL PRODUCTION

It is a well-known fact that in the course of economic development the vertical integration of an economy tends to increase. The early stages of development are usually characterized by primary processing of raw materials and the production of unsophisticated non-durable consumer goods, which frequently take the form of adding some finishing touches to imported semi-finished goods. When development proceeds, production spreads to intermediate goods and investment goods, and the flow of commodities and services from one industry to another—from the lower stages of production to the higher—steadily swells. Final demand in terms of consumption and export is no longer the only outlet of production but is increasingly supplemented by intermediate demand. As such, vertical integration widens an economy's growth potential and creates employment opportunities. It can also reduce the dependency on imported intermediate and capital goods.

Such considerations have given the analysis of structural interdependence with the tool of input-output tables prominent importance. In revealing the impact of spontaneous changes of economic data or policy actions, not only on the industry directly affected but also on all interrelated economic activities, it can be of considerable help to the policy maker in the selection of suitable measures in the right dosage in order to achieve the national goals. The significance of input-output analysis for such problems has already been amply demonstrated above in the discussion of Malaysia's tariff policy.

A first attempt to construct an input-output table for West Malaysia was made in 1960. This was followed by another table for 1965. Both tables have several short-comings due to the non-availability of adequate statistics at the time of their preparation. In spite of this, Lo Sum Yee[36] managed to obtain considerable insight from their analysis. A substantially more refined input-output table has recently been constructed for the year 1970. Whereas the earlier two tables were square matrixes, distinguishing between 29 and 30 industries respectively, the 1970 table shows in its original (unpublished) version 743 input commodities and 97 receiving industries. For the purpose of the subsequent analysis this table has, however, been condensed to a square matrix with 52 entries and exits, of which 50 belong to the manufacturing sector, while the first and the last represent the rest of the economy. As already mentioned in section III.2, the original print-out supplied by the Department of Statistics was carefully vetted and compared with other data sources. This led to a number of revisions. The Input-Output Table published by the Department may therefore not tally with ours in all respects.

A. THE INPUT STRUCTURE

The problem of vertical integration can be approached either from the input side or from the supply side of the industries concerned. Following the above characterization, one would expect for the manufacturing sector of a typical less developed country a predominance of two types of industries: one, which consumes large amounts of domestically-exploited raw materials in order to export them after some basic processing, whereas the other relies primarily on imported semi-finished goods and sells its output to domestic consumers or foreign purchasers. On the input side, the first type of industry would depict high overall and domestic input coefficients and the latter a high coefficient of imported inputs.[37]

On the output side, both industries would show large deliveries to final demand, in the first case export and in the second, consumption or export, while the supply to other domestic industries would be of only minor importance.

Dealing at first with the input side, it can be observed from Table IV.14 that the overall input coefficient of 0.71 for manufacturing as a whole is quite high in Malaysia. In comparison, the input coefficient of manufacturing is only 0.60 in Taiwan and 0.32 in West Germany.[38] The coefficient of domestic inputs (0.52) is substantially higher than the coefficient of imported inputs (0.20). This points to the fact that, if manufacturing is defined inclusive of primary processing,[39] the first type of industries would still weigh heavily in that sector, whereas the second type is of comparatively less importance. In Malaysia the major industries of the first type produce vegetable and animal oils (mainly palm oil), rubber, and tin. These three industries consume 46 per cent of all inputs and 60 per cent of the domestic inputs into manufacturing. If they are excluded, the overall input coefficient of manufacturing reduces to 0.64 and the domestic input coefficient to 0.33, whereas the imported input coefficient rises to 0.30.

If one compares the 1970 input coefficients with those of 1965, one finds that the coefficients were even higher in the mid-1960s. The overall input coefficient of manufacturing was 0.83 in 1965. That of domestic inputs was 0.68 and that of imported inputs 0.16.[40] Quite obviously this largely reflects the fact that the industries of the first type have expanded less rapidly than the rest of manufacturing and consequently reduced their weight in the manufacturing sector. A comparison with 1960 is not possible, because the 1960 input-output table does not show the intra-industry flows.

The input coefficients of Malaysian manufacturing are not only high if compared with those of less raw material-rich countries like Taiwan and with more advanced countries like Germany, but are also substantially higher than in the rest of the economy. The overall coefficient of the primary sector is only 0.18 and that of the tertiary sector 0.32. The domestic input coefficient is 0.12 for the first and 0.25 for the latter. Hence, there is basically a one-way interaction between the primary sector and manufacturing. Whereas the primary sector acts as a major supplier for manufacturing, it purchases rather little in return. Also the tertiary sector purchases, in relation to its output, much less from the other sectors of the economy than manufacturing.

The heavy reliance on supplies from the primary sector is not confined to the three export industries already mentioned. A number of other industries also process primary commodities for export, though on a smaller scale, or produce for the domestic market. To the first belong fruit and vegetable canning (mainly pineapple canning), fish

TABLE IV.14

DIRECT DOMESTIC AND IMPORTED INPUT COEFFICIENTS, 1970

Sector	Domestic Input Coeff (1)	Imported Input Coeff (2)	Total Input Coeff (3)	Col. (2) / Col. (3) (4)
A. Primary sector	0.1225	0.0513	0.1783	0.2877
B. Meat preparation	0.5347	0.0134	0.5481	0.0244
Dairy products	0.3741	0.3775	0.7517	0.5021
Fruits & vegetable canning	0.6359	0.0869	0.7228	0.1202
Fish canning	0.6397	0.0086	0.6484	0.0132
Vegetable and animal oils	0.8135	0.0306	0.8441	0.0362
Grain mills & animal feeds	0.5473	0.1934	0.7407	0.2611
Bakeries	0.5676	0.0993	0.6670	0.1488
Cocoa and chocolate	0.2914	0.4763	0.7677	0.6204
Ice factories	0.2962	0.0597	0.3559	0.1677
Other food preparations	0.2515	0.4920	0.7435	0.6617
Spirits and wines	0.1532	0.1676	0.3208	0.5224
Breweries & soft drinks	0.2372	0.2179	0.4551	0.4787
Tobacco products	0.1284	0.5274	0.6558	0.8042
Textile spinning	0.4978	0.3507	0.8485	0.4133
Knitting mills	0.1028	0.3131	0.4160	0.7526
Other textiles	0.0546	0.1719	0.2266	0.7586
Wearing apparel, exc. footwear	0.0645	0.6622	0.7267	0.9112
Leather products	0.3568	0.3342	0.6911	0.4835
Footwear, exc. rubber & plastic	0.2260	0.1212	0.3473	0.3489
Wood mills	0.5424	0.0351	0.5775	0.0607
Other wood products	0.3247	0.3709	0.6956	0.5332
Furniture & fixtures	0.4240	0.2639	0.6880	0.3835
Paper & paper products	0.2961	0.4126	0.7087	0.5821
Printing & publishing	0.2431	0.2439	0.4870	0.5008
Industrial chemicals	0.2678	0.3007	0.5685	0.5289
Paints & varnishes	0.2722	0.3523	0.6245	0.5641
Drugs & medicines	0.2010	0.2770	0.4780	0.5794
Cleansing detergents & cosmetics	0.2353	0.2217	0.4570	0.4851
Other chemicals	0.4152	0.4233	0.8386	0.5047
Petroleum & coal products	0.0526	0.6789	0.7315	0.9280
Rubber processing	0.7883	0.0057	0.7941	0.0071
Rubber products	0.3246	0.2381	0.5628	0.4230
Plastic products	0.1912	0.4970	0.6882	0.7221
Pottery and china	0.3074	0.1886	0.4961	0.3801
Structural clay products	0.3334	0.0907	0.4241	0.2138
Cement and concrete products	0.2454	0.1210	0.3664	0.3302
Other NM mineral products	0.2890	0.2771	0.5662	0.4894
Iron & steel products	0.4738	0.2066	0.6805	0.3036
Non-ferrous metals & tin	0.8191	0.1049	0.9241	0.1135
Tools, cutlery & metal furniture	0.2140	0.1822	0.3962	0.4598
Structural metal products	0.2500	0.4032	0.6532	0.6177
Fabricated metal products	0.2206	0.4774	0.6981	0.6838
Non-electrical machinery	0.1942	0.3691	0.5633	0.6552
Business & household machinery	0.0722	0.0957	0.1680	0.5696
Communication equipment, appliances	0.2452	0.3819	0.6271	0.6089
Other electrical machinery	0.1730	0.4784	0.6514	0.7344
Shipbuilding & repairs	0.2232	0.0513	0.2745	0.1868
Motor vehicles	0.0653	0.6589	0.7243	0.9097
Other transport equipment	0.0866	0.5684	0.6551	0.8676
Other miscellaneous manufactures	0.1847	0.5687	0.7535	0.7547
C. Tertiary sector	0.2453	0.072	0.3205	0.2246
Total economy	0.3362	0.1266	0.4629	0.2734
Manufacturing sector (Not including sectors A & C)	0.5153	0.1994	0.7142	0.2790

canning, animal feeds (mainly tapioca), and partly wood mills (mainly sawn timber). Orientated towards the domestic market are meat preparations, grain mills, bakeries, and partly wood mills. In all these industries fairly high overall input coefficients coincide with high domestic input coefficients.

The other type of industries mentioned above, which process imported goods for sale in the domestic market or for export, are also represented in Malaysia. However, several are still in the infancy stage or have just grown out of it. That is why they have little impact on the input coefficients of the manufacturing sector. They can be easily identified if one looks into Table IV.14 at column (4) in conjunction with column (3). It can be seen that quite a few industries' input supply depends heavily on imports. Of those which import more than two-thirds of their input, the industries producing other food preparations, tobacco products, plastic products, fabricated metal products, motor vehicles and other transport equipment, mainly sell their products in the domestic market. This is partly true also for the textile industry which is however the major supplier of the very export-oriented clothing industry (knitting mills and wearing apparel). The industries which process in Malaysia imported materials for export are, besides the clothing industry, the electrical machinery industry, and, to some extent, also the petroleum products industry. For the latter, this is however only correct for West Malaysia, because its oil input comes mainly from East Malaysia.

B. THE STRUCTURE OF DEMAND

The predominance of industries which produce for final demand is clearly visible from Table IV.15. Only 17 per cent of manufacturing output is absorbed by intermediate demand while all the remainder goes to final demand, mainly in the form of consumption and export and only a little as investment. In comparison, the share of intermediate demand is as much as 53 per cent in Germany. The function of the primary sector as a major supplier for manufacturing is reflected by the fact that it delivers 72 per cent of its output to intermediate demand. The tertiary sector, with 25 per cent only, on the other hand sells little more in relative terms to other producers of the economy than manufacturing. If the three major export industries, vegetable oil, rubber processing, and non-ferrous metals, are omitted, the share of intermediate demand increases from 17 to 26 per cent and that of final demand decreases correspondingly. However, the share of final demand is still very high compared to industrialized countries, due to the fact that manufacturing is still very much orientated towards the domestic market for consumer goods.

The same factors which have reduced the overall input coefficient between 1965 and 1970 are probably also responsible for the slight increase in the share of intermediate demand in total demand from 15 to 17 per cent and for the corresponding decline of the final demand share. It can be expected that this shift towards intermediate demand will accelerate in the future. On the one hand, production for intermediate demand will increase within the industries and, on the other, several industries which already supply a high proportion of their output to intermediate demand will continue to grow faster than the average. To the latter belong, for instance, the industry producing paper and paper products with an annual growth rate of gross output be-

TABLE IV.15

SALES TO FINAL AND INTERMEDIATE DEMAND, 1970

Sector	Sales to Intermediate Demand	% of Total Sales	Sales to Final Demand	% of Total Sales	Total
A Primary sector	2,941,624	71.82	1,153,776	28.18	4,095,400
B Meat preparation	723	0.38	322,943	99.62	323,666
Dairy products	388	0.36	106,562	99.54	106,950
Fruits & vegetable canning	8	0.01	53,831	99.99	53,839
Fish canning	387	0.37	102,049	99.63	102,436
Vegetable and animal oils	66,774	14.95	379,768	85.05	446,542
Grain mills & animal feeds	163,507	26.10	462,954	73.90	626,461
Bakeries	205	0.25	79,492	99.75	79,697
Cocoa and chocolate	258	1.46	17,344	98.54	17,602
Ice factories	9,485	99.06	90	0.94	9,575
Other food preparations	45,098	19.87	181,797	80.13	226,895
Spirits and wines	72	1.22	5,796	98.78	5,868
Breweries & soft drinks	139	0.15	90,614	99.85	90,753
Tobacco products	386	0.13	288,725	99.87	289,111
Textile spinning	26,612	37.08	45,151	62.92	71,763
Knitting mills	63	0.38	16,221	99.62	16,284
Other textiles	8,917	45.01	10,893	54.99	19,810
Wearing apparel exc. footwear	657	0.93	69,772	99.07	70,429
Leather products	2,521	31.37	5,514	68.63	8,035
Footwear exc. rubber & plastic	63	0.27	23,260	99.73	23,323
Wood mills	108,305	31.96	230,515	68.04	338,820
Other wood products	17,719	72.28	6,792	27.72	24,511
Furniture & fixtures	1,279	3.78	32,501	96.22	33,780
Paper & paper products	30,451	79.00	8,090	21.00	38,541
Printing & publishing	75,819	46.51	87,192	53.49	163,011
Industrial chemicals	84,918	85.16	14,791	14.84	99,709
Paints & varnishes	18,695	64.94	10,091	35.06	28,786
Drugs & medicines	144	0.72	19,627	99.28	19,771
Cleansing detergents & cosmetics	1,686	1.59	103,972	98.41	105,658
Other chemicals	5,476	23.14	18,181	76.86	23,657
Petroleum & coal products	121,528	70.03	51,998	29.97	173,526
Rubber processing	22,561	1.45	1,525,628	98.55	1,548,189
Rubber products	40,251	28.11	102,900	71.89	143,151
Plastic products	19,825	49.81	19,969	50.19	39,794
Pottery and china	5,678	37.72	9,373	62.28	15,051
Structural clay products	23,057	92.15	1,963	7.85	25,020
Cement and concrete products	57,552	76.57	17,604	23.43	75,156
Other NM mineral products	31,201	75.28	10,242	24.72	41,443
Iron & steel products	90,289	92.11	7,725	7.89	98,014
Non-ferrous metals & tin	8,490	1.06	786,634	98.94	795,124
Tools, cutlery & metal furniture	2,720	16.23	14,033	83.77	16,753
Structural metal products	28,415	46.99	32,049	53.01	60,464
Fabricated metal products	56,914	61.10	36,233	38.90	93,147
Non-electrical machinery	47,004	69.84	20,289	30.16	67,293
Business & household machinery	8,910	20.48	34,583	79.52	43,493
Communication equipment, appliances	—	—	43,749	100.00	43,749
Other electrical machinery	2,103	3.02	67,428	96.98	69,531
Shipbuilding & repairs	5,384	64.27	2,992	35.73	8,376
Motor vehicles	1,870	0.71	261,451	99.29	263,321
Other transport equipment	8,551	19.79	34,645	80.21	43,196
Other misc. manufactures	4,271	6.31	63,311	93.69	67,582
C Tertiary sector	1,126,697	24.79	3,416,459	75.21	4,543,156
Total economy	5,325,650	33.63	10,509,562	66.37	15,835,212
Manufacturing sector (Minus sectors A & C)	1,257,329	17.47	5,939,327	82.53	7,196,656

tween 1963 and 1971 of 24 per cent, as compared with the manufacturing growth rate of 14 per cent, industrial chemicals (23 per cent), petroleum and coal products (45 per cent), cement and concrete products (16 per cent), other NM mineral products (24 per cent), and iron and steel products (31 per cent).

For manufacturing as a whole, the bulk of final demand consists of exports. If one follows the official input-ouput data which differ slightly from our adjusted input-output table and the data used in subsequent chapters, one obtains an export share in final demand of 59 per cent for 1970.[41] This is significantly less than in 1965 when the export share was still 65 per cent. Omitting vegetable oils, rubber processing and non-ferrous metals, the share is 20 per cent in 1970 and 27 per cent in 1965. Thus, on the whole, exports had become less weighty in final demand by 1970 as compared with 1965, largely because the three major export industries sold relatively less to final demand than the rest of manufacturing, as pointed out above. However, all other industries together apparently became more export oriented during the second half of the 1960s, an observation which will be supported by facts supplied below.

After exports, private consumption took, with 35 per cent, a very high share of final demand. The manufacturing sector's deliveries to public consumption were negligible. Fixed investment and inventories each had a share of only 3 per cent. Hence, in this respect also, final demand reveals the characteristic structure of a typical less-developed country with a strong bias towards primary production. It is remarkable that the decline in the export share mentioned above was mostly compensated for by an increase in the private consumption share, which in 1965 was only 28 per cent. Manufacturing growth in Malaysia apparently took on the familiar pattern in which a developing country proceeds during its first stages of industrialization from primary processing of raw materials to the production of consumer goods for the domestic market. Whether the share of investment has also slightly increased over the period of observation is difficult to assess. Of the 7 per cent which remain in 1965 after deducting export and consumption, 5 per cent are declared as unspecified and 2 per cent as fixed investment. If one assumes that about 2 per cent have to be allocated to inventories, the share of total investment would at most have increased by only two percentage points.

C. DIRECT VERSUS INDIRECT DEMAND

In a country where final demand is such an important outlet for manufacturing production one might expect that changes in final demand would not produce strong secondary effects on intermediate stages of production. But this is not certain, as it is mainly due to the large size of the primary processing industries that final demand gets such an overwhelming weight. The above calculations have demonstrated that all other industries together supply a substantial portion of their output to intermediate demand. For that reason changes in final demand may well induce sizeable secondary output and growth changes and by this also affect employment. To detect the areas where the impact of such changes is strongest, the indirect effects will be analysed in this section.

One may define, along familiar lines, the *ex-post* equality of supply and demand as follows:

(1) $X + M = F + X_{ij}$

X is the economy's gross output vector, M are imports, F final demand, and X_{ij} the demand for inputs. Defining M as the sum of final (M_F) and intermediate (M_{ij}) import goods, (1) may be rewritten as

(2) $X - (X_{ij} - M_{ij}) = F - M_F$

Introducing a matrix A with the input coefficients $a_{ij} = X_{ij} / X_j$ as its elements and a matrix C with the imported input coefficients $c_{ij} = M_{ij} / X_j$, (2) becomes

(3) $X(I - (A - C)) = F - M_F$

One may simplify the notation by defining $(A - C) = B$ and $(F - M_F) = F_D$ and write alternatively.

(4) $X = (I - (A - C))^{-1} F_D$

or

(5) $X = (I - B)^{-1} F_D$

(4) and (5) give the gross output X which corresponds to a final demand F_D for domestically-produced goods. One can also compute with these equations the gross output change required for a given final demand change under the assumption that the coefficients of the A and C matrix are stable. Stability of the A matrix can be reasonably assumed for a certain period. Stability of the C matrix is, however, less certain. In a country which embarks on an import substitution strategy for intermediate goods also, it must be assumed that several imported input coefficients will decline over time. Theoretically, they all could become zero, if domestic production completely substitutes for imported inputs. In that case the gross output change effected by a change in final demand would be at its maximum. Apart from this, the C-coefficients can be affected by changes in the terms of trade. A decline in the terms of trade due to rising import prices increases the C-coefficients and vice versa.

If we abstract from terms of trade changes, the stability of C would imply that no import substitution at all takes place. A general increase of the C-coefficients is, on the other hand, not very likely in a country which already imports a substantial portion of its inputs and attempts to reduce it by import substitution. If this is correct, one may consider the gross output change due to a final demand increase, as calculated with (5), as the minimum change, and compare this with the theoretical maximum, realizing that the actual change is likely to lie somewhere in between.

Table IV.16 shows the maximum and minimum changes defined above due to a unit increase in final demand and the differences between the two. It is quite clear from the table that the rankings of industries differ for the two criteria. With the import leakage (positive

TABLE IV.16

FINAL DEMAND MULTIPLIERS WITH AND WITHOUT IMPORT LEAKAGE, 1970

Sector	Demand Multiplier Without Leakage	With Leakage	(1) — (2)
	(1)	(2)	(3)
A. Primary sector	1.3358	1.1728	0.1630
B. Meat preparation	1.7414	1.6298	0.1116
Dairy products	2.9750	1.5032	1.4718
Fruits & vegetable canning	2.4574	1.8054	0.6520
Fish canning	1.9043	1.7640	0.1403
Vegetable and animal oils	2.2590	2.0332	0.2258
Grain mills & animal feeds	2.0643	1.6612	0.4031
Bakeries	2.4517	1.9005	0.5512
Cocoa and chocolate	2.5650	1.3890	1.1760
Ice factories	1.6526	1.3818	0.2708
Other food preparations	2.7940	1.3334	1.4606
Spirits and wines	1.5703	1.2073	0.3630
Breweries & soft drinks	2.0040	1.3171	0.6869
Tobacco products	2.5149	1.1618	1.3531
Textile spinning	3.1563	1.8452	1.3111
Knitting mills	2.1414	1.1365	1.0049
Other textiles	1.6119	1.0743	0.5376
Wearing apparel exc. footwear	3.1831	1.0853	2.0978
Leather products	2.3937	1.4785	0.9152
Footwear exc. rubber & plastic	1.7659	1.3225	0.4434
Wood mills	1.8764	1.6630	0.2134
Other wood products	2.2937	1.4748	0.8189
Furniture & fixtures	2.3497	1.6498	0.6999
Paper & paper products	2.4630	1.3680	1.0950
Printing & publishing	2.1041	1.3310	0.7731
Industrial chemicals	2.0816	1.3555	0.7261
Paints & varnishes	2.2604	1.3491	0.9113
Drugs & medicines	1.9202	1.2664	0.6538
Cleansing detergents & cosmetics	1.9178	1.3295	0.5883
Other chemicals	2.7108	1.5852	1.1256
Petroleum & coal products	2.1104	1.0672	1.0432
Rubber processing	2.0761	1.9286	0.1475
Rubber products	2.1821	1.5178	0.6643
Plastic products	2.4176	1.2579	1.1597
Pottery and china	1.9662	1.4018	0.5644
Structural clay products	1.6985	1.4059	0.2926
Cement and concrete products	1.6722	1.3046	0.3676
Other NM mineral products	1.9103	1.3775	0.5328
Iron & steel products	2.4094	1.7081	0.7013
Non-ferrous metals & tin	2.2554	1.9614	0.2937
Tools, cutlery & metal furniture	1.8488	1.3146	0.5342
Structural metal products	2.3975	1.3395	1.0580
Fabricated metal products	2.5764	1.3283	1.2481
Non-electrical machinery	2.1879	1.2685	0.9194
Business & household machinery	1.3276	1.1059	0.2217
Communication equipment, appliances	2.2864	1.3244	0.9620
Other electrical machinery	2.3006	1.2411	1.0595
Shipbuilding & repairs	1.5512	1.3148	0.2364
Motor vehicles	3.2593	1.0938	2.1655
Other transport equipment	2.6562	1.1221	1.5341
Other misc. manufactures	2.6616	1.2493	1.4123
C. Tertiary sector	1.6161	1.3342	0.2819

C), the highest secondary demand generation is created by the primary processing industries such as vegetable and animal oils, non-ferrous metals, and rubber processing, where the demand multiplier is about 2, i.e. the total demand increase is about 100 per cent higher than the change in final demand. Other industries which also have relatively high demand multipliers are similarly engaged in some kind of simple raw material processing, for instance bakeries (1.9), textiles spinning (1.8), fruit and vegetable canning (1.8), fish canning (1.8), iron foundries (1.7), grain milling (1.7), wood milling (1.7), etc. This again reflects the fact that the manufacturing sector is still substantially dependent on the primary sector for its domestic inputs. If there were no import leakage (zero C-matrix) it would be mostly other industries which rank high according to the demand multiplier. Table IV.16 shows that the highest 'potential' demand multipliers exist for motor vehicles (3.3), wearing apparel (3.2), textile spinning (3.2), dairy products (3.0), other food preparations (2.8), other chemicals (2.7), and other transport equipment (2.6).

What can be concluded from these calculations for a policy that aims at a vigorous demand generation throughout the economy by stimulating final demand? Given existing import leakages, one may argue that final demand of the raw material processing industries should be increased, because they present the highest demand multipliers. The wisdom of such a policy is, however, dubious. Several raw materials can be exported in either unprocessed or in processed form. Their supply is, furthermore, rather inelastic in the short and medium run. What may happen, therefore, is that unprocessed raw materials previously exported are diverted toward domestic processing industries. This may be desirable for its own sake, because it increases the country's value added and possibly employment, but it does not generate secondary demand to the extent suggested by the demand multiplier. The policy would therefore be ineffective in this respect. That leads to the consideration to concentrate on non-primary processing industries with relatively high demand multipliers, such as furniture and fixtures, other chemicals, rubber products, etc. In order to have a sizeable impact from a stimulation of these industries their weights in the manufacturing sector must, of course, also be taken into account. In absolute terms, a large industry with a relatively small multiplier may generate more secondary demand than a small one with a high multiplier.

An alternative strategy would be the attempt to exploit the unutilized portion of the potential demand multiplier by import substitution. From column (3) of Table IV.16 it can be seen that the industries where the unutilized portion is highest are generally also those with the greatest potential demand multipliers, such as motor vehicles, wearing apparel, other transport equipment, dairy products, other food preparations, tobacco products, textile spinning, metal products, etc. The selection of industries for such an import substitution strategy should, of course, not be guided by the criterion of potential additional demand generation alone. There have been several examples, in particular in Latin America, where indiscriminate government requirements to increase the domestic input content by a fixed percentage every year have led to grossly inefficient production of intermediate goods. The potential demand generation can, therefore, be only one among a number of other criteria which take into account the long-run comparative advantage of the industries concerned.

D. BACKWARD AND FORWARD LINKAGES

It is a well-known fact that the expansion of an industry not only generates demand for its inputs, but may also, if it produces intermediate goods, induce the expansion of other industries which use the commodities additionally produced as inputs. The connexion with supplier industries has been called by Hirschman[42] backward linkage and that with user-industries forward linkage. Rasmussen[43] who invented these concepts had already earlier proposed the following measures which have been generally accepted. The backward linkage is basically the demand multiplier standardized by the unweighed average of all matrix elements. If the elements of the inverse in equation (5) are denoted by r, the formula for the backward linkage is:

$$B_j = \frac{\frac{1}{n} \sum_{i=1}^{n} r_{ij}}{\frac{1}{n^2} \sum_{i=1}^{n} \sum_{j=1}^{n} r_{ij}}$$

Whereas the backward linkage is obtained by adding up the columns, the forward linkage is calculated by adding up the rows and standardizing correspondingly:

$$F_i = \frac{\frac{1}{n} \sum_{j=1}^{n} r_{ij}}{\frac{1}{n^2} \sum_{i=1}^{n} \sum_{j=1}^{n} r_{ij}}$$

It is quite obvious that in terms of production incentives the forward linkage is generally much weaker than the backward linkage. Whereas an output increase in a certain industry actually creates demand for the required inputs via backward linkages—a demand which has somehow to be satisfied, either by domestic production or by imports—the supply of domestically-produced inputs via forward linkages is for a potential user only one possible source among several others. If he is really determined to produce, he can always do so by purchasing his inputs from foreign sources, except when imports are restricted by tariffs or quotas. It can, therefore, be said that the realization of forward linkages is likely to act as an effective incentive only if imports are severely restricted, a case which is not very relevant in Malaysia.

Table IV.17 shows the backward linkage, the forward linkage, and the sum of both under the assumption that the imported input

TABLE IV.17
BACKWARD AND FORWARD LINKAGES BY INDUSTRIES, 1970

Sector	Backward Linkage (B_i)	Forward Linkage (F_j)	$B_i + F_j$
A. Primary sector	0.8292	5.5068	6.3360
B. Meat preparation	1.1523	0.7088	1.8612
Dairy products	1.0629	0.7096	1.7725
Fruits & vegetable canning	1.2765	0.7072	1.9838
Fish canning	1.2472	0.7090	1.9563
Vegetable and animal oils	1.4376	0.9136	2.3513
Grain mills & animal feeds	1.1745	1.1524	2.3270
Bakeries	1.3438	0.7076	2.0514
Cocoa and chocolate	0.9821	0.7090	1.6911
Ice factories	0.9770	0.7223	1.6993
Other food preparations	0.9428	1.0919	2.0348
Spirits and wines	0.8536	0.7094	1.5631
Breweries & soft drinks	0.9313	0.7074	1.6387
Tobacco products	0.8214	0.7076	1.5291
Textile spinning	1.3047	1.1379	2.4426
Knitting mills	0.8036	0.7071	1.5108
Other textiles	0.7596	0.7547	1.5144
Wearing apparel exc. footwear	0.7673	0.7101	1.4774
Leather products	1.0453	0.7955	1.8409
Footwear exc. rubber & plastic	0.9351	0.7089	1.6440
Wood mills	1.1758	1.2270	2.4028
Other wood products	1.0427	0.8203	1.8631
Furniture & fixtures	1.1665	0.7328	1.8994
Paper & paper products	0.9673	1.0350	2.0023
Printing & publishing	0.9411	0.8521	1.7932
Industrial chemicals	0.9584	1.0425	2.0009
Paints & varnishes	0.9539	0.8071	1.7610
Drugs & medicines	0.8954	0.7122	1.6076
Cleansing detergents & cosmetics	0.9400	0.7133	1.6534
Other chemicals	1.1208	0.7686	1.8894
Petroleum & coal products	0.7546	1.1200	1.8747
Rubber processing	1.3636	0.8257	2.1894
Rubber products	1.0731	0.8603	1.9335
Plastic products	0.8894	0.7761	1.6655
Pottery and china	0.9911	0.7865	1.7777
Structural clay products	0.9940	0.7443	1.7384
Cement and concrete products	0.9224	0.8966	1.8191
Other NM mineral products	0.9739	0.7516	1.7255
Iron & steel products	1.2077	1.1607	2.3685
Non-ferrous metals & tin	1.3868	0.7922	2.1790
Tools, cutlery & metal furniture	0.9295	0.7288	1.6583
Structural metal products	0.9471	0.7514	1.6985
Fabricated metal products	0.9391	1.0581	1.9973
Non-electrical machinery	0.8969	1.0831	1.9801
Business & household machinery	0.7819	0.7300	1.5119
Communication equipment, appliances	0.9364	0.7070	1.6435
Other electrical machinery	0.8775	0.7300	1.6076
Shipbuilding & repairs	0.9296	0.7139	1.6435
Motor vehicles	0.7734	0.7092	1.4826
Other transport equipment	0.7934	0.7170	1.5104
Other misc. manufactures	0.8833	0.7492	1.6326
C. Tertiary sector	0.9433	5.3184	6.2618

coefficients are positive and constant. The backward linkage, therefore, exhibits the same ranking of industries as the demand multiplier with import leakages in Table IV.16. It can be seen that for manufacturing the backward linkage is generally higher than the forward linkage, which is a further reason for placing more emphasis on the former. This again reflects the fact that the manufacturing industries are purchasing substantially more intermediate inputs from domestic sources than they supply to the home economy. The opposite is true for the primary and the tertiary sectors which both have extremely high forward linkages and rather low backward linkages.

Though the forward linkages do not act as powerful incentives, it may be useful for planning purposes to know where these linkages are highest. If the planning agency observes that an industry with a high forward linkage has a comparative advantage in the country—like wood mills and grain mills in Malaysia—or appears desirable for other reasons, it may want to support this industry by providing incentives to the user-industries, and may simultaneously raise the value added created in the country. To take an example, the sawn timber produced in large quantities by Malaysian wood mills may either be exported, as has been done with the major part of the output in the past, or its high forward linkage may be utilized by actively promoting user-industries which produce all kinds of wood products, such as wooden boxes, crates, knocked-down furniture, pre-fabricated parts for the construction industry, etc., and thereby get more value added and employment from the processing of domestic or imported raw materials. The forward linkages suggest that such chances could exist, apart from wood and grain mills, in the industries producing iron and steel, textiles (spinning), petroleum and coal products, other food preparations, non-electrical machinery, industrial chemicals, paper and paper products, etc. It may be noted that several of these industries also have high backward linkages, and therefore a high combined backward and forward linkage (last column of Table IV.17) gives them the role of key industries within the manufacturing sector.

1. Sections IV.1 and 2 were co-authored with Bernhard Weber. See also L. Hoffmann and B. Weber, 'Economies of Scale, Factor Intensities and Substitution: Micro-Estimates for Malaysia's Manufacturing Industries', *Weltwirtschaftliches Archiv*, Vol. 12, No. 1, Kiel, 1976.

2. R. C. O. Matthews, 'Reciprocal Demand and Increasing Returns', *Review of Economic Studies*, Vol. 17 (1949–50), pp. 149 ff.

3. About one-half of all industries were covered fully, while for the rest only establishments with five or more employees were surveyed.

4. The classification by industries follows the Federation of Malaya Industrial Classification (1963), which is broadly comparable to the International Standard Industrial Classification (ISIC).

5. With regard to depreciation, it appears that small companies behave differently from their bigger counterparts. However, too little is known about this to allow the formulation of a more accurate hypothesis.

6. Equation (2) is the logarithmic (linearized) form of $V = \gamma L^{\alpha} C^{\beta}$ where V stands for value added, L for labour, C for capital, and α and β for the output elasticities of labour and capital respectively.

7. The CES-function is defined as: $V = \gamma\left(\delta C^{-\rho} + (1-\delta) L^{-\rho}\right)^{-\frac{\nu}{\rho}}$ where δ is a distribution parameter. γ is an efficiency parameter, ρ is a substitution parameter, and ν the scale-elasticity. Equation (3) was developed by J. Kmenta, 'On the Estimation of the CES Function', *International Economic Review*, Vol. 8, 1967. For a survey of the discussion of these and other estimation approaches see I. Nadiri, 'Some Approaches to the Theory and Measurement of Total Factor Productivity: A Survey', *Journal of Economic Literature*, Vol. 8, Menasha, Wisconsin, 1970, pp. 1137–77. It should be noted that the last two variables in equation (3) are highly correlated. This does not, however, affect the value of ν.

8. This follows from the fact that (3) approaches (2) as the parameter of $\left(\ln \frac{C}{L}\right)^2$ approaches zero. Writing (3) as $\ln V = \ln \gamma + \nu(1-\delta) \ln L + \nu\delta \ln C - \frac{\rho\nu\delta(1-\delta)}{2}\left(\ln \frac{C}{L}\right)^2$ it can be seen that $\nu(1-\delta) + \nu\delta = \nu$ which is equivalent to equation (1), if the parameter of $\ln\left(\frac{C}{L}\right)^2$ is zero.

9. The 5 per cent-confidence interval is given in brackets in equation (4).

10. See for instance E. H. Chamberlin, 'The Theory of Monopolistic Competition—A Reorientation of the Theory of Value', *Harvard Economic Studies*, Vol. 38, Cambridge, 1948.

11. Measuring size by average capital stock and average employment gives lower correlation coefficients of 0.34 and 0.18 respectively.

12. H. Lary, *Imports of Manufactures from Less Developed Countries*, National Bureau of Economic Research, New York, 1968.

13. V may be defined on the one hand as the difference between gross output (O) and input (M), and on the other as the sum of capital and labour incomes.

$$V = O - M = L \cdot w + C \cdot r$$

A skill improvement of the employed labour may increase O without raising M by the same absolute amount. This will happen if O increases with the intermediate input coefficients being constant. On the income side, the output increase is balanced by either higher wages or higher capital rentals (r). Lary assumes that the skill improvements are reflected in higher wages.

14. D. Morawetz, 'Employment Implications of Industrialization in Developing Countries—A Survey, *Economic Journal*, Vol. 84, London, 1974.

15. β and α are defined as:

$$\beta = \frac{\partial V}{\partial C} \cdot \frac{C}{V}; \alpha = \frac{\partial V}{\partial L} \cdot \frac{L}{V}$$

K is then:

$$K = \frac{\frac{\partial V}{\partial C} \cdot C}{\frac{\partial V}{\partial L} \cdot L}$$

It may be noted that allocative efficiency requires a deviation from marginal productivities in the presence of increasing or decreasing returns to scale. However, this is of no concern in our case, as the deviation is of the same relative magnitude for all factors and therefore cancels out in (9).

16. There exists in fact a negative correlation between α and the employment coefficient L/V. The Spearman coefficient is -0.32 and significantly different from zero.

17. For example, the combination of a high C/L- and a low K-ratio is found in the following industries (see Table IV.2): (3097), (4111/3), (4121/4129), (4191), (4330), (4350), (4739/4799), (4831/2).

18. In these industries we observed wide divergencies between the marginal productivity of labour—measured by Cobb-Douglas functions—and the wage rate. Therefore, the high productivity may be due to a too small input of unskilled labour.

Another skill-indicator could be the skill coefficients which have been calculated by L. Hoffmann, *Interim Report on the HEX*, op. cit., for the Malaysian manufacturing industries.

Because of the different classification, these coefficients are not directly comparable with our present data.

19. See for instance Z. Griliches, 'Specification Biases in Estimations of Production Functions', *Journal of Farm Economics*, Vol. 39, Menasha, Wisconsin, 1957; P. Dhrymes, 'Some Extensions and Tests for the CES-Class of Production Functions', *Review of Economics and Statistics*, Vol. 47, Massachusetts, 1965; and M. Girgis, 'Aggregation and Misspecification Biases in Estimates of Factor Elasticity of Substitution—The Case of Egypt', *Weltwirtschaftliches Archiv*, Vol. 110, Kiel, 1974.

20. See W. Vogt, *Theorie des wirtschaftlichen Wachstums*, Frankfurt, Vahlens Handbucher der Wirtschafts- und Sozialwissenschaften, 1968.

21. Assuming a constant factor price ratio.

22. Equation (10) is the simplified form of

$$\ln\left(\frac{V}{L}\right) = \sigma \ln\left[\gamma^{\rho}(1-\delta)^{-1}\right] + \sigma \ln \frac{W}{L}$$

which is derived from the CES-function stated on page 94 under the assumption $\nu = 1$ and that the marginal productivities equal the factor prices.

See K. Arrow, H. Chenery, B. Minhas, and R. Solow, 'Capital-Labor Substitution and Economic Efficiency', *Review of Economics and Statistics*, Vol. 43, 1961.

23. Diwan derives under the assumptions stated in footnote 8 on p. 140 the following equation from the CES-function.

$$\ln\left(\frac{C}{L}\right) = \sigma \ln\left(\frac{\delta}{1-\delta}\right) + \sigma \ln\left(\frac{W}{L}\right)$$

As data for the price of capital (r) are not available, this expression has been transformed to:

$$\ln\left(\frac{C}{L}\right) = \sigma \ln\left(\frac{\delta C}{(1-\delta)(V-W)}\right) + \sigma\left(\frac{W}{L}\right)$$

For the original equations see R. K. Diwan, 'An Empirical Estimate of the Constant Elasticity of Substitution Production Function', *Indian Economic Journal*, Vol. 12, Bombay, 1964/65.

24. The VES-function is defined as:

$$V = \gamma\left(\delta C^{-\rho} + (1-\delta)\eta \frac{C}{L}^{-c(1+\rho)} L^{-\rho}\right)^{-1/\rho}$$

See Y. C. Lu and L. B. Fletscher, 'A Generalization of the CES-Production Function', *Review of Economics and Statistics*, Vol. 50, 1968.

25. For (12) the elasticity is:

$$\sigma_{VES} = \frac{a}{1 - \frac{cV}{V-W}}$$

If we define the parameters in (3) from left to right as f, g, h and j respectively, the elasticity is:

$$\sigma_{KMENTA} = \frac{1}{1 - \frac{2j}{h\left(1 - \frac{h}{g}\right)}}$$

σ_{VES} is derived according to a proposal by Lu and Fletscher, op. cit. while σ_{KMENTA} may be obtained from the CES-function and (3) by making use of the definition $\rho = \frac{1}{\sigma} - 1$, wherein $(-1 < \rho \leq +\infty)$.

26. For instance, the observed high correlations between ln C/L and ln $(C/L)^2$ lead to identification errors for the parameters h and j. The calculated values of σ_{KMENTA} are therefore unreliable.

27. Similar results have been obtained for other countries. See for instance H. J. Bruton, *The Elasticity of Substitution in Developing Countries*, Williams College, Research Memorandum No. 45, Massachusetts, 1972, and G. C. Winston, 'Factor Substitution ex-ante and ex-post', *Journal of Development Economics*, Vol. 1, Amsterdam, 1974.

28. See Chapter VII.

29. F. H. Fleck, B. Finkbeiner, and R. Casutt, 'Die CES-Produktionsfunktion: Eine kritische Gegenuberstellung', *Kyklos*, Vol. 24, Basel, 1971.

30. G. T. O'Mara, 'An Econometric Analysis of Small Scale Industry in Malaysia', Northwestern University and IBRD, 1975 (mimeo). See also Chee Peng Lim, 'The Role of Small-Scale Industry in the Malaysian Economy', Ph.D Thesis, University of Malaya, 1975 (mimeo).

31. David Lim, *Economic Growth and Development in West Malaysia*, p. 270.

32. I. Little, T. Scitovsky, and M. Scott, *Industry and Trade in Some Developing Countries—A Comparative Study*, OECD, Paris and Oxford University Press, London, 1970, p. 93.

33. D. Lim, 'Capital Utilization of Local and Foreign Establishments in Malaysian Manufacturing', *Review of Economics and Statistics*, Vol. LVIII, 1976, and also D. Lim, 'On the Measurement of Capital Utilization in Less Developed Countries', *Oxford Economic Papers*, Vol. 28, No. 1, March 1976.

34. The choice of the weighing scheme depends on the analytical purpose for which the utilization rates are computed. As stated in the text, we are interested here in the output increase that could potentially be achieved if capital were fully utilized. Weighing with capital instead of output or sales would grossly overstate the potential output increase that could be obtained from utilizing capital fully, whenever the utilization rate is relatively low in industries with a high capital-output ratio and vice versa. Assume, for example, industry A has a capital stock of 1000K and an output of 10P, whereas B produces 1000P with 10K. If the utilization rate of A is 50 per cent and that of B 80 per cent, weighing with capital would give an average utilization rate of 50.3 per cent, suggesting that full utilization could roughly double output. However, actually output can only be increased by 10 in A and 250 in B or on average about 26 per cent. This is exactly what is brought out if the average utilization rate is calculated by using output as weight. The rate is then slightly below 80 per cent, indicating a potential 25–26 per cent increase in output.

35. David Lim, 'Capital Utilization in West Malaysian Manufacturing', University of Malaya, June 1975 (mimeo), p. 16.

36. Lo Sum Yee, *The Development Performance of West Malaysia, 1955–1967*, Heinemann Educational Books, Kuala Lumpur, 1972.

37. The overall input coefficient is defined as total non-primary inputs divided by gross output, whereas the domestic and the imported input coefficients relate inputs from domestic and foreign sources respectively to gross output.

38. See Lin Ching-yuan, *Industrialization in Taiwan, 1946–1972*, Praeger Publishers, New York, 1973, and Deutsches Institut fur Wirtschaftsforschung, *Aufstellungen von Input-Output Tabellen*, Dunker & Humblodt, Berlin, 1968.

39. It should be noted that in Table IV.14 primary processing of raw materials is included in manufacturing whereas in Chapter II it was excluded.

40. Computed from Department of Statistics, West Malaysia, *Inter-Industry Accounts*, Kuala Lumpur, 1965, Table 1, p. 10.

41. Department of Statistics, *Input-Output Tables Peninsular Malaysia, 1970*, Kuala Lumpur, Table II. For 1965 only rubber processing and non-ferrous metals could be omitted, as there were no separate data for vegetable oil. However, this probably has little effect on the results, since in 1965 palm oil was still of minor importance.

42. A. O. Hirschman, *The Strategy of Economic Development*, New Haven, 1958.

43. P. N. Rasmussen, *Studies in Intersectoral Relations*, Amsterdam, 1956, p. 133f.

V The Sources of Industrial Growth

HAVING discussed in some detail the major structural characteristics of the manufacturing sector as it emerged from the 1960s, we now come back to the question of what made manufacturing grow as it did. Not that we feel capable of explaining fully the growth mechanism, but by looking at what has been called the 'sources of growth' and at the background of the course of policy as analysed in Chapter III, one can see reasonably well how—though not why—manufacturing growth came about. It also provides valuable guides to the question whether Malaysia made a wise use of its growth potential, taking into account the constraints of its policy targets. Furthermore, it can serve as a basis for conditional forecasts of future growth opportunities for Malaysia's manufacturing sector.

1. OUTPUT EXPANSION VERSUS INCOME EXPANSION: CONCEPTS AND DATA

The concepts of measuring the sources of growth are those employed in earlier studies by Hoffmann and Tan.[1] Define:

(1) $$D = Y + M - X$$

(2) $$v = \frac{Y}{D}$$

(3) $$\mu = \frac{M}{D}$$

(4) $$x = \frac{X}{D}$$

where

D = internal market
Y = sales of local industry
M = imports
X = exports

We then have the identity

(5) $$Y_1 - Y_0 = \underset{(5.1)}{v_0 (D_1 - D_0)} + \underset{(5.2)}{D_1 (\mu_0 - \mu_1)} + \underset{(5.3)}{D_1 (x_1 - x_0)}$$

or

$$(6) \qquad 1 = \underset{(6.1)}{\frac{v_0 (D_1 - D_0)}{Y_1 - Y_0}} + \underset{(6.2)}{\frac{D_1 (\mu_0 - \mu_1)}{Y_1 - Y_0}} + \underset{(6.3)}{\frac{D_1 (x_1 - x_0)}{Y_1 - Y_0}}$$

with indices o and 1 denoting different points of time.

(5) can be used to measure the inter-sectoral spread of the sources of growth, while (6) gives their intra-sectoral shares. The first term on the right side of each equation measures domestic demand expansion, the second import substitution, and the third export expansion. It should be noted that production, imports, and exports are related in (2) to (4) to the local market and not, as is usual, to internal supply.[2] The reference system is accordingly the growth of the local market or balanced growth *à la* Nurkse. The advantage of this concept over various others has been demonstrated elsewhere.[3]

Morley and Smith[4] have proposed an input-output approach for measuring import substitution because they feel that concepts such as those used in our papers understate the actual extent of import substitution. The Morley-Smith method was not employed in this study because we have serious doubts whether it makes sense to attribute to import substitution also the production of inputs which have never been imported as the method implies. Furthermore, the Morley-Smith approach is difficult to interpret, as the authors themselves acknowledge. Assume that car imports decline because of protection. This would (among other reasons) imply import substitution in the steel industry, though its competitiveness (compared to imports) may actually have not changed. The fact that import substitution (or export expansion) cannot be attributed any more to causes originating in a particular industry, limits substantially the possibility of 'explaining' the growth pattern by isolating 'causes' (through cross-section analysis) whose quantitative impact differs from industry to industry.

The concepts outlined above try to assess the performance of an industry in its attempt to obtain a larger share of the internal market and to improve its export position. This performance depends on the competitive strength of the industry, which may be developed by the industry itself or be artificially created through trade policy. As suppliers compete in gross supply the measures were stated in gross terms. From a policy point of view it might be of considerable importance to know the impact of import substitution and export expansion on income and on resource allocation. The latter may be defined more specifically either as capital allocation or as labour allocation. We will not, however, use this specification here.

The income creation that can be attributed to import substitution and export expansion is the corresponding value added. If we assume that the factor price ratios from activity to activity do not change very much and that there are no substantial monopoly rents, these value-added figures also indicate how the allocation of primary factors (labour and capital) is affected by import substitution and export expansion. The translation of the above measures into value-added terms can be done in several ways. Let us define:

$$n = \frac{V}{Y} \tag{7}$$

where V is value added and n the value-added ratio. Equation (5) could then be written in value-added terms as

$$V_1 - V_0 = v_0 \, (D_1 n_1 - D_0 n_0) + D_1 n_1 \, (\mu_0 - \mu_1) + D_1 n_1 \, (x_1 - x_0) \tag{8}$$

Two objections may be raised against this direct translation into value-added terms. First, the change in market is a matter of gross supply and demand and should, therefore, not be measured in net terms. Second, an increase in the value-added ratio means a higher resource allocation to the industry in question or a higher monopoly rent of that industry which cannot directly be attributed to market growth, import substitution, or export expansion, and which should therefore be brought out separately. Taking this into account (8) can be rearranged into

$$V_1 - V_0 = \underbrace{n_0 v_0 \, (D_1 - D_0)}_{(9.1)} + \underbrace{D_1 n_0 (\mu_0 - \mu_1)}_{(9.2)} + \underbrace{D_1 n_0 (x_1 - x_0)}_{(9.3)} + \underbrace{D_1 v_1 (n_1 - n_0)}_{(9.4)} \tag{9}$$

This equation equals the one used by Lewis,[5] except for the export term (9.3). The increase in value added due to market growth, import substitution, and export expansion is measured by keeping the value-added ratio of the initial period constant. Expression (9.4) can be interpreted in several ways. For an individual industry a positive value of (9.4) could mean that the industry increases the degree of processing of its secondary inputs and attracts therefore more primary factors (labour and capital), either by employing factors that were before unemployed or by enticing away employees from other industries or sectors. It could also mean, however, that the primary factors employed in the industry receive higher incomes. In particular, there could be a rise in the monopoly rent if the market of the industry is protected against foreign competitors. Conversely, if (9.4) is negative either a shift towards higher use of raw materials and less use of primary factors, or a relative decline in factor incomes could have taken place.

The data used in this study differ in two respects from those employed in our earlier investigations cited above. First, the coverage is almost complete, except for omissions in the original sources like the Malaysian trade statistics and the manufacturing censuses and surveys and, second, the classification follows closely that of the (unpublished) detailed input-output tables prepared by the Malaysian Department of Statistics for the year 1970.[6] This classification has been used here in order to enable an extension of our earlier calculations to include the indirect effects resulting from backward and forward linkages between different industries.

With the more detailed data now available it was possible to improve the classification into consumption, intermediate, and investment goods, although it is realized that any such classification may raise well-founded objections. It was further decided to present and discuss separately the development of the major primary processing industries, which mostly produce for the world market, because their heavy weight distorts the overall picture. The following analysis begins with these industries and continues in the subsequent section with the non-primary processing manufacturing industries.

2. THE PRIMARY PROCESSING INDUSTRIES, 1963–1974

By 1963, Malaysia's manufacturing sector was still heavily dominated by primary processing industries. Two industries, rubber processing and non-ferrous metals (mainly tin), alone accounted for more than one-half of all manufacturing output. If palm oil processing and wood mills are added, the share of these industries becomes nearly two-thirds. The 4.9 per cent growth rate of the five industries as shown in Table V.1 was quite moderate between 1963 and 1968, but after that year it increased to 7.1 per cent until 1971, and to an impressive 30 per cent for the period 1971–4.

Several factors contributed to this development. The acceleration of the growth rate up to 1971 was on the one hand due to a tapering-off in the fall of the rubber price. The increase in the output volume could therefore overcompensate for the price decline, thereby leading to a higher output value. On the other hand there was a strong tendency toward diversification, with palm oil processing, wood milling, and oil refining growing rapidly. The growth of oil palm processing partly reflects new plantings, for instance on the publicly organized FLDA-schemes,[7] and partly the substitution of palm oil cultivation for rubber cultivation. The increase in wood milling was encouraged by the substantial profit margins which could be realized by exporting sawn timber instead of logs. The expansion of oil refining, finally, was due to the decision of two major oil companies to set up oil refineries in West Malaysia for the processing of crude oil from the Middle East for domestic consumption.

In spite of their fairly high growth rates, the share of these industries declined by 1971 to less than 50 per cent, because other manufacturing industries expanded even more rapidly as will be shown in the next section. Only between 1971 and 1974 did the share again increase as a result of the world-wide boom in commodity prices. With the levelling-off of the boom after 1974 the declining trend of the share is expected to continue.

The sources of growth are obvious for three industries—palm oil processing, rubber processing, and non-ferrous metals—which produce almost exclusively for export. Wood mills and oil refineries, however,

TABLE V.1
GROSS OUTPUT OF PRIMARY PROCESSING INDUSTRIES,
1963–1974

	1963		1968		1971		1974[a]	
	M$'000	%	*M$'000*	%	*M$'000*	%	*M$'000*	%
Palm oil processing	74,251	3.7	142,658	5.5	365,854	11.5	1,120,168	16.2
Wood mills	116,200	5.7	225,700	8.8	341,400	10.8	948,900	13.7
Petroleum products	10,000	0.5	175,100	6.8	199,800	6.3	629,200	9.1
Rubber processing	1,202,100	59.3	1,185,700	46.0	1,342,900	42.4	2,736,300	39.5
Non-ferrous metals	624,400	30.8	849,100	32.9	920,900	29.0	1,495,700	21.6
Total	2,026,951	100.0	2,578,258	100.0	3,170,854	100.0	6,930,268	100.0
Per cent of total manufacturing	64.2		54.4		49.5		56.4	

[a] Preliminary.

also supply the domestic market. Therefore, for these two industries an investigation of the sources of growth along the lines described above makes more sense.

Table V.2 summarizes the sources of output growth of wood mills and petroleum products. For wood mills it is quite clear that import substitution was never a source of growth during the observation period, mainly because imports of sawn timber were rather low right from the beginning. The expansionary forces of this industry were at first exports, but later the domestic market increasingly accounted for the output growth. The reason for this changing pattern is the construction boom which gradually built up after the mid-1960s and culminated in acute shortages of construction materials in the early 1970s. In order to secure an adequate supply for the domestic market the Government temporarily introduced an export ban on sawn logs.

For petroleum products the situation was different, since until 1968 import substitution was the most important growth source. Prior to 1963 Malaysia produced only a very small portion of its consumption needs. This changed rapidly with the establishment and increasing utilization of the capacity of the two oil refineries. Whereas in 1963 domestic production was less than 9 per cent of domestic consumption it increased to 86 per cent by 1968. However, after that the fast-growing consumption outran production and the share declined to 71 per cent in 1971 and 63 per cent in 1974. As the refining capacity cannot be gradually expanded because of the indivisibility of production units, further growth of this industry will have to wait until the establishment of additional refining units.

TABLE V.2

THE SOURCES OF OUTPUT GROWTH OF WOOD MILLS AND PETROLEUM PRODUCTS

	Import Substitution		*Export Expansion*		*Domestic Demand Expansion*	
	Absolute	*Share*	*Absolute*	*Share*	*Absolute*	*Share*
			Wood Mills			
1963–71	1,588	0.7	138,651	61.6	84,960	37.7
1963–8	98	0.1	82,640	75.5	26,762	24.4
1968–71	1,451	1.3	22,369	19.3	91,880	79.4
1971–4[a]	8,973	1.5	–124,344	–20.5	722,870	119.0
			Petroleum Products			
1963–71	136,923	72.1	38,243	20.1	14,633	7.7
1963–8	98,086	59.4	59,124	35.8	7,890	4.8
1968–71	1,864	7.5	–43,168	–174.8	66,003	267.2
1971–4[a]	9,315	2.2	–94,743	–22.1	514,827	119.9

[a] Preliminary.

The early growth phase of the petroleum industry was not only based on import substitution but partly also on export expansion. In the period 1963–8 export expansion accounted for more than a third of output growth. This may appear implausible since domestic output was not even sufficient to satisfy local demand. However, what happened was that Malaysia imported low quality petroleum from the Middle East for its own consumption, while it exported its own high quality petroleum at a correspondingly higher price. As pollution—the major drawback of low quality oil—was not (then) a serious problem in Malaysia this kind of trade was definitely to Malaysia's advantage. The export continued in later periods, but its expansion could not keep pace with that of the domestic market. The export ratio consequently fell.

It was argued above that the sources of growth defined in gross output terms do not adequately reflect their impact on income and resource allocation. A better, though not ideal, expression for this is a formula in value-added terms (equation 19). The problem with a value-added formula is that changes in value added indicate changes in resource allocation only in a rather competitive situation.

Table V.3 provides an overview on the sources of value-added growth. Value-added data are, unfortunately, not available for 1974. The sources could therefore be calculated only up to 1971. For the first sub-period (1963–8) the picture differs only marginally from that for output growth. During the second sub-period (1968–71), however, the value-added ratio significantly declined for both wood mills and petroleum products, but value added still increased in absolute terms. What these observations indicate is that the two industries contributed much less to income growth than the growth of output may suggest. The reason, apparently, was rising prices of raw materials. As far as the raw materials came from other sectors of the economy, this meant a redistribution of income within the economy. This was clearly the case for wood mills. For petroleum the situation was different because part of the crude oil came from the Middle East and part from East Malaysia. Hence, in this industry Malaysia benefited from the growth in output only to a rather limited extent.

The result of a decrease in the value-added ratio was that the growth share of the other sources turned out to be higher than for output growth, i.e. the calculations presented in Table V.2. The conclusions drawn from that table are consequently reinforced by the value-added calculations.

3. THE MANUFACTURING INDUSTRIES, 1963–1974

The manufacturing industries which were not engaged in primary processing were responsible for the high and accelerating growth rate of total manufacturing during the observation period. Whereas the annual rate of increase of these industries was 13.8 per cent between 1963 and

TABLE V.3

THE SOURCES OF VALUE-ADDED GROWTH OF WOOD MILLS AND PETROLEUM PRODUCTS

	Import Substitution		*Export Expansion*		*Domestic Demand Expansion*		*Change in Value-Added Share*	
	Absolute	*Share*	*Absolute*	*Share*	*Absolute*	*Share*	*Absolute*	*Share*
				Wood Mills				
1963–71	639	0.9	55,781	78.4	34,181	48.0	–19,428	–27.3
1963–8	39	0.1	33,247	78.2	10,767	25.3	–1,545	–3.6
1968–71	573	2.0	8,846	30.9	36,335	126.8	–17,091	–59.6
				Petroleum Products				
1963–71	26,946	63.7	7,526	17.8	2,880	6.8	4,948	11.7
1963–8	19,303	49.9	11,636	30.1	1,553	4.0	6,213	16.1
1968–71	433	12.1	–10,028	–279.1	15,333	426.7	–2,145	–59.7

1968, it rose to 14.4 per cent for the period 1968 to 1971 and a high 18.4 per cent from 1971 to 1974. The rate for the last sub-period, however, overstates the actual or real growth in output, because from 1971 onwards the Malaysian economy, contaminated by the world-wide inflationary wave, suffered for the first time since independence from major increases in its domestic price level. As no price index for manufacturing output is available the impact of inflation on the growth of manufacturing real output cannot be adequately assessed.

A. MAJOR TRENDS BY INDUSTRY GROUPS

The type of industries which were causing this fast growth can be identified from Tables V.4 and V.5. Consumption goods grew at a rate below average. Their share in manufacturing output consequently fell from nearly 70 per cent to about 60 per cent. Intermediate goods grew very fast from 1963 to 1968 and from 1971 to 1974. In the intermediate period (1968–71) their growth rate was below the average. It should, however, be kept in mind that the primary processing industries analysed in the previous section are all producing intermediate goods. Their inclusion in this category would lead to a rather different conclusion. Investment goods, finally, expanded rapidly over the entire period and continuously increased their share in total output from about 8 per cent in 1963 to nearly 11 per cent in 1974.

As to the sources of growth, we find our earlier results[8] derived from a smaller data set, largely confirmed, as far as the observation periods are comparable. Between 1963 and 1968 import substitution was the most important growth source, in spite of rather low protection at that time. Most of this import substitution must have been what may be called free-trade import substitution, i.e. an import-competing output growth in accordance with the 'normal' change of the country's comparative advantage in the course of development.[9] The expansion of the domestic market was a little less important than import substitution, whereas export expansion made only a minor contribution to output growth.

In the earlier investigation quoted above, the sources of growth were also calculated for the period 1959–63. Comparing the two sub-periods, one finds that import substitution and export expansion had increased during the second sub-period at the expense of domestic demand expansion. Apparently, manufacturing growth between 1963 and 1968, a period of moderate overall growth, was largely sustained by successful competition with foreign supply on the home market as well as on the world market.

After 1968, when overall growth accelerated, domestic demand expansion again became the most important source of output growth, whereas import substitution and export expansion reduced their growth contribution. In the earlier investigation it was found that export expansion declined only marginally until 1970. This difference in the results is partly due to the shorter observation period of the earlier

TABLE V.4

GROSS OUTPUT OF NON-PRIMARY MANUFACTURING INDUSTRIES BY MAJOR GROUPS,[b] 1963–1974

	1963		*1968*		*1971*		*1974*[a]	
	M$'000	%	*M$'000*	%	*M$'000*	%	*M$'000*	%
Consumption goods	784,300	69.4	1,384,200	64.1	2,056,040	63.6	3,231,900	60.3
Intermediate goods	256,100	22.7	574,700	26.6	833,900	25.8	1,555,100	29.0
Investment goods	90,100	7.9	199,400	9.2	344,400	10.6	576,000	10.7
Total	1,130,500	100.0	2,158,300	100.0	3,234,340	100.0	5,363,000	100.0
Per cent of total manufacturing	35.8		45.6		50.5		43.6	

[a]Preliminary.
[b]The classification of broad industry groups follows that of Table AV.1.

TABLE V.5

THE SOURCES OF OUTPUT GROWTH OF NON-PRIMARY MANUFACTURING INDUSTRIES BY MAJOR GROUPS, 1963–1974

	Import Substitution			*Export Expansion*			*Domestic Demand Expansion*		
	Absolute	*Share*	*Structure*	*Absolute*	*Share*	*Structure*	*Absolute*	*Share*	*Structure*
1963–1971									
Consumption goods	633,087	49.8	61.2	163,695	12.9	67.6	474,958	37.3	57.5
Intermediate goods	252,509	43.7	24.4	46,332	8.0	19.1	278,959	48.3	33.8
Investment goods	149,665	58.9	14.5	32,232	12.7	13.3	72,402	28.5	8.8
Total	(1,019,764)	(48.5)	100.0	(240,718)	(11.4)	100.0	(843,357)	(40.1)	100.0
1963–1968									
Consumption goods	273,081	45.5	56.6	91,008	15.2	65.7	235,810	39.3	58.0
Intermediate goods	150,744	47.3	31.2	33,714	10.6	24.3	134,141	42.1	33.0
Investment goods	58,733	53.7	12.2	13,823	12.6	10.0	36,744	33.6	9.0
Total	(474,360)	(46.2)	100.0	(137,564)	(13.4)	100.0	(415,876)	(40.5)	100.0
1968–1971									
Consumption goods	295,986	44.0	71.1	51,351	7.6	77.8	324,502	48.3	54.7
Intermediate goods	45,823	17.7	11.0	106	0	0.2	213,271	82.3	35.9
Investment goods	74,422	51.3	17.9	14,523	10.0	22.0	56,055	38.7	9.4
Total	(414,272)	(38.5)	100.0	(65,195)	(6.1)	100.0	(596,642)	(55.4)	100.0
1971–1974									
Consumption goods	−554,203	−47.1	59.4	71,523	6.1	101.1	1,658,539	141.0	55.5
Intermediate goods	−7,963	−1.1	0.9	−2,761	−0.4	−3.9	731,923	101.5	24.5
Investment goods	−369,943	−159.7	39.7	1,988	0.9	2.8	599,555	258.9	20.1
Total	(−1,057,743)	(−49.7)	100.0	(35,445)	(1.7)	100.0	(3,150,957)	(148.0)	100.0

study and partly due to the inclusion of some of the primary processing industries which are treated separately in the present study.

The reasons for the reappearance of domestic demand expansion as the dominant growth source may have been two-fold. On the one hand the acceleration of overall growth provided the opportunity for domestic manufacturers to produce increasingly more for the home market without having to fight for market shares with foreign suppliers. The increase of protection after 1968, on the other hand, made exporting less attractive than selling on the home market, as was also revealed by the HEX. If domestic demand had not grown so fast, the rise in protection might have led to more import substitution.

The period 1971–4 witnessed an extraordinary boom in Malaysia due to the domestic price explosion for the major export commodities, in conjunction with a construction boom. This explains why, in spite of a high manufacturing growth rate, export expansion became negligible and import substitution even negative. The latter implies that domestic producers could not hold their market share on the home market in spite of a quite comfortable rate of protection. A plausible explanation for this is that domestic producers were unable or reluctant to increase their capacity fast enough to keep pace with the rapid rise in demand. Another possibility is that suppliers from industrialized countries pressed strongly for more sales in countries like Malaysia to compensate for losses suffered in their own markets caused by the reduction in demand following the heavy world-wide recession which coincided with this period. Domestic demand expansion therefore appears as the only growth source for this period.

If one again makes the distinction between goods for consumption, intermediate use, and investment one discovers that the decline of import substitution and export expansion during the second sub-period (1968–71) was almost entirely accounted for by intermediate goods. If our interpretation of the data is correct it must have been in the category of industries where demand first outran domestic supply. Along the same line of thought it can be argued that during the next sub-period domestic supply of consumption goods and investment goods must have become inelastic, because negative import substitution occurred mainly in these two industrial categories, whereas it was almost zero for intermediate goods. Also, export expansion declined only in the former two groups and remained virtually unchanged for intermediate goods.

The contribution of the sources of growth to the change in value added are shown in Table V.6 for the period 1963 to 1971. Here it becomes clear that the rise in income and resources utilization of manufacturing as a whole even exceeded output growth, as the value-added ratio continuously increased. The change of the value-added ratio contributed nearly 10 per cent to value-added growth. The contribution was slightly higher in the second sub-period than in the first.

This positive growth contribution of the change in the value-added ratio is, however, exclusively due to a sharp rise of the value-added

TABLE V.6

THE SOURCES OF VALUE-ADDED GROWTH OF NON-PRIMARY MANUFACTURING

	Import Substitution		*Export Expansion*		*Domestic Demand Expansion*		*Change in Value-Added Share*	
	Absolute	*Share*	*Absolute*	*Share*	*Absolute*	*Share*	*Absolute*	*Share*
1963–1971								
Consumption goods	157,154	41.3	40,635	10.7	117,901	31.0	65,037	17.1
Intermediate goods	108,535	45.4	19,915	8.3	119,905	50.1	–9,217	–3.9
Investment goods	62,109	71.8	13,376	15.5	30,046	34.7	–19,050	–22.0
Total	308,644	43.7	72,856	10.3	255,253	36.1	69,593	9.9
1963–1968								
Consumption goods	67,788	41.2	22,591	13.7	58,536	35.6	15,608	9.5
Intermediate goods	64,794	48.0	14,491	10.7	57,658	42.7	–2,030	–1.5
Investment goods	24,373	65.5	5,736	15.4	15.248	41.0	–8,152	–21.9
Total	143,571	42.6	41,635	12.4	125,870	37.4	25,566	7.6
1968–1971								
Consumption goods	76,812	35.5	13,326	6.2	84,212	39.0	41,854	19.4
Intermediate goods	19,534	18.7	45	0	90,916	87.2	–6,271	–6.0
Investment goods	27,841	56.5	5,433	11.0	20,970	42.6	–4,971	–10.1
Total	130,292	35.2	20,483	5.5	187,649	50.8	31,289	8.5

TABLE V.7

CHANGES IN MARKET RATIOS AND SHARES OF GROWTH SOURCES, 1963–1968 PENINSULAR MALAYSIA (per cent)

	Industry	*IR Change*	*ER Change*
1	Meat preparation	2.37	0.41
2	Dairy products	33.14	12.77
3	Fruits-veget. canning	10.14	36.04
4	Fish canning	6.31	48.95
5	Veget. & animal oils	−11.67	−2.74
6	Grain mills & animal feeds	26.90	−0.01
7	Bakeries	0.13	−1.34
8	Cocoa & chocolate	16.16	4.62
9	Ice factories	−3.49	0.88
10	Other food prep.	19.59	2.97
11	Spirits & wines	4.47	1.03
12	Breweries, soft drinks	18.92	15.24
13	Tobacco products	2.14	5.32
14	Textile spinning	21.62	3.96
15	Knitting mills	14.30	3.25
16	Other textiles	3.57	−8.16
17	Wearing apparel exc. footwear	12.69	18.22
18	Leather prod.	19.51	0.31
19	Footwear exc. rubber & plastic	3.50	3.81
20	Wood products exc. wood mills	7.44	1.08
21	Furniture & fixtures	8.66	1.57
22	Paper & paper products	6.21	3.13
23	Printing & publishing	10.36	2.18
24	Industrial chemicals	15.65	2.68
25	Paints & varnishes	13.16	27.06
26	Drugs & medicines	1.07	−1.40
27	Cleansing detergents & cosmetics	4.02	−6.39
28	Other chemicals	23.26	8.11
29	Rubber products exc. rubber mills	20.95	−9.06
30	Plastic products	33.82	1.87
31	Pottery & china	9.71	1.40
32	Structural clay products	−0.75	2.58
33	Cement & concrete products	40.15	15.73
34	Other NM mineral products	19.70	−0.02
35	Iron & steel products	17.77	5.35
36	Tools, cutlery, metal furniture	4.05	−1.43
37	Structural metal products	23.84	3.46
38	Fabricated metal products	6.41	1.62
39	NE industrial machinery	5.22	0.57
40	Business & household machinery	3.12	6.17
41	Communication equipment & appliances	19.58	2.12
42	Other electrical machinery	23.32	0.54
43	Shipbuilding & repair	−12.08	1.07
44	Motor vehicles	15.93	0.76
45	Other transport equipment	5.00	0.30
46	Other manufactures	−26.55	3.65

TABLE V.7 (continued)

OR Change	IS Share	EE Share	DE Share
2.78	68.94	11.92	19.12
45.92	64.07	24.69	11.23
46.19	21.19	75.28	3.52
55.26	10.62	82.43	6.93
-14.42	-38.98	-9.17	148.16
26.88	81.92	-0.04	18.12
-1.20	0.90	-8.77	107.87
20.78	50.09	14.31	35.59
-2.60	-15.22	3.87	111.35
22.56	61.68	9.35	28.95
5.51	55.80	12.91	31.27
34.16	42.33	34.09	23.57
7.47	9.11	22.59	68.29
25.59	74.62	13.68	11.68
17.55	70.21	15.94	13.84
-4.58	335.18	-764.64	529.46
30.92	37.81	54.29	7.89
19.83	57.46	0.93	41.60
7.32	16.28	17.75	65.96
8.52	21.73	3.16	75.09
10.24	46.82	8.53	44.63
9.35	43.27	21.84	34.87
12.54	27.52	5.80	66.66
18.33	58.68	10.05	31.26
40.23	21.12	43.42	35.44
-0.33	11.31	-14.86	103.54
-2.37	13.67	-21.72	108.04
31.37	64.72	22.57	12.70
11.88	38.93	-16.84	77.91
35.70	57.14	3.16	39.68
11.12	56.61	8.19	35.18
1.82	-3.48	11.87	91.61
55.89	61.31	24.02	14.65
19.67	68.43	-0.09	31.65
23.13	66.41	19.99	13.58
2.61	53.00	-18.81	65.81
27.30	60.56	8.80	30.63
8.04	30.37	7.70	61.91
5.79	43.62	4.77	51.59
9.29	32.82	64.96	2.20
21.70	78.47	8.50	13.01
23.87	84.39	1.97	13.62
-11.00	35.00	-3.11	68.11
16.69	88.32	4.25	7.41
5.31	63.63	3.86	32.50
-22.89	114.97	-15.82	0.84

TABLE V.8

ABSOLUTE GROWTH SOURCES, 1963–1968 PENINSULAR MALAYSIA (M$'000)

	Industry	*IS Absolute*	*Structure*
1	Meat preparation	62048	0.12
2	Dairy products	4600246	8.70
3	Fruits-veget. canning	540412	1.02
4	Fish canning	265727	0.50
5	Veget. & animal oils	-522392	-0.99
6	Grain mills & animal feeds	12362534	23.27
7	Bakeries	8751	0.02
8	Cocoa & chocolate	325594	0.62
9	Ice factories	-30457	-0.06
10	Other food prep.	4490665	8.49
11	Spirits & wines	83714	0.16
12	Breweries, soft drinks	1104928	2.09
13	Tobacco products	464619	0.88
14	Textile spinning	3828508	7.24
15	Knitting mills	414238	0.78
16	Other textiles	33518	0.06
17	Wearing apparel exc. footwear	616408	1.17
18	Leather prod.	149403	0.28
19	Footwear exc. rubber & plastic	149779	0.28
20	Wood products exc. wood mills	182615	0.35
21	Furniture & fixtures	234143	0.44
22	Paper & paper products	553944	1.05
23	Printing & publishing	1315765	2.49
24	Industrial chemicals	2529367	4.78
25	Paints & varnishes	238703	0.45
26	Drugs & medicines	54304	0.10
27	Cleansing detergents & cosmetics	233915	0.44
28	Other chemicals	899693	1.70
29	Rubber products exc. rubber mills	2024865	3.83
30	Plastic products	965680	1.83
31	Pottery & china	317024	0.60
32	Structural clay products	-17444	-0.03
33	Cement & concrete products	3151538	5.96
34	Other NM mineral products	136870	0.26
35	Iron & steel products	2683288	5.07
36	Tools, cutlery, metal furniture	169621	0.32
37	Structural metal products	969023	1.83
38	Fabricated metal products	941618	1.78
39	NE industrial machinery	1186649	2.24
40	Business & household machinery	128017	0.24
41	Communication equipment & appliances	2244437	4.24
42	Other electrical machinery	1384112	2.62
43	Shipbuilding & repair	-98015	-0.19
44	Motor vehicles	3480171	6.58
45	Other transport equipment	286343	0.54
46	Other manufactures	-2253572	-4.26

Note: The absolute values in these series of tables have to be divided by 100 in order to add up to the output change.

TABLE V.8 (continued)

EE Absolute	*Structure*	*DE Absolute*	*Structure*
10736	0.07	17214	0.05
1773119	12.32	806634	2.27
1919726	13.34	89861	0.25
2060887	14.32	173381	0.49
-122970	-0.85	1985363	5.59
-7255	-0.05	2734717	7.70
-85101	-0.59	1046350	2.95
93047	0.65	231357	0.65
7754	0.05	222702	0.63
681060	4.73	2108327	5.94
19374	0.13	46910	0.13
889864	6.18	615205	1.73
1152558	8.01	3482820	9.81
701952	4.88	599538	1.69
94099	0.65	81661	0.23
-76464	-0.53	52946	0.15
884928	6.15	128661	0.36
2418	0.02	108177	0.30
163370	1.14	606850	1.71
26574	0.18	630810	1.78
42686	0.30	223170	0.63
279637	1.94	446417	1.26
277461	1.93	3186771	8.98
433314	3.01	1347316	3.80
490745	3.41	400550	1.13
-71343	-0.50	497038	1.40
-371527	-2.58	1847611	5.21
313731	2.18	176574	0.50
-876197	-6.09	4051327	11.41
53562	0.37	670756	1.89
45919	0.32	197056	0.56
59356	0.41	458088	1.29
1234998	8.58	753460	2.12
-188	-0.00	63317	0.18
807790	5.61	548921	1.55
-60212	-0.42	210592	0.59
140894	0.98	490081	1.38
238897	1.66	1919483	5.41
129853	0.90	1403498	3.95
253367	1.76	8614	0.02
243282	1.69	372279	1.05
32461	0.23	223425	0.63
8724	0.06	-190709	-0.54
167747	1.17	297082	0.82
17376	0.12	146280	0.41
310071	2.15	-16499	-0.05

ratio in the industries producing consumption goods, in particular during the second sub-period, whereas the ratio declined slightly for intermediate goods and strongly for investment goods. Without more information on the industry details concealed by these aggregates it is not possible to give an explanation for these diverging developments. The problem will therefore be discussed in the next section.

B. THE INDUSTRIAL STRUCTURE OF THE SOURCES OF GROWTH

In this section calculations of the sources of growth are presented for all 46 manufacturing industries of the Malaysian input-output nomenclature, except the primary processing industries already covered above. As it would be too tedious to discuss the tables in detail, i.e. industry by industry, we will concentrate on highlighting a few of the emerging developments which appear most interesting in the context of this study.

In the period 1963–8 grain milling and animal food (unfortunately lumped together) was the most outstanding industry in terms of import substitution. Its intra-industry share of import substitution was over 80 per cent (Table V.7) and it accounted for nearly one-quarter (23.4 per cent) of the manufacturing sector's entire import substitution (Table V.8). High intra-industry shares were also measured for textiles, electrical machinery, and motor vehicles, all industries which were favourite targets of the government's industrial promotion activity. A high intra-industry share does not, of course, necessarily imply a high contribution to the import substitution of the manufacturing sector, as this largely depends on an industry's relative weight. However, textile spinning and motor vehicles also accounted for a substantial portion (14 per cent) of overall import substitution.

For export expansion, the highest intra-industry shares were registered in the industries producing canned fish, canned fruit and vegetables, business and household machinery, and wearing apparel. The largest contributions to the sector's export expansion were made by fish canning, fruit and vegetable canning, dairy products, cement and concrete products, and tobacco products. Here again it turns out that there is only a partial overlapping between industries with a high intra-industry share and those with a large contribution to the sector's export expansion.

Looking at the data sets for import substitution and export expansion, one arrives at the following interesting conclusions. First, the industries which are successful in export expansion are mostly different from those which rely heavily on import substitution. For a given and short enough period this is probably not very surprising, as one may argue that export expansion follows import substitution and neither coincides with, nor precedes it. Secondly, and more particularly, it can be observed that the industries which were successful in export expansion over the sub-period were all engaged in some kind of processing of natural resources or were typically labour-intensive industries. However, labour intensity was only important for the export expansion of the respective industries in question, whereas the processing of resources was the type of activity dominating the sector's export expansion. Together, the five industries mentioned accounted for more than 50 per cent of total export expansion.

If, for the sake of clarity, we now concentrate on the contribution to the sector totals of the growth sources, the following observations can be made for the subsequent sub-period 1968–71 (Tables V.9 and V.10). Grain milling was still the most important import-competing industry, followed by motor vehicles, iron and steel, and other food preparations. The first three industries were, for different reasons, all in one way or another supported by the government: grain milling as a vital industry for the supply of the most important basic food, motor vehicles (assembly plants) officially promoted in the interest of job creation, and iron and steel as an industry heavily dominated by the government-owned Malayawata-complex.

The new-comers in export expansion were industries such as rubber products, non-electrical industrial machinery, electrical machinery, other wood products, bakeries, meat preparation, drugs and medicines, and other transport equipment. They alone accounted for some 66 per cent of total export expansion, though as mentioned above the total was rather small. For that reason one cannot attach too much weight to this observation. However, it remains a noteworthy fact that export expansion apparently began to spread to a larger variety of industries, most of which are also labour intensive. Some of them, like rubber products and other wood products, are engaged in higher stages of the processing of domestic resources.

Coming to the next sub-period (1971–4), we find that negative import substitution prevailed over the entire sector (Tables V.11 and V.12). It is remarkable that the highest negative import substitution was now observed in the industries which were leading in (positive) import substitution or export expansion in the previous sub-periods, such as grain milling, other food preparations, iron and steel products, non-electrical industrial machinery, and motor vehicles. As was argued before, a plausible explanation for this could be inelasticity in supply from domestic producers. However, this explanation becomes less tenable if one looks at the data for export expansion. Some of the industries with the highest negative import substitution belonged at the same time to those with the highest export expansion. Furthermore, all industries with high export expansion such as other food preparations, wearing apparel, communication equipment, and motor vehicles, had simultaneously negative import substitution. These observations speak more for the hypothesis that in this period of depressed demand in the industrialized countries Malaysia became a dumping ground for foreign supply. The export expansion may have acted as an auxiliary outlet for the produce which could not be sold on the Malaysian market because of the heavy competitive pressure from foreign supply.

TABLE V.9

CHANGES IN MARKET RATIOS AND SHARES OF GROWTH SOURCES, 1968–1971 PENINSULAR MALAYSIA (per cent)

	Industry	*IR Change*	*ER Change*
1	Meat preparation	33.14	3.39
2	Dairy products	−1.87	−2.52
3	Fruits-veget. canning	−0.44	13.88
4	Fish canning	43.58	11.06
5	Veget. & animal oils	12.74	−3.15
6	Grain mills & animal feeds	16.15	−0.33
7	Bakeries	3.19	5.04
8	Cocoa & chocolate	18.24	6.99
9	Ice factories	−0.73	−0.64
10	Other food prep.	14.09	1.29
11	Spirits & wines	−7.33	3.40
12	Breweries, soft drinks	5.45	2.16
13	Tobacco products	1.66	8.67
14	Textile spinning	4.72	0.94
15	Knitting mills	9.84	2.90
16	Other textiles	2.69	0.71
17	Wearing apparel exc. footwear	42.75	10.24
18	Leather prod.	10.48	1.64
19	Footwear exc. rubber & plastic	1.48	3.78
20	Wood products exc. wood mills	1.46	10.13
21	Furniture & fixtures	9.16	−1.62
22	Paper & paper products	12.05	2.12
23	Printing & publishing	5.05	−0.09
24	Industrial chemicals	−2.38	2.75
25	Paints & varnishes	11.47	−48.58
26	Drugs & medicines	0.91	7.11
27	Cleansing detergents & cosmetics	13.62	−14.56
28	Other chemicals	10.13	−5.12
29	Rubber products exc. rubber mills	2.72	8.98
30	Plastic products	18.60	0.36
31	Pottery & china	9.97	0.99
32	Structural clay products	8.40	5.17
33	Cement & concrete products	2.01	−4.27
34	Other NM mineral products	5.13	2.09
35	Iron & steel products	25.65	−3.87
36	Tools, cutlery, metal furniture	1.58	1.89
37	Structural metal products	14.82	3.08
38	Fabricated metal products	8.53	2.21
39	NE industrial machinery	−2.33	3.03
40	Business & household machinery	7.83	10.41
41	Communication equipment & appliances	3.52	1.85
42	Other electrical machinery	6.55	5.01
43	Shipbuilding & repair	−5.44	0.56
44	Motor vehicles	16.25	−0.19
45	Other transport equipment	24.49	2.72
46	Other manufactures	15.98	−0.05

TABLE V.9 (continued)

OR Change	*IS Share*	*EE Share*	*DE Share*
36.53	88.86	9.10	2.03
-4.40	-31.99	-43.02	175.07
13.44	7.50	-235.03	327.53
54.64	41.67	10.57	47.74
9.59	112.33	-27.76	15.43
15.81	29.03	-1.87	12.83
8.24	30.88	48.71	20.39
25.24	53.30	20.44	26.24
-1.38	12.28	10.73	76.98
15.38	44.16	4.04	51.78
-3.93	558.63	-259.03	-199.60
7.61	20.80	8.25	70.94
10.34	6.04	31.46	62.49
5.67	29.53	5.88	64.57
12.75	68.05	20.06	11.87
3.41	67.67	17.99	14.32
53.00	74.97	17.95	7.06
12.12	24.07	3.77	72.14
5.26	5.97	15.21	78.81
11.59	81.44	565.44	-546.88
7.54	24.55	-4.33	79.78
14.18	60.06	10.59	29.34
4.95	18.24	-0.35	82.10
0.36	-18.31	21.11	97.19
-37.10	47.42	-200.76	253.34
8.03	11.36	88.21	0.42
-0.94	51.22	-54.77	103.55
5.00	38.14	-19.29	81.14
11.70	13.70	45.15	41.13
18.97	33.02	0.64	66.33
10.96	62.58	6.21	31.20
13.58	26.46	16.30	57.22
-2.26	6.63	-14.10	107.46
7.23	24.29	9.93	65.76
21.77	86.26	-13.03	26.77
3.48	38.31	45.72	15.95
17.90	30.42	6.32	63.25
10.74	47.37	12.28	40.34
0.69	-42.45	55.09	87.36
18.24	40.85	54.31	4.83
5.37	19.48	10.24	70.27
11.56	29.46	22.53	47.99
-4.87	-52.21	5.40	146.80
16.06	69.43	-0.82	31.39
27.22	91.57	10.19	-1.77
15.93	86.50	-0.28	13.77

TABLE V.10

ABSOLUTE GROWTH SOURCES, 1968–1971
PENINSULAR MALAYSIA (M$'000)

	Industry	*IS Absolute*	*Structure*
1	Meat preparation	1021982	2.26
2	Dairy products	−307141	−0.68
3	Fruits-veget. canning	−20252	−0.04
4	Fish canning	3242560	7.16
5	Veget. & animal oils	584137	1.29
6	Grain mills & animal feeds	7692600	16.98
7	Bakeries	206960	0.46
8	Cocoa & chocolate	421108	0.93
9	Ice factories	−6139	−0.01
10	Other food prep.	4368313	9.64
11	Spirits & wines	−167590	−0.37
12	Breweries, soft drinks	386896	0.85
13	Tobacco products	435153	0.96
14	Textile spinning	1169689	2.58
15	Knitting mills	306267	0.68
16	Other textiles	27069	0.06
17	Wearing apparel exc. footwear	2264303	5.00
18	Leather prod.	146873	0.32
19	Footwear exc. rubber & plastic	80019	0.18
20	Wood products exc. wood mills	32576	0.07
21	Furniture & fixtures	370779	0.82
22	Paper & paper products	1435440	3.17
23	Printing & publishing	885032	1.95
24	Industrial chemicals	−582258	−1.28
25	Paints & varnishes	388863	0.86
26	Drugs & medicines	46581	0.10
27	Cleansing detergents & cosmetics	1060294	2.34
28	Other chemicals	778247	1.72
29	Rubber products exc. rubber mills	283656	0.63
30	Plastic products	1069857	2.36
31	Pottery & china	394278	0.87
32	Structural clay products	256702	0.57
33	Cement & concrete products	221687	0.49
34	Other NM mineral products	53453	0.12
35	Iron & steel products	5011810	11.06
36	Tools, cutlery, metal furniture	68969	0.15
37	Structural metal products	949168	2.09
38	Fabricated metal products	1468557	3.24
39	NE industrial machinery	−666486	−1.47
40	Business & household machinery	335021	0.74
41	Communication equipment & appliances	666270	1.47
42	Other electrical machinery	562819	1.24
43	Shipbuilding & repair	−62657	−0.14
44	Motor vehicles	5568730	12.29
45	Other transport equipment	1341623	2.96
46	Other manufactures	1521628	3.36

Note: See footnote of Table V.8.

TABLE V.10 (continued)

EE Absolute	*Structure*	*DE Absolute*	*Structure*
104668	1.65	23349	0.04
-413083	-6.50	1680223	3.00
634598	9.98	-884347	-1.58
823024	12.94	3714416	6.64
-144396	-2.27	80259	0.14
-161876	-2.55	1109271	1.98
326405	5.13	136633	0.24
161522	2.54	207369	0.37
-5369	-0.08	-38490	-0.07
399937	6.29	5121749	9.16
77709	1.22	59881	0.11
153587	2.41	1319514	2.36
2265207	35.62	4499636	8.05
233126	3.67	2557183	4.57
90314	1.42	53418	0.10
7198	0.11	5731	0.01
542368	8.53	213328	0.38
23051	0.36	440074	0.79
203899	3.21	1056080	1.89
226176	3.56	-218753	-0.39
-65532	-1.03	1204752	2.15
253234	3.98	701324	1.25
-17337	-0.27	3982305	7.12
671387	10.56	3090871	5.53
-1646287	-25.89	2077422	3.71
361666	5.69	1750	0.00
-1133913	-17.83	2143616	3.83
-393577	-6.19	1655328	2.96
934788	14.70	851552	1.52
20808	0.33	2149332	3.84
39132	0.62	196589	0.35
158175	2.49	555122	0.99
-470989	-7.41	3589302	6.42
21859	0.34	144686	0.26
-757513	-11.91	1555700	2.78
82311	1.29	28718	0.05
197242	3.10	1973587	3.53
380777	5.99	1250664	2.24
864916	13.60	1371568	2.45
445364	7.00	39613	0.07
350314	5.51	2403414	4.30
430442	6.77	916738	1.64
6488	0.10	176169	0.31
-66369	-1.04	2517635	4.50
149374	2.35	-25998	-0.05
-4960	-0.08	242331	0.43

TABLE V.11

CHANGES IN MARKET RATIOS AND SHARES OF GROWTH SOURCES, 1971–1974 PENINSULAR MALAYSIA (per cent)

	Industry	*IR Change*	*ER Change*
1	Meat preparation	−3.83	3.28
2	Dairy products	4.01	0.63
3	Fruits-veget. canning	−8.50	−6.30
4	Fish canning	−8.77	13.12
5	Veget. & animal oils	16.12	11.34
6	Grain mills & animal feeds	−12.81	−0.65
7	Bakeries	2.61	2.07
8	Cocoa & chocolate	−11.99	42.81
9	Ice factories	2.13	0.67
10	Other food prep.	−23.42	5.15
11	Spirits & wines	3.51	−1.52
12	Breweries, soft drinks	3.18	4.37
13	Tobacco products	−0.33	−0.48
14	Textile spinning	11.50	2.70
15	Knitting mills	11.01	2.46
16	Other textiles	4.76	2.44
17	Wearing apparel exc. footwear	−7.04	32.85
18	Leather products	−22.37	0.92
19	Footwear exc. rubber & plastic	−8.39	−0.67
20	Wood products exc. wood mills	8.23	−11.67
21	Furniture & fixtures	−7.56	8.28
22	Paper & paper products	−7.27	−3.24
23	Printing & publishing	1.43	0.45
24	Industrial chemicals	0.45	−2.48
25	Paints & varnishes	0.33	−1.55
26	Drugs & medicines	30.11	−10.33
27	Cleansing detergents & cosmetics	−1.29	−4.78
28	Other chemicals	7.64	4.49
29	Rubber products exc. rubber mills	−4.58	−0.98
30	Plastic products	−5.39	11.72
31	Pottery & china	−10.43	11.45
32	Structural clay products	−4.85	8.35
33	Cement & concrete products	−2.67	−4.31
34	Other NM mineral products	−7.57	−2.16
35	Iron & steel products	−22.09	2.46
36	Tools, cutlery, metal furniture	−5.19	−0.27
37	Structural metal products	−6.11	1.47
38	Fabricated metal products	0.19	3.50
39	NE industrial machinery	−13.99	−1.52
40	Business & household machinery	−8.85	−1.34
41	Communication equipment & appliances	−7.15	5.63
42	Other electrical machinery	−9.54	4.54
43	Shipbuilding & repair	−3.91	11.43
44	Motor vehicles	−14.58	2.69
45	Other transport equipment	−18.76	3.65
46	Other manufactures	−7.17	2.26

TABLE V.11 (continued)

OR Change	*IS Share*	*EE Share*	*DE Share*
-0.54	-37.89	32.48	105.40
4.64	11.11	1.75	87.13
-14.80	-41.59	-30.81	172.40
4.34	-24.46	36.57	87.88
27.47	29.50	20.75	49.74
-13.47	-57.07	-2.90	159.97
4.69	16.03	12.73	71.22
30.82	-18.16	64.84	53.32
2.81	23.75	7.55	68.68
-18.27	-108.54	23.88	184.66
1.99	103.24	-44.80	41.56
7.56	6.11	8.40	85.48
-0.82	-1.16	-1.67	102.83
14.20	35.19	8.26	56.54
13.48	37.21	8.34	54.44
7.20	39.76	20.39	39.84
25.80	-10.08	46.99	63.08
-21.44	-463.19	19.18	544.00
-9.07	-53.60	-4.29	157.89
-3.44	36.01	-51.07	115.05
0.71	-108.97	119.23	89.73
-10.52	-75.30	-33.62	208.92
1.89	4.70	1.50	93.79
-2.03	2.53	-13.77	111.24
-1.22	0.74	-3.46	102.71
19.77	246.95	-84.77	-62.17
-6.07	-2.66	-9.85	112.52
12.13	32.85	19.30	47.83
-5.56	-8.54	-1.82	110.37
6.33	-10.15	22.07	88.07
1.02	-83.19	91.33	91.86
3.50	-29.52	50.83	78.69
-6.99	-6.57	-10.61	117.19
-9.74	-38.63	-11.05	149.68
-19.63	-109.86	12.27	197.59
-5.46	-199.60	-10.45	310.06
-4.64	-21.85	5.26	116.58
3.70	0.55	9.65	89.79
-15.52	-947.67	-103.41	1151.09
-10.20	-158.66	-24.17	282.83
-1.51	-36.67	28.89	107.78
-5.00	-42.86	20.39	122.47
7.52	-26.61	77.75	48.86
-11.88	-168.98	31.21	237.77
-15.10	-209.24	40.80	268.44
-4.91	-52.93	16.71	136.21

TABLE V.11

CHANGES IN MARKET RATIOS AND SHARES OF GROWTH SOURCES, 1971–1974 PENINSULAR MALAYSIA (per cent)

	Industry	*IR Change*	*ER Change*
1	Meat preparation	−3.83	3.28
2	Dairy products	4.01	0.63
3	Fruits-veget. canning	−8.50	−6.30
4	Fish canning	−8.77	13.12
5	Veget. & animal oils	16.12	11.34
6	Grain mills & animal feeds	−12.81	−0.65
7	Bakeries	2.61	2.07
8	Cocoa & chocolate	−11.99	42.81
9	Ice factories	2.13	0.67
10	Other food prep.	−23.42	5.15
11	Spirits & wines	3.51	−1.52
12	Breweries, soft drinks	3.18	4.37
13	Tobacco products	−0.33	−0.48
14	Textile spinning	11.50	2.70
15	Knitting mills	11.01	2.46
16	Other textiles	4.76	2.44
17	Wearing apparel exc. footwear	−7.04	32.85
18	Leather products	−22.37	0.92
19	Footwear exc. rubber & plastic	−8.39	−0.67
20	Wood products exc. wood mills	8.23	−11.67
21	Furniture & fixtures	−7.56	8.28
22	Paper & paper products	−7.27	−3.24
23	Printing & publishing	1.43	0.45
24	Industrial chemicals	0.45	−2.48
25	Paints & varnishes	0.33	−1.55
26	Drugs & medicines	30.11	−10.33
27	Cleansing detergents & cosmetics	−1.29	−4.78
28	Other chemicals	7.64	4.49
29	Rubber products exc. rubber mills	−4.58	−0.98
30	Plastic products	−5.39	11.72
31	Pottery & china	−10.43	11.45
32	Structural clay products	−4.85	8.35
33	Cement & concrete products	−2.67	−4.31
34	Other NM mineral products	−7.57	−2.16
35	Iron & steel products	−22.09	2.46
36	Tools, cutlery, metal furniture	−5.19	−0.27
37	Structural metal products	−6.11	1.47
38	Fabricated metal products	0.19	3.30
39	NE industrial machinery	−13.99	−1.52
40	Business & household machinery	−8.85	−1.34
41	Communication equipment & appliances	−7.15	5.63
42	Other electrical machinery	−9.34	4.54
43	Shipbuilding & repair	−3.91	11.45
44	Motor vehicles	−14.58	2.69
45	Other transport equipment	−18.76	5.85
46	Other manufactures	−7.17	2.26

TABLE V.11 (continued)

OR Change	IS Share	EE Share	DE Share
-0.54	-57.89	32.48	105.40
4.64	11.11	1.75	87.13
-14.80	-41.59	-30.81	172.40
6.94	-24.46	36.57	87.88
27.47	28.50	20.75	49.74
-15.47	-57.07	-2.90	159.97
4.69	16.03	12.73	71.22
50.82	-18.16	64.84	53.32
2.81	28.75	7.55	68.68
-18.27	-108.54	23.88	184.66
1.99	103.24	-44.80	41.56
7.96	6.11	8.40	85.48
-0.82	-1.16	-1.67	102.83
14.20	55.19	8.26	56.54
15.48	57.21	8.34	54.44
7.20	59.76	20.39	39.84
25.80	-10.08	46.99	63.08
-21.44	-465.19	19.18	544.00
-9.07	-55.60	-4.29	157.89
-3.44	56.01	-51.07	115.05
0.71	-108.97	119.23	89.73
-10.52	-75.50	-33.62	208.92
1.88	4.70	1.50	93.79
-2.08	2.53	-13.77	111.24
-1.22	0.74	-3.46	102.71
19.77	246.85	-84.77	-62.17
-6.07	-2.66	-9.85	112.52
12.13	52.85	19.30	47.83
-5.56	-8.54	-1.82	110.37
6.53	-10.15	22.07	88.07
1.02	-83.19	91.33	91.86
3.50	-29.52	50.83	78.69
-6.99	-6.57	-10.61	117.19
-8.74	-38.63	-11.05	149.68
-19.63	-109.86	12.27	197.59
-5.46	-199.60	-10.45	310.06
-4.64	-21.85	5.26	116.58
3.70	0.55	9.65	89.79
-15.52	-947.67	-103.41	1151.09
-10.20	-158.66	-24.17	282.83
-1.51	-36.67	28.89	107.78
-5.00	-42.86	20.39	122.47
7.52	-26.61	77.75	48.86
-11.88	-168.98	31.21	237.77
-15.10	-209.24	40.80	268.44
-4.91	-52.93	16.71	136.21

TABLE V.12

ABSOLUTE GROWTH SOURCES, 1971–1974 PENINSULAR MALAYSIA (M$'000)

	Industry	*IS Absolute*	*Structure*
1	Meat preparation	–159140	0.22
2	Dairy products	1296771	–1.78
3	Fruits-veget. canning	–532379	0.73
4	Fish canning	–802318	1.10
5	Veget. & animal oils	1088715	–1.50
6	Grain mills & animal feeds	–10866173	14.95
7	Bakeries	190816	–0.26
8	Cocoa & chocolate	–437771	0.60
9	Ice factories	19006	–0.03
10	Other food prep.	–14707807	20.23
11	Spirits & wines	92917	–0.13
12	Breweries, soft drinks	374089	–0.51
13	Tobacco products	–120422	0.17
14	Textile spinning	5075570	–6.98
15	Knitting mills	599108	–0.82
16	Other textiles	79525	–0.11
17	Wearing apparel exc. footwear	–660440	0.91
18	Leather prod.	–463192	0.64
19	Footwear exc. rubber & plastic	–600402	0.83
20	Wood products exc. wood mills	241324	–0.33
21	Furniture & fixtures	–326928	0.45
22	Paper & paper products	–1867573	2.57
23	Printing & publishing	373732	–0.51
24	Industrial chemicals	238016	–0.33
25	Paints & varnishes	22243	–0.03
26	Drugs & medicines	1234752	–1.70
27	Cleansing detergents & cosmetics	–205064	0.28
28	Other chemicals	762254	–1.05
29	Rubber products exc. rubber mills	–901162	1.24
30	Plastic products	–622335	0.86
31	Pottery & china	–582348	0.80
32	Structural clay products	–174208	0.24
33	Cement & concrete products	–515717	0.71
34	Other NM mineral products	–197016	0.27
35	Iron & steel products	–14403540	19.81
36	Tools, cutlery, metal furniture	–359293	0.49
37	Structural metal products	–574686	0.79
38	Fabricated metal products	74981	–0.10
39	NE industrial machinery	–13077952	17.99
40	Business & household machinery	–618777	0.85
41	Communication equipment & appliances	–3073182	4.23
42	Other electrical machinery	–2006204	2.76
43	Shipbuilding & repair	–53237	0.07
44	Motor vehicles	–11474348	15.78
45	Other transport equipment	–2793467	3.84
46	Other manufactures	–1286765	1.77

Note: See footnote of Table V.8.

TABLE V.12 (continued)

EE Absolute	*Structure*	*DE Absolute*	*Structure*
136422	0.78	442717	0.17
205061	1.17	10168168	3.79
-394449	-2.25	2206828	0.82
1199549	6.84	2882768	1.08
765687	4.37	1835594	0.68
-552706	-3.15	30458864	11.36
151586	0.86	847597	0.32
1562752	8.91	1285017	0.48
6045	0.03	54947	0.02
3236010	18.45	25021776	9.34
-40325	-0.23	37408	0.01
514363	2.93	5231546	1.95
-172792	-0.99	10633212	3.97
1191248	6.79	8153178	3.04
134331	0.77	876559	0.33
40793	0.23	79681	0.03
3078438	17.55	4132001	1.54
19184	0.11	544007	0.20
-48053	-0.27	1768455	0.66
-342217	-1.95	770893	0.29
357714	2.04	269214	0.10
-833828	-4.75	5181401	1.93
119235	0.68	7447029	2.78
-1293783	-7.38	10445760	3.90
-103143	-0.59	3060899	1.14
-423879	-2.42	-310871	-0.12
-757936	-4.32	8652998	3.23
447897	2.55	1109847	0.41
-192680	-1.10	11633839	4.34
1353364	7.72	5398970	2.01
639327	3.65	643021	0.24
299928	1.71	464279	0.17
-832535	-4.75	9188249	3.43
-56392	-0.32	763408	0.28
1608690	9.17	25904848	9.66
-18817	-0.11	558111	0.21
138430	0.79	3066253	1.14
1314828	7.50	12230190	4.56
-1427188	-8.14	15885140	5.93
-94280	-0.54	1103057	0.41
2421082	13.81	9032101	3.37
954351	5.44	5731850	2.14
155515	0.89	97721	0.04
2119516	12.09	16144830	6.02
544686	3.11	3583781	1.34
406256	2.32	3311507	1.24

TABLE V.13

THE SOURCES OF VALUE-ADDED GROWTH BY INDUSTRY, 1963–1968 (M$'000)

	Industry	*IS Absolute*	*Structure*
1	Meat preparation	125	0.08
2	Dairy products	14008	9.05
3	Fruits-veget. canning	1500	0.97
4	Fish canning	416	0.27
5	Veget. & animal oils	−391	−0.25
6	Grain mills & animal feeds	14924	9.65
7	Bakeries	21	0.01
8	Cocoa & chocolate	515	0.33
9	Ice factories	−198	−0.13
10	Other food prep.	11493	7.43
11	Spirits & wines	388	0.25
12	Breweries, soft drinks	5654	3.65
13	Tobacco products	783	0.51
14	Textile spinning	10497	6.78
15	Knitting mills	1287	0.83
16	Other textiles	21	0.01
17	Wearing apparel exc. footwear	1699	1.10
18	Leather prod.	367	0.24
19	Footwear exc. rubber & plastics	567	0.37
20	Wood products exc. wood mills	393	0.25
21	Furniture & fixtures	846	0.55
22	Paper & paper products	2096	1.36
23	Printing & publishing	6761	4.37
24	Industrial chemicals	7199	4.65
25	Paints & varnishes	880	0.57
26	Drugs & medicines	293	0.19
27	Cleansing detergents & cosmetics	1133	0.73
28	Other chemicals	3418	2.21
29	Rubber products exc. rubber mills	7994	5.17
30	Plastic products	4156	2.69
31	Pottery & china	1409	0.91
32	Structural clay products	−110	−0.07
33	Cement & concrete products	14829	9.58
34	Other NM mineral products	323	0.21
35	Iron & steel products	5812	3.76
36	Tools, cutlery, metal furniture	461	0.30
37	Structural metal products	3319	2.15
38	Fabricated metal products	4129	2.67
39	NE industrial machinery	5816	3.76
40	Business & household machinery	388	0.25
41	Communication equipment & appliances	8504	5.50
42	Other electrical machinery	5256	3.40
43	Shipbuilding & repair	−483	−0.31
44	Motor vehicles	13352	8.63
45	Other transport equipment	1064	0.69
46	Other manufactures	−8203	−5.30

TABLE V.13 (continued)

EE Absolute	*Structure*	*DE Absolute*	*Structure*	*VR Absolute*	*Structure*
21	0.05	34	0.03	47	0.22
5399	12.62	2456	2.09	−2205	−10.24
5331	12.46	249	0.21	−204	−0.95
3231	7.55	271	0.23	−234	−1.09
−92	−0.22	1487	1.26	236	1.10
−8	−0.02	3301	2.81	−5147	−23.90
−209	−0.49	2580	2.19	124	0.58
147	0.34	366	0.31	715	3.32
50	0.12	1448	1.23	−112	−0.52
1743	4.07	5396	4.59	−173	−0.81
89	0.21	217	0.19	188	0.88
4554	10.64	3148	2.68	3499	16.25
1943	4.54	5871	4.99	20250	94.04
1924	4.50	1643	1.40	−293	−1.36
292	0.68	253	0.22	−284	−1.32
−49	−0.11	34	0.03	163	0.76
2439	5.70	354	0.30	−753	−3.50
5	0.01	266	0.23	−311	−1.45
619	1.45	2299	1.96	502	2.34
57	0.13	1358	1.16	−32	−0.15
154	0.36	806	0.69	−238	−1.11
1058	2.47	1689	1.44	−1691	−7.85
1425	3.33	16377	13.93	−1300	−6.04
1233	2.88	3834	3.26	4050	18.81
1809	4.23	1477	1.26	1408	6.54
−386	−0.90	2690	2.29	263	1.22
−1800	−4.21	8952	7.61	177	0.83
1192	2.79	670	0.57	1404	6.52
−3459	−8.09	15996	13.60	7391	34.32
230	0.54	2887	2.46	−756	−3.51
204	0.48	876	0.75	510	2.37
376	0.88	2904	2.47	−1075	−4.99
5811	13.58	3545	3.02	4147	19.26
−0	−0.00	149	0.13	825	3.83
1749	4.09	1189	1.01	5702	26.48
−163	−0.38	572	0.49	−1121	−5.21
482	1.13	1678	1.43	652	3.03
1047	2.45	8418	7.16	−6199	−28.79
636	1.49	6879	5.85	−2918	−13.55
769	1.80	26	0.02	−1186	−5.51
921	2.15	1410	1.20	−619	−2.88
123	0.29	848	0.72	−366	−1.70
43	0.10	−941	−0.80	−117	−0.55
643	1.50	1120	0.95	−2445	−11.36
64	0.15	543	0.46	−612	−2.85
1128	2.64	−60	−0.05	−326	−1.51

TABLE V.14
THE SOURCES OF VALUE-ADDED GROWTH
BY INDUSTRY, 1968–1971
(M$'000)

	Industry	*IS Absolute*	*Structure*
1	Meat preparation	2444	1.98
2	Dairy products	−863	−0.70
3	Fruits-veget. canning	−55	−0.05
4	Fish canning	4926	4.00
5	Veget. & animal oils	478	0.39
6	Grain mills & animal feeds	7985	6.48
7	Bakeries	514	0.42
8	Cocoa & chocolate	878	0.71
9	Ice factories	−39	−0.03
10	Other food prep.	11128	9.03
11	Spirits & wines	−895	−0.73
12	Breweries, soft drinks	2201	1.79
13	Tobacco products	1136	0.92
14	Textile spinning	3153	2.56
15	Knitting mills	830	0.67
16	Other textiles	72	0.06
17	Wearing apparel exc. footwear	5516	4.48
18	Leather prod.	275	0.22
19	Footwear exc. rubber & plastic	313	0.25
20	Wood products exc. wood mills	69	0.06
21	Furniture & fixtures	1303	1.06
22	Paper & paper products	4271	3.47
23	Printing & publishing	4438	3.60
24	Industrial chemicals	−2046	−1.66
25	Paints & varnishes	1663	1.35
26	Drugs & medicines	262	0.21
27	Cleansing detergents & cosmetics	5167	4.19
28	Other chemicals	3607	2.93
29	Rubber products exc. rubber mills	1310	1.06
30	Plastic products	4223	3.43
31	Pottery & china	1969	1.60
32	Structural clay products	1463	1.19
33	Cement & concrete products	1146	0.93
34	Other NM mineral products	278	0.23
35	Iron & steel products	16269	13.21
36	Tools, cutlery, metal furniture	85	0.07
37	Structural metal products	3432	2.79
38	Fabricated metal products	5186	4.21
39	NE industrial machinery	−2906	−2.36
40	Business & household machinery	585	0.48
41	Communication equipment & appliances	2412	1.96
42	Other electrical machinery	2036	1.65
43	Shipbuilding & repair	−291	−0.24
44	Motor vehicles	18291	14.85
45	Other transport equipment	3661	2.97
46	Other manufactures	5289	4.29

TABLE V.14 (continued)

EE Absolute	*Structure*	*DE Absolute*	*Structure*	*VR Absolute*	*Structure*
250	1.61	55	0.03	-1132	-3.55
-1161	-7.46	4724	2.37	534	1.68
1741	11.19	-2426	-1.22	-2308	-7.24
1250	8.03	5643	2.84	-157	-0.49
-118	-0.76	65	0.03	-519	-1.63
-168	-1.08	1151	0.58	17350	54.42
811	5.21	339	0.17	-1600	-5.02
337	2.17	432	0.22	2926	9.18
-34	-0.22	-245	-0.12	-244	-0.77
1018	6.54	13048	6.55	14773	46.34
415	2.67	319	0.16	-154	-0.49
873	5.61	7507	3.77	-1503	-4.72
5917	38.01	11754	5.91	14541	45.61
628	4.04	6895	3.46	3806	11.94
244	1.57	144	0.07	409	1.28
19	0.12	15	0.01	71	0.22
1321	8.49	519	0.26	3840	12.05
43	0.28	825	0.41	-171	-0.54
797	5.12	4132	2.08	1277	4.01
483	3.11	-468	-0.24	3078	9.66
-230	-1.48	4234	2.13	1983	6.22
753	4.84	2087	1.05	-109	-0.34
-86	-0.56	19971	10.03	1763	5.53
2359	15.16	10863	5.46	-3371	-10.58
-7041	-45.23	8885	4.46	-1827	-5.73
2036	1308	9	0.00	-1923	-6.03
-5526	-35.49	10446	5.25	3874	12.15
-1824	-11.72	7673	3.85	-5000	-15.68
4317	27.73	3932	1.98	2812	8.82
82	0.53	8484	4.26	-1925	-6.04
195	1.26	981	0.49	-158	-0.50
901	5.79	3164	1.59	-319	-1.00
-2435	-15.64	18562	9.32	2675	8.39
113	0.73	754	0.38	670	2.10
-2459	-15.79	5050	2.54	-313	-0.98
102	0.66	35	0.02	-119	-0.38
713	4.58	7136	3.59	-700	-2.20
1344	8.64	4416	2.22	-1815	-5.69
3771	24.23	5981	3.00	191	0.60
778	5.00	69	0.03	1847	5.80
1268	8.15	8703	4.37	-6297	-19.75
1557	10.01	3317	1.67	-3486	-10.93
30	0.19	820	0.41	527	1.65
-218	-1.40	8269	4.15	-12098	-37.95
407	2.62	-70	-0.04	760	2.39
-17	-0.11	842	0.42	-575	-1.81

TABLE V.15
THE SOURCES OF VALUE-ADDED GROWTH BY INDUSTRY, 1963–1971
(M$'000)

	Industry	*IS Absolute*	*Structure*
1	Meat preparation	2217	0.66
2	Dairy products	15566	4.62
3	Fruits-veget. canning	1231	0.37
4	Fish canning	5820	1.73
5	Veget. & animal oils	36	0.01
6	Grain mills & animal feeds	24755	7.34
7	Bakeries	532	0.16
8	Cocoa & chocolate	1257	0.37
9	Ice factories	−229	−0.07
10	Other food prep.	26729	7.92
11	Spirits & wines	−303	−0.09
12	Breweries, soft drinks	8854	2.63
13	Tobacco products	1678	0.50
14	Textile spinning	17873	5.30
15	Knitting mills	2334	0.69
16	Other textiles	40	0.01
17	Wearing apparel exc. footwear	8096	2.40
18	Leather prod.	1035	0.31
19	Footwear exc. rubber & plastics	1018	0.30
20	Wood products exc. wood mills	427	0.13
21	Furniture & fixtures	2605	0.77
22.	Paper & paper products	8233	2.44
23	Printing & publishing	13879	4.12
24	Industrial chemicals	9213	2.73
25	Paints & varnishes	3079	0.91
26	Drugs & medicines	546	0.16
27	Cleansing detergents & cosmetics	6656	1.97
28	Other chemicals	9744	2.89
29	Rubber products exc. rubber mills	9732	2.89
30	Plastic products	12976	3.85
31	Pottery & china	3460	1.03
32	Structural clay products	1480	0.44
33	Cement & concrete products	21853	6.48
34	Other NM mineral products	612	0.18
35	Iron & steel products	18381	5.45
36	Tools, cutlery, metal furniture	665	0.20
37	Structural metal products	8481	2.51
38	Fabricated metal products	11281	3.34
39	NE industrial machinery	4026	1.19
40	Business & household machinery	1423	0.42
41	Communication equipment & appliances	16568	4.91
42	Other electrical machinery	9744	2.89
43	Shipbuilding & repair	−995	−0.30
44	Motor vehicles	42306	12.54
45	Other transport equipment	6007	1.78
46	Other manufactures	−3663	−1.09

TABLE V.15 (continued)

EE Absolute	*Structure*	*DE Absolute*	*Structure*	*VR Absolute*	*Structure*
237	0.32	55	0.02	-662	-1.16
5102	6.92	4118	1.73	-1894	-3.31
6338	8.60	-1238	-0.52	-2504	-4.37
7001	9.50	3296	1.38	-769	-1.34
-202	-0.27	1558	0.65	-246	-0.43
-204	-0.28	4096	1.72	10741	18.76
590	0.80	2921	1.23	-1461	-2.55
424	0.58	597	0.25	4040	7.06
13	0.02	1191	0.50	-349	-0.61
3381	4.59	13836	5.81	14481	25.30
470	0.64	389	0.16	13	0.02
6322	8.58	7700	3.23	3058	5.34
6162	8.36	12897	5.42	41461	72.42
3328	4.52	3722	1.56	3332	5.82
594	0.81	302	0.13	-53	-0.09
-48	-0.07	39	0.02	316	0.55
4156	5.64	567	0.24	2118	3.70
67	0.09	1039	0.44	-840	-1.47
1552	2.11	5993	2.52	1946	3.40
539	0.73	927	0.39	3045	5.32
-6	-0.01	4663	1.96	1595	2.79
2372	3.22	3285	1.38	-3734	-6.52
1878	2.55	33731	14.17	-137	-0.24
3773	5.12	8331	3.50	2804	4.90
-2688	-3.65	6800	2.86	64	0.11
1570	2.13	2699	1.13	-1571	-2.74
-7907	-10.73	19565	8.22	4111	7.18
871	1.18	2417	1.02	-1892	-3.30
-35	-0.05	19008	7.98	11591	20.25
553	0.75	7691	3.23	-3838	-6.71
421	0.57	1409	0.59	697	1.22
1503	2.04	6336	2.66	-2015	-3.52
5938	8.06	12110	5.09	8379	14.64
51	0.07	330	0.14	2123	3.71
624	0.85	2330	0.98	11664	20.38
53	0.07	639	0.27	-1507	-2.63
1436	1.95	6251	2.63	546	0.96
2898	3.93	13011	5.46	-10661	-18.62
5037	6.83	11962	5.02	-3575	-6.25
2155	2.92	96	0.04	-396	-0.69
2849	3.87	4377	1.84	-7491	-13.09
1813	2.46	1924	0.81	-4193	-7.32
93	0.13	113	0.05	376	0.66
754	1.02	2825	1.19	-18972	-33.14
617	0.84	494	0.21	-1300	-2.27
1248	1.69	1683	0.71	-1190	-2.08

For the sources of growth in terms of value added it was shown above that the change of the degree of processing (change of the value-added ratio) made a positive growth contribution for manufacturing as a whole, but not for all of the three major commodity groups. If one looks at the detailed industry data (Tables V.13 to V.15) one can, in fact, observe that for the majority of the industries—26 in the first and 25 in the second sub-period—the value-added ratio has declined. The positive growth contribution for total manufacturing and that for consumption goods originated from a very small number of industries. In the first sub-period, tobacco products alone accounted for 94 per cent of the entire sector's net growth contribution due to a change in the value-added ratio. In the second sub-period this share was still 45 per cent. The intra-industry growth contribution of the value-added ratio change was also very high with 70 per cent over the first sub-period and 43 per cent over the second. This industry developed during the observation period from an indigenous labour-intensive industry into a foreign-dominated fairly capital-intensive industry.[10] Hence, it may be concluded that the extraordinarily high increase in value added mainly accrued to (foreign) capital.

From what has been said, it follows that without the tobacco industry the change in the value-added ratio would hardly have made a positive contribution to manufacturing's value-added growth during the first sub-period. The next five industries with a high growth impact of the value-added ratio change were rubber products, iron and steel, cement and concrete products, industrial chemicals, and breweries. Without these industries and the tobacco industry, value-added growth of manufacturing would have fallen behind output growth. In the second sub-period tobacco products, grain milling, and other food products were the three major industries which alone already accounted for 150 per cent of the manufacturing sector's value-added growth resulting from a changing value-added ratio. Hence, for this period it is found again that this source of value-added growth would be negative if only a rather small number of industries were left out. In most of the industries mentioned one can expect that, as in the tobacco industry, the growth contribution due to a change of the value-added ratio was to a great extent the result of an increasing capital intensity and consequently reflected a rising capital income.

Summing up, we come to the conclusion that the contribution to value-added growth of manufacturing, resulting from an increasing value-added ratio, originated from a very small number of industries and probably mainly took the form of capital income. The latter is likely to be the case in a developing country where the capital intensity increases over time, but wages remain more or less constant because of an elastic labour supply. If the rate of return to capital does not decline and wages do not go up, an increase in the value-added ratio almost by definition goes along with a rising capital intensity and, consequently, a more than proportionate growth of capital income. Where a declining value-added ratio is observed, as was the case for the majority of the industries, an increase in labour productivity (in value terms) must have taken place without a comparable rise in wages or in the rate of return.[11]

1. L. Hoffmann and Tan T. N., 'Pattern of Growth and Structural Change in West Malaysia's Manufacturing Industry, 1959–68', *Kajian Ekonomi Malaysia*, Vol. VIII (December 1971), reprinted in: D. Lim (ed.), *Readings on Malaysian Economic Development*, Oxford University Press, 1975; L. Hoffmann, 'Import Substitution-Export Expansion and Growth in an Open Developing Economy: The Case of West Malaysia', *Weltwirtschaftliches Archiv*, Vol. 109, No. 3 (1973); L. Hoffmann and Tan S. E., 'Employment Creation Through Export Growth: A Case Study of West Malaysia's Manufacturing Industries', in H. Giersch (ed.), *The International Division of Labour—Problems and Perspectives*, Tübingen, 1974, reprinted in D. Lim (ed.), *Readings*..., op. cit.

2. See the pioneering article by Hollis B. Chenery, 'Patterns of Industrial Growth', *The American Economic Review*, Vol. 50 (1960), p. 624.

3. See Lutz Hoffmann and Tan T. N., 'Pattern of Growth and Structural Change in West Malaysia's Manufacturing Industry, 1959–1968', p. 44. Only two technical points need to be mentioned here. When balanced growth is the reference system, the widely discussed joint effect problem (cf. Chenery, op. cit.; M. L. Eysenbach, 'A Note on Growth and Structural Change in Pakistan's Manufacturing Industry, 1954 to 1964', *Pakistan Development Review*, Vol. IX, Karachi, 1969, p. 58, and George Fane, 'Import Substitution and Export Expansion, Their Measurement and an Example of their Application', *Pakistan Development Review*, Vol. XI, 1971, p. 1) becomes irrelevant. Secondly, the balanced growth concept does not give distorted results when exports are important, as can happen with the supply concept. Assume for instance an increase in production for exports without a change in imports. This would reduce the import-supply ratio which is usually used as the criterion for import substitution. The conclusion would consequently be that import substitution has taken place though it was, in fact, export expansion.

4. Samuel A. Morley and Gordon W. Smith, 'On the Measurement of Import Substitution', *The American Economic Review*, Vol. LX, 1970, p. 728.

5. S. R. Lewis, *Economic Policy and Industrial Growth in Pakistan*, London, Allen and Unwin, 1969.

6. A more aggregated version of the tables has been published by the Department in 1975 under the title 'Input-Output Tables 1970—Peninsular Malaysia', op. cit.

7. FLDA stands for Federal Land Development Authority. It is officially known as FELDA.

8. L. Hoffmann, 'Import Substitution-Export Expansion and Growth in an Open Developing Economy: The Case of West Malaysia', pp. 454–75.

9. For a fuller theoretical discussion of this argument see L. Hoffmann, *Importsubstitution und wirtschaftliches Wachstum in Entwicklungsländern—unter besonderer Berücksichtigung von Argentinien, Brasilien, Chile und Kolumbien*, Tübingen, Mohr und Siebeck, 1970.

10. According to our estimates, the ratio of fixed capital per employee was with 4,718 in 1963 significantly below the average of about 6,000 and in 1970 with 7,840 higher than the average of roughly 6,500.

11. The following relationship holds by definition:

$$v \cdot p \cdot \frac{X}{L} = \frac{C}{L} \cdot r + w$$

If the value-added ratio (v) goes up and a decline in price (p) or labour productivity (X/L) is considered to be unlikely, then a constant rate of return (r) and a constant wage (w) imply a rising capital intensity (C/L). On the other hand, if capital intensity, rate of return, and wage are constant, the value-added ratio can only fall if the price or the labour productivity or both increase.

VI Growth and the Absorption of Primary Factors

THE quite impressive growth rates achieved by Malaysia's manufacturing sector should not create any over-enthusiasm about the country's progress in economic development. It must be remembered that industrial growth is not good for its own sake. Among other targets, it has to contribute to the eradication of unemployment, underemployment, and poverty. In this chapter we will deal with the question by how much and in which way manufacturing growth created jobs and thereby helped to reduce unemployment. The problem of underemployment will not be considered as there are at present no data available which would permit a proper or adequate assessment of this problem. Neither will the poverty aspect be explicitly considered, as this is a major research area of its own. However, as employment creation is one important—if not the most important—way to reduce poverty, our findings will permit tentative conclusions about the impact of industrial growth on poverty.

It is a common proposition that a developing country should make maximum use of its abundant labour and economize on its scarce capital. Malaysia is an exception to the rule in the sense that capital apparently is much less scarce than in most other developing countries. One may therefore question whether an analysis of capital absorption is of any political relevance in this particular case. Our impression is that it is important. It may be true that Malaysia's growth is not limited by the supply of capital. But it is limited by the rather small size of its domestic capital market and, to some extent, also by the foreign markets it is able to tap, in competition with its export-experienced Asian neighbours. If this is the case, then it obviously matters whether the output is produced with much or with little capital, as the employment of labour will correspondingly be low or high. Hence, it is the impact on employment which calls for a study of capital absorption.

1. UNEMPLOYMENT

Available employment statistics suggest that, in spite of rapid structural change and high industrial growth, the employment situation has worsened over the 1960s. With the labour force growing by more than 3 per cent per annum, the rate of active unemployment has risen from about 6 per cent in 1962 to around 8 per cent in 1970.[1] Though these rates might not appear startling if compared with those of other developing countries, the unemployment situation has become a major concern of the government because of its heavy concentration in the young and urban sections of the population (see Table VI.1). In 1967, more than 75 per cent of the unemployed were younger than twenty-five, and 65 per cent had never had any job previously.[2]

The rapid increase of the labour force requires employment creation in all productive sectors of the economy. However, the existing unemployment can—at least in the longer run—only be abolished through industrialization. More labour absorption in the low-income urban service sector can at best be considered as a short-term, transitional solution. There is little chance of getting the young urban unemployed back on the land. Malaysia will be lucky if it can prevent, with its land development schemes, further acceleration of rural-urban migration. The rural-urban dichotomy which is common to many developing countries is aggravated in the Malaysian case by the fact that the rural population is mainly Malay while the urban areas are dominated by Chinese. The land settlement schemes, because of racial balance in terms of income and the fact that Malays constitute the majority in the smallholders' sector, benefit almost exclusively the poorest groups of rural Malays. The non-Malays, even if they were prepared to move to rural areas, would therefore under present conditions have limited opportunities to find a job. In view of the under-representation of Malays in the modern sector, the government is, on the other hand, very reluctant to adopt a policy that would bring urban Malays back to rural areas. All this implies that the government has to follow a policy that leads to increasing job creation through industrialization. The question then is how to industrialize to achieve a sufficient rate of employment creation.

TABLE VI.1

WEST MALAYSIA—UNEMPLOYED AS A PERCENTAGE OF LABOUR FORCE,[a] 1967–1968

Age Group	*Actively Unemployed*			*Passively Unemployed*			*Total Unemployed*		
	Urban	*Rural*	*Total*	*Urban*	*Rural*	*Total*	*Urban*	*Rural*	*Total*
15–19	29.0	16.8	20.5	4.2	6.5	5.8	33.2	23.3	26.3
20–24	15.8	9.1	11.4	2.1	2.5	2.4	17.9	11.6	13.8
35–64	3.0	1.4	1.9	1.1	1.0	1.0	4.1	2.4	2.9
Total	9.9	5.4	6.8	1.9	2.3	2.2	11.8	7.7	9.0

Source: Department of Statistics, Kuala Lumpur, *Socio-Economic Sample Survey, 1967/68*, op. cit.

[a]The labour force concept used here includes the employed, the unemployed actively looking for a job (actively unemployed) and the unemployed not actively looking for a job but who will accept a job if given (passively unemployed).

2. THE SOURCES OF GROWTH AND THEIR IMPACT ON EMPLOYMENT

Between 1962 and 1970 manufacturing contributed 51 per cent to West Malaysia's growth of GDP, but only 24 per cent to the creation of jobs. This is clearly an unsatisfactory employment record, particularly in view of the important role manufacturing has to play in the elimination of unemployment. One may well ask whether the worsening of the unemployment situation over the 1960s is not mainly due to the incapability of manufacturing to create jobs at a sufficient rate, although it had become the leading growth sector of the economy.

The discussion of the previous chapter has shown that manufacturing growth resulted mainly from import substitution and domestic demand expansion, and little from export expansion. The experience gathered in other developing countries suggests that an inward-looking strategy can, over a certain period, be conducive to growth, but is unlikely to contribute much to employment. If it could be shown that import substitution and domestic demand expansion had the same effect in Malaysia, where they were only partly the result of government strategy, we would have an initial explanation for the poor employment performance of manufacturing. This would suggest the hypothesis that a more outward-looking strategy may be better suited for creating jobs and for reducing unemployment.

We have already argued along these lines in an earlier study.[3] However, the present investigation differs from the earlier one in that it uses different and more detailed concepts of measurement. The coverage is also broader. In terms of output and trade it is complete if compared with official statistics. The employment and capital data do not cover a number of small-scale activities like abattoirs, tailoring and dressmaking, tin smelting, repair of motor vehicles and bicycles, making of jewellery, gold, silverware and plateware, which, however, are also not covered in the official manufacturing censuses and surveys. This does not make much difference so far as capital is concerned, though it does matter for employment. However, as most of these industries do not expand very fast and sometimes even decline in importance, their omission has little impact on the employment change in which we are interested.

A. CONCEPTS OF MEASUREMENT

The change in employment may be written as follows:

$$(1) \qquad L_1 - L_0 = l_0\,(Y_1 - Y_0) + Y_0\,(l_1 - l_0) + (Y_1 - Y_0)\,(l_1 - l_0)$$

l is the direct labour coefficient (employment divided by gross output) and L and Y are, as in foregoing chapters, employment and gross output. The output change $(Y_1 - Y_0)$ can be split according to formula (5) of Chapter V into the sources of growth, i.e. import substitution (*IS*), export expansion (*EE*), and domestic demand expansion (*DE*).

This gives us:

$$(2) \quad \underset{(2.1)}{L_1 - L_0 = l_0\, IS} + \underset{(2.2)}{l_0\, EE} + \underset{(2.3)}{l_0\, DE} + \underset{(2.4)}{(l_1 - l_0)\, Y_0} + \underset{(2.5)}{(l_1 - l_0)\, IS} + \underset{(2.6)}{(l_1 - l_0)\, EE} + \underset{(2.7)}{(l_1 - l_0)\, DE}$$

Expression (2) divides the change in employment into the labour absorption of the growth sources, the productivity effect of the growth sources, and an independent productivity effect. For instance, (2.1) shows the labour absorption of import substitution, (2.5) is the productivity effect of import substitution, whereas (2.4) is a productivity effect which is independent of any growth source. Our earlier studies failed to take into account the productivity effect of the growth sources, which is not negligible as will be seen below.

A similar expression to (2) can be derived for the change in capital. If the components of this expression are related to those of (2), one obtains the capital intensities of the growth sources. It should be noted that the concept of capital employed in the calculations presented below comprises only the value of machinery and equipment, including transport equipment, but not land and buildings. The latter two have been excluded because land and buildings are comparatively less scarce in a developing country and, secondly, unlike machinery and equipment they are not normally regarded as ready substitutes for labour.

B. LABOUR ABSORPTION

The labour absorption of the sources of growth during the two sub-periods, 1963–8 and 1968–71, is shown in Tables VI.2 and VI.3 for total manufacturing, both including as well as excluding primary processing. The tin industry has been omitted altogether, because its inclusion leads to grossly distorted results for the first sub-period. The data by industry are found in Tables AVI.1–AVI.3.

Table VI.2 reveals that for the period 1963–8 the pattern of labour absorption resembles that of output growth. Import substitution, the most important growth source during that period, created most of the jobs, followed by domestic demand expansion and export expansion. In fact, comparing the labour absorption excluding primary processing with the comparable output data of Table V.5 shows that the shares of the sources in output growth and labour absorption are almost identical. That means that labour absorption per unit of output was more or less the same for all three sources. A different distribution of the sources, given the same change in output, would consequently neither have increased nor reduced the labour absorption in this period.

Similar conclusions follow if the primary processing industries are included. However, the share of export expansion in labour absorption, which is now more than twice as high as it is without primary processing, is also slightly higher than the share in output growth (21.6 per cent). Apparently, the very export-oriented primary processing indus-

TABLE VI.2

LABOUR ABSORPTION THROUGH MANUFACTURING GROWTH, 1963–1968

	Import Substitution			*Export Expansion*		
	(2.1)	(2.5)	*Sum*	(2.2)	(2.6)	*Sum*
Including primary processing						
Employed	44,374	−21,335	23,039	19,101	−4,824	14,277
% of sub-total			40.3			24.9
Excluding primary processing						
Employed	43,901	−21,231	22,669	9,446	−3,809	5,637
% of sub-total			47.8			11.9

	Domestic Demand Expansion			*Sub-Total*	*Productivity Effect*	*Total*
	(2.3)	(2.7)	*Sum*		(2.4)	
Including primary processing						
Employed	31,379	−11,470	19,909	57,225	−20,541	36,684
% of sub-total			34.8	100.0		(64.1)
Excluding primary processing						
Employed	29,221	−10,151	19,070	47,376	−20,843	26,533
% of sub-total			40.3	100.0		(56.0)

tries absorbed more labour per unit of output than the average of manufacturing.

The most striking fact which emerges from Table VI.2 is the large impact of the rise in labour productivity on employment. Taking the independent productivity effect (2.4) alone, employment creation is lower by some 36 per cent than it would have been without a productivity change, if primary processing is included, and by 44 per cent excluding primary processing. Considering in addition the productivity effect of the growth sources, actual employment creation is as low as 39 per cent of potential employment creation (no productivity change) including primary processing, and only 32 per cent without the latter. This is much less than could be expected if one looks at the aggregate labour productivity of manufacturing, which rose from 23,238 (excluding tin) in 1963, to 26,684 in 1968. The calculations point to the fact that the change in aggregate productivity considerably understates the negative impact of the productivity effect on employment creation. Such an understatement will always be found, if output growth tends to be above the average rate in industries which employ a relatively large proportion of the sector's labour force, or, in other words, which have a high labour-output ratio (low labour productivity).[4]

Apart from disembodied technical progress, an increase in labour productivity occurs if either capital utilization or the employment of capital per unit of labour increases. If the productivity effect differs between the sources of growth, one can infer that there are differences with regard to the change in capital utilization or capital intensity between industries which rely on either import substitution, export expansion, or domestic demand expansion.

Table VI.2 shows that the productivity effect was largest in absolute as well as relative terms in import substitution. Next came domestic demand expansion, and last, export expansion. Comparing import substitution and export expansion only, one may infer that import-competing industries either started off with a rather low capital utilization in 1963, which, however, improved after 1968, or that they have become increasingly more capital intensive. These findings would support a common charge levelled against import-competing industries, that, because of protection, they can both afford to produce with low capital utilization as well as increase their capital intensity, disregarding the country's comparative advantage. Export expansion, on the other hand, had a relatively low productivity effect. That leads to the conclusion that export-oriented industries produced more efficiently with regard to capital utilization and/or were also more in line with the country's comparative advantage.

TABLE VI.3

LABOUR ABSORPTION THROUGH MANUFACTURING GROWTH, 1968–1971

	Import Substitution			*Export Expansion*		
	(2.1)	(2.5)	*Sum*	(2.2)	(2.6)	*Sum*
Including primary processing						
Employed	24,795	-4,077	20,718	14,266	2,482	16,748
% of sub-total			30.5			24.7
Excluding primary processing						
Employed	24,648	-4,148	20,500	4,529	633	5,162
% of sub-total			40.5			10.2

	Domestic Demand Expansion			*Sub-Total*	*Productivity Effect*	*Total*
	(2.3)	(2.7)	*Sum*		(2.4)	
Including primary processing						
Employed	33,078	-2,622	30,456	67,922	-3,615	64,307
% of sub-total			44.8			(94.7)
Excluding primary processing						
Employed	28,216	-3,263	24,953	50,615	-9,735	40,880
% of sub-total			49.3			(80.8)

If one turns to the next sub-period, 1968–71 (Table VI.3), one finds an enormous change in the pattern of labour absorption. The magnitude of the change strongly suggests that it reflects, at least partly, the change in government policy toward industry around 1968 which has been extensively described above. The government's increased concern about job creation in manufacturing and its introduction of labour utilization incentives may have contributed to the substantial increase in labour absorption per unit of output. Whereas the change in output (including primary processing) was only 18 per cent higher during the second sub-period than in the first, labour absorption increased by 74 per cent. The much higher labour absorption was due to a much lower productivity effect. It will be shown below that one of the major reasons for this must have been that manufacturing output growth shifted towards more labour-intensive lines of production.

Another feature which distinguishes the second from the first sub-period is the relative distribution of labour absorption as compared to output growth. Whereas in the first sub-period the distribution of labour absorption was almost identical with that of output growth, we find for the second sub-period that labour absorption is substantially higher for export expansion, somewhat higher for import substitution, and significantly lower for domestic demand expansion than could be expected from the distribution of output growth. For this period the reduction of the share of export expansion from 10.2 to 6.1 per cent was clearly detrimental to employment creation. If there had been even more emphasis on export expansion—and less on protection which seems to have promoted domestic demand expansion—the manufacturing sector could have created more jobs.

C CAPITAL ABSORPTION

The data for capital absorption shown in Tables VI.4 and VI.5 mirror most of the developments described above. For the first sub-period, the share of import substitution in total capital absorption is significantly higher than the corresponding share in output growth and labour absorption. This observation underlines the above conclusion that import-competing industries became more capital intensive. The fairly high negative productivity effect on employment further points to increasing capital utilization, as already suggested above. Export expansion absorbed less capital than the shares in output growth and labour absorption indicate, if primary processing is included, but slightly more if it is excluded. The non-primary export-oriented industries apparently were not so clearly labour intensive during this sub-period. The relatively low capital absorption of domestic demand expansion is remarkable, particularly if contrasted with the high capital absorption of import substitution. Our interpretation of this phenomenon is that domestic demand expansion mainly occurred in already established labour-intensive industries, whereas import substitution was dominated by more recently established production lines

TABLE VI.4
CAPITAL ABSORPTION THROUGH MANUFACTURING GROWTH, 1963–1968

	Import Substitution			*Export Expansion*		
	(2.1)	(2.5)	*Sum*	(2.2)	(2.6)	*Sum*
Including primary processing						
M$'000	243,632	−61,369	182,263	98,556	−28,547	70,009
% of sub-total			53.8			20.7
Excluding primary processing						
M$'000	205,768	−61,291	144,477	55,385	−19,329	36,056
% of sub-total			56.4			14.1

	Domestic Demand Expansion			*Sub-Total*	*Productivity Effect*	*Total*
	(2.3)	(2.7)	*Sum*		(2.4)	
Including primary processing						
M$'000	104,856	−18,334	86,522	338,794	−52,738	286,056
% of sub-total			25.5	100.0		(84.4)
Excluding primary processing						
M$'000	94,258	−18,700	75,558	256,091	−60,250	195,841
% of sub-total			29.5	100.0		(76.5)

which benefited from the capital-biased rather than employment-promoting incentive system.

As for labour absorption, there are also significant changes in capital absorption in the second sub-period. The structure of capital absorption is now more or less in line with the pattern of output growth, except that the capital absorption of export expansion is relatively low. This means that import substitution must have become less capital intensive, export expansion much more labour intensive, and domestic demand expansion more capital intensive. Most likely the new import-competing and export-oriented activities responded to the government's urge to employ more labour, whereas the fairly capital-intensive import substituting industries of the previous phase were now diverted to domestic demand expansion.

The shift in capital intensity of the sources of growth between the two sub-periods comes out even more clearly from Table VI.6 where capital and labour absorption are related to each other. The capital-labour ratio of the overall change in output was only half as high in the second sub-period as in the first. This was due to a significant reduction in the capital intensity of import substitution and a dramatic shift towards labour intensity in export expansion. Only domestic demand expansion became more capital intensive as already indicated above.

TABLE VI.5

CAPITAL ABSORPTION THROUGH MANUFACTURING GROWTH, 1968–1971

	Import Substitution			*Export Expansion*		
	(2.1)	*(2.5)*	*Sum*	*(2.2)*	*(2.6)*	*Sum*
Including primary processing						
M$'000	115,167	−27,457	87,710	12,169	11,962	24,131
% of sub-total			31.4			8.7
Excluding primary processing						
M$'000	113,904	−27,753	86,151	6,643	2,425	9,068
% of sub-total			39.3			4.1

	Domestic Demand Expansion			*Sub-Total*	*Productivity Effect*	*Total*
	(2.3)	*(2.7)*	*Sum*		*(2.4)*	
Including primary processing						
M$'000	189,421	−22,396	167,025	278,866	−50,971	227,895
% of sub-total			59.9	100.0		(81.7)
Excluding primary processing						
M$'000	152,450	−28,397	124,053	219,272	−60,957	158,315
% of sub-total			56.6	100.0		(72.2)

TABLE VI.6

CAPITAL INTENSITY OF THE SOURCES OF GROWTH VALUE OF FIXED ASSETS PER MAN IN MALAYSIAN DOLLARS

	Import Substitution		*Export Expansion*		*Domestic Demand Expansion*		*Sub-Total*	*Total*
	Excl. P.E.	*Incl. P.E.*	*Excl. P.E.*	*Incl. P.E.*	*Excl. P.E.*	*Incl. P.E.*		
Including primary processing								
1963–1968	5,490	7,911	5,160	4,904	3,342	4,346	5,920	7,760
1968–1971	4,654	4,232	853	1,441	5,726	5,484	4,106	3,544
Excluding primary processing								
1963–1968	4,687	6,373	5,863	6,396	3,226	3,962	5,406	7,381
1968–1971	4,621	4,152	1,467	1,757	5,403	4,971	4,332	3,873

Note: Excl. P.E. means excluding productivity effect and incl. P.E. including productivity effect. The first refers to the factor absorption according to formulae (2.1) — (2.3), whereas the latter is based on (2.1) + (2.5), (2.2) + (2.6), and (2.3) + (2.7).

These data provide additional evidence for the hypothesis that more reliance on export expansion, in particular in connexion with effective government support for more labour-intensive production, can substantially contribute to the reduction of unemployment through manufacturing growth.

3. STRUCTURAL CHANGE AND EMPLOYMENT FROM EXPORTS

The rapid fall of capital intensity in export expansion between the two sub-periods, as discussed in the previous section, suggests that the structure of manufactured exports shifted swiftly toward more labour-intensive products. To ascertain more accurately the impact of the change in export structure on employment creation, the total change in employment generated by manufactured exports will be split into several components. The procedure is basically an extension of the analytical devices employed above.

A. THE MODE OF MEASUREMENT

Using the same notations as before we can write down the following identity for employment generated by a change in exports in industry i:

(3) $$L_{i1}^{x} - L_{i0}^{x} = l_{i1} X_{i1} - l_{i0} X_{i0}$$

If we define

(4) $$\bar{X}_{i1} = \frac{X_{io}}{\Sigma X_{io}} \sum_{i} X_{i1}$$

(3) may be expanded to:

(5) $$L_{i1}^{x} - L_{i0}^{x} = \underbrace{X_{io}(l_{i1} - l_{io})}_{(5.1)} + \underbrace{l_{io}(X_{i1} - \bar{X}_{i1})}_{(5.2)} + \underbrace{l_{io}(\bar{X}_{i1} - X_{io})}_{(5.3)}$$

$$+ \underbrace{(l_{i1} - l_{io})(X_{i1} - X_{io})}_{(5.4)}$$

An increase of export demand does, in most instances, affect employment not only in the industries directly concerned but also in a number of activities which produce intermediate and investment goods for the export industries. Hence, it makes sense to calculate the direct and indirect employment changes by using the inverse of the domestic transactions matrix as discussed in section IV.6. For this purpose we have only to substitute the direct labour coefficients of formula (5) by the total (direct plus indirect) labour coefficients which are:

(6) $$l^{*} = l(I - B)^{-1}$$

(5) divides the total change of employed labour engaged in the production of manufactured exports into a productivity effect (5.1), a structural effect (5.2), a volume change effect (5.3), and a joint or combined effect (5.4). The productivity effect is the change in employment due to

a change in labour productivity. It is comparable to the independent productivity effect calculated in the previous section, except that here it relates to exports only and therefore is smaller than the productivity effect of output growth.

In order to understand the structural effect and its distinction from the volume change effect one has to be clear about the meaning of $\bar{X}_i$. This variable denotes the value the exports of industry i would assume in year 1 if their share in total exports were the same as in year 0. If, for instance, total exports are 100 in year 1 and 50 in year 0 and if industry i had an export of 5 in year 0, then $\bar{X}_{i1}$ is 100 x 0.1 = 10. Subtracting this hypothetical export value of 10 from actual exports in year 1, let us say 12, gives the export change—and, if multiplied with the labour coefficient, the corresponding employment increase—due to a change of the export structure in favour of industry i. If, on the other hand, X_{i0} is substracted from X_{i1} one obtains the export change of industry i that would occur, if these exports grew at the same rate as total exports and therefore keep their share in the total constant. In our example the difference would be 10–5 = 5.

The combined effect (5.4) again contains a structural effect and a volume change effect. They may be interpreted as the impact on employment of productivity changes in over- or under-proportional export growth (structural productivity effect) and proportional export growth (volume change productivity effect). With these extensions the final equation to be estimated reads:

$$(7) \qquad \underset{}{L^x_{i1} - L^x_{i0}} = \underset{(7.1)}{X_{i0}\,(l_{i1} - l_{i0})} + \underset{(7.2)}{l_{i0}\,(X_{i1} - \bar{X}_{i1})} + \underset{(7.3)}{l_{i0}\,(\bar{X}_{i1} - X_{i0})}$$

$$+ \underset{(7.4)}{(l_{i1} - l_{i0})\,(X_{i1} - \bar{X}_{i1})} + \underset{(7.5)}{(l_{i1} - l_{i0})\,(\bar{X}_{i1} - X_{i0})}$$

B. THE QUANTITATIVE IMPACT OF STRUCTURAL EXPORT CHANGE

The change in export structure between the two sub-periods and its impact on employment generation can be estimated by calculating formula (7) for the entire observation period (1963–71). The direct employment change and its components are found in Table VI.7, whereas Table VI.8 shows the direct plus indirect employment change.

The results strongly confirm our hypothesis that structural change was an important determinant of employment growth in export manufacturing. The structural effect was substantially higher than the volume change effect in direct employment generation and somewhat higher if indirect employment creation is also considered. If rubber processing is excluded the structural effect is about four times the volume change effect for the direct employment change and about three-and-a-half times that for the total.

The significance of this observation can be assessed if one compares our results for Malaysia with those obtained by Banerji[5] for India.

Banerji calculated the employment change due to exports for the period 1964–70 by making use of formula (5). For direct employment generation he found a structural effect which is only a quarter of the volume change effect, and for the total employment change the structural effect was even negative by a similar absolute amount as the positive volume change effect.

The reasons for the large negative structural effect of rubber processing are obvious. The restructuring of agricultural estate production towards oil palm cultivation reduced the relative importance of rubber production and exports. In value terms, exports were still lower because of the sharp decline of the rubber price. Similar arguments hold for the tin industry although the tin prices had moved upwards. The effect was much smaller and here it was mainly the depletion of alluvial tin reserves which slowed down the growth of tin exports. In volume terms, tin exports rose by only 0.6 per cent between 1963 and 1971.

Large positive structural effects resulted from two types of industries. The first are the 'new' primary processing industries, palm oil and wood mills, which accounted for 63 per cent of the direct and 87 per cent of the direct plus indirect structural effect. The second are the more recently established labour-intensive industries, such as textile spinning, wearing apparel, other chemicals, and non-electrical as well as electrical machinery. These industries caused 33 per cent of the direct but only 23 per cent of the total structural effect.[6]

Of considerable interest are the differences between direct and total employment generation. However, when drawing conclusions from these differences one should be aware of the fact that certain indirect effects calculated are unlikely to materialize in reality. Consider the primary processing industries which rank on top in terms of indirect employment effects, suggesting that an increase in export demand for these commodities substantially raises production and thereby employment in the supplying industries, basically forestry and agriculture. This is, however, an illusion. What happens if processing facilities are erected or expanded is largely a substitution of raw material exports for the export of processed material. Hence, additional jobs are created mainly in the processing plants and it is therefore merely the direct effect which counts.

Apart from this it is interesting to note that certain so-called labour-intensive industries create very few jobs indirectly, mostly because the majority of their inputs are imported. Examples are wearing apparel with a direct structural effect of 2,055 jobs and a total structural effect of 2,063 jobs, or business and household machinery where the corresponding figures are 475 and 491 respectively. In order to get more employment out of these activities it is important to promote further vertical integration by substituting their imported inputs for domestic production.

Among the capital-intensive industries are, on the other hand,

TABLE VI.7

COMPONENTS OF DIRECT LABOUR ABSORPTION OF EXPORT GROWTH, 1963–1971
(man-years) (According to Formula 7)

	Industry	*(7.1)*	*(7.2)*	*(7.3)*	*(7.4)*	*(7.5)*	*Total Effect*
1	Meat preparation	−0.27	62.46	3.21	−2.88	−0.14	62
2	Dairy products	−31.24	564.06	27.06	−353.08	−16.93	189
3	Fruits & vegetable canning	−64.33	202.73	1069.35	−6.61	−34.88	1166
4	Fish canning	79.65	435.12	92.98	202.08	43.18	853
5	Vegetable and animal oils & palm oil	368.47	2459.90	576.53	1315.15	308.23	5228
6	Grain mills & animal feeds	−202.28	−170.16	192.78	96.81	−109.68	−192
7	Bakeries	−16.92	177.75	107.23	−15.21	−9.17	243
8	Cocoa and chocolate	0.14	154.86	8.43	1.45	0.07	164
9	Ice factories	−0.20	1.52	0.63	−0.26	−0.11	1
10	Other food preparations	−67.28	999.44	52.11	−699.69	−36.48	248
11	Spirits and wines	−0.74	103.32	0.88	−47.42	−0.40	55
12	Breweries & soft drinks	−0.06	780.59	0.06	−383.84	−0.03	396
13	Tobacco products	−0.01	907.42	0.02	−299.30	−0.00	608
14	Textile spinning	−28.27	1039.71	160.71	−99.19	−15.33	1057
15	Knitting mills	−9.96	491.78	27.14	−97.92	−5.40	405
16	Other textiles	447.26	−115.06	77.03	−362.24	242.51	289
17	Wearing apparel exc. footwear	−3.36	2055.24	77.33	−48.51	−1.82	2078
18	Leather products	0.05	27.77	1.34	0.60	0.02	29
19	Footwear exc. rubber & plastic	4.71	133.84	3.15	108.26	2.55	252
20	Wood mills	−661.64	14829.20	2266.82	−2346.90	−358.75	13728
21	Other wood products	−78.88	184.04	72.21	−109.01	−42.77	25
22	Furniture & fixtures	−3.01	−1.21	7.60	0.26	−1.63	2
23	Paper & paper products	−19.12	615.40	48.64	−131.22	−10.37	503
24	Printing & publishing	−69.48	580.27	95.93	−227.86	−37.67	341
25	Industrial chemicals	−2.79	294.53	6.83	−65.37	−1.51	231

TABLE VI.7 (continued)

	Industry	(7.1)	(7.2)	(7.3)	(7.4)	(7.5)	Total Effect
26	Paints & varnishes	-23.70	-118.90	55.67	27.45	-12.85	-72
27	Drugs & medicines	-2.89	247.75	172.19	-2.25	-1.56	413
28	Cleansing detergents & cosmetics	-188.86	-366.75	298.12	125.97	-102.40	-233
29	Other chemicals	-792.95	2918.79	474.32	-2645.72	-429.94	-475
30	Petroleum & coal products	-1.15	131.63	5.44	-15.10	-0.62	120
31	Rubber processing	7216.18	-9444.80	11218.30	-3294.16	3912.72	9608
32	Rubber products	-1169.06	724.68	1407.08	-326.46	-633.88	2
33	Plastic products	-9.06	315.06	19.03	-81.35	-4.91	238
34	Pottery and china	-23.16	177.49	23.87	-93.36	-12.56	72
35	Structural clay products	-15.60	523.45	47.80	-92.65	-8.46	454
36	Cement and concrete products	-4.71	489.21	10.84	-115.32	-2.55	377
37	Other NM mineral products	-42.59	263.18	27.22	-223.29	-23.09	1
38	Iron & steel products	-18.06	196.51	17.92	-107.41	-9.79	79
39	Non-ferrous metals & tin	-657.22	-230.18	985.42	83.24	-356.35	-175
40	Tools, cutlery & metal furniture	-50.87	27.85	46.95	-16.35	-27.58	-20
41	Structural metal products	1.99	252.78	12.41	22.03	1.08	290
42	Fabricated metal products	-106.74	863.89	113.53	-440.41	-57.88	372
43	Non-electrical machinery	-80.88	1714.23	84.69	-887.72	-43.85	786
44	Business & household machinery	15.18	474.68	5.23	746.23	8.23	1249
45	Communication equipment, appliances	-79.72	574.69	96.12	-258.46	-43.22	289
46	Other electrical machinery	-36.32	450.93	38.46	-230.89	-19.69	202
47	Shipbuilding & repairs	-1.92	17.06	6.71	-2.64	-1.04	18
48	Motor vehicles	-26.57	292.02	19.57	-214.98	-14.41	55
49	Other transport equipment	-5.99	199.27	4.50	-143.69	-3.25	50
50	Other misc. manufactures	56.88	87.36	22.83	118.28	30.84	316
	Sum	3792.47	27596.67	20190.40	-11640.92	2056.33	41994

Note: Figures in last column have been rounded.

TABLE VI.8

THE COMPONENTS OF DIRECT PLUS INDIRECT LABOUR ABSORPTION OF EXPORT GROWTH, 1963–1971 (man-years) (According to Formula 7)

	Industry	*(7.1)*	*(7.2)*	*(7.3)*	*(7.4)*	*(7.5)*	*Total Effect*
1	Meat preparation	-0.27	62.57	3.22	-2.85	-0.14	62
2	Dairy products	-31.29	565.82	27.14	-353.64	-16.96	191
3	Fruits & vegetable canning	-65.56	202.80	1069.69	-6.73	-35.54	1164
4	Fish canning	77.80	441.55	94.36	197.40	42.18	853
5	Vegetable and animal oils & palm oil	-718.01	8866.46	2078.05	-1661.11	-389.31	8176
6	Grain mills & animal feeds	-308.18	-432.21	489.65	147.49	-167.09	-270
7	Bakeries	-17.12	177.87	107.30	-15.38	-9.28	243
8	Cocoa and chocolate	0.13	155.52	8.47	1.33	0.07	165
9	Ice factories	-0.21	1.55	0.64	-0.27	-0.11	1
10	Other food preparations	-82.55	1469.02	76.59	-858.50	-44.76	559
11	Spirits and wines	-0.74	103.56	0.88	-47.46	-0.40	55
12	Breweries & soft drinks	-0.06	780.70	0.06	-384.17	-0.03	396
13	Tobacco products	-0.01	910.09	0.02	-303.36	-0.00	606
14	Textile spinning	-36.25	1678.52	259.46	-127.16	-19.65	1754
15	Knitting mills	-9.95	491.70	27.13	-97.75	-5.39	405
16	Other textiles	446.28	-118.18	79.12	-361.45	241.98	287
17	Wearing apparel exc. footwear	-3.39	2063.39	77.64	-48.88	-1.83	2086
18	Leather products	0.12	29.44	1.42	1.42	0.06	32
19	Footwear exc. rubber & plastic	4.73	134.13	3.16	108.78	2.56	253
20	Wood mills	-2890.15	32292.66	4936.32	-10251.63	-1567.08	22520
21	Other wood products	-142.65	295.60	115.98	-197.13	-77.34	-5
22	Furniture & fixtures	-3.11	-1.25	7.83	0.26	-1.68	2
23	Paper & paper products	-37.81	971.82	76.81	-259.42	-20.50	730
24	Printing & publishing	-84.74	698.59	115.50	-277.91	-45.94	405
25	Industrial chemicals	-15.43	884.60	20.52	-360.80	-8.36	520

TABLE VI.8 (continued)

	Industry	*(7.1)*	*(7.2)*	*(7.3)*	*(7.4)*	*(7.5)*	*Total Effect*
26	Paints & varnishes	-60.30	-208.27	97.52	69.83	-32.69	-133
27	Drugs & medicines	-2.76	249.58	173.47	-2.15	-1.49	416
28	Cleansing detergents & cosmetics	-188.09	-372.07	302.44	125.46	-101.98	-234
29	Other chemicals	-825.99	3055.66	496.56	-2755.95	-447.86	-477
30	Petroleum & coal products	-125.24	3311.36	137.01	-1641.28	-67.91	1613
31	Rubber processing	-4284.77	-21397.29	25415.15	1955.98	-2323.26	-634
32	Rubber products	-1389.76	875.13	1699.20	-388.10	-753.55	42
33	Plastic products	-9.38	329.97	19.93	-84.21	-5.08	251
34	Pottery and china	-24.78	189.00	25.42	-99.89	-13.43	76
35	Structural clay products	-16.58	537.69	49.10	-98.48	-8.99	462
36	Cement and concrete products	-68.76	2441.16	54.11	-1682.03	-37.28	707
37	Other NM mineral products	-42.77	265.39	27.45	-224.25	-23.19	2
38	Iron & steel products	-32.57	381.84	34.82	-193.66	-17.66	172
39	Non-ferrous metals & tin	-2999.72	-1252.98	5363.96	379.93	-1626.49	-135
40	Tools, cutlery & metal furniture	-52.13	28.70	48.40	-16.76	-28.26	-20
41	Structural metal products	1.10	282.88	13.89	12.24	0.60	310
42	Fabricated metal products	-151.22	1245.04	163.63	-623.90	-81.99	551
43	Non-electrical machinery	-105.33	2433.19	120.21	-1155.98	-57.11	1234
44	Business & household machinery	15.27	490.51	5.41	750.53	8.28	1270
45	Communication equipment, appliances	-79.85	574.84	96.14	-258.88	-43.30	288
46	Other electrical machinery	-37.00	461.93	39.40	-235.25	-20.06	209
47	Shipbuilding & repairs	-1.95	17.18	6.76	-2.68	-1.05	18
48	Motor vehicles	-26.63	292.88	19.63	-215.42	-14.44	56
49	Other transport equipment	-6.04	202.08	4.57	-144.72	-3.27	52
50	Other misc. manufactures	54.34	108.74	28.35	113.01	29.46	333
	Sum	-14379.42	47270.57	44119.65	-21575.59	-7796.70	47638

Note: See footnote of Table VI.7.

activities which generate a very substantial amount of indirect employment. For instance petroleum and coal products and industrial chemicals both create through structural change much more employment indirectly than directly, although they belong to the most capital-intensive activities. A closer inspection of the data and further analysis may reveal that certain industries usually considered as capital intensive are capable of generating substantial employment and might therefore be suitable for promotion.

Turning now to the structural and the volume change productivity effects, we observe a large negative impact of the first for both direct (−42 per cent)[7] and total (−46 per cent) employment generation, whereas the latter is low but positive (+10 per cent) for the direct change and negative (−18 per cent) for the total change. If rubber processing is excluded the anomaly of a positive direct volume change productivity effect disappears. The difference also narrows down.

The fact that the negative employment impact of productivity change was relatively more important for the structural rather than the volume change effect leads to the following conclusion. Although the activities which recorded an over-proportional export growth contributed relatively more to labour absorption than those which just managed to keep their share constant, they also increased their labour productivity faster than the others. This may have been partly due to rising capital intensity but probably to a greater extent to improved *X*-efficiency.

4. COMPARATIVE ADVANTAGE AND THE FACTOR INTENSITY OF TRADE

The previous discussion revealed that output growth, and in particular growth for exports, had a changing impact on labour absorption. However, the findings do not provide any answer to the question as to whether Malaysia's manufacturing sector produced and traded in accordance with the static principles of comparative advantage. In our earlier study we concluded, first, that in manufactured goods Malaysia had developed its comparative advantage in resource-based industries[8] and, second, that its imports, if produced at home, were more labour intensive than its exports.[9] The first conclusion suggests the utilization of comparative advantage, if natural resources are considered as the country's most abundant factor of production. The latter confirms the Leontief paradox, and hence violates the principle of comparative advantage if labour is the most abundant factor. It is not intended here to enter into a discussion of how to define comparative advantage with more than two factors of production. What interests us is the question whether the exploitation of the possibility of accelerating industrial growth through the primary processing of domestic natural resources led to such a low labour absorption per unit of capital in the remaining part of manufacturing that exports became on average more capital intensive than imports.

Our earlier investigation is not really a confirmation of the Leontief paradox as it considered, unlike Leontief, only the direct factor intensity of exports and imports. With the data now at hand we are in a position to estimate the direct plus indirect factor intensities, and hence, to apply the Leontief test to Malaysian manufacturing. However, by dealing with manufacturing only we still deviate from Leontief's procedure. If we define the share of commodity i in exports and imports as sE_i and sM_i respectively, the formula to be estimated is:

$$(8) \qquad \frac{K^M/L^M}{K^E/L^E} = \frac{\sum_i k_i\, sM_i / \sum_i l_i\, sM_i}{\sum_i k_i\, sE_i / \sum_i l_i\, sE_i}$$

k_i and l_i are the direct plus indirect capital and labour coefficients as defined above. If (8) is greater than 1, imports are more capital intensive than exports. The so-called factor proportions theory which is based on the static principle of comparative advantage would be confirmed. If, on the other hand, (8) is smaller than 1, we would have just another example of the Leontief paradox.

From what has been said above it is clear that natural resources are an important determinant of Malaysia's manufacturing exports. In such cases, it has been argued by various authors and acknowledged by Leontief,[10] that the test should be performed without the major resource-based industries. We have therefore excluded those industries for which the natural resource factor seems to be of utmost importance. Specifically, the palm oil, wood milling, rubber processing, petroleum, and coal as well as tin smelting industries were among the first industries that were omitted from the analysis. In a subsequent run of the same computation, some other industries like non-metallic mineral products, grain milling products, etc., were excluded from the sample in order to ensure that only internationally mobile products were considered.

Tables VI.9 and VI.10 below set out the results of our investigation on the factor endowment structure of West Malaysian trade in manufactures. The data sets are for the three years, 1963, 1968, and 1971. Two alternative definitions of capital were used in the calculations—first, fixed capital investment comprising only machinery and transport equipment, and second, total capital investment, incorporating land, buildings, and other capital outlay besides machinery. If we use the first definition of capital and omit only the five major resource-based industries, formula (8) is estimated at 1.282 for 1963, 1.100 for 1968, and 1.229 for 1971. With total capital the comparable ratios are 1.481, 1.094, and 1.176. Taking the first capital definition but a reduced sample of forty industries the ratios become 1.302, 1.213, and 1.284 for the respective years.

Except maybe for 1963, a year for which only estimated and hence less reliable capital data are available, the calculations support the hypothesis that West Malaysian trade in manufactures conformed with

TABLE VI.9
LABOUR REQUIREMENTS OF TRADE

	Industry	*Labour Requirements of Imports*			*Labour Requirements of Exports*		
		1963	*1968*	*1971*	*1963*	*1968*	*1971*
1	Meat preparation	0.54	1.20	0.48	0.04	0.07	0.14
2	Dairy products	1.56	0.39	0.48	0.37	0.70	0.50
3	Fruits & vegetable canning	1.70	1.23	1.11	14.59	8.89	6.55
4	Fish canning	0.17	0.16	0.19	1.28	1.12	2.13
5	Vegetable and animal oils & palm oil	—	—	—	—	—	—
6	Grain mills & animal feeds	11.95	4.53	2.66	6.67	2.00	1.32
7	Bakeries	0.26	0.18	0.15	1.46	0.30	0.92
8	Cocoa and chocolate	0.27	0.12	0.11	0.11	0.13	0.37
9	Ice factories	0.00	0.01	0.01	0.00	0.01	0.00
10	Other food preparations	6.66	2.02	1.82	1.04	1.09	1.46
11	Spirits and wines	0.71	0.34	0.58	0.01	0.02	0.12
12	Breweries & soft drinks	0.52	0.11	0.05	0.00	0.99	0.82
13	Tobacco products	0.16	0.09	0.05	0.00	0.66	1.27
14	Textile spinning	7.67	5.73	8.89	3.54	3.46	4.66
15	Knitting mills	2.41	1.94	2.16	0.37	0.62	0.95
16	Other textiles	0.68	3.15	4.20	1.07	0.78	0.90
17	Wearing apparel exc. footwear	2.80	2.32	1.05	1.05	3.92	4.65
18	Leather products	0.15	0.09	0.14	0.01	0.01	0.07
19	Footwear exc. rubber & plastic	0.08	0.08	0.12	0.04	0.24	0.54
20	Wood mills	—	—	—	—	—	—
21	Other wood products	0.26	0.08	0.04	1.58	0.45	0.43
22	Furniture & fixtures	0.52	0.16	0.08	0.10	0.15	0.03
23	Paper & paper products	4.13	3.82	4.28	1.04	1.34	1.82
24	Printing & publishing	2.30	1.51	1.32	1.57	1.61	1.29
25	Industrial chemicals	2.71	2.44	3.10	0.27	0.73	1.16

TABLE VI.9 (continued)

	Industry	Labour Requirements of Imports			Labour Requirements of Exports		
		1963	*1968*	*1971*	*1963*	*1968*	*1971*
26	Paints & varnishes	0.13	0.06	0.05	1.32	1.02	0.09
27	Drugs & medicines	1.09	1.40	1.54	2.36	1.28	1.53
28	Cleansing detergents & cosmetics	0.23	0.19	0.09	4.12	1.52	0.67
29	Other chemicals	8.69	1.24	1.51	6.77	1.43	0.91
30	Petroleum & coal products	—	—	—	—	—	—
31	Rubber processing	—	—	—	—	—	—
32	Rubber products	1.68	0.64	0.47	23.17	7.68	6.63
33	Plastic products	0.62	0.42	0.36	0.27	0.34	0.60
34	Pottery and china	1.88	1.37	1.08	0.34	0.28	0.25
35	Structural clay products	0.63	0.70	0.62	0.66	0.66	1.15
36	Cement and concrete products	3.12	0.07	0.03	0.73	2.35	1.68
37	Other NM mineral products	1.84	0.27	0.43	0.37	0.03	0.11
38	Iron & steel products	6.67	5.78	2.70	0.47	2.81	0.49
39	Non-ferrous metals & tin	—	—	—	—	—	—
40	Tools, cutlery & metal furniture	2.08	1.55	1.07	0.66	0.07	0.14
41	Structural metal products	0.52	0.37	0.11	0.18	0.51	0.70
42	Fabricated metal products	6.27	4.02	3.47	2.23	1.44	1.78
43	Non-electrical machinery	16.21	13.85	13.53	1.63	1.28	3.04
44	Business & household machinery	1.41	0.50	2.85	0.07	0.23	2.67
45	Communication equipment, appliances	2.39	1.49	2.04	1.31	0.72	0.97
46	Other electrical machinery	1.74	0.96	1.11	0.53	0.22	0.58
47	Shipbuilding & repairs	0.30	0.24	0.33	0.09	0.05	0.06
48	Motor vehicles	9.96	5.84	3.79	0.26	0.41	0.19
49	Other transport equipment	2.01	1.60	0.60	0.06	0.05	0.12
50	Other misc. manufactures	1.03	3.66	2.41	0.38	1.38	0.80
	Sum of proportional labour requirement	118.92	78.13	73.49	84.41	55.28	57.45

TABLE VI.10

CAPITAL REQUIREMENTS OF TRADE (M$)

	Industry	Capital Requirements of Imports			Capital Requirements of Exports		
		1963	1968	1971	1963	1968	1971
1	Meat preparation	3.21	5.58	0.74	0.25	0.35	0.22
2	Dairy products	11.47	3.50	5.42	2.71	6.35	5.56
3	Fruits & vegetable canning	2.63	1.82	1.50	22.52	13.20	8.87
4	Fish canning	0.59	0.71	0.40	4.32	4.94	4.45
5	Vegetable and animal oils & palm oil	—	—	—	—	—	—
6	Grain mills & animal feeds	22.23	12.17	5.56	12.42	5.37	2.75
7	Bakeries	0.22	0.21	0.13	1.22	0.36	0.77
8	Cocoa and chocolate	0.43	0.39	0.22	0.18	0.40	0.73
9	Ice factories	0.00	0.10	0.09	0.06	0.18	0.04
10	Other food preparations	10.79	8.28	6.22	1.69	4.47	4.98
11	Spirits and wines	1.61	0.95	2.82	0.02	0.07	0.57
12	Breweries & soft drinks	2.11	1.00	0.53	0.00	8.64	7.85
13	Tobacco products	0.41	0.32	0.21	0.00	2.32	4.76
14	Textile spinning	83.77	28.15	54.67	38.65	17.03	28.64
15	Knitting mills	8.98	3.28	4.58	1.38	1.06	2.01
16	Other textiles	0.61	1.30	2.15	0.98	0.32	0.46
17	Wearing apparel exc. footwear	3.47	2.20	1.40	1.31	3.72	6.19
18	Leather products	0.31	0.15	0.24	0.03	0.02	0.11
19	Footwear exc. rubber & plastic	0.02	0.02	0.08	0.01	0.05	0.37
20	Wood mills	—	—	—	—	—	—
21	Other wood products	0.33	0.22	0.16	2.03	1.14	1.40
22	Furniture & fixtures	0.29	0.16	0.04	0.05	0.15	0.02
23	Paper & paper products	11.80	12.21	14.47	2.98	4.29	6.14
24	Printing & publishing	4.75	4.62	4.01	3.25	4.94	3.92
25	Industrial chemicals	46.40	73.93	66.46	4.78	22.06	24.99
26	Paints & varnishes	0.68	0.35	0.18	6.60	5.33	0.32
27	Drugs & medicines	1.35	1.27	1.94	2.93	1.15	1.93

TABLE VI.10 (continued)

	Industry	Capital Requirements of Imports 1963	1968	1971	Capital Requirements of Exports 1963	1968	1971
28	Cleansing detergents & cosmetics	0.95	0.67	0.33	17.00	5.32	2.38
29	Other chemicals	2.77	2.37	6.58	2.16	2.73	3.98
30	Petroleum & coal products	—	—	—	—	—	—
31	Rubber processing	—	—	—	—	—	—
32	Rubber products	5.63	1.94	1.51	77.29	23.21	21.38
33	Plastic products	1.74	1.96	1.26	0.76	1.56	2.10
34	Pottery and china	9.55	7.72	6.76	1.75	1.60	1.60
35	Structural clay products	0.93	0.97	1.65	0.98	0.92	3.05
36	Cement and concrete products	28.11	0.88	0.27	6.63	27.53	12.96
37	Other NM mineral products	0.10	0.21	0.76	0.02	0.02	0.19
38	Iron & steel products	92.35	75.90	39.73	6.57	36.87	7.28
39	Non-ferrous metals & tin	—	—	—	—	—	—
40	Tools, cutlery & metal furniture	2.75	1.87	2.23	0.87	0.09	0.30
41	Structural metal products	1.82	1.05	0.30	0.65	1.43	1.82
42	Fabricated metal products	5.69	9.34	14.76	2.02	3.36	7.56
43	Non-electrical machinery	18.23	27.15	30.22	1.84	2.52	6.79
44	Business & household machinery	2.86	2.33	1.23	0.14	1.06	1.15
45	Communication equipment, appliances	3.21	8.37	14.58	1.76	4.07	6.94
46	Other electrical machinery	0.13	4.13	5.99	0.04	0.97	3.17
47	Shipbuilding & repairs	0.40	0.51	0.15	0.12	0.11	0.02
48	Motor vehicles	10.14	25.35	7.82	0.27	1.79	0.39
49	Other transport equipment	9.86	7.61	1.91	0.30	0.26	0.40
50	Other misc. manufactures	8.05	10.18	9.96	3.01	3.85	3.32
	Sum of proportional capital requirement	423.94	353.57	322.45	234.73	227.42	205.07

$\left(K^M/L^M\right) \div \left(K^E/L^E\right)$ Index for 1963 = 1.282
1968 = 1.100
1971 = 1.229

the factor proportions theory. They contradict our earlier findings based on direct labour and capital inputs only. Qualitatively the results are neither affected by the inclusion of immobile capital equipment nor by the omission of non-tradeable resource-intensive industries. Also, the development over time is basically the same in all alternative calculations.

The decline of the ratio between 1963 and 1968 and its increase thereafter underline the fact, already observed above, that export expansion was fairly capital intensive in the first sub-period, at least more capital intensive than domestic demand expansion, but rather labour intensive in the second sub-period. If primary processing is excluded, as has been done in the Leontief test, export expansion during the first sub-period was even more capital intensive than import substitution (Table VI.6). An attempt to explain this rather surprising phenomenon will be made in the next section.

5. FACTOR INTENSITIES AND THE TRADE PATTERN

The Leontief test has been much criticized. However, few proposals have been made for a superior test of the hypothesis that trade follows the principle of comparative advantage as defined by the factor proportions theory. Of more recent origin is a test by which Fels[11] analysed the trade patterns of West Germany. The test is straightforward.

It consists of a cross-section regression between the trade surplus (or deficit) per unit of labour and capital intensity. This test has the clear advantage in that it circumvents a number of problems inherent in the Leontief test. One of these is inaccurate input-output data and the arbitrariness of taking an input-output table for a year which has been selected for reasons other than to perform the test. Another is the fact that the outcome of the test often depends very much on the type of industries which have been included or excluded. There is no fool-proof criterion for a proper selection of the sample.

The formula to be estimated for the Fels test may be written as follows:

$$\frac{X_i - M_i}{L_i} = a + b\,K_i \qquad (9)$$

The symbols on the left side of the equation denote the specific industry's export, import, and employment, whereas K_i stands for the capital intensity. K_i is measured in four different ways: mobile capital (machinery and transport equipment) per employee (VC/L); total fixed capital (including land and buildings) per employee (TC/L); capital income per employee ($((V-W)/L)$), and value added per employee, as proposed by Lary (V/L).

Equation (9) is estimated for the years 1963, 1968, and 1971, as well as for the changes of the trade surplus and the capital intensity between 1963 and 1968 and between 1968 and 1971. Additional regressions were calculated with the wage rate (W/L) as independent variable.

Statistically significant results were obtained for the year 1963 and, as far as changes are concerned, for the period 1963–8. These results are summarized in Table VI.11. For 1963 all regression coefficients are negative and highly significant. That means a high export surplus per unit of labour was associated with a low capital intensity and vice versa. Apparently, Malaysia's trade pattern in 1963 was quite in line with its comparative advantage, as stipulated by the factor proportions theory.

The best explanation is given by mobile capital. As total fixed capital

TABLE VI.11

TRADE PATTERN AND CAPITAL INTENSITY, 1963 AND 1963–1968

Dependent Variable	*Constant*	*Regression Coefficient*	*Independent Variable*	R^2
		1963		
$\frac{X-M}{L}$	44.7 (1.2)	−22.3 (−12.0)	$\frac{VC}{L}$	0.75
$\frac{X-M}{L}$	−13.1 (−0.2)	−7.2 (−4.4)	$\frac{TC}{L}$	0.28
$\frac{X-M}{L}$	125.7 (3.1)	−49.9 (−11.5)	$\frac{V-W}{L}$	0.73
$\frac{X-M}{L}$	178.6 (4.2)	−45.7 (−11.6)	$\frac{V}{L}$	0.73
$\frac{X-M}{L}$	301.1 (3.2)	−260.1 (−5.3)	$\frac{W}{L}$	0.36
		1963–1968		
$\Delta\frac{X-M}{L}$	34.1 (0.9)	+45.8 (9.8)	$\Delta\frac{VC}{L}$	0.66
$\Delta\frac{X-M}{L}$	−76.8 (−2.2)	+36.5 (12.4)	$\Delta\frac{TC}{L}$	0.76
$\Delta\frac{X-M}{L}$	−54.5 (−1.4)	+65.5 (10.2)	$\Delta\frac{V-W}{L}$	0.68
$\Delta\frac{X-M}{L}$	−71.9 (−1.8)	+58.0 (10.2)	$\Delta\frac{V}{L}$	0.68
$\Delta\frac{X-M}{L}$	−72.8 (−1.2)	+282.2 (5.5)	$\Delta\frac{W}{L}$	0.38

Note: The t-ratios are given in brackets.

includes immobile land and buildings it is quite reasonable that its explanatory power is weaker. The strongest influence on the trade pattern, however, is exerted neither by the capital intensity with mobile or total capital but by the capital intensity according to Lary, which includes human capital as well. The mean elasticity of this variable (2.6) is substantially higher than that of the intensity with mobile capital (0.9).

The good results for 1963 could not be attained for 1968 and 1971. The regression coefficients were all statistically insignificant, though the signs were, as expected, negative in almost all instances. However, even more disturbing than this is the fact that the regressions for the changes between 1963 and 1968 yielded highly significant positive regression coefficients (Table VI.11), whereas for the period 1968–71 the coefficients again were insignificant.

How could the positive coefficients be explained? They imply that the export surplus per labour unit rose in those industries which increased their capital intensity. At first, one may note that this result is quite in line with our Leontief test which showed that, compared to imports, exports became more capital intensive between 1963 and 1968. An explanation for these observations could be the following. Between 1963 and 1968 Malaysia witnessed a substantial increase of investment in new manufacturing activities. Most of it was of foreign origin, as will be seen in the next chapter. Several of them, especially the foreign ones, were intended for exports. As was argued earlier, the Malaysian market is too small to sustain a larger variety of competing modern plants. Furthermore, with Singapore and Hong Kong facing problems of land shortage and also, to a certain extent, that of labour shortage, Malaysia became increasingly attractive for foreign export processing, as compared with these 'traditional' locations for such activities. As any new investment is generally more capital intensive than existing plants it is therefore not implausible that capital intensity increased in industries which recorded a comparatively high export growth.

A final remark may be made on the regressions with the wage rate. It is probably not surprising that the regression coefficient of the wage rate always has the same sign as that of the capital intensity. This merely indicates that the higher productivity achieved by more capital per labour unit leads on average also to higher wages. However, from the fact that the mean elasticity of the wage rate (with respect to the trade surplus per labour unit) is considerably higher with 3.7 than that of labour productivity (V/L), which has a value of only 2.6, one may conclude that the income distribution between labour and capital is positively biased towards the latter in more capital-intensive industries. This is an interesting result, because it implies that export growth in labour-intensive rather than in capital-intensive lines of production is likely not only to reduce unemployment but also to change the distribution of income in favour of labour and thus reduce inequality in the Malaysian economy.

1. Department of Statistics, Kuala Lumpur, *Socio-Economic Sample Survey of Households—Malaysia, 1967–1968; First Malaysia Plan 1966–1970*, Kuala Lumpur, 1966; *Second Malaysia Plan 1971–1975*, Kuala Lumpur, 1971.

2. Department of Statistics, Kuala Lumpur, *Socio-Economic Sample Survey, 1967/68.*

3. Hoffmann and Tan Siew Ee, *Employment Creation through Export Growth: A Case Study of West Malaysia's Manufacturing Industries.*

4. If (2.4)—or, alternatively, the sum of (2.1), (2.2), (2.3), (2.5), (2.6) and (2.7)—is calculated first, for all individual industries and then summed and, second, for aggregate employment and output, the difference (d) between the two is:

$$d = \left(\frac{\Sigma L_0 \dot{Y}}{\Sigma L_0} - \frac{\Sigma Y_0 \dot{Y}}{\Sigma Y_0}\right)\Sigma L_0$$

where the dot denotes growth rates. If the difference d is positive, the sum of the individual productivity effects is larger than the aggregate productivity effect. The formula indicates that this is the case if the weighed average output growth rate is larger with labour share weights than with output share weights. This will take place if growth rates are high in those activities where the labour share is larger than the output share and vice versa.

5. Banerji, *Exports of Manufactures from India. An Appraisal of the Emerging Pattern*, p. 276.

6. The sum of the two industry categories already exceeds 100 per cent. This is because of the large negative elements recorded for certain industries like rubber processing which make for a relatively small total.

7. The percentages show the relative reduction of the productivity and volume change effects discussed above.

8. Hoffmann and Tan S. E., *Employment Creation through Export Growth* . . ., p. 410.

9. Ibid., p. 411.

10. J. Vanek, 'The Natural Resource Content of Foreign Trade, 1870–1955, and the Relative Abundance of Natural Resources in the United States', *Review of Economics and Statistics*, May 1959, and also W. W. Leontief, 'Factor Proportions and the Structure of American Trade: Further Theoretical and Empirical Analyses', *Review of Economics and Statistics*, November 1956.

11. G. Fels, 'The Choice of Industry Mix in the Division of Labour between Developed and Developing Countries', *Weltwirtschaftliches Archiv (Review of World Economics)*, Vol. 108, 1972, pp. 71–121.

VII The Impact of Foreign Direct Investment

In previous chapters we have stressed the fact several times that foreign direct investment is an important element in the Malaysian economy. However, the question which role foreign investment played in industrial development has remained open until now. In this chapter we will try to provide tentative answers, although the conceptual difficulties of quantifying the impact of foreign investment in a developing country are intricate, as the proliferating literature on the subject amply demonstrates. Since the various arguments to be considered are widely scattered over a large number of publications, it seems advisable to introduce our investigation with a concise summary of the debate (section VII.1) and a brief discussion of the basic conceptual difficulties (section VII.2).

Foreign investment in Malaysia's manufacturing sector is a rather recent phenomenon which has to be seen as the latest link in a long historical chain of foreign economic involvement in the Malaysian economy. As almost all foreign investment before the post-world-war period of industrial growth took place in the primary sector, trade and transport, and utilities, it is in these sectors where the impact of foreign investment in the past is reflected today. Because of the historical relationship between past and today's foreign investment activity we feel that an adequate assessment of the impact of foreign investment on industrial growth should not be restricted to an analysis of manufacturing only. In this chapter, the coverage of our investigation has consequently been extended to include other sectors of the economy, although manufacturing is discussed in greater detail.

1. PROS AND CONS OF FOREIGN DIRECT INVESTMENT: A SKETCH OF THE DEBATE

There are basically two main streams of thought regarding the impact of foreign investment in developing countries. One, which may be attributed to liberal economists, focuses its discussion on growth, the balance of payments, and employment. Under the usual assumptions of a competitive economy, constant terms of trade, full employment, non-existence of external effects, and independence of the domestic capital stock from imported capital, MacDougall[1] forecasts a positive growth effect of foreign direct investment, even when all profits of the foreign investment are transferred to the home country. Growth, measured as an increase of *per capita* income, takes place because the capital import raises the marginal productivity of labour and thereby real wages. The increase in labour income is largely at the expense of income which, prior to the capital import, accrued to the existing capital stock, because the capital import lowers the marginal productivity of capital. However, as long as the marginal productivity of capital is positive the rise in labour income will more than compensate for the income decline of the existing capital.

In the case of open profit transfer, additional income increases can be obtained if the profits are taxed. Indeed, Streeten[2] considers the tax receipts from foreign direct investment to be the major benefit to the host country, as it is frequently rather difficult to collect taxes from domestic income receivers. Several authors have, however, wondered whether even these tax benefits can be sufficiently realized. Foreign investors, especially if they are multinational corporations, apparently have ways and means to evade tax obligations. Such practices as transfer pricing, high royalty payments to the parent company, fees for supplied technology, excessive salary payments to expatriates, etc., have become the best known.

When unemployed labour exists, the imported capital may create new jobs and thereby alleviate the unemployment problem. This aspect has gained special attention in the context of dualistic economy models, developed by authors like Fei and Ranis, Jorgenson, Lewis and Quayum.[3] Here it is assumed that the economy consists of a modern sector where labour is fully employed and paid more or less according to its marginal productivity and a traditional sector where labour is under- or unemployed and paid more than its marginal productivity, though less than in the modern sector. The imported capital is invested in the modern sector, but employs labour which migrates from the traditional sector. This continues until labour is fully employed in both sectors of the economy and wages are equalized throughout.

Growth and employment creation have been stressed even more than the positive balance of payments effects. A deficit in the balance of payments—which is indeed a major problem of most developing countries—may be reduced, according to this view, first by the capital inflow which finances the direct investment and second, by the output produced by the foreign companies, if it substitutes for imports or is exported. With regard to the latter, substantial discussion has taken place as to whether import substitution actually improves or worsens the balance of payments.[4] Import substitution may, for instance, worsen the balance of payments if the import replacement achieved by a foreign company is outweighed by its imports of capital goods and raw materials and its profit transfers.

Foreign direct investment is considered much less beneficial by authors who challenge some of the underlying basic assumptions. Traditional trade theory had already forecasted that under certain conditions output expansion induced by capital import may worsen the terms of trade and reduce income. Edgeworth[5] called this 'damnification' and Bhagwati[6] spoke of 'immiserizing' growth. With regard to employment, foreign capital may have negative effects if the assumption of independence between domestic and foreign capital made above does not hold. It has been frequently observed that foreign investment displaces indigenous production and, being more capital intensive, eliminates more jobs than it creates. Excessive profit transfers can, finally, drain the exchange reserves to such an extent that sufficient needed raw materials and spare parts cannot be imported. This hampers production and thus growth and employment.

A few authors have also discussed the impact of foreign investment on income distribution. By paying relatively high wages to a small group of skilled urban workers, foreign companies are said to make income distribution more unequal. A higher inequality favours on the other hand the capital-intensive production of durable consumer goods and luxuries at the expense of the labour-intensive production of non-durables. This again has a negative employment effect and, if the supply of capital is limited, also reduces growth.

The other stream of thought represents a continuation and further elaboration of ideas originating from the older theoreticians of imperialism, though only some of the authors may be called neo-marxists. Baran[7] argues that foreign investment in developing countries forestalls growth, because it prevents the transition from a feudal-mercantilistic social system to a capitalistic system. He thought mainly of the traditional colonial investment in extractive industries.

More recent contributions stress the general disintegration of the developing country's economy resulting from the activity of foreign companies. They do not deny that some growth of *per capita* income takes place in the modern sector of the economy, but this goes along, according to this view, with increasing under-employment and immiserization of the remainder of the economy. Sunkel[8] foresees a substantial increase of under-employment because of displacement of indigenous production by foreign companies with highly capital-intensive techniques of production. The disintegration results in a worsening of the income distribution. The general welfare decreases even where positive growth rates of overall *per capita* income are measured. Where 20 per cent of the population receive more than two-thirds of national income as, for instance, in Kenya, Rhodesia, and Ecuador,[9] the economic well-being of the vast majority of the population is grossly underrated by a measure like *per capita* income. A further complaint of these authors is the excessive transfer of resources generated by foreign companies. They argue that the transfer of profits, open or hidden, far outweighs the influx of investment capital. The balance of payments problem thus created increases the country's dependence on foreign capital and foreign political influences. An independent development policy which serves the needs of the poor has hence become virtually impossible.

One may wonder whether the profit transfer can really reach such magnitudes that it exceeds the capital import. In a number of cases it can indeed, partly because of an ambiguous policy towards foreign investment in the past. In several countries, foreign capital was attracted by all kinds of incentives, while at the same time reinvestment of profits in lieu of transfers was declared to be desirable. This resulted in a rapid accumulation of sizeable foreign-owned assets which today by far exceed the original capital import. If only part of the profits are now transferred, it really can be larger than the import of new capital.

The liberal economists would argue that in such a case the foreign companies should regain the exchange by exporting, and they would judge their balance of payments effect by netting all their international transactions. This argument is not acknowledged by the other line of thought. First, it is said, developing countries cannot export sufficiently because of import restrictions in developed countries and second, such exports should not be credited to the foreign investment alone, as the export could also have been effected by a domestic company.

The latter argument raises an intriguing imputation problem. Any imputation of certain costs or benefits to a foreign investment makes explicitly or implicitly an assumption about what might have happened without the foreign investment. Liberal economists tend to assume that the foreign investment is additional in the sense that, without it, no comparable alternative development can be expected to take place. Their opponents are more inclined to believe that it is the very presence of foreign investors which hampers economic development and that therefore in their absence an uninterrupted development would proceed. However, even among this group doubts have been raised as to whether it can be reasonably assumed that a positive alternative development would come about in a country which is embedded in a predominantly capitalistic world economy. Furthermore, the kind of expected alternative development has as yet remained unspecified. For empirical purposes this concept is therefore not (yet) operational.

2. THE ALTERNATIVE SITUATION

The arguments discussed in the previous section suggest that theoretically one could assume as alternative to the foreign investment any of the three following situations or combinations thereof:[10]

a. No corresponding investment from domestic sources and no import which substitutes for the output forgone.
b. Investment from domestic sources which produces equivalent output and employment.
c. No corresponding investment from domestic sources, but import of

the commodities which otherwise would have been produced domestically.

In their foreign investment study for Malaysia, Lall, Mayhew, and Page[11] assume alternatives (b) and (c). The reason is stated in Lall and Elek[12] as follows:

> In excluding the alternative of doing without a firm's output, we have really made an assumption about how a government of a country values the domestic production of a commodity. If the government allows something to be produced, using scarce inputs that could be used elsewhere, (including the foreign exchange used to service foreign capital) it seems sensible and consistent to assume that the goods would be valued sufficiently to be produced by local investors or, in the absence of domestic production, imported.

Apparently, this reasoning rests on the assumption that the government does not only provide the general institutional framework within which production takes place, but, in addition, takes a distinct stand on which commodities are to be produced and which not. This may be the case in a country such as India where an acute shortage of foreign exchange forces the government for balance of payments reasons to regulate production and foreign trade by strict licensing. However, this is not so in Malaysia where exchange reserves are plentiful and policies towards production and trade are fairly liberal.

In spite of this objection, alternatives (b) and (c) may still be reasonably assumed if only marginal increases of foreign investment are to be evaluated. This is indeed what Lall and Associates do. Their object of study is a rather small sample of some twenty foreign-controlled companies. In our case, however, where all foreign companies operating in Malaysia are under discussion, alternatives (b) and (c) can hardly be generally assumed. For an economy in which roughly 60 per cent of the organized sector are foreign owned, it is impossible to say which pattern of production and import would have evolved in the absence of foreign capital. Calculations of costs and benefits of foreign investment would consequently be very unreliable if such assumptions were made.

Take as an example alternative (b). If the output contribution of foreign investment is to be calculated, the gross output of that investment has to be netted by the output from a domestic investment in the alternative situation. Any assumed value of the latter, however, would be a mere speculation and the output contribution imputed to foreign investment a very ambiguous figure. Assuming (c) poses an additional problem. If imports are the alternative to production resulting from foreign investment, any increase in production would be valued as a balance of payments-improving import substitution and as such credited to the foreign investment. This clearly overstates import substitution and the balance of payments effect of foreign investment as has been argued elsewhere.[13] What remains then, is alternative (a) which has generally been assumed in this study, except for a few cases mentioned below, where alternatives (b) or (c) appeared more appropriate. Alternative (a) implies a number of further assumptions of which the following three are the most important:

1. The opportunity costs of imported capital are zero. It is additional to domestic capital and does not influence its development.
2. The opportunity costs of labour employed in foreign companies are zero. That labour would be unemployed without the foreign investment.
3. The opportunity costs of domestic capital invested in foreign companies are zero.

Malaysia's favourable balance of payments guarantees an elastic supply of foreign capital and opportunity costs close to zero. The assumption of independence of domestic capital from foreign capital should also be generally valid. Cases of asset stripping and displacement of domestic capital do not appear to be very frequent.

Opportunity costs of labour are zero as far as unemployment exists. The statistics indicate that unemployment in Malaysia is exceedingly high in urban areas, especially among the young. As most foreign companies are located in urban areas the assumption of very low opportunity costs cannot be too wrong.

Assumption (3), finally, is plausible, because domestic capital is by all indications not really scarce. Interest rates have in the past been rather low in Malaysia and in the 1960s it was even a net exporter of capital.

On the whole, therefore, assumption (a) does not seem very unreasonable. Of the three alternatives it is the only assumption which does not require subjective 'guesstimates' about the alternative situation. The evaluation is based entirely on statistical observations and is therefore more reliable than the other two assumptions.

3. CONCEPTS OF MEASUREMENT

According to the issues raised in the debate attempts have been made to measure the impact of foreign direct investment in Malaysia on growth, tax receipts by Malaysian authorities, employment, and the balance of payments. The concepts of measurement for most of the effects are straightforward and simple. Only for the balance of payments effect has a somewhat more sophisticated concept been used.

A. THE CONTRIBUTION TO GROWTH

The contribution of foreign capital to growth is measured as the foreign-controlled companies' (FCC) share in the change of gross domestic product (GDP) at factor cost. The remainder of the change in GDP is attributed to locally-controlled companies (LCC) unless stated otherwise. The gross product was given preference over the net product in order to ensure that diverging depreciation practices do not distort the results.

Most calculations are based on nominal instead of real changes. The first reason is that no time series for changes in real terms are available. Second, the rate of inflation during the period under observation was extremely low so that no serious bias can be expected from a utilization of nominal values, and third, the shares, however calculated, would only be distorted if the price changes of the two aggregates related to each other differ significantly.

An exception was, however, made for those important primary commodities produced in Malaysia whose prices changed substantially over time. For rubber and palm oil (included under agriculture) real values were also calculated by deflating the nominal values with export-unit-value indices. This deflation can, of course, only approximate real values. There were no price indices available which could be used to deflate inputs as well as output.

B. TAX RECEIPTS

The taxes paid by FCC are shown in relation to total taxes. Direct taxes paid by employees of the FCCs and taxes on distributed profits could not be calculated. The total direct taxes resulting from the activity of FCCs are therefore underestimated. Indirect taxes cover export duties, import duties, excises, surtax, road transport fees and licences, in accordance with the classification used by the Malaysian Treasury.[14]

C. EMPLOYMENT CREATION

The question how many jobs have been created by FCC is not easy to answer. Data on employment by FCC are available only for 1970. It was therefore necessary to estimate employment for previous years. This was done by deflating the 1970 figures with the growth rates of salary and wage payments. The assumption implicitly made is that salaries and wages per employee have remained constant during the period of observation. As far as wage rates have actually increased our assumption implies an overestimation of the number of jobs created.

An idea as to the likely extent of overestimation may be obtained by looking at the wage increases in the manufacturing and mining sectors for which data are available. As these two sectors belong to the modern part of the economy, the observed wage increases probably indicate the upper limit of wage rises in Malaysia. Corresponding corrections of the estimated employment creation have, however, been calculated only for these two sectors.

Another difficulty is the displacement of labour employed by LCC. This is a much more serious problem than the displacement of local output, as FCC usually produce a comparable output with substantially less labour than LCC. Under assumption (a) discussed above, displacement would be identified only in those cases where the contribution of FCC exceeds 100 per cent, i.e. if employment by LCC declines. This is not very satisfactory. However, we were unable to invent a better approach.

D. BALANCE OF PAYMENTS EFFECTS

Two approaches have been used for measuring the balance of payments effects of foreign investment. The first starts from assumption (a) and attempts to record all balance of payments transactions resulting from the activity of FCC. These are attributed to foreign investment because it is assumed that they would not have taken place in the alternative situation.

The second approach takes account of the arguments raised by the theoreticians of imperialism. It is assumed that in the alternative situation local investment would have led to the production of the respective commodities. The balance of payments effects resulting from the production as such—export of output or import of input—are therefore not counted. This corresponds to assumption (b).

The first approach may be defined as follows. The net balance of payments effect is the net sum of long-term capital import (K_{fl}), short-term capital import (K_{fs}), and export of commodities (X_f) minus the net sum of exported profits and interest (I_{fe}), wages and salaries paid to foreigners (W_f), and import of intermediary goods and capital goods (M_f):

$$B_f = K_{fl} + K_{fs} + X_f - (I_{fe} + W_f + M_f) \tag{1}$$

It should be noted that the long-term capital import as well as the exported profit and interest include undistributed profits,[15] which cancel out in (1) as they appear in the first magnitude with a positive and in the second with a negative sign.

The second approach counts only the long-term capital import and the exported profit and interest, because it is assumed that all other transactions, such as commodity export and import, short-term capital movements, and salary and wage payments to foreigners, are directly related to current production. The sum of long-term capital import and profit transfer will be called resource effect:

$$R = K_{fl} - I_{fe} \tag{2}$$

Besides the balance of payments effect as defined by (1) and the resource effect (2), an attempt has been made to calculate the impact on the balance of payments resulting from import substituting production by FCC on the one hand and export-oriented production on the other. For that purpose the formulae (5) and (6) of Chapter V have to be split into foreign and domestic components. There are various possible ways of doing this. The most straightforward one seems to be the following. Take from equation (5) expression (5.2) which measures import substitution. (5.2) may be transformed as follows:

$$\begin{aligned} D_1 (\mu_0 - \mu_1) &= (Y_1 - X_1) - \frac{D_1}{D_0} (Y_0 - X_0) \\ &= (Y_{f1} - X_{f1}) - \frac{D_1}{D_0} (Y_{f0} - X_{f0}) + (Y_{d1} - X_{d1}) - \frac{D_1}{D_0} (Y_{d0} - X_{d0}) \end{aligned} \tag{3}$$

wherein the index f stands for foreign and d for domestic. For export expansion we have correspondingly:

(4) $D_1(x_1 - x_0) = (X_{f1} - \frac{D_1}{D_0} X_{f0}) + (X_{d1} - \frac{D_1}{D_0} X_{d0})$

and for domestic demand expansion:

(5) $v_0(D_1 - D_0) = v_{f0}\ (D_1 - D_0) + v_{d0}\ (D_1 - D_0)$

Import substitution resulting from FCC is thus measured as that part of the FCC's increase in supply to the domestic market which raises their market share. Export expansion is the increase in the FCC's export supply which exceeds the growth rate of the domestic market. Domestic demand expansion of FCCs, finally, is the output which keeps their market share constant. However, when looking at the balance of payments effect we are only concerned with import substitution and export expansion.

Bode and Müller-Debus[16] have pointed to the fact that this way of splitting into a foreign and a domestic component may raise interpretation problems. FCC do not only compete with imports but also with LCC. It may therefore happen that we measure with (3) a positive import substitution for FCC which is in fact only a displacement of LCC. For LCC, import substitution would in those cases be very low or even negative.

If the output of LCC decreases while that of FCC increases, displacement is rather obvious. However, if the output of both increases the problem is much more difficult. Most likely, it would require a case-by-case investigation to find out whether or not displacement has occurred. As this would be a too-cumbersome undertaking, one may, instead, work on the assumption that LCC are displaced whenever their share in the domestic market decreases absolutely or relatively in favour of FCC. This should in most cases be a reasonably good approximation of reality.

In order to allow for different uses and interpretations of the calculations, three different stages of displacement may be distinguished:

Stage 1: FCC's output increases while that of LCC decreases.

Stage 2: Output of both FCC and LCC increases, but the market share of LCC decreases.

Stage 3: Output and market share of both FCC and LCC increase, but the market share of FCC increases more than that of LCC.

With these definitions it is possible to differentiate between import substitution and displacement. The import substitution imputable to FCC is obtained by deducting from the foreign component according to formula (3) that part of the increase in output which is displacement of Stage 1, 2, or 3 respectively.

If the import substitution thus calculated is considered as import saving which improves the balance of payments, the alternative situation (a) can no longer be assumed. One has to assume that in the alternative situation imports would have increased by exactly the same amount as that which is now produced as import substitution. Apparently, this corresponds to the alternative situation (c) outlined above.

4. THE DATA

The debate concerning the vices and virtues of foreign investment in developing countries could have been carried out less heatedly if more solid empirical facts had been available. In most countries there are no official statistics which contain data on foreign investment and the activities of foreign companies, and the companies themselves substantially contribute to the confusion by being unduly restrictive in releasing information to the public. With regard to data collection by the government Malaysia is a notable exception. Since 1962 the Department of Statistics has carried out six surveys of private and public limited companies which show separate statistics for foreign- and locally-controlled firms. Most of the surveys have, however, never been published. The distinction between foreign and locally-controlled companies is made according to the majority shareholding (more than 50 per cent) by foreigners and Malaysians respectively.

The coverage of the surveys for the purpose of a study of foreign investment is quite satisfactory. It has considerably improved over the years. In all years it was intended to cover all registered limited companies, though in the earlier years the percentage of questionnaires returned was lower or the questionnaires were incompletely answered. Thus, out of 3,200 companies surveyed in 1962, the questionnaires returned by only about 2,000 could be tabulated. In 1966, 4,491 companies were surveyed and 3,315 returns evaluated. For 1968, only the number of questionnaires actually evaluated is known—which was 5,036.

In spite of this increasing trend in overall coverage, the foreign-controlled companies were probably covered to a very high percentage right from the beginning, for two reasons. First, only a very few foreign-controlled firms were not organized as limited companies. Second, the companies omitted from the earlier surveys were mostly very small. As foreign firms are typically much larger than local ones, it was mainly local firms for which no data could be obtained. From this it follows that in terms of output and, even more, of investment the undercoverage was much lower than might be expected from the numbers stated above.

Besides the surveys of limited companies, a number of other official statistics, such as the census and the surveys of manufacturing industries, the rubber and oil palm statistics, etc., contain since 1968 data on foreign companies. The Federal Industrial Development Authority (FIDA) has undertaken since 1968 an annual (only partly published) survey of companies approved by the authority, which again distinguishes between foreign and local firms. Finally, there were available for this study data from a survey of about 330 manufacturing companies which the authors conducted in 1974 with the support of the Ministry of Trade and Industry.[17]

5. THE PATTERN OF FOREIGN OWNERSHIP

If one compares the foreign sector with the organized local sector, foreign ownership appears to be very high in Malaysia (Table VII.1). In 1970 foreigners owned as much as 61 per cent of the share capital in the economy. Foreign ownership was highest in modern agriculture and mining which both almost exclusively produce for export. Not only the production of these raw materials but also their export trade is heavily dominated by foreigners as can be seen from the high percentage of foreign share capital in wholesale trade.

These observations are not surprising as it was foreign companies, mainly British, which enabled Malaysia, still under colonial rule, to become the world's largest producer of such important raw materials as rubber and tin. Thus, Malaysia is an outstanding example of a colonial investment pattern and the resulting economic structure the country adopted when it became politically independent. The foreign domination in the primary sector was neither a matter of choice of a sovereign government nor something that could reasonably be changed drastically in the short period since Independence (1957).

This is different in the other sectors of the economy, where foreign ownership is lower than in the primary sector, but still high in absolute terms. It might have been even higher if a striving business-minded section of the population, the Malaysian Chinese, had not existed. The Chinese who immigrated into Malaysia in the nineteenth century and the first quarter of the twentieth, and who now constitute about one-third of the population, hold nearly all the remaining equity capital, whereas the Malays and other indigenous groups own only 2 per cent of the economy's share capital. As the other sectors, in particular manufacturing, became major investment areas only after Independence, it was at least with the approval, if not through outright promotion by the Malaysian government, that foreign investors became so heavily entrenched in the secondary and the tertiary sectors of the economy. It may be concluded that, at least in principle, a possibility existed to limit foreign involvement in the more modern industries. The question whether it was worthwhile not to do so will be the theme of the subsequent sections.

The picture which emerges from the data on share capital ownership can, however, be misleading if not correctly interpreted. It should be kept in mind that the dividing line between local and foreign companies is drawn according to majority ownership. If more local investors have a minority share in foreign firms than vice versa, the foreign ownership is overstated. The equity ownership, furthermore, is not identical with the ownership of fixed assets. Besides the fact that there are companies which have a different legal organization and therefore are omitted from the calculation, the share capital may under- or over-represent the value of fixed assets, depending on the extent of outside financing through loans.

TABLE VII.1

FOREIGN OWNERSHIP IN THE MALAYSIAN ECONOMY, 1970

	Share Capital		Value of Fixed Assets	
	M$'000	Foreign %	M$'000	Foreign %
Agriculture	(1,432,400)	(75.4)	(14,901,620[a])	(25.4)
Rubber	1,134,163	77.7	10,890,000	20.4
Oil palm			2,945,810	50.3
Coconut	298,237	66.8	1,051,550	6.7
Tea			14,260	54.8
Mining	(543,497)	(72.5)	(311,600)	(55.1)
Tin	434,477	71.5		
Other	109,020	76.4		
Manufacturing	1,348,245	59.6	1,128,400	51.0
Construction	58,419	34.1	63,500	5.9
Transport	81,887	12.0	(n.a.)	
Trade	(605,164)	(63.6)	(n.a.)	
Wholesale	450,593	70.1		
Retail	154,571	44.5		
Financial sector	(636,850)	(52.3)	(n.a.)	
Banks	93,549	35.2		
Insurance	7,670	55.3		
Other	535,631	55.2		
Other industries	582,516	31.4	(n.a.)	
Total	5,288,978	60.7	(16,405,120)	(27.6)

[a] Own Estimates.

Sources: *Financial Survey of Limited Companies*, 1970; *Rubber Statistics Handbook*, 1970; *Oil Palm, Coconut and Tea Statistics*, 1970; *Survey of Manufacturing Industries*, 1970; *Census of Mining Industries*, 1970; *Survey of Construction Industries*, 1970.

For the economy as a whole the picture looks markedly different if the value of land under cultivation is included. An attempt roughly to estimate the land value of the major crops has been undertaken in Table VII.1. The method applied is the calculation of the present value under the assumption of an infinite life time. From the sources stated in Table VII.1, an annual net output (gross output minus use of fertilizer, maintenance and wages) per acre of M$256 was estimated for rubber, M$700 for palm oil, and about M$200 for coconuts. For tea it was assumed that the net value is the same as for coconuts. Assuming a rate of return of 10 per cent the values shown in Table VII.1 are obtained. The relatively low percentages of foreign ownership in rubber and coconut which determine the low average are due to the large amount of land under Malay-owned smallholder cultivation. The data for mining, manufacturing, and construction are taken from the respective censuses and surveys. Omitting the other sectors for which no data are available or could be estimated, the foreign share in the economy's assets as a whole turns out to be much lower than it is in terms of share capital. It is also quite clear that the ownership balance between

TABLE VII.2
FOREIGN OWNERSHIP IN MANUFACTURING

Industry	*Foreign Share in Fixed Assets (HEX) %*	*Foreign Share in Paid-Up Capital (FIDA) %*	*Foreign Share in Paid-Up & Loan Capital (FIDA) %*	*Two most important foreign sources according to* *HEX*	*FIDA*
Food	64.2			Singapore, Japan	
Grain milling	45.9			Hong Kong, Singapore	
Animal feeds	96.2	61.5	64.5	Singapore	Singapore, Japan
Beverages	92.8			Singapore, UK	
Tobacco	68.6			UK	
Textiles	45.3	50.0	48.1	Hong Kong, Japan	Australia, Singapore
Clothing	90.0			Hong Kong	
Leather products	0				
Footwear	3.5	72.4	57.4	Singapore	UK, Singapore
Rubber products	60.6			Singapore, UK	
Wood products	17.7	11.5	11.2	Japan, Singapore	Singapore, Indonesia
Furniture	n.a.	71.2	68.1		India, Singapore
Paper products	80.8	20.9	20.9	Singapore, Japan	Japan
Printing, publishing	15.2			Singapore	Singapore
Chemicals	87.8	76.5	70.5	UK, Hong Kong	USA, UK
Chemical products	89.2			Singapore, UK	
Petroleum products	99.6	89.1	89.0	USA, Singapore	UK, Singapore
Plastic products	11.8	18.9	14.8	Japan, Netherlands	Singapore, UK

TABLE VII.2 (continued)

Industry	*Foreign Share in Fixed Assets (HEX) %*	*Foreign Share in Paid-Up Capital (FIDA) %*	*Foreign Share in Paid-Up & Loan Capital (FIDA) %*	*Two most important foreign sources according to HEX*	*Two most important foreign sources according to FIDA*
Earthenware	0				
Glass products	88.1	65.9	60.5	Singapore, Australia	Singapore, UK
NM mineral products	61.2			Singapore, UK	
Steel	37.5			Singapore, Japan	
NF basic products	75.9	45.9	44.1	Singapore, Canada	Japan, USA
Metal products	68.5	68.1	68.5	Singapore, Netherlands	Singapore Hong Kong
Electrical machinery	62.7	64.8	64.7	Netherlands, USA	USA, Japan
Machinery	49.1	29.2	40.4	USA, Singapore	Hong Kong, USA
Transport equipment	60.6			Singapore, USA	
Others	87.9	69.4	67.1	Germany F.R., Japan	Germany F.R., UK
Total	65.9	60.7	58.5		

Sources: Hoffmann, 'Interim Report on Methodology and Results of the HEX', Regensburg, 1974 (mimeo); FIDA, 'Survey of Pioneer Companies', 1970 (mimeo).

Malays and Chinese becomes much more even if land ownership is taken into account.

As manufacturing has been the most dynamic sector since Independence and was increasingly considered by policy makers as the economy's engine for development, the foreign ownership in this sector deserves special attention. Table VII.2 shows the foreign share in fixed assets, paid-up capital, and paid-up plus loan capital, as derived from the HEX and the 1970 FIDA survey. Though the samples of the two surveys differ in size and composition, the results are remarkably similar and also consistent with the much larger sample of the Financial Survey of Limited Companies. All three surveys indicate that foreigners own about 60 per cent of the capital in manufacturing. Noteworthy is the difference between the foreign ownership in fixed assets as shown by the manufacturing survey (Table VII.1) and that according to the HEX. Part of the difference may be due to different coverage. Whereas the manufacturing survey covered M$1,128 million asset value for 1970, the corresponding figure of the HEX for 1973 was only M$945 million. However, the reason for the difference could also be the diverging methods of computation. The manufacturing survey applies the majority rule, while in the HEX the foreign ownership was calculated according to the percentages as stated by the companies. That means that minority shares are also allocated to the respective groups. If the samples were identical, the difference would indicate that foreigners own more of the manufacturing capital stock than suggested by the majority ownership, because they participate substantially in locally-controlled companies through minority shares

Of interest also is the difference between the share in paid-up capital and that in paid-up plus loan capital which is not large for the entire sample but only for a few industries. A positive difference occurs if the percentage of loans from foreign sources falls short of the share of foreign paid-up capital. It has frequently been alleged that foreign companies tend to finance their operations with loans raised in the host country instead of supplying sufficient own investment capital. Our data show that indeed the loan contribution from local sources is substantial, but they do not support such a sweeping statement. First, the ratio of loans to paid-up capital is only one to five in the FIDA sample and, secondly, the difference between foreign and local loans is simply not large enough. For individual industries, on the other hand, the argument has more weight. For instance, in the footwear and the plastic products industries the loan contribution from local sources is significantly higher than that from foreign ones. But there are also counter-examples. In the machinery and transport equipment industries foreigners supply most of the loans.

If one looks at the major countries of origin of foreign capital in Table VII.2, one gets the impression that most of the capital is not coming from the industrialized countries in North America and Europe, but from a few Asian and South-East Asian countries, like Singapore, Hong Kong, and Japan. As far as Singapore and Hong Kong are concerned this impression could be wrong. It appears not unlikely that the supplying companies residing in these countries are themselves affiliates of multinational corporations who have their head offices in London or New York. In a few instances it was possible to confirm this assumption though its general validity could not be ascertained.

6. THE CONTRIBUTION TO GROSS DOMESTIC PRODUCT AND GROWTH

The value added created in all FCC was 18.6 per cent of Gross Domestic Product in 1962, 16.1 per cent in 1966, and 18.3 per cent in 1970 (Table VII.3). Over the entire observation period (1962–70) the contribution to growth of GDP was 17.7 per cent (Table VII.4). While during the first half (1962–6) the contribution was much lower with only 7.5 per cent, this increased considerably over the second half (1966–70) to 28.6 per cent. Though this is quite substantial in absolute terms, it is hardly satisfactory if viewed against the heavy dependence on foreign capital. Also, the FCC's share in gross investment with an average of 23 per cent over the entire period was not very high.[18]

A. AGRICULTURE VERSUS MANUFACTURING

The difference in the FCC's growth contribution between the two sub-periods essentially originates from a much better performance in agriculture and manufacturing during the second sub-period. Between 1962 and 1966 the FCC's value added in agriculture declined due to a 21 per cent reduction in rubber which was hardly compensated for by an increase in other crops. This drop was not only nominal because of the fall of the rubber price, but also real. The growth contribution of FCC was consequently negative. Three factors are probably responsible for this development. First, it appears that foreign capital began to disengage from agriculture in favour of manufacturing. There is no direct evidence for this for the first sub-period, but for the second sub-period it can be observed that the acreage cultivated by foreign estates decreased slightly while that of locally-owned estates increased. Second, foreign estates increasingly replanted with oil palms land which was formerly under rubber cultivation. This is easily explained by the downward price trend for rubber and the upward trend for palm oil. It was also shown above that the annual net value of output per acre was much higher for palm oil than for rubber. Third, within the rubber sector the land was largely replanted with high yielding stands at the expense of unselected seedlings which resulted in a temporary shortfall in production.

During the second sub-period the FCC's value added in agriculture rose by 35 per cent and even more so in real terms, because the rubber price still declined. This was the result of the replanting activity over the previous years which led to a moderate increase for rubber (12 per

TABLE VII.3

GROSS DOMESTIC PRODUCT AT FACTOR COST FOR WEST MALAYSIAN AND FOREIGN-CONTROLLED COMPANIES

(M$ million)

Industrial Sectors	*West Malaysian*						*Foreign-controlled Companies*																	
	1962		*1966*		*1970*		*1962*		*1966*						*1970*					
							Total		*Total*		*Subsidiaries*		*Branches*		*Total*		*Subsidiaries*		*Branches*	
	Mil.	%	*Mil.*	%	*Mil.*	%	*Mil.*	%	*Mil.*	%	*Mil.*	%	*Mil.*	%	*Mil.*	%	*Mil.*	%	*Mil.*	%
Agriculture	(1,935)	(36.5)	(2,183)	(31.7)	(2,428)	(29.1)	(477)	(48.3)	(409)	(37.0)	(86)	(19.9)	(323)	(47.9)	(553)	(36.2)	(175)	(23.6)	(378)	(58.2)
Rubber	1,004	18.9	99[illegible]	[illegible]5	971	11.6	445	45.0	352	31.8	70	16.2	282	41.8	393	25.7	94	12.7	299	46.0
Other	931	17.6	1,184	[illegible].2	1,457	17.4	32	3.3	57	5.2	16	3.7	41	6.1	160	10.5	81	10.9	79	12.2
Mining & Quarrying	(385)	(7.3)	541)	(7.8)	(548)	(6.6)	(247)	(25.0)	(242)	(21.9)	(107)	(24.8)	(135)	(20.9)	(140)	(9.2)	(32)	(4.3)	(108)	(16.6)
Tin							173	17.5	188	17.0	57	13.2	131	19.4	170	11.6	42	5.7	136	20.9
Other							74	7.5	54	4.9	50	11.6	4	0.5	−38	−2.4	−10	−1.4	−28	−4.3
Manufacturing	455	8.6	756	11.0	1.254	15.0	119	12.0	162	14.6	118	27.41	44	6.5	537[a]	35.1	340	45.8	67	10.3
Construction	214	4.0	274	4.0	290	13.5	3	0.3	5	0.5	1	0.2	4	0.6	21[a]	1.4	13	1.8	2	0.3
Trade	(823)	(15.5)	(1,051)	(15.3)	(1,212)	(14.5)	(142)	(14.4)	(198)	(17.9)	(82)	(19.0)	(116)	(17.2)	(207)	(13.5)	(139)	(18.7)	(68)	(10.5)
Wholesale							96	9.7	166	15.0	69	16.0	97	14.4	167	10.9	109	14.7	58	8.9
Retail							46	4.7	32	2.9	13	3.0	19	2.8	40	2.6	30	4.0	10	1.6
Other Industries	1,490	28.1	2,074	30.2	2,620	31.3	0	0	90	8.1	37	8.6	53	7.9	70	4.6	43	5.8	27	4.2
Total	5,302	100.0	6,879	100.0	8,352	100.0	988	100.0	1,106	100.0	431	100.0	675	100.0	1,528	100.0	742	100.0	650	100.0

Note: [a] Including joint ventures.

TABLE VII.4
FOREIGN-CONTROLLED COMPANIES' CONTRIBUTION TO GROWTH OF GDP

Industrial Sectors	1962–1970		1962–1966		1966–1970 Total		1966–1970 Subsidiaries		1966–1970 Branches	
	Contribution to		Contribution to		Contribution to		Contribution to		Contribution to	
	Industry Growth	GDP Growth	Industry Growth	GDP Growth	Industry Growth	GDP Growth	Industry Growth	GDP Growth	Industry Growth	GDP Growth
Agriculture	15.4	2.5	-27.4	-4.3	58.8	9.8	36.3	6.0	22.4	3.7
Rubber	(157.6)	-1.7	(1860.0)	-5.9	(-146.4)	2.8	(-85.7)	1.6	(-60.7)	1.2
Other	24.3	4.2	9.9	1.6	37.7	7.0	23.8	4.4	13.9	2.5
Mining & Quarrying	-65.6	-3.5	-3.2	-0.3	-1457.1	-6.9	-1071.4	-5.1	-385.7	-1.8
Tin	—	0.2	—	1.0	—	-0.7	—	-1.0	—	0.3
Other	—	-3.7	—	-1.3	—	-6.2	—	-4.1	—	-2.1
Manufacturing	52.3	13.7	14.3	2.7	75.3	25.5	44.6	15.1	4.6	1.6
Construction	23.7	0.6	3.3	0.1	100.0	1.1	75.0	0.8	-12.5	-0.1
Trade	16.7	2.1	24.6	3.6	5.6	0.6	35.4	3.9	-29.8	-3.3
Wholesale	—	2.3	—	4.5	—	0.1	—	2.7	—	-2.6
Retail	—	-0.2	—	-0.9	—	0.5	—	1.2	—	-0.7
Other Industries	6.2	2.3	15.4	5.7	-3.7	-1.4	1.1	0.4	-4.8	-1.8
Total	17.7	17.7	7.5	7.5	28.6	28.6	21.1	21.1	-1.7	-1.7

cent) and a trebling for palm oil. Within the agricultural sector the FCC contributed as much as 59 per cent to value-added growth while their share in the growth contribution of all FCC was about one-third.

In manufacturing the FCC's contribution to growth was also rather low during the first sub-period. This can probably be explained by the following factors. Up to the mid-1960s there was little active encouragement of foreign investment by policy measures. The effective rate of protection was negligible and other incentives had just begun to take shape, culminating in the Investment Incentives Act of 1968. In consequence, foreign investment in manufacturing was rather low. In the years 1962, 1964, and 1966 it amounted to only 38 per cent of foreign investment in agriculture.

This changed drastically in the second sub-period when foreign investment in manufacturing nearly doubled and now even exceeded foreign investment in agriculture. Value added in FCC contributed as much as 25 per cent to the growth of GDP and accounted for three-quarters of the growth in manufacturing. By 1970 the manufacturing FCC's gross rate of return on invested capital (share capital) was 24.5 per cent and thus about the same as in agriculture (24 per cent), while in LCC it was only 14 per cent. This development is likely to have been fostered by the change in policy towards manufacturing, in particular the foreign sector. The introduction of a new tariff schedule in 1966 and subsequent tariff increases raised the effective rate of protection of domestic sales for manufacturing as a whole to about 40 per cent. The 1968 Investment Incentives Act and various government promotion campaigns also contributed their share to the rapid rise of foreign-owned manufacturing.

A remarkable feature of the second sub-period is the conspicuous difference in growth between foreign branches and subsidiaries. Whereas a subsidiary has a legal personality of its own this is not the case for a branch. Subsidiaries can also have local participation which is not possible with branches. In consequence the policy of the host country tends to favour subsidiaries.

In 1966 the value added in branches of foreign companies was more than 50 per cent higher than that in subsidiaries. This was mainly due to the heavy weight of branches in agriculture. Between 1966 and 1970 the value added of branches rose somewhat in agriculture and manufacturing, but declined in mining and trade, so that as a result the contribution of all branches to GDP growth was close to zero (−1.7 per cent). Hence, subsidiaries were those which exclusively accounted for the high contribution of FCC to GDP growth. In agriculture the subsidiaries' value added doubled because of the rapid expansion of palm oil production, whereas in manufacturing it more than trebled within the relatively short time span of only four years. One reason for this may have been better investment conditions granted to subsidiaries by the government. It is also noteworthy that profits as a percentage of sales value were in manufacturing at least generally higher for subsidiaries than for branches. Over the years 1966, 1967, 1968, and 1970 profits amounted to 7 per cent of sales in manufacturing subsidiaries and 3.2 per cent in branches. This should, however, not be overrated as the correct measure would be the rate of return on capital which could not be obtained for branches and subsidiaries separately. The lower profit-sales ratio for branches could simply be due to the fact that the primary processing of agricultural commodities, which means a huge sales value but a rather low value added, is mainly done by branches. This argument is supported by the observation that the sales value of manufacturing branches in 1970 was only some 20 per cent lower than that of subsidiaries. It could also be that branches find it easier to hide or to transfer profits abroad through price manipulations because they are uncontrolled by local partners. It is, of course, also possible that the differences in profit ratios reflect in fact different investment opportunities due to a differentiating government policy.

B. MANUFACTURING BY INDUSTRY

Because of the sizeable impact of manufacturing FCC on growth during the second sub-period, a more detailed investigation of that sector is required. For this, data can be used from the 1968 Census of Manufacturing, which for the first time showed data by industry for LCC and FCC separately, and from subsequent surveys. The time span (1968–71) is unfortunately still rather short and the results have therefore to be interpreted with care. The overall picture which emerges from these data is very similar to that revealed by the financial surveys as presented in Table VII.5. The contribution of manufacturing FCC to GDP growth is 20.8 per cent as compared with 21.1 per cent in Table VII.4 and to the growth of the manufacturing sector 67.1 per cent instead of 75.3 per cent.

The Department of Statistics is not permitted to publish data for industries with less than three establishments. For a few industries separate data for LCC and FCC are therefore not obtainable and it is not possible to allocate completely the FCC's contribution to manufacturing growth to the various industries. Keeping these data limitations in mind the following conclusions may be drawn from Table VII.5.

Only four industries account for 62 per cent of the allocated growth contribution, i.e. processing of agricultural products, tobacco products, printing and publishing, and non-metallic mineral products. Among agricultural processing it is rubber processing and in the non-metallic mineral industry cement production which produce all the additional value added. If in addition beverages and textiles are included, one already has three-quarters of the contribution to growth. Apparently, the strong impact of manufacturing FCC on growth results from a rather small number of industries. Most likely these industries have a significant comparative advantage in Malaysia due to their closeness to raw material (rubber processing, cement, partly tobacco products), to the domestic market (cement, tobacco products, beverages, and pub-

TABLE VII.5

FOREIGN-CONTROLLED MANUFACTURING COMPANIES' CONTRIBUTION TO GROWTH BY INDUSTRY, 1968–1971

Industry	*Change in Value Added of LCC and FCC*	*Change in Value Added of FCC*	(*3*)	(*4*)
	(*1*)	(*2*)	[(2) ÷ (*1*) × *100*]	[(2) ÷ Σ (*1*) × *100*]
Processing of agricultural products	56,074	43,271	77.2	9.2
Food products	51,388	2,231	4.3	0.5
Beverages	8,734	12,491	143.0	2.7
Tobacco products	33,350	41,567	124.6	8.9
Textiles	16,293	12,589	77.3	2.7
Clothing & footwear	18,297	3,920	21.4	0.8
Wood products	26,598	2,764	10.4	0.6
Furniture	5,995	733	12.2	0.2
Paper products	7,129	3,559	49.9	0.8
Printing & publishing	31,391	24,852	79.2	5.3
Leather products	1,676	204	12.2	0.0
Rubber products	12,373	11,805	95.4	2.5
Chemicals	28,652	10,770	37.6	2.3
Petroleum products	3,593	3,593	100.0	0.8
NM mineral products	30,315	17,824	58.8	3.8
Basic metals	18,840	−77	−0.4	—
Metal products	18,852	4,575	24.3	1.0
Machinery	10,318	—	—	—
Electrical machinery	21,250	6,239	29.4	1.3
Transport equipment	28,684	—	—	—
Other industries	15,387	2,913	18.9	0.6
Unallocated	22,391	108,013	(482.4)	(23.1)
Total	467,580	313,836	67.1	67.1

lishing) and/or because of labour intensity (rubber processing, textiles, and printing).

The question whether FCC have displaced local companies cannot be fully answered here according to the concepts proposed in section 4D. However, displacement has probably taken place whenever the FCC's share in an industry's value-added growth exceeds 100 per cent, because it implies an absolute decline in LCC's value added. According to Table VII.5 this is clearly the case in the beverages and tobacco industries. If the industries are more disaggregated one finds additional cases, for instance in the industries producing ice-cream and cement. These four industries account for 30 per cent of the allocated contribution to growth by FCC. This suggests that displacement has been of considerable importance.

C. THE REGIONAL IMPACT

As in most developing countries, economic growth in Malaysia was in the past very heavily concentrated in a few regions. Although the dualistic structure that emerged was not as pronounced as in many other countries, it had a number of the familiar undesirable effects on employment and income distribution. It is therefore one of the government's objectives to reduce the regional imbalance. A variety of regional development plans have been worked out and the incentive system for private investment provides special benefits for the location of plants in less developed areas.

The extent of regional imbalance can be seen from Table VII.6. Economic development has in the past been heavily concentrated on the west-coast states of which one state, Selangor, alone accounted for more than a quarter of GDP in 1970 though only 18.5 per cent of the population lived in that state. The three states of Selangor, Perak, and Johor together produced 62 per cent of GDP and contained half the population. If the data permitted a further regional disaggregation one would find that within these states economic activity is concentrated in rather small regions. For Selangor, for instance, it has been estimated by Shankland Cox[19] that the Klang Valley area alone accounts for 25 per cent of West Malaysia's or 89 per cent of Selangor's GDP.

From Table VII.6 it can be seen that manufacturing growth as a whole has accentuated this regional imbalance and even more so that of the FCC. Two-thirds of the FCC's increase in value added over the observation period was produced in Selangor. If one adds Perak, Johor, and the west-coast island of Penang, one already has 94 per cent of the FCC's growth. Hence, foreign investment has definitely aggravated the task of achieving a more balanced regional structure of production throughout the country.

D. COUNTRY OF ORIGIN AND INCENTIVES

If the contribution to growth of FCC is classified according to country of origin of the companies in question, one finds that one-third originates from British and 23 per cent from Singaporean companies. As the latter are probably also largely affiliates of British companies it may be concluded that the former colonial power in the country still has, after nearly twenty years of independence, a lasting influence on the economy's development. However, this is likely to change in the near future. Whereas the contribution to growth of British and Singaporean companies more or less equals their share in value added in the years 1968 and 1971, the growth contribution of FCC from other countries is significantly higher than their value added share in 1968. US-American companies, for instance, contributed in 1968 only 5 per cent to the FCC's value added, but accounted for 14 per cent of the change in value added.

In order to encourage investment, Malaysia grants, like several other developing countries, tax incentives to 'pioneer companies'. The pioneer sector altogether contributed 27.2 per cent to the growth of the manufacturing sector which is not very much if one considers that by 1971, 54 per cent of the manufacturing capital stock was held by

TABLE VII.6

FOREIGN-CONTROLLED MANUFACTURING COMPANIES' CONTRIBUTION TO GROWTH BY REGION, 1968–1971

State	*1970 Per Capita GDP as % of West Malaysian Mean*	*1970 Per cent Distribution of GDP*	*Change in Value Added of LCC and FCC*		*Change in Value Added of FCC*		
			M$'000	*%*	*M$'000*	*%*	
	(1)	*(2)*	*(3)*	*(4)*	*(5)*	*(6)*	*(7) = (5) ÷ (3) x 100*
Selangor	1.49	28.1	256,126	54.8	204,814	65.3	80.0
Negri Sembilan	1.16	6.4	12,441	2.7	12,290	3.9	98.8
Perak	1.07	19.2	42,504	9.1	19,395	6.2	45.6
Pahang	1.04	5.9	8,284	1.8	1,864	0.6	22.5
Johor	0.98	14.2	51,269	10.9	39,408	12.6	76.9
Perlis	0.80	1.1	655	0.1	−52	0	−7.9
Kedah	0.81	8.8	8,774	1.9	3,272	1.0	37.3
Penang	0.78	6.9	51,506	11.0	29,346	9.4	57.0
Melaka	0.69	3.2	4,242	0.9	2,096	0.7	49.4
Trengganu	0.60	3.0	4,521	1.0	573	0.2	12.7
Kelantan	0.52	3.9	−1,973	−0.4	−155	0	(−7.9)
Unallocated			29,231	6.3	985	0.3	3.4
Total	1.00	100.0	467,580	100.0	313,836	100.0	67.1

Sources: *Mid-Term Review of the Second Malaysia Plan 1971–1975*; T. Bode, T. E. Müller-Debus, op. cit.; *Census of Manufacturing Industries, West Malaysia*, 1968; *Survey of Manufacturing Industries, Peninsular Malaysia*, 1971.

pioneer companies. Foreign-controlled pioneer companies made up for 74 per cent of the pioneer sector's growth which is about the same percentage as their share in the pioneer sector's value added. Apparently, FCC were the major receivers of tax benefits. In view of the weak growth performance it may be said that in terms of growth the tax concessions have hardly paid off.

7. TAX RECEIPTS

Taxes collected by the Federal Government in 1962 amounted to 16.6 per cent of West Malaysian GDP and in 1970 to 20.1 per cent. The annual growth rate of direct taxes (14.2 per cent) was one-and-a-half times as high as that of indirect taxes (9.3 per cent). The share of direct taxes in total taxes increased from 27.6 to 35.1 per cent (Table VII.7). With these changes in the tax structure, Malaysia followed the familiar pattern observed in other developing countries.

All limited companies together accounted in 1962 for 73 per cent of total direct taxes and for 52 per cent of indirect taxes. From the FCC alone came 58 per cent of direct taxes and 40 per cent of indirect taxes. In terms of total taxes the share for all limited companies is 58 per cent and for FCC 44 per cent. By 1970, the contribution of all limited companies had increased substantially to 70 per cent whereas that of FCC remained about constant at 45 per cent. Thus, the increase came entirely from LCC. The constant share of FCC was the result of a declining share for direct taxes (42 per cent) and an increasing share for indirect taxes (47 per cent). The relative decline of direct taxes paid by FCC reflects, first, a faster growth of LCC which produced in 1962

TABLE VII.7

FEDERAL GOVERNMENT TAX RECEIPTS, 1962 AND 1970

	1962[a]		*1970*[b]	
	M$ million	*%*	*M$ million*	*%*
Direct taxes	243	27.6	701	35.1
Indirect taxes	637	72.4	1,299	64.9
Export duties	177	20.1	258	12.9
Rubber	93	10.6	80	4.0
Tin	67	7.6	130	6.5
Others	17	1.9	48	2.4
Import duties, Excise, Surtax	373	42.4	806	40.3
Licences & Other	87	9.9	235	11.8
Total Taxes	880	100.0	2,000	100.0

[a] West Malaysia.
[b] Malaysia.

Source: The Treasury, Malaysia, *Economic Report, 1973–74.*

only 35 per cent, but in 1970 as much as 67 per cent of all limited companies' value added[20] and, secondly, the improvement of tax collection from LCC. In 1962 direct taxes collected from LCC amounted to only 10.6 per cent of value added as compared with 14.1 per cent for FCC. By 1970 this ratio had risen for LCC to 17.3 per cent and for FCC to 19.4 per cent. Hence, in relative terms the collection of direct taxes had improved significantly more for LCC than for FCC. The opposite can be said for indirect taxes where the ratio to value added rose from 22.5 to 30.1 per cent for LCC and from 25.5 to 39.6 per cent for FCC. However, this is probably not so much due to an improved enforcement of tax laws, but is merely reflective of different selling and purchasing practices. For instance, FCC import a much higher portion of their inputs than LCC and were therefore much more affected by the increase in tariffs between 1962 and 1970.

The data presented here confirm the hypothesis that the tax payments by FCC are quite high and can therefore be considered as a major benefit to the host country. This is further supported by Table VII.8 which shows, if compared with Table VII.1, that the FCC's relative contribution to tax receipts has generally been higher than their ownership in share capital. Here again, one observes over time a declining share of FCC's contribution to direct taxes from 79 per cent in 1962 to 63 per cent in 1970. Their share in indirect taxes fluctuates around 76 per cent up to 1968 and falls to 66 per cent by 1970. By industry, the ranking according to tax contribution is very similar to

TABLE VII.8

TAXES PAID BY LIMITED COMPANIES, 1962/64/66/67/68/70

	Direct Taxes		*Indirect Taxes*	
	Local & Foreign Companies M$'000	*Share of Foreign Companies %*	*Local & Foreign Companies M$'000*	*Share of Foreign Companies %*
Agriculture	456,469	79.2	343,512	77.9
Rubber	319,196	86.0	256,281	88.1
Other	137,273	63.6	87,231	48.1
Mining & Quarrying	404,063	86.1	383,978	90.8
Tin	343,924	87.4	297,581	92.5
Other	60,139	78.7	86,397	85.0
Manufacturing	342,833	61.4	733,269	75.3
Construction	13,275	26.8	4,879	32.9
Trade	256,949	59.6	1,504,236	73.8
Wholesale	209,085	61.3	1,356,567	75.0
Retail	47,864	52.2	147,669	62.3
Other Industries	232,333	38.2	125,731	24.2
Total	1,709,522	68.3	3,095,605	74.6

Source: Department of Statistics, *Financial Survey of Limited Companies*, op. cit.

the ranking by ownership. A notable exception is the high share of manufacturing FCC in indirect taxes. As already mentioned, this is probably due to high import duty liabilities of the respective companies.

If the FCC's contribution to direct taxes is split between those from subsidiaries and those from branches, one finds for all years (since 1966), and even for 1970, that the share of the former is significantly lower than that of the latter. This is probably to be explained by the fact that almost all the more recently founded establishments which have been granted tax exemptions were subsidiaries. If one assumes that without the exemptions the ratio of direct taxes to value added would be the same for subsidiaries as for branches, one obtains for 1970 an amount of about M$40 million as taxes forgone which is 28 per cent of the direct taxes actually collected from subsidiaries.

8. EMPLOYMENT CREATION BY FOREIGN-CONTROLLED COMPANIES

Employment in the base year of the observation period was estimated as described in section 3C. The method used implies an overestimate of jobs actually created by FCC. The correction applied for manufacturing indicates that the margin of error of about 11 per cent is not very large. For mining it is also not high in absolute terms though high in relative terms because the uncorrected employment creation is so low.

A. AGRICULTURE VERSUS MANUFACTURING

The share of FCC in the economy's employment was extremely low (Table VII.9) with 8.9 per cent in 1962 and 8.4 per cent in 1970. The contribution to employment creation was even lower (5.8 per cent). This poor performance of FCC was largely due to a drastic fall of employment on foreign rubber estates. Although some of the labour was apparently shifted to oil palm cultivation there was still a net loss in the foreign agricultural sector. Manufacturing FCC which contributed most to GDP did so also in terms of employment. However, the contribution to the employment growth of manufacturing and of the entire economy was, with 26.3 and 5.8 per cent respectively, approximately half as large as the growth contribution.

These observations seem to confirm the hypothesis that FCC do not help much in solving the unemployment problems of less developed countries. But this cannot be taken as an unavoidable fact and has therefore to be taken as given. That can be clearly seen for Malaysia if one splits the observation period into two sub-periods, because it was only during the second half of the 1960s that the government actively tried to induce investors, especially foreign ones, to operate more labour intensively. The consequences of this change in policy are most obvious in manufacturing. Whereas during the first sub-period employment in

TABLE VII.9

EMPLOYMENT IN WEST MALAYSIA AND FOREIGN-CONTROLLED COMPANIES, 1962–1970

1962

	West Malaysia ('000)	*Foreign Companies* ('000)	*Share of Foreign Companies* (%)
Agriculture	1,262.0	165.7	13.1
Forestry, fishing, hunting	489.1	—	—
Rubber	731.1	153.6	21.0
Other agriculture	41.8	12.1	28.9
Mining & Quarrying	56.1	16.9 (20.4)	30.1
Tin	47.1	16.9 (20.4)	35.9
Other	9.0	—	—
Manufacturing	185.4	14.5 (17.5)	7.8
Construction	82.5	0.9	1.1
Trade	253.3	9.7	3.8
Other Industries	492.4	—	—
Total	2,331.7	207.7	8.9

1970

	West Malaysia ('000)	*Foreign Companies* ('000)	*Share of Foreign Companies* (%)
Agriculture	1,369.0	157.6	11.11
Forestry, fishing, hunting	571.6	—	—
Rubber	704.9	120.0	17.0
Other agriculture	92.5	37.6	40.6
Mining & Quarrying	85.0	17.4	20.5
Tin	74.9	17.4	23.2
Other	10.1	—	—
Manufacturing	292.0	40.8	14.0
Construction	78.0	3.2	4.1
Trade	295.0	14.8	5.0
Other Industries	664.0	—	—
Total	2,783.0	233.8	8.4

Change 1962–1970

	West Malaysia ('000)	*Foreign Companies* ('000)	*Share of Foreign Companies* (%)	*Share of Foreign Companies in Total for West Malaysia* (%)
Agriculture	107.0	−8.1	−7.6	−1.7
Forestry, fishing, hunting	82.5	—	—	—
Rubber	−26.2	−33.6	(−128.2)	−7.4
Other agriculture	50.7	25.5	50.3	5.7
Mining & Quarrying	28.9	0.5	1.7	0.1
Tin	27.8	0.5	1.7	0.1
Other	1.1	—	—	—
Manufacturing	106.6	26.3	24.7	5.8
Construction	−4.5	2.3	(100.0)	0.5
Trade	41.7	5.1	12.2	1.1
Other Industries	171.6	—	—	—
Total	451.3	26.1	5.8	5.8

TABLE VII.10
THE CONTRIBUTION OF FOREIGN-CONTROLLED COMPANIES TO EMPLOYMENT CREATION, 1962–1970

Change 1962–1966

	West Malaysia	Foreign Companies	Share of Foreign Companies	Share of Foreign Companies in Total for West Malaysia
	'000	'000	%	%
Agriculture	94	-8.9	-9.5	-3.1
Forestry, fishing, hunting	75	—	—	—
Rubber	-21	-16.6	(79.1)	-5.9
Other agriculture	40	7.7	13.3	2.7
Mining and Quarrying	12	1.9 (-0.1)	15.8	0.7
Tin	11	1.9 (-0.1)	17.3	0.7
Other	1	—	—	—
Manufacturing	40	1.4 (0.4)	3.5	0.5
Construction	5	0.2	4.0	—
Trade	36	2.6	7.2	0.9
Other Industries	96	—	—	—
Total	283	-2.9	-1.0	-1.0

Change 1966–1970

	West Malaysia	Foreign Companies	Share of Foreign Companies	Share of Foreign Companies in Total for West Malaysia
	'000	'000	%	%
Agriculture	13	0.8	6.1	0.5
Forestry, fishing, hunting	8	—	—	—
Rubber	-5	-17.0	(-340.0)	-10.1
Other agriculture	10	17.8	178.0	10.6
Mining and Quarrying	17	-1.4	-8.2	-0.8
Tin	17	-1.4 (-2.9)	-8.2	-0.8
Other	0	—	—	—
Manufacturing	67	24.9 (22.9)	37.2	14.8
Construction	-10	2.1	(-21.0)	1.3
Trade	6	2.5	41.7	1.5
Other Industries	75	—	—	—
Total	168	28.9	17.2	17.2

manufacturing FCC nearly stagnated, it increased over the second sub-period by as much as 157 per cent (Table VII.10).[21] This was due to rather capital-intensive foreign investment during the first half of the 1960s which led to a sharp rise in labour productivity (5.6 per cent per annum), while with the more labour-intensive investment of the second half, productivity even declined slightly (–0.6 per cent per annum).

In agriculture the development was less clear-cut, although the employment performance of FCC was also significantly better in the second sub-period than in the first. On the foreign rubber estates, employment fell continuously over the entire period, partly because the foreign-owned acreage under rubber cultivation was reduced and partly because of productivity-raising large-scale replanting with high yielding stands. The latter was stimulated by substantial government subsidies which originally were designed to improve the profitability of rubber smallholders. With the rapid expansion of oil palm cultivation by FCC over the second sub-period, employment was, on the other hand, expanded so that for the foreign agricultural sector as a whole, employment remained more or less constant. Further shifts from rubber to oil palm are, however, likely to reduce employment as the labour required per acre is much lower for oil palm than for rubber. In 1971 on the estates the average was 79 man-years for oil palm and 128 man-years for rubber.

B. MANUFACTURING BY INDUSTRY

For the period 1968–71 for which more detailed data on foreign-controlled manufacturing are available the contribution of FCC to the employment growth of the manufacturing sector was, 26.7 per cent, (Table VII.11) about the same as that for the period 1966–70, while the contribution to the economy's employment growth was significantly higher (11 per cent). Compared to foreign ownership and the FCC's growth contribution, this is still not very much in absolute terms, but it is a further improvement over the earlier periods, since it means a 50 per cent higher employment creation by manufacturing FCC in this period than by all FCC together during the period 1966–70.

Similar to the growth contribution, the employment creation was concentrated on a few industries. The textile, the electrical machinery, and the clothing industry, printing and publishing, and primary processing of agricultural products together accounted for 59 per cent of the allocated employment creation by manufacturing FCC. However, the ranking of industries in terms of FCC's growth contribution differs from that in terms of employment creation. For instance, the foreign tobacco companies contributed much to growth but little to employment. The reverse is true for the clothing industry. This suggests that there may exist a trade-off between growth and employment creation in the sense that a policy which selectively promotes foreign investment in certain industries in order to maximize growth is likely to forgo employment opportunities.

TABLE VII.11
EMPLOYMENT CREATION BY FOREIGN-CONTROLLED COMPANIES, 1968–1971

	Employment Change in: LCC & FCC (1)	FCC (2)	[(2) ÷ (1) × 100] (3)	[(2) ÷ Σ (1) × 100] (4)
Primary processing & agricultural products	3,535	1,289	36.5	1.7
Food products	6,853	280	4.0	0.4
Beverages	389	442	113.6	0.6
Tobacco products	806	540	66.9	0.7
Textiles	5,006	2,498	49.4	3.3
Clothing and footwear	7,185	1,279	17.8	1.7
Wood products	10,317	601	5.8	0.8
Furniture	2,505	146	5.8	0.2
Paper & paper products	1,759	215	12.2	0.3
Printing & publishing	3,338	1,276	38.2	1.7
Leather products	336	6	1.8	—
Rubber products	379	2	0.5	—
Chemical products	2,420	776	32.0	1.0
Petroleum products	171	171	100.0	0.2
Non-metallic mineral products	2,849	585	20.5	0.8
Iron & non-ferrous metals	640	−57	−8.9	−0.1
Iron & metal products	2,321	500	21.5	0.7
Manufacture of machinery	2,456	—	—	—
Electrical products	2,063	1,459	70.7	1.9
Transport equipment	1,963	—	—	—
Other industries	4,865	1,140	23.4	1.5
Unallocated	14,185	7,262	(51.1)	(9.5)
Total	76,341	20,410	26.7	26.7

The displacement of LCC by FCC led to an absolute employment reduction by the former in the industries producing ice-cream, soft drinks, cosmetics, and tin cans. As far as LCC could have provided the output actually produced by FCC, an assumption which appears justified for all the industries mentioned, except electrical machinery, and a few others, the negative employment effect of FCC due to displacement was even higher, as FCC generally operate more capital intensively than LCC. This may be illustrated by the following example. Assume that the output realized by the foreign tobacco firms was produced by the more labour-intensive LCC. This would have increased employment in the tobacco industry by 8,846 jobs and reduced the employment contribution of FCC in manufacturing from 26.7 per cent to 15.2 per cent.

C. THE REGIONAL IMPACT

It was shown above that the manufacturing FCC's contribution to growth is heavily concentrated in a few relatively well-developed states

TABLE VII.12
REGIONAL EMPLOYMENT CREATION BY FOREIGN-CONTROLLED COMPANIES, 1968–1971

State	Employment Change in: LCC & FCC (1)	FCC (2)	[(2) ÷ (1) × 100] (3)
Selangor	27,385	9,320	34.0
Negri Sembilan	768	−48	−6.3
Perak	9,207	2,387	25.9
Pahang	3,801	582	15.3
Johor	9,767	3,837	39.3
Perlis	−37	1	(−0.3)
Kedah	1,588	657	41.4
Penang	8,174	3,621	44.3
Melaka	944	224	23.7
Trengganu	862	100	11.6
Kelantan	218	−271	−124.3
Unallocated	16,766	—	—
Total	76,341	20,410	26.7

and therefore further accentuates regional disparity and distributional inequality. For employment it is also true that FCC's employment is more regionally concentrated than that of LCC, but not as much as for the growth contribution. Whereas Selangor alone accounts for 65 per cent and Selangor, Perak, and Johor for 84 per cent of the growth contribution, their share in manufacturing FCC's employment creation is only 46 and 76 per cent respectively (Table VII.12). This difference points to the fact that the already more advanced states attract the more capital-intensive type of foreign investment. As unemployment is highest in the urban areas,[22] this regional employment impact of foreign capital is definitely undesirable because it means that the FCC's employment creation is lowest where it is most needed and vice versa.

D. COUNTRY OF ORIGIN AND INCENTIVES

The structure of employment creation by country of origin of manufacturing FCC also differs markedly from the structure of growth contribution. Most remarkable is the low share of less than 10 per cent of British companies in employment creation which accounts for one-third of the growth contribution. For the American companies too, the difference between the share in growth contribution (13.7 per cent) and in employment creation (2.6 per cent) is very large. It can be said, without exaggeration, that the rather low employment creation of FCC as compared to their growth contribution can be mainly attributed to the investment originating from these two countries. Investment from other sources, even from Singapore, was clearly much more conducive to the creation of jobs.

The pioneer sector's share in manufacturing employment creation (52.7 per cent) was much higher than its growth contribution (27.2 per cent). This suggests that the government's pressure on pioneer companies to rely on more labour-intensive production techniques and, in particular, the special investment incentives for labour-intensive industries such as the electronics industry, were quite effective. Within the pioneer sector, however, the FCC's share in employment creation (55.5 per cent) was lower than their growth contribution (73.8 per cent). From this would follow that the LCC rather than the FCC reacted positively to the government's employment policy.

9. THE BALANCE OF PAYMENTS EFFECTS

Before we enter into a discussion of the balance of payments effects of FCC it may be worthwhile to take a look at those balance of payments items of Malaysia which mainly are the result of private enterprise activity. As can be seen from Table VII.13, Malaysia enjoyed during the 1960s a sizeable surplus in its trade balance. As the world's largest producer of rubber and tin, a position it gained through the export of high-quality products, it was able to finance its entire demand of imported commodities by its export sales. In that respect Malaysia is different from most other developing countries.

The trade surplus was, however, apart from a net import of services, largely offset by a substantial outflow of resources and short-term capital. Although there was a net import of private long-term capital, this was overcompensated by a net outflow of investment income. If the country's substantial exchange reserves (M$2.9 billion in 1970) had not yielded a quite comfortable investment income from abroad, the net outflow of resources which amounted on average to 7.2 per cent of the trade surplus and 0.5 per cent of GDP would have been even larger. Unfortunately little is known as to what constitutes the export of short-term capital as this is lumped together with the errors and omissions. It is not unlikely that quite a large portion of the amounts under this category are also investment income which has not been declared as such. In the following we will deal first with the resource effect, as it is part of the net balance of payments or exchange effect. It should be remembered that the calculation of the resource effect implies the assumption that in the alternative situation (b), investment from domestic sources would have produced equivalent output and employment.

A. THE RESOURCE EFFECT

Table VII.14 reveals the amazing fact that the outflow of resources (negative inflow) originating from foreign direct investment was, during the years under observation, at M$964.7 million, more than four times as high as the outflow of resources of M$233.1 million for

TABLE VII.13

SELECTED BALANCE OF PAYMENTS ITEMS—MALAYSIA, 1962/64/66/67/68/70
(M$ million)

	Investment Income			Net Private Companies' Long-term Capital Import	Inflow of Resources	Trade Surplus	Short-term Capital Import[a]	Balance	GDP at Factor Cost
	Inflow	*Outflow*	*Net Outflow*						
	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)	(9)
1962	164.8	341.5	176.7	235	58.3	337	−98	297.3	5,302[b]
1964	170.0	400.0	230.0	165	−65.0	272	−275	−68.0	6,066[b]
1966	167.0	435.0	268.0	170	−98.0	553	−385	70.0	6,879[b]
1967	189.0	333.0	144.0	130	−14.0	475	−709	−248.0	8,378
1968	209.0	363.0	154.0	93	−61.0	637	−276	300.0	8,692
1970	242.6	456.0	213.4	160	−53.4	972	−264	654.6	10,096
Total	1,142.4	2,328.0	1,186.1	953	−233.1	3,246	−2,007	1,005.9	45,413
1966–70	807.6	1,587.0	779.4	553	−226.4	2,637	−1,634	776.6	34,045

[a]Including errors and omissions.
[b]West Malaysia only.

Sources: The Treasury, Malaysia, *Economic Report*, various issues; Bank Negara Malaysia, *Quarterly Economic Bulletin*, various issues; IBRD, *Current Economic Position and Prospects of Malaysia*, Washington, 1972.

TABLE VII.14

RESOURCE EFFECTS OF FOREIGN DIRECT INVESTMENT

	Investment Income				*Long-term Capital Import*				*Inflow of Resources*			
	1962–70		*1966–70*		*1962–70*		*1966–70*		*1962–70*		*1966–70*	
	M$ million	*%*	*M$ million*	*%*	*M$ million*	*%*	*M$ million*	*%*	*M$ million*	*%*	*M$ million*	*%*
Agriculture	832.4	70.2	509.8	65.4	212.8	22.3	45.8	8.3	-619.6	265.9	-464.0	205.0
Rubber	690.2	58.2	418.0	53.6	158.6	16.6	-8.0	-1.4	-531.6	228.1	-426.0	188.2
Other	142.2	12.0	91.8	11.8	54.2	5.7	53.8	9.7	-88.0	37.8	-38.0	16.8
Mining	349.0	29.4	158.5	20.4	186.2	19.6	100.3	18.2	-162.8	69.9	-58.2	25.9
Tin	353.4	29.8	203.9	26.2	115.9	12.2	40.2	7.3	-237.5	101.9	-163.7	72.3
Other	-4.4	-0.4	-45.4	-5.8	70.3	7.4	60.1	10.9	74.7	-32.0	105.5	-46.6
Manufacturing	332.9	28.1	255.7	32.8	191.8	20.1	162.6	29.4	-141.1	60.5	-93.1	41.1
Construction	5.6	0.5	4.9	0.6	13.8	1.4	9.6	1.7	8.2	-3.5	4.7	-2.1
Trade	195.8	16.5	151.5	19.4	205.6	21.5	121.2	21.9	9.8	-4.2	-30.3	13.4
Wholesale	160.9	13.6	128.6	16.5	142.4	14.9	101.9	18.4	-18.5	7.9	-26.7	11.8
Retail	34.9	2.9	22.9	2.9	63.2	6.6	19.3	3.5	28.3	-12.1	-3.6	1.6
Other Industries	137.1	11.6	100.4	12.9	77.9	8.2	34.2	6.2	-59.2	25.4	-66.2	29.2
Total	1,852.8	156.2	1,180.8	151.5	888.1	93.2	473.7	85.7	-964.7	413.9	-707.1	312.3

Source: Department of Statistics, *Financial Survey of Limited Companies*, various issues.

Malaysia as a whole (Table VII.13). That means that without capital import by locally-owned companies and investment income from abroad, the country would have lost on average about 2 per cent of its GDP to foreign-resident owners of the capital stock or, in other words, that the growth rate would have been roughly 40 per cent lower than it actually was. If the alternative situation (b) is accepted as a plausible assumption one would conclude that foreign investment did not prevent growth but acted as an effective brake on the pace of growth.

The FCC's drain on the country's resources resulted not so much from a low capital import, but from large transfers of investment income. Whereas the FCC accounted for 93 per cent of Malaysia's import of private long-term capital, their net transfer of investment income was 56 per cent higher than that for the country as a whole. As already mentioned, the difference was made up by investment income from abroad originating largely from the high exchange reserves. The reserves themselves, however, essentially stemmed from exports by FCC in the past. Thus, under the assumption that LCC would not have exported equivalent amounts in the alternative situation, one might value the resource effect correspondingly lower.

Industry-wise the loss of resources mainly originated from foreign investment in the major primary industries, rubber and tin. These two alone accounted for 80 per cent of the outflow. Manufacturing made up another 15 per cent, of which the larger part probably has to be attributed to primary processing of agricultural products and to tin smelting.

In terms of investment income, the ranking of the industries is more or less similar though the share of rubber and tin is lower (56 per cent) and that of manufacturing higher (18 per cent). The differences in the shares of the outflow of resources are due to the rather low capital import by the former as compared to the latter. Manufacturing was absolutely the largest importer of long-term capital, followed by the rubber industry and wholesale trade. Apparently, the rapid structural change which led to a doubling of the share of manufacturing in GDP over the 1960s was significantly backed up, if not initiated, by the large amounts of foreign capital which were now attracted to the still rather small manufacturing sector, a phenomenon resembling that of earlier periods when the primary sector had been the exclusive target of foreign investors. It may be noted that there is one industry, other mining, where the FCC in Malaysia were net receivers of investment income. Most likely these are payments which accrued to the head offices of oil companies residing in West Malaysia but operating in the wider South-East Asian area, including East Malaysia.[23]

For the sub-period 1966–70 it is possible to distinguish between the resource effects of branches and those of subsidiaries. As can be seen from Table VII.15, the outflow of resources was caused almost entirely (97 per cent) by branches. The earlier investments in the primary sector, mostly in the form of branches, yielded high investment incomes,

TABLE VII.15
RESOURCE EFFECTS OF BRANCHES AND SUBSIDIARIES

	Investment Income		*Long-term Capital Import*		*Inflow of Resources*	
	Branches *M$ million*	*Subsidiaries* *M$ million*	*Branches* *M$ million*	*Subsidiaries* *M$ million*	*Branches* *M$ million*	*Subsidiaries* *M$ million*
Agriculture	423.0	86.8	−28.1	73.9	−451.1	−12.9
Rubber	365.4	52.6	−26.6	18.6	−392.0	−34.0
Other	57.6	34.2	−1.5	55.3	−59.1	21.1
Mining	148.0	10.8	95.5	4.7	−52.5	−6.1
Tin	163.8	40.1	26.2	13.9	−137.6	−26.2
Other	−15.8	−29.3	69.3	−9.2	85.1	20.1
Manufacturing	91.4	164.3	34.0	128.7	−57.4	−35.6
Construction	3.6	1.3	5.7	3.9	2.1	2.6
Trade	95.1	56.4	40.5	80.7	−54.6	24.3
Wholesale	84.8	43.9	39.5	62.4	−45.3	18.5
Retail	10.3	12.5	1.0	18.3	−9.3	5.8
Other Industries	65.8	34.6	−7.8	42.0	−73.6	7.4
Total	826.9	354.2	139.8	333.9	−687.1	−20.3

Source: Department of Statistics, *Financial Survey of Limited Companies*, various issues.

whereas most of the new capital was invested in subsidiaries, in particular in the manufacturing, the wholesale trade, and the oil palm sectors. The investment income of branches was more than twice as high as that of subsidiaries, whereas their share in the FCC's capital import was less than 30 per cent. The reasons for the clear tendency of FCC to establish new firms in the form of subsidiaries have already been stated above. In rubber and oil palm cultivation and in 'other industries', capital was even withdrawn from branches. The high investment income of branches was on the one hand simply due to the larger volume of foreign capital bound to this type of firm, as most of the FCC in the primary sector founded under colonial rule were branches. It appears on the other hand that in rubber cultivation branches have been more profitable than subsidiaries. Over the observation period profits as a per cent of sales value were on average 32 per cent in the former and 19 per cent in the latter. No information is available which could be used to explain this difference. It is, however, plausible that branches were able to produce at lower costs because, being older, they had already written off their investment.

Summing up, it can be concluded that our results strongly support the hypothesis that the resource effects of FCC tend to be negative. The different observations made for branches and subsidiaries underpin the significance of investment income originating from capital accumulated in the hands of foreigners over a long period and the balance of payments problems it can create if the trade balance is not as favourable as in Malaysia. As already mentioned, it appears not unlikely that the resource effect was even larger than our calculations indicate, as the large short-term capital export may also partly consist of investment income which has not been declared as such.

B. THE EXCHANGE EFFECT

The net balance of payments or exchange effect can only be calculated for the years 1966–70. The tables of the previous section show, therefore, the relevant data for this sub-period. It should, however, be noted that the size of the resource effect for the sub-period cannot be directly compared with that for the entire period, because the former is based on data for four years, whereas the calculation for the entire period includes only two additional years although the period is twice as long as the sub-period.

Table VII.16 reveals that the trade surplus of FCC outweighs by far their negative resource effect and their other transactions (royalties, salaries to non-residents, short-term capital export). The exchange earned by FCC is more than three-and-a-half times as high as the comparable balance for Malaysia shown in Table VII.13. Thus, our observations strongly support the hypothesis of those liberal economists who assume the alternative situation (a) and forecast a positive net balance of payments effect of foreign direct investment.

The sources of the trade surplus are not easy to trace. Table VII.16

TABLE VII.16

THE EXCHANGE EFFECTS OF FOREIGN DIRECT INVESTMENT

	Inflow of Resources M$ million	Trade Surplus M$ million	Trade Surplus %	Other Transactions M$ million	Total M$ million	Inflow of Exchange: Branches M$ million	Inflow of Exchange: Subsidiaries M$ million
Agriculture	-464.0	1,365.5	51.8	87.9	989.4	617.4	372.1
Rubber	-426.0	1,044.2	39.6	64.0	682.2	475.7	206.5
Other	-38.0	321.3	12.2	23.9	307.2	141.7	165.6
Mining	-58.2	386.6	14.7	-155.8	172.6	-28.5	201.1
Tin	-163.7	8.1	0.3	-11.4	-167.0	-123.9	-43.1
Other	105.5	378.5	14.4	-144.4	339.6	95.4	244.2
Manufacturing	-93.1	1,863.2	70.7	-175.1	1,595.0	2,627.4	-1,032.4
Construction	4.7	-29.1	-1.1	-4.6	-29.0	-9.9	-19.1
Trade	-30.3	79.9	3.0	-48.8	0.8	-250.4	251.2
Wholesale	-26.7	565.0	21.4	-44.3	494.0	-123.9	617.9
Retail	-3.6	-485.1	-18.4	-4.5	-493.2	-126.5	-366.7
Other Industries	-66.2	258.8	9.8	-52.1	140.5	-101.1	241.6
Total	-707.1	3,924.9	148.8	-348.5	2,869.3	2,854.9	14.5

Source: Department of Statistics, *Financial Survey of Limited Companies*, various issues.

represents the responses of the companies which however are misleading with regard to the sectoral structure of the trade surplus, because a company reports sales and purchases only as exports and imports if it does the transaction with a foreign partner directly. If, for instance, a tin mine company sells its output to a domestic foundry, the export of the tin bars appears under manufacturing and not under tin mining. Exports of rubber estates handled by agents are recorded under wholesale trade and not under rubber cultivation. It is not possible to adjust the data correctly in order to obtain a proper allocation according to sector of origin, but one can make a few rough estimates from the sales figures, as in the rubber, the oil palm, and the tin industry the output is almost entirely exported. Assuming that wholesale trade acts only as intermediary and, therefore, has zero export, the trade surplus of rubber would be around M$2,000 million, that of other agriculture M$400 million and that of the tin industry M$950 million, leaving a trade surplus for manufacturing of about M$450 million. Hence, the ranking of the industries according to the trade surplus is broadly similar to that by the outflow of resources, though the absolute amounts diverge somewhat.

Again if a distinction is made between branches and subsidiaries, one finds that branches which account on the one hand for 97 per cent of the outflow of resources are, on the other, also the major exchange earners. Only 0.5 per cent of the exchange earnings of FCC are realized by subsidiaries. This rather weak performance of subsidiaries is due to the orientation toward the domestic market which this type of investment assumed during the 1960s, in particular in the manufacturing sector. The required imports of capital goods and raw materials were not balanced by exports. The trade balance was consequently negative. The retail trade, which does not export except for marginal amounts in border areas—and even there it cannot be measured statistically—will always have a negative trade balance.

C. THE IMPACT OF IMPORT SUBSTITUTION AND EXPORT EXPANSION

Foreign investment in manufacturing has frequently been accused of contributing to balance of payments problems of the host country by aiming exclusively at production for the domestic market instead of substituting for inputs or exporting. At a superficial level, our above calculations could be viewed as an empirical confirmation of this argument as the trade balance of manufacturing FCC turns out to be strongly negative. However, this certainly is not sufficient evidence. A negative trade balance can also occur if imports are substituted or if at least part of the output is exported. Furthermore, the argument has to be qualified against the background of a reference system which could, for instance, be the performance of LCC. In the following, the import substitution and export expansion of FCC is therefore compared with that of LCC. Of course, the output increase defined as import substitution and export expansion according to the formulae outlined above can again only be reckoned as an improvement of the balance of payments if an assumption is made about the alternative development. The only reasonable assumption which can be made in this context is the alternative situation (c) which implies that without the output attributed to import substitution and export expansion of FCC, equivalent amounts would have been imported, though the corresponding exports would not have taken place. This assumption confirms that the import substitution and export expansion attributed to LCC remains unaffected by the activity of FCC.

The calculations presented are for the period 1968–71 and are only for selected industries. For manufacturing as a whole a calculation would also have been possible for the period 1966–70. However, this was not undertaken because of the classification problem outlined in the previous section, which would have caused severe distortions in the results. It has to be emphasized that the calculations of import substitution and export expansion for a short period of only three years poses a problem. The formulae which were originally developed to measure the sources of growth in the medium and long run are fairly sensitive to data changes. As in a short period changes of output, imports, and exports are strongly affected by cyclical factors, the results cannot represent trend phenomena and should, therefore, be interpreted with some reservation.

Table VII.17 shows the calculated import substitution and export expansion of both FCC and LCC for the total of the selected industries.

TABLE VII.17

IMPORT SUBSTITUTION AND EXPORT EXPANSION OF FOREIGN- AND LOCALLY-CONTROLLED COMPANIES, 1968–1971

	Foreign-controlled Companies	*Locally-controlled Companies*
Absolute M$'000		
Import substitution	176,865	−47,852
+ Export expansion	49,667	3,348
= Trade balance effect	225,532	−44,504
+ Demand expansion	152,511	224,461
= Output change	383,043	179,957
Shares in %		
Import substitution	46.2	−26.6
Export expansion	13.0	1.9
Demand expansion	39.8	124.7
	100.0	100.0

Sources: Department of Statistics, *Census of Manufacturing Industries, West Malaysia*, 1968; *Survey of Manufacturing Industries, Peninsular Malaysia*, 1971; Own Estimates.

TABLE VII.18

IMPORT SUBSTITUTION AND EXPORT EXPANSION OF FOREIGN-CONTROLLED COMPANIES IN SELECTED INDUSTRIES, 1968–1971 (per cent)

	Industry	*IR Change*	*ER Change*	*OR Change*	*IS Share*	*EE Share*	*DE Share*
1	Ice-cream	0.58	−0.56	7.16	311.97	−22.67	72.69
2	Bakery products	3.19	0.96	−3.67	−44.86	9.36	5.60
3	Cocoa & chocolate	9.76	5.18	21.65	48.11	15.14	6.96
4	Ice factories	−0.73	−0.16	6.18	−105.66	2.73	23.72
5	Meehoon, noodles etc.	11.12	0.05	−3.36	−18.29	0.31	2.01
6	Coffee	15.88	0.00	−0.24	61.55	−1.49	13.94
7	Soft drinks	0.44	0.81	28.15	111.01	3.32	48.31
8	Tobacco products	1.66	8.94	28.48	70.85	32.41	45.38
9	Textiles	5.41	1.73	5.29	23.08	11.22	37.94
10	Clothing	37.78	4.31	8.62	6.48	6.49	22.22
11	Leather products	10.48	0.25	−3.32	−8.22	0.59	14.95
12	Footwear exc. rubber & plastic	39.22	−3.17	−5.14	−2.23	−3.60	7.62
13	Sawmills	−0.26	1.80	3.91	4.00	3.43	4.30
14	Furniture & fixtures	9.16	−0.17	−2.03	−4.98	−0.46	10.23
15	Paper & paper products	11.88	0.88	6.58	28.40	4.38	20.72
16	Printing & publishing	5.05	0.58	17.09	59.61	2.12	15.49
17	Drugs & medicines	0.91	5.11	0.25	−60.21	63.34	0.27
18	Perfumes & cosmetics	25.38	−6.53	19.28	68.08	−17.23	47.00
19	Miscellaneous chemicals	24.97	0.19	19.56	54.41	0.55	18.39
20	Rubber products	2.72	4.92	15.68	54.13	24.74	24.89
21	Plastic products	18.60	0.09	11.84	20.84	0.16	3.88
22	Structural clay products	6.78	3.59	21.21	52.66	10.75	23.07
23	Iron foundries	21.89	−0.10	−2.53	−7.77	−0.32	1.02
24	Structural shapes, archit. metal prod.	14.82	1.69	9.28	15.57	3.47	6.60
25	Wire & wire products	27.78	1.04	13.30	34.25	2.93	1.03
26	Non-ferrous metal products	5.49	0.90	−2.18	−11.25	3.28	38.23
27	Electrical machinery	4.30	2.61	13.03	53.80	13.49	37.73

TABLE VII.18 (continued)

	Industry	IS Absolute	Structure	EE Absolute	Structure	DE Absolute	Structure
1	Ice-cream	623	0.31	−45	−0.09	145	0.12
2	Bakery products	−3005	−1.50	627	1.18	375	0.30
3	Cocoa & chocolate	3800	1.90	1196	2.26	550	0.44
4	Ice factories	528	0.26	−13	−0.03	−118	−0.09
5	Meehoon, noodles etc.	−622	−0.31	10	0.02	68	0.05
6	Coffee	−61	−0.03	1	0.00	−13	−0.01
7	Soft drinks	10546	5.27	315	0.60	4589	3.64
8	Tobacco products	51017	25.49	23340	44.09	32680	25.95
9	Textiles	10272	5.13	4996	9.44	16885	13.41
10	Clothing	1614	0.81	1617	3.06	5534	4.39
11	Leather products	−501	−0.25	36	0.07	912	0.72
12	Footwear exc. rubber & plastic	−341	−0.17	−551	−1.04	1166	0.93
13	Sawmills	2133	1.07	1828	3.45	2296	1.82
14	Furniture & fixtures	−752	−0.38	−70	−0.13	1545	1.23
15	Paper & paper products	6788	3.39	1048	1.98	4953	3.93
16	Printing & publishing	28914	14.45	1029	1.95	7516	5.97
17	Drugs & medicines	−2468	−1.23	2597	4.91	11	0.01
18	Perfumes & cosmetics	8919	4.46	−2257	−4.26	6157	4.89
19	Miscellaneous chemicals	11099	5.55	113	0.21	3751	2.98
20	Rubber products	11205	5.60	5122	9.68	5153	4.09
21	Plastic products	6754	3.37	55	0.10	1258	1.00
22	Structural clay products	14588	7.29	2979	5.63	6392	5.07
23	Iron foundries	−194	−0.10	−8	−0.02	25	0.02
24	Structural shapes, archit. metal prod.	4858	2.43	1084	2.05	2060	1.64
25	Wire & wire products	6269	3.13	536	1.01	189	0.15
26	Non-ferrous metal products	−517	−0.26	151	0.29	1758	1.40
27	Electrical machinery	28675	14.33	7194	13.59	20112	15.97

Source: As per Table VII.17.

TABLE VII.19

IMPORT SUBSTITUTION AND EXPORT EXPANSION OF LOCALLY-CONTROLLED COMPANIES IN SELECTED INDUSTRIES, 1968–1971

	Industry	*IR Change*	*ER Change*	*OR Change*	*IS Share*	*EE Share*	*DE Share*
1	Ice-cream	0.58	−0.27	−7.41	−288.27	−10.99	37.27
2	Bakery products	3.19	4.07	11.92	75.75	39.35	14.78
3	Cocoa & chocolate	9.76	8.10	1.39	−19.57	23.66	25.69
4	Ice factories	−0.73	−0.46	−7.55	117.94	7.80	53.45
5	Meehoon, noodles etc.	11.12	2.74	17.29	77.65	14.65	23.66
6	Coffee	15.88	−1.33	14.80	−3954.68	326.08	3654.59
7	Soft drinks	0.44	−0.17	−27.06	−109.21	−0.71	47.27
8	Tobacco products	1.66	−0.25	−18.13	−64.81	−0.94	17.09
9	Textiles	5.41	0.00	1.86	12.02	0.03	15.67
10	Clothing	37.78	−4.68	28.79	50.41	−7.05	21.43
11	Leather products	10.48	1.38	15.44	32.30	3.18	57.18
12	Footwear exc. rubber & plastic	39.22	−0.75	40.43	46.73	−0.86	52.33
13	Sawmills	−0.26	5.39	3.01	−4.50	10.23	82.52
14	Furniture & fixtures	9.16	−1.44	9.58	29.53	−3.87	69.55
15	Paper & paper products	11.88	1.20	7.38	30.80	5.98	9.69
16	Printing & publishing	5.05	−0.68	−12.13	−41.36	−2.48	66.61
17	Drugs & medicines	0.91	2.00	7.78	71.57	24.86	0.15
18	Perfumes & cosmetics	25.38	−1.87	−2.31	−1.14	−4.95	8.24
19	Miscellaneous chemicals	24.97	−4.34	1.25	15.74	−12.22	23.11
20	Rubber products	2.72	4.06	−3.98	−40.43	20.41	16.24
21	Plastic products	18.60	0.26	7.12	12.17	0.47	62.45
22	Structural clay products	6.78	−1.81	−12.65	−32.39	−5.42	51.32
23	Iron foundries	21.89	2.29	26.61	77.74	7.33	21.99
24	Structural shapes, archit. metal prod.	14.82	1.38	8.62	14.85	2.84	56.65
25	Wire & wire products	27.78	0.27	15.80	43.43	0.76	17.57
26	Non-ferrous metal products	5.49	1.71	10.30	31.30	6.26	32.16
27	Electrical machinery	4.30	0.32	−5.80	−31.59	1.65	24.90

TABLE VII.19 (continued)

	Industry	IS Absolute	Structure	EE Absolute	Structure	DE Absolute	Structure
1	Ice-cream	-576	1.44	-22	-0.21	74	0.04
2	Bakery products	5075	-12.70	2636	25.29	990	0.47
3	Cocoa & chocolate	-1546	3.87	1869	17.93	2030	0.97
4	Ice factories	-589	1.48	-39	-0.37	-267	-0.13
5	Meehoon, noodles etc.	2640	-6.60	498	4.78	804	0.38
6	Coffee	3954	-9.89	-326	-3.13	-3654	-1.74
7	Soft drinks	-10375	25.95	-68	-0.65	4491	2.14
8	Tobacco products	-46666	116.73	-678	-6.51	12306	5.87
9	Textiles	5352	-13.39	17	0.17	6974	3.33
10	Clothing	12553	-31.40	-1756	-16.85	5336	2.55
11	Leather products	1970	-4.93	194	1.86	3488	1.66
12	Footwear exc. rubber & plastic	7149	-17.88	-131	-1.26	8007	3.82
13	Sawmills	-2402	6.01	5456	52.33	43986	21.00
14	Furniture & fixtures	4459	-11.16	-585	-5.61	10502	5.01
15	Paper & paper products	7361	-18.41	1430	13.72	2317	1.11
16	Printing & publishing	-20063	50.19	-1203	-11.54	32306	15.42
17	Drugs & medicines	2934	-7.34	1019	9.78	6	0.00
18	Perfumes & cosmetics	-150	0.38	-648	-6.22	1079	0.52
19	Miscellaneous chemicals	3212	-8.04	-2492	-23.91	4715	2.25
20	Rubber products	-8369	20.93	4225	40.53	3362	1.60
21	Plastic products	3943	-9.86	153	1.47	20235	9.66
22	Structural clay products	-8973	22.45	-1502	-14.41	14216	6.79
23	Iron foundries	1943	-4.86	183	1.76	549	0.26
24	Structural shapes, archit. metal prod.	4633	-11.59	887	8.51	17676	8.44
25	Wire & wire products	7948	-19.88	140	1.34	3216	1.54
26	Non-ferrous metal products	1440	-3.60	288	2.76	1479	0.71
27	Electrical machinery	-16840	42.12	880	8.44	13276	6.34

Source: As per Table VII.17.

TABLE VII.20

OUTPUT AND TRADE OF FOREIGN-CONTROLLED COMPANIES IN SELECTED INDUSTRIES, 1968–1971 (M$'000)

	Industry	Import 0	Import 1	Export 0	Export 1	Output 0	Output 1
1	Ice-cream	457	423	80	37	4958	5682
2	Bakery products	5495	3552	428	1065	16301	14298
3	Cocoa & chocolate	5344	4061	5	1202	3027	8574
4	Ice factories	318	365	29	14	2613	3009
5	Meehoon, noodles etc.	5059	3412	4	15	933	390
6	Coffee	7909	2703	3	4	84	10
7	Soft drinks	159	36	204	582	15061	30513
8	Tobacco products	9374	6952	8374	33438	158802	265841
9	Textiles	158138	194630	5609	12454	51236	83391
10	Clothing	13356	6447	6780	12083	10182	18949
11	Leather products	2418	2957	13	60	1099	1546
12	Footwear exc. rubber & plastic	2902	1117	236	93	674	948
13	Sawmills	579	986	7261	10830	9581	15840
14	Furniture & fixtures	3249	1152	53	9	3117	3840
15	Paper & paper products	71741	82550	2938	5009	14239	27030
16	Painting & publishing	27062	28495	927	2309	19780	57240
17	Drugs & medicines	45816	45417	5277	7882	7765	7905
18	Perfumes & cosmetics	9821	4754	3338	2339	16335	29154
19	Miscellaneous chemicals	26637	25749	2463	3818	7444	22409
20	Rubber products	13297	11487	15542	21864	66746	88227
21	Plastic products	8498	6415	68	192	1241	9309
22	Structural clay products	14648	15375	741	4041	14764	38724
23	Iron foundries	3031	1697	9	2	181	10
24	Structural shapes, archit. metal prod.	8253	3510	245	1470	3581	11584
25	Wire & wire products	29237	23113	81	640	683	7678
26	Non-ferrous metal products	1906	1525	3	155	6191	7583
27	Electrical machinery	125148	186110	4752	14711	34576	90559

TABLE VII.20 (continued)

	Industry	Import Change	Structure	Export Change	Structure	Output Change	Structure
1	Ice-cream	-34	-0.05	-43	-0.06	724	0.19
2	Bakery products	-1943	-2.98	637	0.90	-2003	-0.53
3	Cocoa & chocolate	-1283	-1.97	1197	1.69	5547	1.46
4	Ice factories	47	0.07	-15	-0.02	396	0.10
5	Meehoon, noodles etc.	-1647	-2.53	11	0.02	-543	-0.14
6	Coffee	-5206	-7.99	1	0.00	-74	-0.02
7	Soft drinks	-123	-0.19	378	0.53	15452	4.08
8	Tobacco products	-2422	-3.72	25064	35.37	107039	28.24
9	Textiles	36492	56.02	6845	9.66	32155	8.48
10	Clothing	-6909	-10.61	5303	7.48	8767	2.31
11	Leather products	539	0.83	47	0.07	447	0.12
12	Footwear exc. rubber & plastic	-1785	-2.74	-143	-0.20	274	0.07
13	Sawmills	407	0.62	3569	5.04	6259	1.65
14	Furniture & fixtures	-2097	-3.22	-44	-0.06	723	0.19
15	Paper & paper products	10309	16.59	2071	2.92	12791	3.37
16	Printing & publishing	1433	2.20	1382	1.95	37460	9.88
17	Drugs & medicines	-399	-0.61	2605	3.68	140	0.04
18	Perfumes & cosmetics	-5067	-7.78	-999	-1.41	12819	3.38
19	Miscellaneous chemicals	-888	-1.36	1355	1.91	14965	3.95
20	Rubber products	-1810	-2.78	6322	8.92	21481	5.67
21	Plastic products	-2083	-3.20	124	0.18	8068	2.13
22	Structural clay products	727	1.12	3300	4.66	23960	6.32
23	Iron foundries	-1334	-2.05	-7	-0.01	-177	-0.05
24	Structural shapes, archit. metal prod.	-4743	-7.28	1225	1.73	8003	2.11
25	Wire & wire products	-6124	-9.40	559	0.79	6995	1.85
26	Non-ferrous metal products	-381	-0.58	152	0.21	1392	0.37
27	Electrical machinery	60962	93.59	9959	14.06	55983	14.71

Source: As per Table VII.17.

TABLE VII.21

OUTPUT AND TRADE OF LOCALLY-CONTROLLED COMPANIES IN SELECTED INDUSTRIES, 1968–1971 (M$'000)

	Industry	*Import 0*	*Import 1*	*Export 0*	*Export 1*	*Output 0*	*Output 1*
1	Ice-cream	457	423	34	13	2542	2018
2	Bakery products	5495	3552	1132	3795	42999	51702
3	Cocoa & chocolate	5344	4061	8	1879	11173	13526
4	Ice factories	318	365	66	24	5887	4991
5	Meehoon, noodles etc.	5059	3412	51	553	10967	14910
6	Coffee	7909	2703	620	191	22016	21990
7	Soft drinks	159	36	181	168	14739	8787
8	Tobacco products	9374	6952	3146	3115	59798	24759
9	Textiles	158138	194630	7978	10625	21164	33509
10	Clothing	13356	6447	2285	1770	9818	25951
11	Leather products	2418	2957	49	284	4201	9854
12	Footwear exc. rubber & plastic	2902	1117	1611	4268	4626	19652
13	Sawmills	579	986	104782	135353	183519	230560
14	Furniture & fixtures	3249	1152	462	106	21183	35560
15	Paper & paper products	71741	82550	1394	3309	6661	17770
16	Printing & publishing	27062	28495	3982	4292	85020	96060
17	Drugs & medicines	45816	45417	1802	2824	4235	8195
18	Perfumes & cosmetics	9821	4754	593	168	2865	3146
19	Miscellaneous chemicals	26637	25749	2867	1819	9356	14791
20	Rubber products	13297	11487	11440	16549	43554	42773
21	Plastic products	8498	6415	1082	2332	19959	44291
22	Structural clay products	14648	15375	3724	3834	32836	36576
23	Iron foundries	3031	1697	194	404	4013	6690
24	Structural shapes, archit. metal prod.	8253	3510	1666	3512	3079	53916
25	Wire & wire products	29237	23113	1379	1901	11617	22922
26	Non-ferrous metal products	1906	1525	239	595	5209	8417
27	Electrical machinery	125148	146110	3862	6989	22824	20141

TABLE VII.21 (continued)

	Industry	*Import Change*	*Structure*	*Export Change*	*Structure*	*Output Change*	*Structure*
1	Ice-cream	−34	−0.05	−21	−0.04	−524	−0.29
2	Bakery products	−1943	−2.98	2663	4.93	8703	4.84
3	Cocoa & chocolate	−1283	−1.97	1871	3.46	2353	1.31
4	Ice factories	47	0.07	−42	−0.08	−896	−0.50
5	Meehoon, noodles etc.	−1647	−2.53	502	0.93	3943	2.19
6	Coffee	−5206	−7.99	−429	−0.79	−26	−0.01
7	Soft drinks	−123	−0.19	−13	−0.02	−5952	−3.31
8	Tobacco products	−2422	−3.72	−31	−0.06	−35039	−19.47
9	Textiles	36492	56.02	2647	4.90	12345	6.86
10	Clothing	−6909	−10.61	−515	−0.95	16133	8.96
11	Leather products	539	0.83	235	0.43	5653	3.14
12	Footwear exc. rubber & plastic	−1785	−2.74	2657	4.92	15026	8.35
13	Sawmills	407	0.62	30571	56.57	47041	26.14
14	Furniture & fixtures	−2097	−3.22	−356	−0.66	14377	7.99
15	Paper & paper products	10809	16.59	1915	3.54	11109	6.17
16	Printing & publishing	1433	2.20	310	0.57	11040	6.13
17	Drugs & medicines	−399	−0.61	1022	1.89	3960	2.20
18	Perfumes & cosmetics	−5067	−7.78	−425	−0.79	281	0.16
19	Miscellaneous chemicals	−888	−1.36	−1048	−1.94	5435	3.02
20	Rubber products	−1810	−2.78	5109	9.45	−781	−0.43
21	Plastic products	−2083	−3.20	1250	2.31	24332	13.52
22	Structural clay products	727	1.12	110	0.20	3740	2.08
23	Iron foundries	−1334	−2.05	210	0.39	2677	1.49
24	Structural shapes, archit. metal prod.	−4743	−7.28	1846	3.42	23197	12.89
25	Wire & wire products	−6124	−9.40	522	0.97	11305	6.28
26	Non-ferrous metal products	−381	−0.58	356	0.66	3208	1.78
27	Electrical machinery	60962	93.59	3127	5.79	−2683	−1.49

Source: As per Table VII.17.

The data do not at all confirm the hypothesis that FCC are heavily oriented toward the domestic market. On the contrary, whereas the import substitution of LCC is negative and their export expansion negligible, 46 per cent of the output increase of FCC was import competing and 13 per cent export expansion. Roughly speaking then, one could say that 60 per cent of the output increase of FCC would—under the assumption of the alternative situation (c)—have contributed to an improvement of the balance of payments, while the import substitution and export expansion of LCC had on balance a negative balance of payments effect. This statement neglects, of course, all conceivable kinds of indirect effects.

The intra-industry shares of import substitution and export expansion shown in the last three columns of the upper part of Tables VII.18 and VII.19 are not very informative for short periods, as the rather small output changes which appear in the denominator produce either very high or very low shares. Of greater interest are the inter-industry shares which appear in the lower part of the tables. According to these data, import substitution in the foreign sector was concentrated on a few industries such as tobacco products, printing and publishing, and electrical machinery which together accounted for about 55 per cent of the total. The concentration was even more pronounced in export expansion, where tobacco products alone had a share of 44 per cent, and rubber products and electrical machinery together another 23 per cent. It should be noted that our data relate to West Malaysia only. It is quite possible that the high share of tobacco products results from exports to East Malaysia. The foreign-controlled tobacco industry consists practically of only one monopoly (Rothmans). Rubber products have a clear comparative advantage due to their raw material intensity, and electrical machinery because of its labour intensity.

Among the LCC, import substitution is strongly negative for a number of industries, implying that those LCC were unable to prevent increases in the market shares of foreign competitors. Substantive import substitution was only achieved by the clothing industry. Second, third, and fourth in rank are the producers of wire and wire products, paper and paper products, and footwear. In terms of export expansion only two industries were of some importance—saw mills and rubber products—both of which have a strong 'natural' comparative advantage in Malaysia because of their raw material intensity.

The extent of displacement of LCC by FCC can be deduced from the last column in the lower part of Table VII.21 in comparison with that of Table VII.20. Displacement of Stage 1, as defined in section 4D above, took place in quite a number of industries. These were, in order of importance of the displacement effect, tobacco products, soft drinks, electrical machinery, ice factories, rubber products, and ice-cream. Without these displacements the output change of LCC could have been about 25 per cent higher.

Displacement of Stage 2 can be identified through a comparison of the third column in the upper part of Table VII.19 with that of Table VII.18. Here it is seen that in addition to the industries already mentioned, displacement may have taken place in printing and publishing, perfumes and cosmetics, and structural clay products. By including the displacement of Stage 3 another few industries will be added. Nevertheless, one thing seems to be clearly revealed by this exercise—that displacement of LCC by FCC is probably a fairly widespread phenomenon in Malaysia which should not be underrated by policy makers.

1. G. MacDougall, 'The Benefits and Costs of Private Investment from Abroad, A Theoretical Approach', *Economic Record*, Vol. 36, 1960.

2. P. Streeten, 'Nouvelles Manières d'Aborder le Problème l'Investissement Privé dans les Pays en Boie de Developpement', *Revue de la Société et d'Expansion*, Vol. 238, 1969.

3. See for example J. Fei and G. Ranis, *Development of the Labour Surplus Economy: Theory and Policy*, Homewood, Illinois, 1964; D. Jorgenson, 'The Development of the Dual Economy', *Economic Journal*, Vol. 71, 1961; Arthur Lewis, *The Theory of Economic Growth*; and A. Quayum, 'Models of Balanced and Maximum Growth in Dualistic Economies', in H. C. Bos (ed.), *Towards Balanced International Growth*, Amsterdam and London, 1969.

4. C. F. Diaz-Alejandro, 'On the Import Intensity of Import Substitution', *Kyklos*, Vol. 20, 1965, and C. F. Diaz-Alejandro, 'Import Substitution, Ceteris Paribus and Mutadis Mutandis: Reply', *Kyklos*, Vol. 20, 1967. L. Hoffmann, 'The Import Intensity of Import Substitution: Ceteris Paribus versus Mutadis Mutandis', *Kyklos*, Vol. 20, 1967, and W. von Rijckeghem, 'The Import Intensity of Import Substitution', *Kyklos*, Vol. 19, 1966.

5. F. Edgeworth, 'The Theory of International Values-I', *Economic Journal*, Vol. 4, 1899.

6. J. Bhagwati, 'Immiserising Growth: A Geometrical Note', *Review of Economic Studies*, Vol. 25, 1958.

7. P. Baran, 'On the Political Economy of Backwardness', *Manchester School*, Vol. 20, 1962.

8. O. Sunkel, 'La Tarea Politica y Thèorie del Planificador en America Latina', *Revista de la Sociedad Interamericana de Planificacion*, Vol. II, 1968.

9. See Chenery, Ahluwalia, Bell, Duloy, and Jolly, *Redistribution with Growth*, Washington, 1974.

10. For the following also see T. Bode and T. E. Müller-Debus, 'Die Auswirkungen von Direktinvestitionen auf das Wirtschaftliche Wachstum, die Beschäftigung und die Zahlungsbilanz von Malaysia 1962–72', Regensburg University, 1975 (mimeo).

11. S. Lall, K. Mayhew, and S. Page, 'Balance of Payments and Income Effects of Private Foreign Investment in Manufacturing: Case Studies of Columbia and Malaysia', Geneva, 1973 (mimeo).

12. S. Lall and A. Elek, 'Balance of Payments and Income Effects of Private Foreign Investment—Case Studies of India and Iran', Geneva, November 1971 (mimeo), p. 8.

13. See L. Hoffmann and T. N. Tan, 'Pattern of Growth and Structural Change in West Malaysia's Manufacturing Industry 1959–1968', op. cit.

14. See The Treasury, Government of Malaysia, *Economic Report*, various annual editions.

15. *Bank Negara Malaysia*—1968, pp. 35–48.

16. Bode and Müller-Debus, op. cit.

17. Hoffmann, *Interim Report on HEX*, op. cit.

18. Computed from the *Financial Surveys* and the *Economic Report*, 1972–73 of The Treasury.

19. Shankland Cox Partnerships, 'Klang Valley Regional Planning and Development—Draft Report', Kuala Lumpur, December 1972 (mimeo).

20. This may be partly (though probably not much) a statistical illusion, because LCC might have been systematically undercovered in the earlier surveys as mentioned above.

21. If wage increases are considered, as mentioned in section 3C, the increase is still high at 128 per cent.

22. See Table VI.1.

23. It is not unlikely that the oil companies which operate off the coast of East Malaysia have declared those benefits as investment income from abroad though the surveys conducted after 1966 were intended to cover West and East Malaysia as one country.

VIII Conditions and Prospects for Further Export Expansion

HAVING investigated Malaysia's industrial development in the past under the two-fold impact of the country's industrialization policy on the one hand and the massive involvement of foreign capital on the other, we may now turn to the question how it might develop in the future. We do not intend to venture into the futile effort of forecasting future growth, but rather to indicate emerging trends and to evaluate views expressed by the manufacturers themselves during the export survey (HEX) conducted in 1974.

1. TRENDS OF OUTPUT AND TRADE

In determining trends of output and trade we adopted the following approach. First, semi-logarithmic trend functions were estimated for output, export, and import. Such trend estimates imply a levelling off of the growth curve. In particular, the extraordinary increase between 1971 and 1974, which was, of course, partly inflationary, is treated as an upward aberration from the trend. The annual growth from the actual 1974 values to the 1980 trend values is consequently comparatively low.

The next round consisted of a calculation of the sources of growth for the period 1974 (actual) to 1980 (trend). The results were then inspected industry by industry. Revisions of the original data were made if the results for a certain industry appeared implausible. Exports, for instance, may have been projected too high, implying a decline of the domestic market, or a tendentially declining import ratio may suddenly have made a large jump upwards, and so on. After several rounds of such revisions and calculations of the growth sources the results shown in Tables VIII.1 and VIII.2 were obtained. Although the results include estimates for the primary processing industries, we will abstain from commenting on them as they are, by necessity, highly questionable. A few remarks on the major groups of the non-primary manufacturing industries may, however, be appropriate.

Table VIII.3 shows the trend values of output and trade for 1980 as compared with the actual values of the years 1963, 1968, 1971, and

TABLE VIII.1

CHANGES IN MARKET RATIOS AND SHARES OF GROWTH SOURCES, 1974–1980 PENINSULAR MALAYSIA (per cent)

	Industry	*IR Change*	*ER Change*	*OR Change*	*IS Share*	*EE Share*	*DE Share*
1	Meat preparation	6.74	−0.87	5.86	36.47	−4.74	68.27
2	Dairy products	0.81	2.68	3.50	5.53	18.20	76.26
3	Fruits-veget. canning	7.81	4.37	12.18	19.46	10.90	69.62
4	Fish canning	−2.82	13.73	10.90	−3.95	19.23	84.71
5	Veget. & animal oils	−4.46	−6.98	−11.45	−12.79	−19.99	132.79
6	Grain mills & animal feeds	14.29	0.74	15.04	52.10	2.72	45.17
7	Bakeries	1.86	−0.38	1.47	5.10	−1.06	95.96
8	Cocoa & chocolate	8.71	21.58	30.30	17.12	42.39	40.48
9	Ice factories	0.02	−0.38	−0.35	0.07	−1.14	101.07
10	Other food prep.	11.86	−0.57	11.29	52.08	−2.51	50.43
11	Spirits & wines	−1.19	0.01	−1.17	−28.76	0.47	128.28
12	Breweries, soft drinks	1.61	−3.02	−1.40	4.25	−7.97	103.71
13	Tobacco products	1.03	−0.12	0.91	2.52	−0.29	97.76
14	Textile spinning	7.30	0.65	7.95	32.62	2.90	64.46
15	Knitting mills	7.25	0.75	8.01	35.03	3.64	61.32
16	Other textiles	3.64	1.14	4.79	50.04	15.74	34.21
17	Wearing apparel exc. footwear	15.95	−7.02	8.93	32.86	−14.46	81.60
18	Leather prod.	14.51	5.34	19.85	47.48	17.50	35.00
19	Footwear exc. rubber & plastic	−2.63	−0.23	−2.86	−8.06	−0.71	108.78
20	Wood products exc. wood mills	−0.50	0.94	0.43	−1.49	2.77	98.72
21	Furniture & fixtures	2.83	1.22	4.06	8.04	3.49	88.46
22	Paper & paper products	6.16	1.80	7.97	57.05	16.70	26.23
23	Printing & publishing	4.05	−0.52	3.52	10.74	−1.38	90.63

TABLE VIII.1 (continued)

	Industry	IR Change	ER Change	OR Change	IS Share	EE Share	DE Share
24	Industrial chemicals	10.21	1.00	11.22	83.80	8.26	7.92
25	Paints & varnishes	1.67	-0.36	1.31	5.99	-1.30	95.30
26	Drugs & medicines	10.67	0.90	11.57	45.52	3.84	50.64
27	Cleansing detergents & cosmetics	2.72	-1.62	1.10	9.00	-5.37	96.36
28	Other chemicals	-3.70	-3.88	-7.59	-17.62	-18.45	136.08
29	Rubber products exc. rubber mills	5.83	5.24	11.07	12.86	11.56	75.56
30	Plastic products	4.18	-3.98	0.19	13.89	-13.26	99.36
31	Pottery & china	4.31	3.22	7.54	23.28	17.38	59.32
32	Structural clay products	7.38	-2.75	4.63	20.72	-7.73	87.01
33	Cement & concrete products	0.62	-0.39	0.22	1.59	-1.02	99.42
34	Other NM mineral products	12.92	0.56	13.49	55.01	2.40	42.57
35	Iron & steel products	-1.93	0.49	-1.43	-21.02	5.41	115.61
36	Tools, cutlery, metal furniture	3.78	0.71	4.49	53.00	9.96	37.03
37	Structural metal products	1.15	-0.23	0.91	4.44	-0.91	96.46
38	Fabricated metal products	3.93	-1.34	2.58	18.82	-6.42	87.60
39	NE industrial machinery	1.96	-0.48	1.47	49.38	-12.20	62.82
40	Business & household machinery	4.62	15.19	19.82	24.25	79.73	-3.98
41	Communication equipment & appliances	14.38	-1.42	12.96	69.34	-6.84	37.50
42	Other electrical machinery	15.02	-1.97	13.04	65.48	-8.61	43.12
43	Shipbuilding & repair	-13.72	-2.77	-16.50	-122.65	-24.83	247.48
44	Motor vehicles	7.35	0.94	8.29	69.43	8.87	21.68
45	Other transport equipment	5.21	-0.93	4.28	51.87	-9.29	57.42
46	Other manufactures	10.70	0.33	11.03	59.13	1.83	39.02

TABLE VIII.2
ABSOLUTE GROWTH SOURCES, 1974–1980 PENINSULAR MALAYSIA (M$'000)

	Industry	IS Absolute	Structure	EE Absolute	Structure	DE Absolute	Structure
1	Meat preparation	404819	0.57	−52650	−1.85	757831	0.38
2	Dairy products	316496	0.44	1041378	36.57	4362117	2.20
3	Fruits-veget. canning	644361	0.90	360925	12.67	2304712	1.16
4	Fish canning	−395732	−0.55	1923848	67.55	8471880	4.26
5	Veget. & animal oils	−514340	−0.72	−803911	−28.23	5338248	2.69
6	Grain mills & animal feeds	14791650	20.69	773303	27.15	12825046	6.45
7	Bakeries	202698	0.28	−42328	−1.49	3809626	1.92
8	Cocoa & chocolate	380082	0.53	941233	33.05	898684	0.45
9	Ice factories	337	0.00	−5168	−0.18	454831	0.23
10	Other food prep.	9198067	12.86	−444587	−15.61	8906509	4.48
11	Spirits & wines	−54658	−0.08	909	0.03	243750	0.12
12	Breweries, soft drinks	282408	0.39	−528408	−18.55	6875993	3.46
13	Tobacco products	579885	0.81	−67335	−2.36	22457440	11.30
14	Textile spinning	4336101	6.06	386157	13.56	8567737	4.31
15	Knitting mills	525514	0.73	54632	1.92	919852	0.46
16	Other textiles	70059	0.10	22035	0.77	47904	0.02
17	Wearing apparel exc. footwear	2172102	3.04	−955997	−33.57	5393891	2.71
18	Leather prod.	365652	0.51	134782	4.73	269565	0.14
19	Footwear exc. rubber & plastic	−308177	−0.43	−27311	−0.96	4155487	2.09
20	Wood products exc. wood mills	−21706	−0.03	40239	1.41	1431467	0.72
21	Furniture & fixtures	179375	0.25	77847	2.73	1972777	0.99
22	Paper & paper products	1768794	2.47	517806	18.18	813400	0.41
23	Printing & publishing	1705992	2.30	−219946	−7.72	14383950	7.24

TABLE VIII.2 (continued)

	Industry	IS Absolute	Structure	EE Absolute	Structure	DE Absolute	Structure
24	Industrial chemicals	5455701	7.63	538195	18.90	516106	0.26
25	Paints & varnishes	155286	0.22	-33806	-1.19	2468519	1.24
26	Drugs & medicines	568999	0.80	48000	1.69	632999	0.32
27	Cleansing detergents & cosmetics	606968	0.85	-361951	-12.71	6494977	3.27
28	Other chemicals	-701342	-0.98	-734663	-25.80	5416007	2.73
29	Rubber products exc. rubber mills	1601750	2.24	1440372	50.58	9407870	4.73
30	Plastic products	689280	0.96	-657832	-23.10	4928552	2.48
31	Pottery & china	330681	0.46	246880	8.67	842437	0.42
32	Structural clay products	404150	0.57	-150862	-5.30	1696712	0.85
33	Cement & concrete products	190503	0.27	-122285	-4.29	11841779	5.96
34	Other NM mineral products	451115	0.63	19730	0.69	349153	0.18
35	Iron & steel products	-1772195	-2.48	456107	16.02	9746085	4.90
36	Tools, cutlery, metal furniture	312715	0.44	58786	2.06	218497	0.11
37	Structural metal products	145702	0.20	-29872	-1.05	3164169	1.59
38	Fabricated metal products	2066935	2.89	-705783	-24.78	9618841	4.84
39	NE industrial machinery	2548259	3.56	-629983	-22.12	3241710	1.63
40	Business & household machinery	315293	0.44	1036508	36.39	-51802	-0.03
41	Communication equipment & appliances	7884019	11.03	-778589	-27.34	4264569	2.15
42	Other electrical machinery	4158536	5.82	-547192	-19.21	2738657	1.38
43	Shipbuilding & repair	-380220	-0.53	-76985	-2.70	767205	0.39
44	Motor vehicles	6387946	8.93	816904	28.68	1995149	1.00
45	Other transport equipment	1037447	1.45	-185869	-6.53	1148420	0.58
46	Other manufactures	2412883	3.37	74724	2.62	1592392	0.80

Note: See footnote of Table V.8.

TABLE VIII.3

OUTPUT AND TRADE OF NON-PRIMARY MANUFACTURING INDUSTRIES, 1963–1980

	Output	*Import*	*Export*
1963			
Consumption goods	784,300	1,009,212	98,631
Intermediate goods	256,100	401,903	35,193
Investment goods	90,100	334,462	3,987
Sum	1,130,500	1,745,577	137,811
1968			
Consumption goods	1,384,200	1,039,564	219,294
Intermediate goods	574,700	461,669	87,341
Investment goods	199,400	412,128	19,436
Sum	2,158,300	1,913,361	326,098
1971			
Consumption goods	2,056,040	987,286	322,055
Intermediate goods	833,900	587,171	119,859
Investment goods	344,400	453,563	39,423
Sum	3,234,340	2,028,020	481,337
1974			
Consumption goods	3,231,900	2,337,900	653,396
Intermediate goods	1,555,100	1,110,500	222,300
Investment goods	576,000	1,613,100	110,041
Sum	5,363,000	5,061,500	985,737
1980			
Consumption goods	4,869,200	2,408,966	916,756
Intermediate goods	2,374,600	1,219,400	321,400
Investment goods	849,700	2,147,834	149,460
Sum	8,093,500	5,776,200	1,387,616

1974. The fairly low increases of the totals between 1974 and 1980 are remarkable. For output the annual growth rate is only 7.1 per cent, as compared with the rather high rates of the earlier sub-periods (1963–8, 13.8 per cent, 1968–71, 14.4 per cent and 1971–4, 18.4 per cent). This is, of course, due to the fact that the actual 1974 value substantially surpassed the trend. For the period 1971–80 the annual growth rate of 15.8 per cent is significantly higher. Similar observations are made for exports and imports. The export growth rate is 5.8 per cent, whereas it was 18.8, 13.9, and 27 per cent respectively in the earlier sub-periods. For imports we find a growth rate of only 2.3 per cent, as compared with 1.9 and 36 per cent earlier.

Assuming that the estimated trend values would materialize, this

TABLE VIII.4

THE SOURCES OF OUTPUT GROWTH OF NON-PRIMARY MANUFACTURING INDUSTRIES BY MAJOR GROUPS, 1974–1980

	Import Substitution			*Export Expansion*			*Domestic Demand Expansion*		
	Absolute	*Share*	*Structure*	*Absolute*	*Share*	*Structure*	*Absolute*	*Share*	*Structure*
Consumption goods	616,079	37.6	65.1	71,316	4.4	76.1	949,905	58.0	56.2
Intermediate goods	268,024	32.7	28.3	23,647	2.9	25.2	527,829	64.4	31.2
Investment goods	61,929	22.6	6.6	−1,284	−0.5	−1.3	213,055	77.9	12.6
Total	(917,269)	(33.6)	100.0	(84,050)	(3.1)	100.0	(1,729,181)	(63.3)	100.0

would lead to a distribution of the change in output among the sources of growth as calculated in Table VIII.4. Of interest are the rather low shares of import substitution and export expansion, and the correspondingly high share of domestic demand expansion. If one compares these shares with those of Table V.5, one finds that there is a continuous downward trend of the import substitution and export expansion shares, interrupted by exceptionally low values from 1971 to 1974, and an upward trend of the domestic demand expansion share. For the three industry groups the trends are most pronounced in the groups producing consumption and investment goods, and are less clear for intermediate goods.

TABLE VIII.5

REGIONAL STRUCTURE OF MANUFACTURING EXPORTS OF WEST MALAYSIA (per cent)

	Official Trade Statistics SITC 6–8		*HEX*
	1961	*1973*	*1974*
USA, Canada	39.2[a]	24.7	25.3
EEC	(16.2)	(17.6)	(20.3)
United Kingdom	2.0	7.0	6.5
Germany F.R.	4.8	2.1	2.0
France	3.7	1.6	0.3
Italy	4.8	3.3	0.1
Netherlands	0.9	3.6	11.4
Other			
Japan	11.7	17.9	14.8
Australia	0.9	1.6	1.8[b]
India	4.7	1.9	n.a.
ASEAN			(10.5)
Singapore	9.8	11.9	9.2
Thailand	1.4	0.5	0.9
Indonesia			0.3
Philippines			0.1
Hong Kong			1.6
Other East Asia			7.8
Middle East	16.1	23.9	0.6
Eastern Europe			4.0
Latin America, Africa			1.2
Other countries			0.8
	100.0	100.0	100.0

[a] USA only.
[b] Including New Zealand.

Source: Department of Statistics, Kuala Lumpur, *Annual Statistics of External Trade*, 1961 and 1973; HEX, op. cit.

The calculations which have, of course, only an experimental character nevertheless point to the fact that a mere continuation of past trends would increase the orientation toward the domestic market. This may not be desirable for the following reasons. If the phase of extensive import substitution nears its end, as the calculations seem to indicate, a high output growth cannot be sustained by the expansion of the domestic market alone, as has been argued in several previous instances. Assume, for example, a growth of real income of 5 per cent per annum and an income elasticity for manufactures of 1.8 which is, probably, already on the high side, then output growth is limited to 9 per cent per annum. If productivity changes as in the past, manufacturing employment would grow by not more than 4–5 per cent, a rate which is certainly insufficient to make a significant impact on unemployment. Furthermore, if the developments between 1963 and 1971 continue, domestic demand expansion will increasingly become more capital intensive. A rising share of domestic demand expansion may therefore act as an additional brake on labour absorption in manufacturing.

If we assume that domestic demand expansion is unlikely to become substantially more labour intensive, the only way out of the dilemma is to have more export expansion. This could significantly increase labour absorption, first, because output could grow faster and, second, because of the higher labour intensity of export expansion as compared with the other growth sources. The Malaysian government seems to be aware of this, because in the Third Malaysia Plan (1976–1980) it sets a much higher target for manufacturing export growth—19.2 per cent per annum in nominal terms—than our trend projections indicate. The question then is how can more export expansion be achieved. An idea of the answer to this question can be obtained from an analysis of the comments expressed by entrepreneurs in Malaysia on their own position *vis-à-vis* exporting. The following sections will provide a summary of the respective findings of the HEX. For details the reader may refer to the appendix of the HEX.

2. MARKETS FOR EXPORT EXPANSION

The export expansion that can be achieved depends on the one hand on the existing market potential and, on the other, on the domestic supply elasticity as well as competitiveness. As for the first, one may argue that for a small country like Malaysia the market potential will hardly be a limiting factor. In the past, most of Malaysia's manufactured exports went to North America, the EEC, and Japan (Table VIII.5). Although import tariffs against exports from developing countries are relatively high in these countries, even very large export increases of manufactured goods from Malaysia are unlikely to face market limitations if they are sufficiently competitive to jump the tariff walls.

For individual commodity groups, like textiles, quantitative import restrictions may exist which effectively inhibit further export expansion. In such cases the industries concerned have to look out for new markets. Some indication that this has already occurred in the past may be seen in the fact that between 1961 and 1973 the share of other countries as purchasers of manufactured exports has risen from 16.1 to 23.9 per cent. It is also noteworthy that the firms surveyed in the HEX listed South-East Asia in the first position amongst the important future export markets, although the present share of the South-East Asian bloc in Malaysia's exports is very small. The Middle East countries and Australia were mentioned equally often as, for instance, Japan. Hence, market potential does not appear to be a limiting factor for export growth.

The statement that sufficient markets exist does not mean that this is also realized by potential exporters in Malaysia or that the markets are easily accessible. Many producers in developing countries cannot afford, or do not have the expertise, to undertake systematic market research in foreign countries. They obtain information about export markets rather accidentally from such sources as their foreign customers or from export agents. It is quite obvious that such channels are unlikely to transmit objective and unbiased information.

In the HEX the companies were asked how they obtained information on sales possibilities in foreign markets. The answers confirm the presumption that customers and export agents are the major sources of information, in particular for smaller companies as the positive difference between the unweighed and weighed percentages indicates (Table VIII.6). One should, however, consider that in the Malaysian case, the answers may partly reflect the presence of subsidiaries of multinational corporations only. Such subsidiaries frequently sell their entire produce to other subsidiaries of the same corporation. It is then only natural that information on sales possibilities comes exclusively from the purchasing company.

Next in importance, after customers and export agents, are its own representatives in foreign countries and Malaysian trade offices abroad. In principle, these are fairly independent and objective information sources, although the representatives may again be only subsidiaries or affiliates of the same corporation. It is of interest that more systematic market research is of so little importance. Thus, this may be an area where the government could provide incentives or become actively involved in order to promote the export of a larger variety of products and to a larger number of countries.

Problems of market information and market access may further arise if the producers do not arrange the exports themselves but sell their output to agents who then conduct the export business according to their own preferences and interests. In the interviews for the HEX there were quite a number of companies which had no idea which countries were the final buyers of their products. The knowledge about the foreign market is particularly poor if the agent resides abroad.

TABLE VIII.6
SOURCES OF INFORMATION ON EXPORT MARKETS

Sources	*Percentage of firms which consider sources as quite important or very important*	
	Unweighed	*Weighed*
Own representatives in the foreign country	40.3	34.5
Participation in fairs in foreign countries	5.8	5.3
Market studies prepared by foreign Chamber of Commerce	10.6	6.9
Foreign market research undertaken on own behalf	20.6	19.9
Foreign customers	63.0	48.2
Export agent	43.4	38.3
Suppliers of equipment	7.9	4.1
Foreign partners	27.5	26.1
Malaysian Trade Officers abroad or/and the Ministry of Trade and Industry	31.8	23.3
Embassies and High Commissions in Malaysia	15.9	15.1
Domestic Chambers of Commerce or/and domestic associations of manufacturers (e.g. FMM)	25.9	18.1
Other ways	15.3	14.2

Source: HEX.

According to the HEX, more than one-third (36 per cent) of all manufactured exports are made through agents. Industries for which this share is much higher are leather products (100 per cent), paper products (100 per cent), transport equipment (95 per cent), beverages (87 per cent), grain milling (76 per cent), footwear (60 per cent), and textiles (59 per cent).

Of the agents handling Malaysian manufactured exports, only a minor percentage (28 per cent) are located in Malaysia. However, another 40 per cent reside in neighbouring Singapore. A further 17 per cent reside in the United Kingdom, the former colonial power, whereas the rest is distributed over such countries as Hong Kong (5 per cent), North America (4 per cent), and other Asian countries (2 per cent).

That the producers themselves consider lack of market information as a serious problem is underlined by the fact that 44 per cent of the companies stated in their general comments to the HEX that the government should disseminate relevant market information to producers either by way of sales surveys or by organizing trade fairs abroad. The

Malaysian Trade Commissioners or Commercial Attachés could provide assistance in this respect. At present, however, some producers alleged that these government representatives are indifferent to their requests for more market information.

Finally, the large number of foreign-controlled companies in Malaysia raises further difficulties for the penetration of foreign markets. Though some companies feel that they are capable of exporting, they simply do not do so because they are merely subsidiaries or branches of multinational corporations. Over 30 per cent of local industries emphasized that being part of a world-wide chain of 'sister' companies they are not permitted to export to markets where another branch company operates. It is perhaps necessary for the government to revise the terms of conditions offered as incentives to foreign companies intent on establishing subsidiary plants in Malaysia.

3. AVAILABILITY OF INPUTS AND INFRASTRUCTURE

How fast and vigorous domestic supply can react to the challenge of ready foreign markets is largely dependent on the availability of inputs and infrastructural facilities, as well as on adequate organization and administrative machinery. In order to find out whether these factors had in the past a negative influence on exports, the companies were asked in the HEX to check which of the factors listed in Table VIII.7 prevented them from exporting more than they did.

The answers show that for the majority of companies there was neither a problem of hiring skilled labour nor one of acquiring financial or real capital. However, quite a few companies seemed to have faced difficulties in procuring raw materials, although it is not clear from these answers whether the difficulties were due to real shortages or were just a matter of high prices. The industries with most frequent complaints about raw material problems are the producers of non-ferrous basic products, leather products, grain milling, wood products, and metal products, and the smaller producers of tobacco products, chemicals, and transport equipment.

Real shortages may have existed in such industries as wood products and non-ferrous metal products (which include tin) because the booming world commodity markets made exports of locally-produced raw materials very attractive. In the case of wood products the government had to introduce a temporary export ban on sawn logs in 1973 in order to secure domestic supply. The smaller tobacco producers have a tough stand against one big company which almost monopolizes the Malaysian market for tobacco products of the non-traditional indigenous type.

The majority of manufacturers, however, seem to have been worried more by high raw-material costs than by shortages. This comes out quite clearly from the open-ended questions which gave the companies

TABLE VIII.7
IMPEDIMENTS FOR INCREASING EXPORTS

Impediments	*Percentage of companies which consider impediments as quite important or very important*	
	Unweighed	*Weighed*
Shortage of skilled labour	14.8	8.8
Shortage of capital	16.8	7.1
Difficulties in procuring raw materials	37.7	39.7
Difficulties in getting machinery and equipment	8.8	5.7
Handicap in competitiveness due to higher prices for domestic inputs	33.0	21.4
Difficulties in getting government approval	15.5	16.2
Lack of knowledge about potential foreign markets	37.7	19.4
Incomplete sales organizations	19.6	8.5
Competitive practices by the rival domestic exporters	22.5	17.1
Branches or subsidiaries of your company are already established in the foreign markets	16.1	16.6
Your licence does not permit you to export	7.8	6.1
Other reasons (please state)	19.5	21.9

Source: HEX.

interviewed the opportunity to report on their most pressing problems. Here the imposition of import duties on raw materials—including those material inputs used for producing export goods—was severely criticized by the majority of producers. In fact almost 65 per cent voiced their objection to these import duties. Their basic contention here is that import duties will blunt the competitive edge of their products in the world markets. This is probably a valid criticism, given the fact that on average 49 per cent of all inputs are imported and that an export tax is also levied on certain exports from Malaysia. This latter tax has been severely criticized by about 45 per cent of firms surveyed.

Whilst the government does provide tax rebates on duty paid or duty draw-backs, inefficiency and inordinate delays of all sorts encountered by exporters in getting these rebates have become negative factors in the consideration of larger exports. Excessive red-tapism and bureaucratic set-backs have afflicted twenty-two of the industries surveyed. These bureaucratic inefficiencies take the form of delays in granting licences (import and export), processing of application forms, and more important, customs clearance for imported raw materials that serve as inputs, and lastly, export clearance. Such administrative inefficiencies, if continued, would probably dampen the enthusiasm of producers to make bigger inroads into the export markets. It is perhaps necessary to indicate here that, according to some producers, even spare parts for imported machinery are not excluded from tax duties, although the customs regulations stipulate such exemptions.

Some exporters also expressed their dismay and surprise over the many export control measures imposed by the government. If the government strives for continued expansion of local industries then it is beyond their comprehension why such restrictions should be imposed at all. These export control measures include sales quotas, rigid export licences, and trade embargoes on certain countries, the last being based on political justification.

In general, there is very little complaint about lack of infrastructural facilities. This is not surprising as Malaysia's infrastructure is on the whole quite well developed. However, there are problems with the external as well as the internal transport system. According to the HEX, inadequate shipping facilities pose a serious threat to the successful export drive of local producers. These problems are complex and varied as 45 per cent of the exporters explained themselves. The most common problem is, however, the acute shortage of external shipping facilities. There are insufficient ships as well as shipping routes—to Africa, Indonesia, and Middle East countries especially. Besides this, there is an urgent call for cheaper shipping services and the construction of larger and more modern ports specifically at Penang, Johor Bahru, and Klang. In the view of the companies the soaring international shipping freight rates are a constant reminder to the government of the need to provide cheap shipping facilities—perhaps through government subsidies or other means.

Though sufficient external transport facilities are most crucial to exporting activity, internal transport problems must not be neglected. Problems of tonnage restriction on lorries (that some feel are outdated), insufficient lorries and railwagons must, according to the respondents, also be attended to promptly if the government is serious in its attempt to intensify exporting activities. The internal transport problem commonly affects those industries, e.g. timber and cement industries, which produce bulky goods.

4. INTERNATIONAL COMPETITIVENESS

If supply is sufficiently elastic and markets are available, the international competitiveness of potential exporters is crucial for export success. Competitiveness is basically a matter of prices or costs and of product quality. However, the quantity an exporter is able to supply can also be important. The latter is not identical with the question of sufficient supply elasticity as discussed above, but is more a problem of technologies applied, which may or may not permit the production in batch sizes required by foreign purchasers.

In the HEX the companies were asked several related questions in order to find out, first, how they view their international competitiveness *vis-à-vis* their position on the home market, second, how far competitiveness has been a determining factor for exports, as compared with market access and supply elasticity and, third, which factors mostly affected competitiveness.

A. EXPORT PROFITABILITY

For an entrepreneur it is sometimes difficult to assess his international competitiveness, although he would mostly have a clear understanding about the profitability of exports and domestic sales. A firm which rates its export profitability low can be expected to be a high-cost producer who achieves satisfactory profits only on the sheltered home market. Statements about high or low export profitability are therefore a good indicator of international competitiveness as seen by the companies.

Table VIII.8 shows that 48 per cent of the companies consider the profitability from exporting smaller or substantially smaller than that of domestic sales if the answers are unweighed, but only 36 per cent if the answers are weighed. If one takes into account that even in industrialized countries domestic sales are frequently preferred over exports, as Linder[1] has demonstrated, these percentages are probably not high. The great difference between the unweighed and the weighed percentages suggests that larger companies should find it much easier to turn to export markets than smaller ones. This result is of course not unexpected. Scale economies, higher product quality, better market information, and so on are all factors which usually make large companies more competitive on the international market than small firms.

TABLE VIII.8

PROFITABILITY FROM EXPORTING IN COMPARISON WITH HOME MARKET (per cent)

	Percentage of companies which consider profitability as:	
	Unweighed	*Weighed*
substantially smaller	20.8	14.2
smaller	27.2	21.9
the same	20.1	25.4
higher	18.0	10.8
substantially higher	13.8	27.8

If one looks at the detailed industry data (see HEX—Appendix) one finds that the export profitability is rated substantially higher than the profitability of domestic sales by more than a quarter of the firms in only five industries. These are non-ferrous basic products where the weighed percentage is 51 per cent, rubber products (48 per cent), food products (35 per cent), electrical machinery (29 per cent) and wood products (27 per cent), i.e. basically all industries which have in the past been Malaysia's most important exporters of manufactured products. Together in 1973, according to the HEX, they accounted for about 87 per cent of all manufactured exports.

The export profitability is rated substantially lower than that of the domestic market in such industries as beverages with a weighed percentage of 89 per cent, paper products (61 per cent), clothing (57 per cent) and non-metallic mineral products (54 per cent). One should, however, clearly distinguish here between industries with a high percentage for lower or substantially lower export profitability and at the same time a significant percentage for higher export profitability on the one hand, and such industries where the answers are unambiguous in favour of either lower or higher export profitability on the other. To the first category belongs for instance the clothing industry where 32 per cent of the companies state a higher export profitability as compared to sales on the home market. Apparently, we have here a case where part of the industry is internationally competitive and the other part not. The reason may be that part of the industry produces mainly for domestic consumption while another, more modern part, produces for export or, simply, that our industry data lumps together industrial activities which differ significantly in their production characteristics.

The reasons for lower export profitability as compared with domestic sales are indicated in Table VIII.9, which is basically only a confirmation of our reasoning that international competitiveness and relative

TABLE VIII.9

REASONS FOR LOWER PROFITABILITY OF EXPORT MARKET AS COMPARED WITH DOMESTIC MARKET

Reasons	*Percentage of companies which consider reasons as quite important or very important*	
	Unweighed	*Weighed*
Greater financial risk	29.8	19.2
Lower volume of orders	36.8	19.6
More competition in the international markets	73.0	84.6
Longer time for payment	22.7	19.1
Lower prices	67.4	69.1
Too high transport costs	73.8	76.1
Too high costs for marketing	36.8	28.7

export profitability are closely correlated. However, the table also confirms the significance of high transport costs as an obstacle for exports.

Another indication of the fact that manufacturers in Malaysia fare reasonably well in terms of international competitiveness is the observation that only 30 per cent of the companies surveyed state that foreign competitors force them to sell at lower prices on the foreign market than at home (see the Appendix of HEX). The necessary price-cut which would enable the companies to enter foreign markets or to expand sales abroad was on average given as only 7.4 per cent. The highest price-cuts were mentioned by the producers of non-metallic mineral products (29 per cent), paper products (24 per cent), and beverages (23 per cent). Even these percentages are not high if compared with other developing countries where, supported by high tariffs, the domestic price is sometimes twice or three times the world market price.

B. THE SIGNIFICANCE OF COMPETITIVENESS AND ITS DETERMINANTS

The relative significance of competitiveness for past export performance, as compared with supply elasticity and market access, is revealed by Table VIII.10. The most important factor by far which affected exports positively is good quality and design of the product. This is clearly related to international competitiveness. What is interesting here is the fact that the companies consider the impact of good quality on their exports to be more important than low costs. The (weighed) percentages found for cost determining factors such as wage costs (36 per cent), freight costs (40 per cent), large scale of production (49 per cent) are much lower than for the quality factor (85 per cent), although it may be noted that they play a somewhat larger role for small companies than for large ones, as can again be concluded from the positive difference between the unweighed and the weighed percentages.

Second in importance, after product quality, comes the abundance of raw materials which is related to supply elasticity. Other factors affecting supply elasticity such as export credits were in the past apparently of minor significance. Access to foreign markets is also rated relatively low. However, marketing facilities which are an important element of market access are rated high by small companies though not so by large ones.

The factors which were responsibile for export success in the past are, of course, not necessarily the same as those which may help to increase exports further. If, for instance, a company has exported much of its output due to high product quality it may in the future be able to export more only if it lowers costs. This seems to be exactly the case with Malaysia's manufacturers. They consider cost reductions as the most effective way to increase exports in the future (Table VIII.11).

TABLE VIII.10
FACTORS AFFECTING EXPORTS POSITIVELY

Factors	*Percentage of companies which consider factors as quite important or very important*	
	Unweighed	*Weighed*
Relative abundance of basic raw materials	60.6	65.8
Lower wage costs than abroad	59.4	35.8
Low freight costs	38.8	40.2
Relatively large scale of production	59.1	48.8
Use of standardized technologies	55.9	39.8
Availability of marketing facilities	58.6	49.7
Slow growth of the domestic markets	34.0	32.7
Preferential access to foreign regions	31.4	32.5
Short delivery period	44.7	30.2
Good quality and design of the product	80.8	84.5
Good access to export credits	35.6	22.4
Low costs of export credits	27.7	17.9
Excess of capacity	38.8	32.6

Second in importance comes the expansion of the productive capacity and only third, the adaptation of quality and design to international standards. It is probably not surprising that the latter is stressed much more by the small companies than the large ones. A policy programme of the government which aims at increasing exports may therefore focus on measures which help the companies to reduce costs and increase their capacity. This should, however, be administered selectively, as quite a few companies found that they could also increase exports by making better use of existing capacities.

An export promotion policy would also have to take into account why companies may be at all interested to increase exports, because such a programme can only be successful if it is in line with the interest of the companies. The possible reasons for the companies' interest in export expansion are given in Table VIII.12. Most important is the greater scope for expanding the size of the company which was mentioned by 65 per cent (weighed) and 73 per cent (unweighed) respectively.

TABLE VIII.11

POSSIBLE OWN EFFORTS FOR INCREASING EXPORTS

Factors	*Percentage of companies which consider factors as quite important or very important*	
	Unweighed	*Weighed*
Increasing the utilization of existing capacity	57.1	44.4
Increasing the productive capacity	68.8	59.1
Creating export departments	30.8	19.8
Creating and extending foreign sales organization	31.6	20.7
Creating adequate customers' services	41.7	30.1
Adapting the quality and design of products to international standards	65.9	48.4
Giving preference to foreign orders over local ones	27.7	17.9
More market research	47.4	34.5
Reducing production costs	74.7	64.3

The fact that this factor seems to have more weight for the smaller than for the larger companies suggests that there are at least two different motives for company expansion via exports. One is probably that in a small market the scope for growth through home market sales appears limited, in particular for large companies with modern technologies which, due to scale economies, require large output volumes. Another may be that a small market can easily be monopolized by one or a few relatively large companies, so that small firms find it difficult to survive if they do not find export outlets.

Both interpretations are consistent with the factors which were mentioned next in importance. These are cost reductions through scale economies and better utilization of existing capacities. The factors which rank more or less equally with capital utilization, i.e. to take advantage of fast-growing foreign markets and to maintain or increase the market share, are also indications of the companies' desire to get around problems arising out of market limitations.

Summing up, it can be said that, according to the companies surveyed, past export success of Malaysia's manufacturers largely resulted from high product quality and raw material availability. However, future export increases will not only depend heavily on the possibility of reducing costs, but also on the ability to expand their productive

TABLE VIII.12
POSSIBLE REASONS FOR INCREASING EXPORTS

Reasons	*Percentage of companies which consider reasons as quite important or very important*	
	Unweighed	*Weighed*
Saturation of the demand for your products in the domestic market	41.3	32.7
Increasing pressure for efficiency and higher productivity coming from domestic competitors	36.4	22.6
The possibility to reduce unit costs through production on a larger scale	70.3	53.7
Greater scope for expanding the size of your enterprise	72.9	64.7
To take advantage of fast growing foreign markets	58.3	59.9
To maintain or increase the present market share	58.8	56.9
To make better use of existing capacity	63.2	56.7
To sell excess production in times of domestic recession	42.4	38.4
To diversify the export supply	27.5	19.0
To capture new markets in foreign countries or regions (please specify where)	48.7	42.6
To take advantage of preferential treatment (e.g. tariff preferences) in foreign markets	34.2	34.0
To provide yourself with the financial and other benefits arising from official export promotion programmes	27.2	17.9

capacity. In particular, the small companies will have to continue to reach international quality standards. The companies have a positive interest in increasing exports because it enables them to avoid difficulties resulting from the small size of the Malaysian market.

1. St. Burenstam Linder, *An Essay on Trade and Transformation*, Uppsala, 1961.

Appendixes

TABLE AII.1

EMPLOYMENT BY ECONOMIC SECTORS, WEST MALAYSIA (SELECTED YEARS)

Sectors	*1947*[1]		*1957*[1]		*1965*[2]		*1970*[3]	
	('000)	%	('000)	%	('000)	%	('000)	%
1. *Primary*	1288.2	68.7	1303.3	61.3	1416.0	54.6	1454.0	52.2
(i) Agriculture, Forestry & Fishing	1240.5	66.2	1244.8	58.5	1350.0	52.1	1369.0	49.1
(ii) Mining & Quarrying	47.7	2.5	58.5	2.8	66.0	2.5	85.0	3.1
2. *Secondary*	139.7	7.4	203.5	9.6	307.0	11.9	370.0	13.3
(i) Manufacturing	126.2	6.7*	135.7	6.4	217.0	8.4	292.0	10.5
(ii) Building & Construction	13.5	0.7	67.8	3.2	90.0	3.5	78.0	2.8
3. *Tertiary*	447.3	23.8	619.3	29.1	867.0	33.5	959.0	34.5
(i) Electricity, Gas, Water, etc.	4.6	0.2	11.5	0.6	16.0	0.6	21.0	0.8
(ii) Transport & Communication	65.9	3.5	74.8	3.5	101.0	3.9	115.0	4.1
(iii) Commerce & Trade	173.1	9.2	195.2	9.2	287.0	11.1	295.0	10.6
(iv) Private & Public Services	174.2	9.3	221.0	10.4				
(v) Defence	23.4	1.3	98.7	4.6	463.0	17.9	528.0	19.0
(vi) Others	6.1	0.4	18.1	0.8				
Total working population	1875.2	100.0	2126.2	100.0	2590.0	100.0	2783.0	100.0
Total population	4908.1	—	6278.8	—	7912.3	—	8.774	—

*The IBRD data shows the manufacturing sector as providing employment to 7.5% of the 1947 active labour force. This figure seems to be rather on the high side and the 1957 Census figure of 6.7 per cent seems more reasonable.

Sources: [1]E. L. Wheelwright, 'Industrialization in Malaya', in T. H. Silcock and E. K. Fisk (eds.), *The Political Economy of Independent Malaya*, Eastern Universities Press, op. cit.

[2]*First Malaysia Plan, 1966–1970*, pp. 35, 53 & 81 and Mid-Term Review of *First Malaysia Plan*, p. 17.

[3]*Mid-Term Review of Second Malaysia Plan, 1971–1975*, p. 77.

TABLE AII.2

MALAYA: EMPLOYMENT BY INDUSTRY GROUPS, 1947–1957

Industry	*1947*		*1957*		*1947–57*	
	('000)	%	('000)	%	('000)	% change
1. Food	17.983	14.3	17.596	13.0	−0.387	−2.2
2. Beverages	1.143	0.9	1.733	1.3	0.630	55.1
3. Tobacco	2.791	2.2	3.147	2.3	0.356	12.8
4. Textiles, ropes, nets	4.121	3.3	2.779	2.0	−1.342	−32.6
5. Footwear & wearing apparel	14.764	11.7	22.788	16.8	8.024	54.3
6. Wood products	17.135	13.6	19.998	14.7	2.863	16.7
7. Furniture	3.415	2.7	6.583	4.9	3.166	92.7
8. Paper products	0.305	0.2	0.316	0.2	0.011	3.6
9. Printing & publishing	2.723	2.2	4.319	3.2	1.596	58.6
10. Rattan, attap & cane	21.010	16.7	8.800	6.5	−12.210	−58.1
11. Rubber products	2.334	1.9	2.102	1.6	−0.232	−9.9
12. Chemicals	1.393	1.1	1.958	1.4	0.565	40.1
13. Non-metallic minerals	2.361	1.9	4.252	3.1	1.891	80.1
14. Basic metals	2.701	2.1	0.873	0.6	−1.828	−67.7
15. Metal products	3.223	2.6	2.738	2.0	−0.485	−15.0
16. Engineering machinery	16.934	13.4	23.577	17.4	6.476	38.2
17. Electrical machinery	1.223	1.0	2.180	1.6	0.957	78.3
18. Miscellaneous	10.600	8.4	9.930	7.3	−0.670	−6.3
Total	126.161	100.0	135.709	100.0	9.548	7.6
Total of labour force	1875.2	—	2126.2	—	251.0	13.4

Source: E. L. Wheelwright, 'Industrialization in Malaya', op. cit., p. 211.

TABLE AIII.1

WEST MALAYSIAN IMPORT QUOTAS AND IMPORT BANS, JULY 1974

BTN-Code		Description	Quota in %	Base Year
04.03	910	Butter in airtight containers	50	1969
	990	Other		
07.01	500	Cabbage	n.a.	n.a.
11.01	110 120	Cereal flours of wheat or meslin	0	
11.02	101	Meal and groats of wheat or meslin: in packings of over 10 lb.	0	
	102	in packings of not over 10 lb.		
12.10	000	Grass meal and grass pellets	50	1971
18.05	000	Cocoa powder, unsweetened	n.a.	n.a.
19.05	100	Prepared foods obtained by the swelling or roasting of oats or oats products	n.a.	n.a.
21.06	100	Active natural yeasts	40	1972
23.01	110	Fish meal	50	1967
23.02	100	Rice bran		
23.02	900	Bran (except rice bran), sharps and other residues derived from the sifting, milling or working of cereals or of leguminous vegetables	40	1964/65
23.03	900	Beet pulp, bagasse, and other waste of sugar manufacture; brewing and distilling dregs and waste; residues, except tapioca refuse and sago refuse	0	
23.05	000	Wine lees; argol	0	
23.07	000	Sweetened forage; other preparations of a kind used in animal feeding	50	1964/65
25.01	100 200 900	Table salt; pure sodium chloride Rock salt and salt liquors Other	20	1968
27.10	800	Liquid for hydraulic brakes	120	1972
27.16	000	Bituminous mixtures based on natural asphalt, on natural bitumen, on mineral tar pitch (for example bituminous mastics, cut-backs)	20	1960
28.32	100	Sodium chlorate	0	
28.56	100	Calcium carbide	50	1971
29.23	110	Monosodium glutamate, other salts or derivatives and preparations thereof	0	
32.13	200	Inks for duplicating machines	n.a.	n.a
38.03	000	Activated carbon	60	1970
38.11	410 430	Wood preservatives, being preparations other than surface coatings; containing insecticides or fungicides, for application by impregnation	50	1970
38.11	990	Benzene hexachloride (BHC) insecticide preparations	10	1970
38.19	200	Liquids for hydraulic transmission	120	1972
39.01	911	Rigid laminated plates and sheets	n.a.	n.a.
39.02	320	Polyvinylchloride resins in powder form	50	1971
39.02	911	Rigid laminated plates and sheets other than imitation leather of polyvinylchloride in sheets	n.a.	n.a.
39.03	330	Rigid laminated plates and sheets in semi-manufactured forms	25	1970
40.12	100	Condoms	25	1968

TABLE AIII.1 (continued)

BTN-Code		*Description*	*Quota in %*	*Base Year*
41.02	110 120 910 920	Bovine cattle leather (including buffalo leather) and equine leather	50	1966
51.04	120 210 410 520 610 910	Textile suiting materials	60	1970
53.11	110 210 910	Textile suiting materials	60	1970
55.05	100	Textiles	n.a.	n.a.
56.05	200	Textile suiting materials	n.a.	n.a.
56.07	112 121 191 212 221	Textile suiting materials	60	1970
58.04	310 411 421 491 511 521 591	Textile suiting materials	60	1970
66.01	900	Umbrellas, other than those covered with silk, cotton, or fabric of man-made fibres	20	1971
68.14	000	Friction material of a kind suitable for brakes, for clutches or the like, with a basis of asbestos, other mineral substances or of cellulose	100	1971
70.04 70.05 70.06	000 000 000	Glass sheets	100	1971/72
70.18	000	Optical blanks	150	1969
73.13	460	Corrugated sheets and plates of iron or steel	n.a.	n.a.
73.25	000	Steel wire ropes	10	1969
73.29	900	Chain and parts thereof of iron and steel (industrial chains)	120	1971/72
83.13	100	Crown corks	130	1967
84.18	600 900	Oil filters, air filters and parts thereof	100	1971
85.01	110 120 190	Generators of not more than 120 kilowatts	100	1971
85.01	530	Electric motors	10	1969/70
85.08	300	Spark plugs	n.a.	n.a.
87.02	139	Motor vehicles	1	1966
87.09	820	Motor-cycles	20	1968
87.10	100	Bicycles (including children's bicycles in the normal form of adults, bicycles) not motorized	100	1967
90.01	200	Spectacle lenses	150	1969
90.03	100	Spectacle frames	150	1969
90.04	000	Spectacles, corrective, protective or other	150	1969

Source: Federal Industrial Development Authority (FIDA), Kuala Lumpur.

TABLE AIII.2

I/O VALUE-ADDED RATIOS REPLACED BY RATIOS FROM THE MANUFACTURING SURVEY, 1970

I/O-Industry Code	*Description*	*I/O value-added ratio (%)*	*Survey industry code (MIC)*	*Survey value-added ratio (%)*
311	Meat preparation	1.1	3011,3012	42.5
312	Dairy products	16.9	3021,3029	23.8
323	Animal feeds	6.6	3098	11.0
326	Breweries and soft drinks	47.0	3130,3140	54.1
329	Tobacco products	26.5	3200	30.0
334	Wearing apparel, except footwear	17.7	3432,3439 3440	27.7
341	Sawmills	29.1	3511,3512	36.0
343	Other products of wood and cork	62.9	3513,3515 3516,3531	29.4
344	Furniture and fixtures (wooden)	18.4	36	30.6
345	Paper and paper products	22.3	37	27.8
346	Printing and publishing	30.5	38	50.9
354	Cleaning preparations, cosmetics	35.4	4191,4194	53.9
357	Rubber processing	9.3	1121,1122 1123	19.9
358	Rubber products	23.5	40	42.9
371	Iron and steel basic industries	41.6	4410,4421 4429	30.0
374	Structural metal products	4.4	4510,4520 4550	34.1
381	Industrial machinery not electric	34.2	4610,4623 4630	43.2
384	Electrical appliances and houseware	neg.	4721	35.0
385	Other electrical machinery	13.9	4711,4799	34.2
387	Motor vehicles	11.1	4831,4832 4834	26.9

Sources: Department of Statistics, *Preliminary Input-Output Table for West Malaysia, 1970*, *Survey of Manufacturing Industries, West Malaysia, 1970*.

TABLE AIV.1

DIRECT PURCHASES OF DOMESTIC AND IMPORTED INPUTS, 1970

Sector	*Domestic Inputs*	*Imported Inputs*	*Total Inputs*
A. Primary sector	501686	228523	730209
B. Meat preparation	173064	4337	177401
Dairy products	40009	40385	80394
Fruit & vegetable canning	34236	4679	38915
Fish canning	65528	891	66419
Vegetable and animal oils	363261	13665	376926
Grain mills & animal feeds	342862	121157	464019
Bakeries	45236	7921	53157
Cocoa and chocolate	5129	8384	13513
Ice factories	2836	572	3408
Other food preparations	57064	111632	168696
Spirits and wines	898	984	1882
Breweries & soft drinks	21526	19776	41302
Tobacco products	37121	152478	189599
Textile spinning	35723	25168	60891
Knitting mills	1673	5101	6774
Other textiles	1081	3400	4489
Wearing apparel, exc. footwear	4542	46638	51180
Leather products	2866	2687	5553
Footwear, exc. rubber & plastic	5270	2930	8100
Wood mills	183775	11894	195669
Other wood products	7958	9091	17049
Furniture & fixtures	14322	8919	23241
Paper & paper products	11411	15903	27314
Printing & publishing	39627	39759	79386
Industrial chemicals	26702	29982	56684
Paints & varnishes	7835	10142	17977
Drugs & medicines	3973	5477	9450
Cleansing detergents & cosmetics	24861	23425	48286
Other chemicals	9822	10017	19839
Petroleum & coal products	9127	117807	126934
Rubber processing	1220437	8980	1229417
Rubber products	46466	34099	80565
Plastic products	7608	19778	27386
Pottery and china	4626	2841	7467
Structural clay products	8341	2270	10611
Cement and concrete products	18443	9094	27537
Other NM mineral products	11977	11488	23465
Iron & steel products	46439	20260	66699
Non-ferrous metals & tin	651286	83488	734774
Tools, cutlery & metal furniture	3585	3053	6638
Structural metal products	15116	24379	39495
Fabricated metal products	20548	44478	65026
Non-electrical machinery	13068	24838	37906
Business & household machinery	3140	4167	7307
Communication equipment appliances	10727	16708	27435
Other electrical machinery	12028	33264	45292
Shipbuilding & repairs	1869	430	2299
Motor vehicles	17194	173529	190723
Other transport equipment	3740	24558	28298
Other miscellaneous manufactures	12482	38441	50923
C. Tertiary sector	1114436	341645	1456081
Total economy	5324580	2005420	7330000
Manufacturing sector (Not including sectors A & C)	3708456	1435254	5143710

TABLE AV.1

MANUFACTURING GROSS OUTPUT, NET IMPORT AND NET EXPORT, 1963 AND 1968 PENINSULAR MALAYSIA (M$'000)

		Industry	Import 0	Import 1	Export 0	Export 1	Output 0	Output 1
1		Meat preparation	17988	25109	113	269	400	1300
2		Dairy products	81160	64125	1490	19753	22600	94400
3		Fruits-veget. canning	44887	40576	29801	49724	36800	62400
4	C	Fish canning	36268	36298	20475	42601	23400	48400
5		Veget. & animal oils	4953	15045	2583	3892	20200	33600
6		Grain mills & animal feeds	247359	167860	10738	12381	153300	304200
7		Bakeries	4610	5495	1991	1560	49600	59300
8		Cocoa & chocolate	8054	7218	268	1279	7700	14200
9	I	Ice factories	10	318	13	95	6500	8500
10		Other food prep.	106387	92460	1296	8484	72400	145200
11	C	Spirits & wines	12256	16210	16	216	1200	2700
12		Breweries, soft drinks	14579	6085	2	8901	35100	61200
13		Tobacco products	11608	9374	2	11528	167600	218600
14	I	Textile spinning	112371	125514	4028	12891	13100	64400
15		Knitting mills	16681	23017	199	1265	1300	7200
16		Other textiles	5282	8942	650	377	700	800
17		Wearing apparel exc. footwear	35015	35108	1028	10061	7200	23500
18	C	Leather prod.	2793	2418	27	62	2700	5300
19		Footwear exc. rubber & plastic	4546	3924	178	1846	31500	40700
20		Wood products exc. wood mills	3244	2713	1516	2387	15800	24200
21		Furniture & fixtures	5011	3249	79	515	19300	24300

TABLE AV.1 (continued)

		Industry	Import 0	Import 1	Export 0	Export 1	Output 0	Output 1
22		Paper & paper products	50348	72557	990	4332	8100	20900
23		Printing & publishing	25797	27062	1369	4909	57000	104800
24	I	Industrial chemicals	74385	106360	596	5388	17500	60600
25		Paints & varnishes	4662	3757	3506	9528	12600	23900
26		Drugs & medicines	27426	45816	4610	7079	7200	12000
27	C	Cleansing detergents & cosmetics	11780	14193	16215	19041	45800	62900
28		Other chemicals	22502	27206	1361	5327	2900	16800
29	I	Rubber products exc. rubber mills	19792	13297	21089	26982	58300	110300
30		Plastic products	7092	8498	240	1150	4300	21200
31	C	Pottery & china	17838	24168	255	850	3700	9300
32	K	Structural clay products	5161	7339	421	1178	11800	16800
33		Cement & concrete products	28297	2452	519	12973	37600	89000
34	I	Other NM mineral products	3229	4132	51	85	900	2900
35		Iron & steel products	92726	106941	513	8818	12400	52800
36	K	Tools, cutlery, metal furniture	24498	34527	602	288	4400	7600
37		Structural metal products	14153	8253	396	1911	18300	34300
38	I	Fabricated metal products	60510	79014	1671	4831	41600	72600
39		NE industrial machinery	123323	176040	969	2775	26800	54000
40	K	Business & household machinery	35201	34493	143	2679	5300	9200
41	C	Communication equipment & appliances	73958	84686	3144	6987	8300	36900
42		Other electrical machinery	35149	40462	843	1627	4100	20500
43	K	Shipbuilding & repair	4251	4073	100	160	7000	4200
44		Motor vehicles	132247	176276	276	2118	4900	44300
45	C	Other transport equipment	29095	51267	70	304	1700	6200
46		Other manufactures	47095	69434	1369	4464	39500	19900

Note: Industries with a 'C' have been classified under consumption goods, those with an 'I' under intermediate goods and those with a 'K' under investment goods.

TABLE AV.2

MANUFACTURING GROSS OUTPUT, NET IMPORT AND NET EXPORT, 1968 AND 1971 PENINSULAR MALAYSIA (M$'000)

	Industry	Import 0	Import 1	Export 0	Export 1	Output 0	Output 1
1	Meat preparation	25109	19399	269	1364	1300	12800
2	Dairy products	64125	78610	19753	19138	94400	104000
3	Fruits-veget. canning	40576	35028	49724	49023	62400	59700
4	Fish canning	36298	31729	42601	83525	48400	126200
5	Veget. & animal oils	15045	9563	3892	2541	33600	38800
6	Grain mills & animal feeds	167860	97055	12581	11421	304200	390600
7	Bakeries	5495	3552	1560	4860	59300	66000
8	Cocoa & chocolate	7218	4061	1279	3081	14200	22100
9	Ice factories	318	365	95	37	8500	8000
10	Other food prep.	92460	81391	8484	15476	145200	244100
11	Spirits & wines	16210	21481	216	1041	2700	2400
12	Breweries, soft drinks	6085	3528	8901	12356	61200	79800
13	Tobacco products	9374	6952	11528	36553	218600	290600
14	Textile spinning	125514	163656	12891	20341	64400	104000
15	Knitting mills	23017	21662	1265	2262	7200	11700
16	Other textiles	8942	9312	377	476	800	1200
17	Wearing apparel exc. footwear	35108	15652	10061	16398	23500	53700
18	Leather prod.	2418	2957	62	344	5300	11400
19	Footwear exc. rubber & plastic	3924	4142	1846	4364	40700	54100
20	Wood products exc. wood mills	2713	2142	2387	4433	24200	24600
21	Furniture & fixtures	3249	1152	515	115	24300	39400
22	Paper & paper products	72557	82550	4332	8318	20900	44800
23	Printing & publishing	27062	28495	4909	6601	104800	153300

TABLE AV.2 (continued)

	Industry	*Import 0*	*Import 1*	*Export 0*	*Export 1*	*Output 0*	*Output 1*
24	Industrial chemicals	106360	166431	5388	14850	60600	92400
25	Paints & varnishes	3757	3134	9528	1347	23900	32100
26	Drugs & medicines	45816	45417	7079	10706	12000	16100
27	Cleansing detergents & cosmetics	14193	8427	19041	14191	62900	83600
28	Other chemicals	27206	46230	5327	6640	16800	37200
29	Rubber products exc. rubber mills	13297	11487	26982	38413	110300	131000
30	Plastic products	8498	6415	1150	2524	21200	53600
31	Pottery & china	24168	25334	850	1421	9300	15600
32	Structural clay products	7339	7197	1178	3149	16800	26500
33	Cement & concrete products	2452	1224	12973	13495	89000	122400
34	Other NM mineral products	4132	5659	85	346	2900	5100
35	Iron & steel products	106941	88332	8818	3841	52800	110900
36	Tools, cutlery, metal furniture	34527	35142	288	1122	7600	9400
37	Structural metal products	8253	3510	1911	4983	34300	65500
38	Fabricated metal products	79014	77940	4831	9471	72600	103600
39	NE industrial machinery	176040	227418	2775	12129	54000	69700
40	Business & household machinery	34493	32628	2679	7248	9200	17400
41	Communication equipment & appliances	84686	133182	6987	15041	36900	71100
42	Other electrical machinery	40462	52928	1627	6659	20500	39600
43	Shipbuilding & repair	4073	6408	160	292	4200	5400
44	Motor vehicles	176276	220769	2118	2658	44300	124500
45	Other transport equipment	51267	35701	304	1785	6200	20850
46	Other manufactures	69434	62673	4464	4958	19900	37490

TABLE AV.3

MANUFACTURING GROSS OUTPUT, NET IMPORT AND NET EXPORT, 1963 AND 1971
PENINSULAR MALAYSIA (M$'000)

	Industry	*Import 0*	*Import 1*	*Export 0*	*Export 1*	*Output 0*	*Output 1*
1	Meat preparation	17988	19399	113	1364	400	12800
2	Dairy products	81160	78610	1490	19138	22600	104000
3	Fruits-veget. canning	44887	35028	29801	49023	36900	59700
4	Fish canning	36268	31729	20475	83525	23400	126200
5	Veget. & animal oils	4953	9563	2583	2541	20200	38800
6	Grain mills & animal feeds	247359	97055	10738	11421	153300	390600
7	Bakeries	4610	3552	1991	4860	49600	66000
8	Cocoa & chocolate	8054	4061	268	3081	7700	22100
9	Ice factories	10	365	13	37	6500	8000
10	Other food prep.	106387	81391	1296	15476	72400	244100
11	Spirits & wines	12256	21481	16	1041	1200	2400
12	Breweries, soft drinks	14579	3528	2	12356	35100	79800
13	Tobacco products	11608	6952	2	36553	167600	290600
14	Textile spinning	112371	163656	4028	20341	13100	104000
15	Knitting mills	16681	21662	199	2262	1300	11700
16	Other textiles	5282	9312	650	476	700	1200
17	Wearing apparel exc. footwear	35015	15652	1028	16398	7200	53700
18	Leather prod.	2793	2957	27	344	2700	11400
19	Footwear exc. rubber & plastic	4546	4142	178	4364	31500	54100
20	Wood products exc. wood mills	3244	2142	1516	4433	15800	24600
21	Furniture & fixtures	5011	1152	79	115	19300	39400
22	Paper & paper products	50348	82550	990	8318	8100	44800
23	Printing & publishing	25797	28495	1369	6601	57000	153300

TABLE AV.3 (continued)

	Industry	*Import 0*	*Import 1*	*Export 0*	*Export 1*	*Output 0*	*Output 1*
24	Industrial chemicals	74385	166431	596	14850	17500	92400
25	Paints & varnishes	4662	3134	3506	1347	12600	32100
26	Drugs & medicines	27426	45417	4610	10706	7200	16100
27	Cleansing detergents & cosmetics	11780	8427	16215	14191	45800	83600
28	Other chemicals	22502	46230	1361	6640	2900	37200
29	Rubber products exc. rubber mills	19792	11487	21089	38413	58300	131000
30	Plastic products	7092	6415	240	2524	4300	53600
31	Pottery & china	17838	25334	255	1421	3700	15600
32	Structural clay products	5161	7197	421	3149	11800	26500
33	Cement & concrete products	28297	1224	519	13495	37600	122400
34	Other NM mineral products	3229	5659	51	346	900	5100
35	Iron & steel products	92726	38332	513	3841	12400	110900
36	Tools, cutlery, metal furniture	24498	35142	602	1122	4400	9400
37	Structural metal products	14153	3510	396	4983	18300	65500
38	Fabricated metal products	60510	77940	1671	9471	41600	103600
39	NE industrial machinery	123323	227418	969	12129	26800	69700
40	Business & household machinery	35201	32628	143	7248	5300	17400
41	Communication equipment & appliances	73958	133182	3144	15041	8300	71100
42	Other electrical machinery	35149	52928	843	6659	4100	39600
43	Shipbuilding & repair	4251	6408	100	292	7000	5400
44	Motor vehicles	132247	220769	276	2658	4900	124500
45	Other transport equipment	29095	35701	70	1785	1700	20850
46	Other manufactures	47095	62673	1369	4958	39500	37490

TABLE AV.4

CHANGES IN MARKET RATIOS AND SHARES OF GROWTH SOURCES, 1963–1971
PENINSULAR MALAYSIA (per cent)

	Industry	*IR Change*	*ER Change*	*OR Change*	*IS Share*	*EE Share*	*DE Share*
1	Meat preparation	35.51	3.80	39.32	88.32	9.46	2.21
2	Dairy products	31.27	10.25	41.52	62.79	20.58	16.61
3	Fruits-veget. canning	9.70	49.93	59.63	19.45	100.09	-19.55
4	Fish canning	49.89	60.01	109.91	36.11	43.43	20.45
5	Veget. & animal oils	1.07	-5.89	-4.82	2.64	-14.53	111.88
6	Grain mills & animal feeds	43.05	-0.35	42.70	86.41	-0.71	14.30
7	Bakeries	3.33	3.69	7.03	13.16	14.59	72.24
8	Ccoca & chocolate	34.41	11.61	46.03	55.15	18.62	26.22
9	Ice factories	-4.22	0.24	-3.98	-23.47	1.35	122.12
10	Other food prep	33.68	4.26	37.94	60.82	7.69	31.48
11	Spirits & wines	-2.85	4.43	1.57	-54.42	84.48	69.94
12	Breweries, soft drinks	24.37	17.40	41.78	38.70	27.63	33.66
13	Tobacco products	3.81	14.00	17.81	8.09	29.71	62.19
14	Textile spinning	26.35	4.90	31.26	71.70	13.35	14.93
15	Knitting mills	24.15	6.15	30.30	72.23	18.40	9.36
16	Other textiles	6.27	-7.44	-1.17	125.97	-149.48	123.51
17	Wearing apparel exc. footwear	55.45	28.47	83.92	63.15	32.42	4.42
18	Leather prod.	29.99	1.96	31.95	48.31	3.15	48.52
19	Footwear exc. rubber & plastic	4.98	7.60	12.59	11.88	18.12	69.98
20	Wood products exc. wood mills	8.90	11.22	20.12	22.57	28.44	48.97
21	Furniture & fixtures	17.83	-0.04	17.78	35.87	-0.08	64.21
22	Paper & paper products	18.27	5.26	23.53	59.27	17.07	23.65
23	Printing & publishing	15.41	2.08	17.50	28.04	3.79	68.15

TABLE AV.4 (continued)

	Industry	IR Change	ER Change	OR Change	IS Share	EE Share	DE Share
24	Industrial chemicals	13.26	5.43	18.70	43.22	17.69	39.07
25	Paints & varnishes	24.64	-21.51	3.13	42.82	-37.38	94.56
26	Drugs & medicines	1.98	5.71	7.69	11.34	32.60	56.04
27	Cleansing detergents & cosmetics	17.65	-20.96	-3.31	36.34	-43.17	106.82
28	Other chemicals	33.39	2.98	36.38	74.76	6.68	18.55
29	Rubber products exc. rubber mills	23.68	-0.08	23.59	33.90	-0.12	66.22
30	Plastic products	52.43	2.23	54.67	61.14	2.61	36.24
31	Pottery & china	19.69	2.39	22.09	65.40	7.96	26.63
32	Structural clay products	7.64	7.76	15.40	15.88	16.13	67.98
33	Cement & concrete products	42.17	11.46	53.63	54.76	14.88	30.35
34	Other NM mineral products	24.83	2.07	26.90	61.57	5.13	33.28
35	Iron & steel products	43.42	1.47	44.90	86.14	2.92	10.92
36	Tools, cutlery, metal furniture	5.64	0.45	6.09	49.00	3.96	47.03
37	Structural metal products	38.66	6.54	45.21	52.45	8.88	38.66
38	Fabricated metal products	14.94	3.84	18.79	41.49	10.65	47.85
39	NE industrial machinery	2.88	3.60	6.48	19.15	23.95	56.89
40	Business & household machinery	10.95	16.58	27.54	38.72	58.64	2.62
41	Communication equipment & appliances	23.10	3.97	27.07	69.62	11.97	18.39
42	Other electrical machinery	29.88	5.55	35.44	72.27	13.44	14.27
43	Shipbuilding & repair	-17.52	1.63	-15.88	126.11	-11.79	-14.32
44	Motor vehicles	32.18	0.57	32.75	92.19	1.64	6.15
45	Other transport equipment	29.50	3.03	32.53	84.38	8.66	6.94
46	Other manufactures	-10.57	3.60	-6.96	500.68	-170.58	-230.09

TABLE AV.5

ABSOLUTE GROWTH SOURCES, 1963–1971 PENINSULAR MALAYSIA (M$'000)

	Industry	IS Absolute	Structure	EE Absolute	Structure	DE Absolute	Structure
1	Meat preparation	1095175	0.95	117333	0.46	27491	0.04
2	Dairy products	5111902	4.46	1675632	6.51	1352463	1.93
3	Fruits-veget. canning	443571	0.39	2282256	8.87	−445829	−0.64
4	Fish canning	3712218	3.24	4465524	17.35	2102256	3.01
5	Veget. & animal oils	49266	0.04	−270304	−1.05	2081038	2.98
6	Grain mills & animal feeds	20505936	17.88	−169396	−0.66	3393451	4.85
7	Bakeries	215913	0.19	239342	0.93	1184742	1.69
8	Cocoa & chocolate	794250	0.69	268157	1.04	377591	0.54
9	Ice factories	−35218	−0.03	2033	0.01	183184	0.26
10	Other food prep.	10443005	9.10	1321233	5.13	5405758	7.73
11	Spirits & wines	−65309	−0.06	101380	0.39	83928	0.12
12	Breweries, soft drinks	1730056	1.51	1235313	4.80	1504628	2.15
13	Tobacco products	995409	0.87	3655007	14.20	7649579	10.94
14	Textile spinning	6518415	5.68	1213809	4.72	1357774	1.94
15	Knitting mills	751239	0.65	191395	0.74	97364	0.14
16	Other textiles	62988	0.05	−74744	−0.29	61755	0.09
17	Wearing apparel exc. footwear	2936667	2.56	1507629	5.86	205701	0.29
18	Leather prod.	420332	0.37	27478	0.11	422189	0.60
19	Footwear exc. rubber & plastic	268663	0.23	409662	1.59	1581674	2.26
20	Wood products exc. wood mills	198684	0.17	250348	0.97	430966	0.62
21	Furniture & fixtures	721007	0.63	−1683	−0.01	1290675	1.85
22	Paper & paper products	2175267	1.90	626708	2.43	868024	1.24
23	Printing & publishing	2700777	2.35	365556	1.42	6563664	9.38

TABLE AV.5 (continued)

	Industry	*IS Absolute*	*Structure*	*EE Absolute*	*Structure*	*DE Absolute*	*Structure*
24	Industrial chemicals	3237200	2.82	1325711	5.15	2927086	4.18
25	Paints & varnishes	835052	0.73	-728979	-2.83	1843926	2.64
26	Drugs & medicines	100965	0.09	290219	1.13	498813	0.71
27	Cleansing detergents & cosmetics	1373927	1.20	-1632055	-6.34	4038127	5.77
28	Other chemicals	2564423	2.24	229279	0.89	636296	0.91
29	Rubber products exc. rubber mills	2464849	2.15	-9053	-0.04	4814199	6.88
30	Plastic products	3014580	2.63	128674	0.50	1786743	2.55
31	Pottery & china	778317	0.68	94757	0.37	316923	0.45
32	Structural clay products	233493	0.20	237144	0.92	999361	1.43
33	Cement & concrete products	4644217	4.05	1262074	4.90	2573705	3.68
34	Other NM mineral products	258611	0.23	21577	0.08	139811	0.20
35	Iron & steel products	8485704	7.40	288284	1.12	1076010	1.54
36	Tools, cutlery, metal furniture	245000	0.21	19823	0.08	235176	0.34
37	Structural metal products	2475757	2.16	419207	1.63	1825033	2.61
38	Fabricated metal products	2572386	2.24	660829	2.57	2966783	4.24
39	NE industrial machinery	821565	0.72	1027752	3.99	2440683	3.49
40	Business & household machinery	468551	0.41	709641	2.76	31806	0.05
41	Communication equipment & appliances	4372582	3.81	752053	2.92	1155362	1.65
42	Other electrical machinery	2565893	2.24	477419	1.85	506687	0.72
43	Shipbuilding & repair	-201785	-0.18	18872	0.07	22912	0.03
44	Motor vehicles	11026735	9.61	196712	0.76	736551	1.05
45	Other transport equipment	1615959	1.41	166022	0.65	133017	0.19
46	Other manufactures	-1006371	-0.88	342870	1.33	462500	0.66

Note: See footnote of Table V.8.

TABLE AV.6

MANUFACTURING GROSS OUTPUT, NET IMPORT AND NET EXPORT, 1971 AND 1974
PENINSULAR MALAYSIA (M$'000)

	Industry	Import 0	Import 1	Export 0	Export 1	Output 0	Output 1
1	Meat prepration	19399	27700	1364	3200	12800	17000
2	Dairy products	78610	142500	19138	39900	104000	220700
3	Fruits-veget. canning	35028	53300	49023	63200	59700	72500
4	Fish canning	31729	47000	83525	114600	126200	159000
5	Veget. & animal oils	9563	3200	2541	11400	38800	75700
6	Grain mills & animal feeds	97055	281400	11421	14800	390600	581000
7	Bakeries	3552	2100	4860	7000	66000	77900
8	Cocoa & chocolate	4061	10800	3081	20500	22100	46200
9	Ice factories	365	200	37	100	8000	8800
10	Other food prep.	81391	311900	15476	63700	244100	379600
11	Spirits & wines	21481	23900	1041	800	2400	3300
12	Breweries, soft drinks	3528	2100	12356	25600	79800	141000
13	Tobacco products	6952	10700	36553	48200	290600	394000
14	Textile spinning	163656	241200	20341	48200	104000	248200
15	Knitting mills	21662	31900	2262	5300	11700	27800
16	Other textiles	9312	14700	476	1200	1200	3200
17	Wearing apparel exc. footwear	15652	34300	16398	59800	53700	119200
18	Leather prod.	2957	9000	344	700	11400	12400
19	Footwear exc. rubber & plastic	4142	11500	4364	5310	54100	65300
20	Wood products exc. wood mills	2142	400	4433	2400	24600	31300
21	Furniture & fixtures	1152	4500	115	3700	39400	42400
22	Paper & paper products	82550	196700	8318	9600	44800	69600
23	Printing & publishing	28495	38600	6601	11000	153300	232700

TABLE AV.6 (continued)

	Industry	*Import 0*	*Import 1*	*Export 0*	*Export 1*	*Output 0*	*Output 1*
24	Industrial chemicals	166431	352200	14850	18700	92400	186300
25	Paints & varnishes	3134	5900	1347	1600	32100	61900
26	Drugs & medicines	45417	24300	10706	4400	16100	21100
27	Cleansing detergents & cosmetics	8427	19200	14191	21300	83600	160500
28	Other chemicals	46230	52400	6640	13100	37200	60400
29	Rubber products exc rubber mills	11487	30700	38413	70600	131000	236400
30	Plastic products	6415	19100	2524	18600	53600	114900
31	Pottery & china	25334	41600	1421	8400	15600	22600
32	Structural clay products	7197	10200	3149	6700	26500	32400
33	Cement & concrete products	1224	7300	13495	15300	122400	200800
34	Other NM mineral products	5659	16100	346	300	5100	10200
35	Iron & steel products	88332	438700	3841	28900	110900	242000
36	Tools, cutlery, metal furniture	35142	59600	1122	1600	9400	11200
37	Structural metal products	3510	10900	4983	8700	65500	91800
38	Fabricated metal products	77940	169200	9471	33800	103600	239800
39	NE industrial machinery	227418	876500	12129	25500	69700	83500
40	Business & household machinery	32628	59500	7248	10900	17400	21300
41	Communication equipment & appliances	133182	333100	15041	58359	71100	154900
42	Other electrical machinery	52928	149600	6659	25841	39600	86400
43	Shipbuilding & repair	6408	8100	292	1900	5400	7400
44	Motor vehicles	220769	621300	2658	27300	124500	192400
45	Other transport equipment	35701	125000	1785	10300	20850	34200
46	Other manufactures	62673	130900	4958	13400	37490	61800

TABLE AVI.1

THE COMPONENTS OF LABOUR ABSORPTION IN MANUFACTURING, 1963–1968
(Man-years) (According to Formula 2)

	Industry	*(2.1)*	*(2.2)*	*(2.3)*	*(2.4)*	*(2.5)*	*(2.6)*	*(2.7)*
1	Meat preparation	32.58	5.64	9.04	15.31	23.75	4.11	6.59
2	Dairy products	1540.88	593.92	270.19	-497.48	-1012.63	-390.31	-177.56
3	Fruits & vegetable canning	357.64	1270.45	59.47	-314.93	-46.12	-163.84	-7.67
4	Fish canning	22.26	172.62	14.52	0.29	0.03	0.25	0.02
5	Vegetable and animal oils & palm oil	147.84	-2508.57	3293.55	-76.00	-10.43	177.02	-232.41
6	Grain mills & animal feeds	4093.43	-2.40	905.51	-2259.45	-1822.08	1.07	-403.06
7	Bakeries	8.69	-84.54	1039.39	-360.12	-0.64	6.18	-75.97
8	Cocoa and chocolate	189.01	54.02	134.31	-190.51	-80.56	-23.02	-57.24
9	Ice factories	-27.32	6.96	199.75	-157.06	7.36	-1.87	-53.81
10	Other food preparations	3330.16	505.06	1563.44	-2709.35	-1680.49	-254.87	-788.96
11	Spirits and wines	85.11	19.70	47.69	-73.56	-51.31	-11.88	-28.75
12	Breweries & soft drinks	698.21	562.31	388.75	-953.94	-300.30	-241.85	-167.20
13	Tobacco products	115.35	286.15	864.68	-1052.04	-29.16	-72.35	-218.62
14	Textile spinning	2817.31	516.55	441.19	-273.81	-800.21	-146.72	-125.31
15	Knitting mills	1041.97	236.70	205.41	-118.82	-378.61	-86.01	-74.64
16	Other textiles	73.26	-167.13	115.73	313.37	150.05	-342.31	237.03
17	Wearing apparel exc. footwear	855.27	1227.84	178.52	-97.62	-83.58	-119.98	-17.44
18	Leather products	137.23	2.22	99.36	-71.74	-39.69	-0.64	-28.74
19	Footwear exc. rubber & plastic	49.02	53.47	198.62	607.46	28.88	31.51	117.03
20	Wood mills	9.90	8367.82	2709.86	-2313.49	-1.95	-1645.32	-532.83
21	Other wood products	160.42	23.34	554.15	-619.55	-71.61	-10.42	-247.35
22	Furniture & fixtures	415.63	75.77	396.16	-789.13	-95.74	-17.45	-91.25
23	Paper & paper products	501.97	253.40	404.53	-179.01	-122.42	-61.80	-98.66
24	Printing & publishing	1700.57	358.61	4118.76	-2194.58	-506.59	-106.83	-1226.95
25	Industrial chemicals	534.78	91.61	284.86	-22.02	-31.83	-5.45	-16.95

TABLE AVI.1 (continued)

	Industry	(2.1)	(2.2)	(2.3)	(2.4)	(2.5)	(2.6)	(2.7)
26	Paints & varnishes	69.91	143.72	117.30	-81.15	-15.37	-31.61	-25.80
27	Drugs & medicines	37.41	-49.15	342.40	-79.00	-5.96	7.83	-54.54
28	Cleansing detergents & cosmetics	79.32	-125.98	626.49	-392.34	-20.04	31.83	-158.28
29	Other chemicals	5782.86	2016.54	1134.95	-1630.27	-5057.75	-1763.69	-992.64
30	Petroleum & coal products	313.87	189.20	25.25	-9.38	-92.05	-55.48	-7.40
31	Rubber processing	2.70	3606.14	-3870.18	2700.17	0.38	508.34	-545.56
32	Rubber products	2491.66	-1078.19	4985.29	-2716.14	-943.36	408.21	-1887.47
33	Plastic products	1412.59	78.35	981.18	-241.39	-542.11	-30.07	-376.55
34	Pottery and china	547.51	94.85	340.32	-257.06	-220.26	-38.16	-136.91
35	Structural clay products	-36.53	124.30	959.27	-373.69	5.52	-18.80	-145.07
36	Cement and concrete products	1214.52	475.93	290.36	-236.51	-198.23	-77.68	-47.35
37	Other NM mineral products	1347.41	-1.85	623.33	-634.62	-965.12	1.33	-446.48
38	Iron & steel products	1728.99	520.50	353.70	-80.13	-173.39	-52.20	-35.47
39	Non-ferrous metals & tin	3782.97	-168463.71	165320.52	-508.76	-1082.46	48204.20	-47304.80
40	Tools, cutlery & metal furniture	244.02	-86.62	302.97	-268.26	-103.42	36.71	-128.40
41	Structural metal products	560.23	81.46	283.34	439.08	232.50	33.81	117.59
42	Fabricated metal products	1179.97	299.37	2405.35	-2313.03	-523.56	-132.83	-1067.27
43	Non-electrical machinery	1912.81	209.32	2262.35	-1458.85	-645.95	-70.69	-763.99
44	Business & household machinery	86.47	171.14	5.82	-218.59	-52.80	-104.50	-3.55
45	Communication equipment, appliances	1265.54	137.18	209.91	-189.31	-511.92	-55.49	-84.91
46	Other electrical machinery	1164.68	27.32	188.00	-164.00	-553.64	-12.98	-89.37
47	Shipbuilding & repairs	-121.40	10.81	-236.21	-68.67	9.61	-0.86	18.71
48	Motor vehicles	4552.63	219.44	382.09	-333.73	-2370.26	-114.25	-198.93
49	Other transport equipment	340.24	20.65	173.82	-102.74	-173.06	-10.50	-88.41
50	Other miscellaneous manufactures	-693.19	95.38	-5.08	2556.36	-1458.46	200.67	-10.68
	Sum	48158.38	-149362.42	196699.98	-21049.79	-22417.03	43380.35	-58774.27

TABLE AVI.2

THE COMPONENTS OF LABOUR ABSORPTION IN MANUFACTURING, 1968–1971
(Man-years) (According to Formula 2)

	Industry	*(2.1)*	*(2.2)*	*(2.3)*	*(2.4)*	*(2.5)*	*(2.6)*	*(2.7)*
1	Meat preparation	927.65	95.01	21.19	-52.90	-415.86	-42.59	-9.50
2	Dairy products	-35.27	-47.43	192.94	98.72	-3.21	-4.32	17.57
3	Fruits & vegetable canning	-11.67	365.81	-509.78	397.85	-1.29	40.46	-56.38
4	Fish canning	272.00	69.04	311.58	187.69	125.74	31.92	144.04
5	Vegetable and animal oils & palm oil	127.47	697.56	1595.49	1216.35	83.00	454.22	1038.90
6	Grain mills & animal feeds	1413.34	-29.74	203.80	-1247.18	—315.39	6.64	-45.48
7	Bakeries	190.56	300.54	125.80	-73.58	-2.57	-4.05	-1.70
8	Cocoa and chocolate	140.27	53.80	69.07	359.08	106.49	40.84	52.44
9	Ice factories	-4.02	-3.52	-25.22	72.00	-0.52	-0.45	-3.26
10	Other food preparations	1604.72	146.92	1881.50	-2104.62	-633.17	-57.97	-742.38
11	Spirits and wines	-67.66	31.37	24.17	39.50	-24.52	11.37	8.76
12	Breweries & soft drinks	139.33	55.31	475.20	-238.39	-15.07	-5.98	-51.40
13	Tobacco products	80.72	420.19	834.68	-417.94	-8.32	-43.31	-86.03
14	Textile spinning	616.27	122.83	1347.25	893.93	162.36	32.36	354.96
15	Knitting mills	490.45	144.63	85.54	297.46	126.53	37.31	22.07
16	Other textiles	180.35	47.96	38.19	192.33	65.08	17.31	13.78
17	Wearing apparel exc. footwear	2834.71	679.00	267.07	241.66	232.85	55.77	21.94
18	Leather products	95.88	15.05	287.29	151.46	41.97	6.59	125.76
19	Footwear exc. rubber & plastic	41.62	106.06	549.32	292.65	5.75	14.66	75.94
20	Wood mills	118.02	1819.67	7474.15	876.73	5.64	86.89	356.91
21	Other wood products	15.84	110.00	-106.39	-310.33	-4.18	-29.00	28.05
22	Furniture & fixtures	506.58	-89.53	1646.00	65.96	10.07	-1.78	32.70
23	Paper & paper products	983.52	173.51	480.53	58.06	39.88	7.03	19.48
24	Printing & publishing	803.12	-15.73	3613.71	-1283.92	-108.43	2.12	-487.88
25	Industrial chemicals	-115.78	133.50	614.60	-208.12	20.00	-23.06	-106.15

TABLE AVI.2 (continued)

	Industry	*(2.1)*	*(2.2)*	*(2.3)*	*(2.4)*	*(2.5)*	*(2.6)*	*(2.7)*
26	Paints & varnishes	88.84	-376.10	474.59	-7.69	-1.25	5.30	-6.69
27	Drugs & medicines	26.98	209.47	1.01	124.13	4.82	37.41	0.18
28	Cleansing detergents & cosmetics	268.70	-287.35	543.23	-193.80	-32.67	34.94	-66.05
29	Other chemicals	627.23	-317.20	1334.12	-343.74	-159.24	80.53	-338.69
30	Petroleum & coal products	4.22	-97.63	149.27	100.03	1.06	-24.66	37.71
31	Rubber processing	-102.27	7316.56	-4356.26	3926.41	-18.63	1332.65	-793.45
32	Rubber products	216.90	714.78	651.13	-975.70	-25.09	-82.69	-75.33
33	Plastic products	964.39	18.76	1937.44	389.36	196.49	3.82	394.75
34	Pottery and china	407.00	40.39	202.93	-198.71	-84.24	-8.36	-42.00
35	Structural clay products	456.26	281.14	986.66	-90.69	-13.86	-8.54	-29.97
36	Cement and concrete products	71.49	-151.88	1157.45	-248.72	-6.20	13.16	-100.31
37	Other NM mineral products	149.30	61.05	404.13	-377.27	-69.54	-28.44	-188.23
38	Iron & steel products	2905.52	-439.16	901.85	-1518.62	-1441.30	217.85	-447.39
39	Non-ferrous metals & tin	-19.46	220.65	-55.23	-182.52	2.06	-23.33	5.84
40	Tools, cutlery & metal furniture	57.17	68.23	23.81	-178.85	-16.23	-19.37	-6.76
41	Structural metal products	776.49	161.36	1614.54	-650.07	-179.89	-37.38	-374.05
42	Fabricated metal products	1023.74	265.44	871.85	-601.29	-121.63	-31.54	-103.58
43	Non-electrical machinery	-711.54	923.38	1464.28	-1568.19	193.55	-251.18	-398.31
44	Business & household machinery	88.13	117.15	10.42	1356.37	493.93	656.61	58.40
45	Communication equipment, appliances	223.72	117.63	807.00	-94.11	-16.99	-8.93	-61.30
46	Other electrical machinery	248.46	190.02	404.71	-63.26	-17.37	-13.28	-28.29
47	Shipbuilding & repairs	-71.46	7.40	200.92	-39.56	5.90	-0.61	-16.59
48	Motor vehicles	3492.08	-41.62	1578.78	-1249.03	-1570.09	18.71	-709.84
49	Other transport equipment	783.33	87.22	-15.18	-156.52	-338.70	-37.71	6.56
50	Other miscellaneous manufactures	1452.81	-4.74	231.37	-460.98	-352.48	1.15	-56.14
	Sum	24776.04	14486.74	33022.58	-3798.35	-4074.75	2459.07	-2616.37

TABLE AVI.3

THE COMPONENTS OF LABOUR ABSORPTION IN MANUFACTURING, 1963–1971

(Man-years) (According to Formula 2)

	Industry	*(2.1)*	*(2.2)*	*(2.3)*	*(2.4)*	*(2.5)*	*(2.6)*	*(2.7)*
1	Meat preparation	574.97	61.60	14.43	-0.97	-26.52	-2.84	-0.67
2	Dairy products	1712.26	561.26	453.02	-473.85	-1071.80	-351.33	-283.57
3	Fruits & vegetable canning	293.55	1510.37	-295.04	-79.66	-9.58	-49.27	9.62
4	Fish canning	310.94	374.04	176.09	91.03	144.41	173.72	81.78
5	Vegetable and animal oils & palm oil	411.26	-3900.65	7026.51	575.80	219.88	-2085.44	3756.64
6	Grain mills & animal feeds	6789.83	-56.09	1123.62	-2887.96	-3863.04	31.91	-639.28
7	Bakeries	214.48	237.75	1176.86	-421.67	-18.36	-20.35	-100.72
8	Cocoa and chocolate	461.08	155.67	219.20	4.20	4.33	1.46	2.06
9	Ice factories	-31.59	1.82	164.30	-102.00	5.53	-0.32	-28.75
10	Other food preparations	7744.27	979.79	4008.77	-3758.76	-5421.65	-685.94	-2806.48
11	Spirits and wines	-66.40	103.07	85.33	-56.00	30.48	-47.31	-39.17
12	Breweries & soft drinks	1093.24	780.61	950.79	-1090.67	-537.58	-383.85	-467.53
13	Tobacco products	247.13	907.43	1899.16	-1372.47	-81.51	-299.31	-626.42
14	Textile spinning	4796.76	893.22	999.16	-91.97	-457.62	-85.22	-95.32
15	Knitting mills	1889.66	481.43	244.91	-65.11	-376.26	-95.86	-48.77
16	Other textiles	137.68	-163.37	134.98	481.67	433.42	-514.31	424.94
17	Wearing apparel exc. footwear	4074.63	2091.84	285.41	-23.58	-96.18	-49.38	-6.74
18	Leather products	386.08	25.24	387.79	5.42	8.44	0.55	8.48
19	Footwear exc. rubber & plastic	87.93	134.08	517.68	833.96	71.13	108.46	418.75
20	Wood mills	160.83	14039.29	8602.82	-1862.11	-25.45	-2221.89	-1361.50
21	Other wood products	174.54	219.93	378.60	-822.15	-103.39	-130.27	-224.25
22	Furniture & fixtures	1279.88	-2.99	2291.12	-736.74	-275.23	0.64	-492.69
23	Paper & paper products	1971.17	567.91	786.58	-156.51	-420.32	-121.10	-167.73
24	Printing & publishing	3490.64	472.47	8483.25	-2892.89	-1370.71	-185.53	-3331.22
25	Industrial chemicals	684.44	280.29	618.87	-82.12	-151.91	-62.21	-137.36

TABLE AVI.3 (continued)

	Industry	*(2.1)*	*(2.2)*	*(2.3)*	*(2.4)*	*(2.5)*	*(2.6)*	*(2.7)*
26	Paints & varnishes	244.55	-213.49	540.01	-85.21	-56.47	49.30	-124.69
27	Drugs & medicines	69.55	199.93	343.63	-4.52	-0.63	-1.82	-3.13
28	Cleansing detergents & cosmetics	465.88	-553.40	1369.26	-533.46	-160.03	190.09	-470.34
29	Other chemicals	16483.05	1473.71	4089.85	-1689.61	-14940.95	-1335.84	-3707.22
30	Petroleum & coal products	438.15	122.38	46.83	-3.67	-50.27	-14.04	-5.37
31	Rubber processing	-87.48	9290.02	-6958.95	6680.89	-30.51	3240.18	-2427.15
32	Rubber products	3033.07	-11.14	5924.02	-3231.85	-1366.39	5.02	-2668.74
33	Plastic products	4409.70	188.22	2613.63	-162.42	-1138.66	-48.60	-674.88
34	Pottery and china	1344.18	163.65	547.34	-336.12	-707.05	-86.08	-287.91
35	Structural clay products	488.95	496.60	2092.73	-437.39	-86.55	-87.90	-370.43
36	Cement and concrete products	1789.75	486.37	991.83	-341.58	-421.91	-114.65	-233.81
37	Other NM mineral products	2545.88	212.42	1376.36	-751.71	-2160.00	-180.22	-1167.76
38	Iron & steel products	5467.80	185.76	693.33	-436.73	-2988.66	-101.53	-328.97
39	Non-ferrous metals & tin	3634.65	-162763.53	159973.15	-642.97	-1314.39	58859.78	-57850.70
40	Tools, cutlery & metal furniture	352.47	28.52	338.33	-371.81	-207.03	-16.75	-198.73
41	Structural metal products	1431.34	242.36	1055.13	92.25	124.80	21.13	92.00
42	Fabricated metal products	3223.52	828.10	3717.75	-2657.57	-1643.34	-422.16	-1895.30
43	Non-electrical machinery	1324.31	1656.68	3934.24	-2237.14	-685.80	-857.92	-2037.37
44	Business & household machinery	316.49	479.34	21.48	562.80	497.55	753.56	33.78
45	Communication equipment, appliances	2465.50	424.05	651.46	-210.48	-1108.84	-190.71	-292.99
46	Other electrical machinery	2159.11	401.73	426.36	-176.65	-1105.53	-205.70	-218.31
47	Shipbuilding & repairs	-249.93	23.38	28.38	-134.59	38.80	-3.63	-4.41
48	Motor vehicles	14424.77	257.33	963.53	-471.88	-10619.00	-189.44	-709.32
49	Other transport equipment	1920.14	197.87	138.06	-145.66	-1384.59	-142.25	-113.97
50	Other miscellaneous manufactures	-309.55	105.47	142.26	1641.35	-418.18	142.47	192.18
	Sum	106275.11	-125322.28	225814.18	-21070.84	-53323.13	52187.30	-81679.42

TABLE AVI.4

THE COMPONENTS OF CAPITAL ABSORPTION IN MANUFACTURING, 1963–1968
(M$'000) (According to Formula 2)

	Industry	*(2.1)*	*(2.2)*	*(2.3)*	*(2.4)*	*(2.5)*	*(2.6)*	*(2.7)*
1	Meat preparation	192.35	33.28	53.37	44.62	69.21	11.98	19.20
2	Dairy products	11282.82	4348.85	1978.40	−3209.26	−6532.48	−2517.88	−1145.44
3	Fruits & vegetable canning	552.71	1963.43	91.91	−618.58	−90.59	−321.82	−15.06
4	Fish canning	75.18	583.04	49.05	207.28	23.54	182.56	15.36
5	Vegetable and animal oils & palm oil	317.64	−5389.81	7076.39	1974.01	270.97	−4597.91	6036.69
6	Grain mills & animal feeds	10716.62	−6.29	2370.62	−1862.56	−1502.02	0.88	−332.26
7	Bakeries	7.26	−70.60	868.09	−387.89	−0.68	6.66	−81.83
8	Cocoa and chocolate	304.45	87.01	216.33	69.52	29.40	8.40	20.85
9	Ice factories	−199.61	50.82	1439.56	−116.82	5.47	−1.39	−40.03
10	Other food preparations	3613.00	547.95	1696.23	1488.30	923.13	140.00	433.39
11	Spirits and wines	191.85	44.40	107.50	−139.89	−97.59	−22.59	−54.69
12	Breweries & soft drinks	2783.41	2241.65	1459.56	2137.07	672.74	541.80	374.57
13	Tobacco products	288.14	714.78	2159.93	463.97	12.86	31.91	96.41
14	Textile spinning	31677.25	5807.99	4960.61	−7314.61	−21377.14	−3919.47	−3347.63
15	Knitting mills	3884.29	882.36	765.73	−867.10	−2762.96	−627.64	−544.68
16	Other textiles	64.16	−146.37	101.35	53.25	25.50	−58.17	40.28
17	Wearing apparel exc. footwear	1059.88	1521.59	221.23	−384.42	−329.11	−472.47	−68.69
18	Leather products	283.31	4.59	205.14	−196.66	−108.82	−1.76	−78.79
19	Footwear exc. rubber & plastic	15.26	16.65	61.84	−11.42	−0.54	−0.59	−2.20
20	Wood mills	24.01	20292.27	6571.51	−10448.12	−8.79	−7430.56	−2406.34
21	Other wood products	267.68	38.95	924.66	−325.98	−37.68	−5.48	−130.15
22	Furniture & fixtures	231.35	42.18	220.51	−120.76	−14.65	−2.67	−13.96
23	Paper & paper products	1409.48	711.52	1135.88	−308.84	−211.21	−106.62	−170.21
24	Printing & publishing	3466.46	730.99	8395.74	710.76	164.07	34.60	397.37
25	Industrial chemicals	22648.67	3880.02	12064.25	3680.78	5320.03	911.39	2833.82

TABLE AVI.4 (continued)

	Industry	(2.1)	(2.2)	(2.3)	(2.4)	(2.5)	(2.6)	(2.7)
26	Paints & varnishes	500.14	1028.23	839.25	-827.50	-156.77	-322.29	-263.06
27	Drugs & medicines	46.39	-60.94	424.55	-238.80	-18.01	23.66	-164.85
28	Cleansing detergents & cosmetics	328.10	-521.11	2591.50	-2345.69	-119.80	190.28	-946.27
29	Other chemicals	1644.27	573.37	322.70	-123.65	-383.63	-133.77	-75.29
30	Petroleum & coal products	37517.78	22615.05	3017.90	-34.88	-342.12	-206.23	-27.52
31	Rubber processing	4.23	5654.41	-6068.43	16020.32	2.26	3016.00	-3236.83
32	Rubber products	8780.20	-3799.36	17567.33	-11583.99	-4023.33	1740.97	-8049.84
33	Plastic products	3869.46	214.62	2687.71	42.03	94.39	5.24	65.56
34	Pottery and china	2882.35	499.32	1791.61	-1187.76	-1017.70	-176.30	-632.58
35	Structural clay products	-50.32	171.23	1321.47	-677.36	10.01	-34.07	-262.96
36	Cement and concrete products	53068.21	20795.92	12687.40	-39300.27	-32940.51	-12908.45	-7875.32
37	Other NM mineral products	51.71	-0.07	23.92	40.48	61.57	-0.08	28.48
38	Iron & steel products	33971.72	10227.08	6949.62	-3548.41	-7678.55	-2311.59	-1570.81
39	Non-ferrous metals & tin	13355.30	-594739.44	583642.79	1034.75	2201.60	-98041.78	96212.51
40	Tools, cutlery & metal furniture	323.05	-114.68	401.08	-398.58	-153.65	54.54	-190.77
41	Structural metal products	2016.95	293.26	1020.07	353.58	187.23	27.22	94.69
42	Fabricated metal products	804.90	204.21	1640.79	3103.44	702.47	178.22	1431.97
43	Non-electrical machinery	968.80	106.02	1145.84	1645.39	728.55	79.72	861.68
44	Business & household machinery	175.36	347.07	11.80	-70.99	-17.15	-33.94	-1.15
45	Communication equipment, appliances	1698.20	184.07	281.68	929.88	2514.53	272.56	417.08
46	Other electrical machinery	47.26	1.11	7.63	755.20	2549.47	59.79	411.54
47	Shipbuilding & repairs	-160.74	14.31	-312.76	528.67	-74.02	6.59	-144.03
48	Motor vehicles	4616.55	222.52	387.46	684.06	4858.47	234.18	407.76
49	Other transport equipment	1677.66	101.81	857.05	-322.19	-879.57	-53.38	-449.33
50	Other miscellaneous manufactures	-6308.29	867.97	-46.19	-497.20	283.67	-39.03	2.08
	Sum	256986.84	-496182.85	688499.33	-51702.82	-59167.98	-126588.78	77878.75

TABLE AVI.5

THE COMPONENTS OF CAPITAL ABSORPTION IN MANUFACTURING, 1968–1971
(M$'000) (According to Formula 2)

	Industry	*(2.1)*	*(2.2)*	*(2.3)*	*(2.4)*	*(2.5)*	*(2.6)*	*(2.7)*
1	Meat preparation	4308.05	441.22	98.43	−447.76	−3520.00	−360.51	−80.42
2	Dairy products	−317.16	−426.56	1735.04	3348.18	−108.94	−146.51	595.94
3	Fruits & vegetable canning	−17.32	542.66	−756.23	68.86	−0.22	7.00	−9.76
4	Fish canning	1204.57	305.74	1379.86	−569.59	−381.60	−96.86	−437.13
5	Vegetable and animal oils & palm oil	546.06	2988.15	6834.63	5375.57	366.83	2007.38	4591.36
6	Grain mills & animal feeds	5733.79	−120.66	826.81	−5676.65	−1435.51	30.21	−207.00
7	Bakeries	155.52	245.27	102.67	57.99	2.02	3.19	1.34
8	Cocoa and chocolate	431.78	165.62	212.63	154.83	45.92	17.61	22.61
9	Ice factories	−39.14	−34.23	−245.34	−835.44	6.03	5.28	37.83
10	Other food preparations	4412.54	403.99	5173.60	−4036.65	−1214.42	−111.18	−1423.88
11	Spirits and wines	−188.69	87.50	67.42	412.62	−256.12	118.76	91.51
12	Breweries & soft drinks	1210.19	480.41	4127.36	−519.95	−32.87	−13.05	−112.10
13	Tobacco products	281.91	1467.51	2915.09	−532.97	−10.61	−55.23	−109.71
14	Textile spinning	3146.90	627.20	6879.78	10186.42	1850.15	368.75	4044.81
15	Knitting mills	829.05	244.48	144.60	1126.69	479.26	141.33	83.59
16	Other textiles	72.41	19.26	15.33	152.67	51.66	13.74	10.94
17	Wearing apparel exc. footwear	2684.40	643.00	252.91	1444.00	1391.34	333.27	131.08
18	Leather products	171.54	26.92	513.97	223.89	62.04	9.74	185.90
19	Footwear exc. rubber & plastic	7.86	20.04	103.79	1275.40	25.08	63.90	330.94
20	Wood mills	225.79	3481.45	14299.80	22156.11	142.42	2195.90	9019.50
21	Other wood products	41.03	284.87	−275.52	−276.80	−3.73	−25.87	25.02
22	Furniture & fixtures	343.16	−60.65	1115.02	−242.09	−36.94	6.53	−120.02
23	Paper & paper products	3105.08	547.79	1517.08	599.03	411.42	72.58	201.01
24	Printing & publishing	2442.03	−47.84	10988.20	−4020.68	−339.54	6.65	−1527.82
25	Industrial chemicals	−6438.37	7423.93	34177.55	−26815.59	2576.50	−2970.90	−13677.15

TABLE AVI.5 (continued)

	Industry	(2.1)	(2.2)	(2.3)	(2.4)	(2.5)	(2.6)	(2.7)
26	Paints & varnishes	559.38	-2368.17	2988.36	-1383.79	-225.15	953.19	-1202.81
27	Drugs & medicines	24.34	188.97	0.91	400.83	15.56	120.80	0.58
28	Cleansing detergents & cosmetics	944.15	-1009.71	1908.81	-606.62	-102.26	109.36	-206.73
29	Other chemicals	1090.47	-551.48	2319.43	2046.52	948.03	-479.44	2016.46
30	Petroleum & coal products	706.51	-16361.03	25016.12	-19265.90	-205.10	4749.64	-7262.23
31	Rubber processing	-215.51	15418.17	-9179.94	1720.23	-8.16	583.85	-347.63
32	Rubber products	666.37	2196.03	2000.49	-122.85	-3.16	-10.41	-9.48
33	Plastic products	4391.46	85.41	8822.40	-723.52	-365.13	-7.10	-733.53
34	Pottery and china	2319.04	230.16	1156.28	-665.60	-282.18	-28.01	-140.70
35	Structural clay products	593.17	365.50	1282.73	3630.45	554.73	341.81	1199.61
36	Cement and concrete products	1415.83	-3008.04	22923.54	-21925.95	-546.15	1160.33	-8842.57
37	Other NM mineral products	44.24	18.09	119.74	515.71	95.06	38.87	257.30
38	Iron & steel products	49110.04	-7422.78	15244.09	-17587.02	-16693.71	2523.18	-5181.84
39	Non-ferrous metals & tin	-112.11	1271.08	-318.19	1432.12	-16.15	183.08	-45.83
40	Tools, cutlery & metal furniture	68.88	82.20	28.68	188.57	17.11	20.42	7.13
41	Structural metal products	2159.01	448.66	4489.19	-2212.93	-612.37	-127.26	-1273.30
42	Fabricated metal products	2350.90	609.56	2002.10	11689.19	2364.50	613.08	2013.67
43	Non-electrical machinery	-953.32	1237.15	1961.85	-721.82	89.09	-115.61	-183.34
44	Business & household machinery	414.04	550.41	48.96	-473.44	-172.40	-229.19	-20.39
45	Communication equipment, appliances	1250.57	657.53	4511.12	1233.52	222.73	117.11	803.43
46	Other electrical machinery	1055.90	807.55	1719.89	692.47	190.12	145.40	309.67
47	Shipbuilding & repairs	-150.08	15.54	421.97	-811.56	121.07	-12.54	-340.41
48	Motor vehicles	15161.28	-180.69	6854.45	-8921.57	-11214.86	133.66	-5070.26
49	Other transport equipment	3739.23	416.32	-72.46	-1075.29	-2326.83	-259.07	45.09
50	Other miscellaneous manufactures	4067.87	-13.26	647.84	801.28	612.69	-2.00	97.58
	Sum	115054.66	13440.25	189102.87	-49538.87	-27472.75	12144.86	-22442.15

TABLE AVI. 6

THE COMPONENTS OF CAPITAL ABSORPTION IN MANUFACTURING, 1963–1971
(M$'000) (According to Formula 2)

	Industry	*(2.1)*	*(2.2)*	*(2.3)*	*(2.4)*	*(2.5)*	*(2.6)*	*(2.7)*
1	Meat preparation	3395.04	363.73	85.22	−93.16	−2550.56	−273.26	−64.02
2	Dairy products	12537.73	4109.75	3317.12	−2407.68	−5445.95	−1785.13	−1440.84
3	Fruits & vegetable canning	453.67	2334.21	−455.98	−577.85	−69.46	−357.40	69.82
4	Fish canning	1050.21	1263.32	594.74	−68.10	−108.03	−129.96	−61.18
5	Vegetable and animal oils & palm oil	883.62	−8380.79	15096.88	4854.61	1853.78	−17582.32	31672.21
6	Grain mills & animal feeds	17775.82	−146.84	2941.65	−4723.27	−6318.01	52.19	−1045.54
7	Bakeries	179.13	198.57	982.91	−339.39	−14.77	−18.38	−81.07
8	Cocoa and chocolate	742.68	250.74	353.07	153.48	158.31	53.45	75.26
9	Ice factories	−230.81	13.33	1200.56	−755.69	40.94	−2.36	−212.97
10	Other food preparations	8402.00	1063.01	4349.25	−524.47	−756.49	−95.71	−391.59
11	Spirits and wines	−149.67	232.33	192.34	43.50	−23.67	36.75	30.42
12	Breweries & soft drinks	4358.16	3111.86	3790.29	1838.87	906.37	647.17	788.27
13	Tobacco products	617.32	2266.71	4744.02	55.34	3.29	12.07	25.26
14	Textile spinning	53933.66	10043.11	11234.28	−5242.53	−26086.24	−4857.58	−5433.72
15	Knitting mills	7044.31	1794.70	912.98	−663.67	−3835.17	−977.10	−497.06
16	Other textiles	120.58	−143.08	118.22	186.83	168.12	−199.50	164.83
17	Wearing apparel exc. footwear	5049.44	2592.28	353.69	58.00	236.56	121.45	16.57
18	Leather products	797.07	52.11	800.60	−82.61	−128.60	−8.41	−129.17
19	Footwear exc. rubber & plastic	27.38	41.75	161.18	975.68	83.22	126.89	489.91
20	Wood mills	390.03	34045.81	20862.16	958.79	13.11	1144.04	701.03
21	Other wood products	291.24	366.97	631.72	−506.71	−63.72	−80.29	−138.21
22	Furniture & fixtures	712.41	−1.66	1275.29	−313.04	−116.94	0.27	−209.34
23	Paper & paper products	5534.85	1594.62	2208.64	−76.68	−205.93	−59.33	−82.17
24	Printing & furnishing	7115.36	963.08	17292.38	−1476.06	−699.39	−94.66	−1699.71
25	Industrial chemicals	28986.81	11870.80	26209.96	−4062.99	−7515.84	−3077.92	−6795.84

TABLE AVI.6 (continued)

	Industry	(2.1)	(2.2)	(2.3)	(2.4)	(2.5)	(2.6)	(2.7)
26	Paints & varnishes	1749.63	-1527.39	3863.46	-1557.03	-1031.91	900.83	-2278.61
27	Drugs & medicines	86.24	247.90	426.07	1.70	0.24	0.68	1.17
28	Cleansing detergents & cosmetics	1927.10	-2289.15	5663.96	-2787.39	-836.17	993.27	-2457.61
29	Other chemicals	4686.70	419.03	1162.89	229.61	2030.43	181.54	503.80
30	Petroleum & coal products	52373.02	14628.15	5597.31	-1135.16	-15542.95	-4341.25	-1661.13
31	Rubber processing	-137.17	14566.73	-10911.63	17764.34	-81.13	8615.56	-6453.73
32	Rubber products	10688.06	-39.26	20875.29	-11648.93	-4925.02	18.09	-9619.25
33	Plastic products	12079.35	515.60	7159.44	-104.72	-734.18	-31.34	-435.15
34	Pottery and china	7076.38	861.53	2881.44	-1452.57	-3055.57	-372.01	-1244.20
35	Structural clay products	673.57	684.10	2882.90	1872.60	370.54	376.34	1585.94
36	Cement and concrete products	78203.18	21251.85	43338.18	-48563.37	-59983.73	-16300.68	-33241.43
37	Other NM mineral products	97.70	8.15	52.82	200.53	576.21	48.08	311.51
38	Iron & steel products	107433.12	3649.82	13622.81	-7678.69	-52547.68	-1785.20	-6663.19
39	Non-ferrous metals & tin	12831.67	-574615.67	564764.61	2087.89	4268.13	-191131.36	187854.66
40	Tools, cutlery & metal furniture	466.61	37.75	447.90	-289.40	-161.15	-13.04	-154.68
41	Structural metal products	5153.09	872.55	3798.66	-827.08	-1118.93	-189.46	-824.83
42	Fabricated metal products	2198.90	564.88	2536.03	9801.37	6060.80	1556.98	6990.04
43	Non-electrical machinery	670.74	839.08	1992.62	1287.16	394.58	493.61	1172.22
44	Business & household machinery	641.83	972.07	43.57	-343.73	-303.88	-460.24	-20.63
45	Communication equipment, appliances	3308.41	569.02	874.18	1207.34	6360.47	1093.96	1680.62
46	Other electrical machinery	87.62	16.30	17.30	893.69	5592.99	1040.65	1104.45
47	Shipbuilding & repairs	-330.93	30.95	37.58	-823.93	237.51	-22.21	-26.97
48	Motor vehicles	14627.30	260.95	977.06	-302.75	-6812.93	-121.54	-455.08
49	Other transport equipment	9467.62	972.70	779.33	-817.03	-7766.41	-797.92	-639.29
50	Other miscellaneous manufactures	-2817.08	959.78	1294.65	1093.28	278.54	94.90	128.01
	Sum	483260.72	-445642.17	793431.60	-54681.06	-179763.37	-227554.78	150907.74

TABLE AVIII.1

MANUFACTURING GROSS OUTPUT, NET IMPORT AND NET EXPORT, 1974 AND 1980, PENINSULAR MALAYSIA (M$'000)

	Industry	*Import 0*	*Import 1*	*Export 0*	*Export 1*	*Output 0*	*Output 1*
1	Meat preparation	27700	36000	3200	4100	17000	28100
2	Dairy products	142500	167500	39900	58200	220700	277900
3	Fruits-veget. canning	53300	63800	63200	86900	72500	105600
4	Fish canning	47000	76000	114600	194900	159000	259000
5	Veget. & animal oils	3200	10600	11400	17400	75700	115900
6	Grain mills & animal feeds	281400	195600	14800	25800	581000	864900
7	Bakeries	2100	1100	7900	10000	77900	117600
8	Cocoa & chocolate	10800	9100	20500	33900	46200	68400
9	Ice factories	200	300	100	100	8800	13300
10	Other food prep.	311900	293100	63700	74200	379600	556200
11	Spirits & wines	23900	42100	800	1400	3300	5200
12	Breweries, soft drinks	2100	300	25600	32800	141000	207300
13	Tobacco products	10700	11000	48200	75000	394000	623700
14	Textile spinning	241200	281100	48200	68700	248200	381100
15	Knitting mills	31900	37200	5300	7600	27800	42800
16	Other textiles	14700	16200	1200	1600	3200	4600
17	Wearing apparel exc. footwear	34300	28100	59800	77300	119200	185300
18	Leather prod.	9000	7300	700	2200	12400	20100
19	Footwear exc. rubber & plastic	11500	21900	5300	8400	65300	103500
20	Wood products exc. wood mills	400	800	2400	3900	31300	45800
21	Furniture & fixtures	4500	4800	3700	6200	42400	64700
22	Paper & paper products	196700	202000	9600	15900	69600	100600
23	Printing & publishing	38600	45400	11000	15600	232700	391400

TABLE AVIII.1 (continued)

	Industry	Import 0	Import 1	Export 0	Export 1	Output 0	Output 1
24	Industrial chemicals	352200	307400	18700	24600	186300	251400
25	Paints & varnishes	5900	6700	1600	1900	61900	87800
26	Drugs & medicines	24300	25900	4400	6200	21100	33600
27	Cleansing detergents & cosmetics	19200	20900	21300	26300	160500	227900
28	Other chemicals	52400	106400	13100	17500	60400	100200
29	Rubber products exc. rubber mills	30700	26900	70600	113100	236400	360900
30	Plastic products	19100	20400	18600	20000	114900	164500
31	Pottery & china	41600	53800	8400	14000	22600	36800
32	Structural clay products	10200	11500	6700	8700	32400	51900
33	Cement & concrete products	7300	9700	15300	23100	200800	319900
34	Other NM mineral products	16100	17100	300	600	10200	18400
35	Iron & steel products	438700	633100	28900	45100	242000	326300
36	Tools, cutlery, metal furniture	59600	68100	1600	2500	11200	17100
37	Structural metal products	10900	13200	8700	11400	91800	124600
38	Fabricated metal products	169200	216400	33800	40300	239800	349600
39	NE industrial machinery	876500	1191300	25500	29100	83500	135100
40	Business & household machinery	59500	54900	10900	21000	21300	34300
41	Communication equipment & appliances	333100	345900	58300	66600	154900	268600
42	Other electrical machinery	149600	155400	25800	28500	86400	149900
43	Shipbuilding & repair	8100	20300	1900	3100	7400	10500
44	Motor vehicles	621800	622400	27300	38300	192400	284400
45	Other transport equipment	125000	156600	10300	11900	34200	54200
46	Other manufactures	130900	140500	13400	17600	61800	102600

References

I. OFFICIAL REPORTS AND PUBLICATIONS

a) MALAYSIAN

Bank Negara Malaysia, *Annual Report*, various issues.

______, *Quarterly Economic Bulletin*, various issues.

Department of Statistics, *Annual Statistics of External Trade for West Malaysia*, Vols. I & II, various issues.

______, *Census of Construction Industries*, 1970.

______, *Census of Manufacturing Industries*, 1959, 1963, and 1968.

______, *Census of Mining Industries*, 1970.

______, *Financial Survey of Limited Companies*, various issues.

______, *Input-Output Table for West Malaysia*, 1970.

______, *Inter-Industry Accounts*, Kuala Lumpur, 1965.

______, *Monthly Statistical Bulletin of West Malaysia*, various issues.

______, *Monthly Statistics of External Trade—Peninsular Malaysia*, various issues.

______, *National Accounts, 1960–1968*.

______, *National Accounts, 1960–1971*.

______, *Oil Palm, Coconut and Tea Statistics*, 1970.

______, *Population and Housing Census of Malaysia—Community Groups*, 1970.

______, *Rubber Statistics Handbook*, 1970.

______, *Socio-Economic Sample Survey of Households, Malaysia 1967–68*, Kuala Lumpur, October 1970.

______, *Survey of Manufacturing Industries*, Vols. I & II of various published issues.

Economic Planning Unit (EPU) Kuala Lumpur, *First Malaya Plan 1956–60*.

______, *Second Malaya Plan 1960–65*.

______, *First Malaysia Plan 1966–70*.

______, *Mid-Term Review of the First Malaysia Plan 1966–70*.

______, *Second Malaysia Plan 1971–75*.

______, *Mid-Term Review of the Second Malaysia Plan 1971–75*.

______, *Third Malaysia Plan 1976–80*.

Federal Industrial Development Authority (FIDA), *Annual Report*, various issues.

Federation of Malaya, *Report of the Industrial Development Working Party*, Kuala Lumpur, Government Printers, 1957.
——, *Malayan Trade Classification and Federation of Malaya Customs Tariffs*, effective 1 January 1962.
——, *Malaysia Trade Classification and Customs Tariffs 1966*, effective 1 November 1966.
Ministry of Finance, *Economic Report 1976–77*, Kuala Lumpur, October 1976.
The Treasury, *Economic Report 1973–74*, Kuala Lumpur, December 1973.
——, *Economic Report 1974–75*, Kuala Lumpur, November 1974.
——, *Economic Report 1975–76*, Kuala Lumpur, November 1975.
——, *Sales Tax in Malaysia*, Kuala Lumpur 1972.

b) OTHERS

Deutsches Institut für Wirtschaftsforschung, *Aufstellung von Input-Output Tabellen*, Berlin, Dunker und Humblodt, 1968.
International Bank for Reconstruction and Development (IBRD), *Report on the Economic Development of Malaya*, Baltimore, Johns Hopkins Press, 1955.
——, *Working Party Report 1959*, Kuala Lumpur.
——, *Bank Staff Working Paper No. 154*, prepared by N. G. Carter, June 1973.
——, *Malaysia: Second Plan Performance and Third Plan Issues*, Vols. I & II, Washington, D.C., September 1976.

II. BOOKS

Ariff, K. A. M., *Export Trade and the West Malaysian Economy—An Enquiry into the Economic Implications of Export Instability*, Kuala Lumpur, University of Malaya, 1972.
Balassa, B., and Associates (eds.), *The Structure of Protection in Developing Countries*, Baltimore, Johns Hopkins Press, 1971.
Banerji, R., *Exports of Manufactures from India—An Appraisal of the Emerging Pattern*, Kieler Studien No. 130, Tübingen, J. C. B. Mohr (Paul Siebeck), 1975.
Chamberlin, E. H., *Theory of Monopolistic Competition—A Reorientation of the Theory of Value*, Harvard Economic Studies, Vol. 38, 6th edition, Cambridge, 1948.
Chenery, H. B., Ahluwalia, M. S., Bell, C. L. G., Duloy, J. H., and Jolly, R., *Redistribution with Growth*, Washington—Brighton, 1974.
——, and Syrquin, M., *Patterns of Development, 1950–1970*, Washington, D. C., Oxford University Press, 1975.
Clark, C., *The Conditions of Economic Progress*, London, MacMillan, 1940.
Fei, J., and Ranis, G., *Development of the Labour Surplus Economy: Theory*

and Policy, Homewood, Illinois, 1964.

Giersch, H., *The International Division of Labour-Problems and Perspectives*, Tübingen, J. C. B. Mohr (Paul Siebeck), 1975.

Grubel, H. G., and Johnson, H. G. (eds.), *Effective Tariff Protection*, Geneva, Graduate Institute of International Studies and GATT, 1971.

Hiemenz, U., and v. Rabenau, K., *Effektiv Protektion*, Tübingen, J. C. B. Mohr (Paul Siebeck), 1973.

Hirschmann, A. O., *The Strategy of Economic Development*, New Haven, Yale University Press, 1958.

Hoffmann, L., *Importsubstitution und wirtschaftliches Wachstum in Entwicklungsländern—unter besonderer Berücksichtigung von Argentinien, Brasilien, Chile und Kolumbien*, Tübingen, J. C. B. Mohr (Paul Siebeck), 1970.

Hoffmann, W. G., *Stadien und Typen der Industrialisierung*; translated into English by W. O. Henderson and W. H. Chaloner as *The Growth of Industrial Economies*, Manchester University Press, 1958.

Kasper, W., *Malaysia—A Study in Successful Economic Development*, Washington, D. C., American Enterprise Institute for Public Policy Research, 1974.

Lary, H. B., *Imports of Manufactures from Less Developed Countries*, New York, National Bureau of Economic Research, 1968.

Lewis, A., *The Theory of Economic Growth*, London, Unwin University Books, 1954.

Lewis, S. R., *Economic Policy and Industrial Growth in Pakistan*, London, Allen and Unwin, 1969.

Lim, D., *Economic Growth and Development in West Malaysia 1947–1970*, Kuala Lumpur, Oxford University Press, 1973.

———, *Readings on Malaysian Economic Development*, London, Oxford University Press, 1975.

Lin Ching-yuan, *Industrialization in Taiwan 1946–1972*, New York, Praeger Publishers Inc., 1973.

Linder, St. Burenstam, *An Essay on Trade and Transformation*, Uppsala, 1961.

Little, I., Scitovsky, T., and Scott, M., *Industry and Trade in Some Developing Countries—A Comparative Study*, OECD, Paris and Oxford University Press, London, 1970.

Lo Sum Yee, *The Development Performance of West Malaysia 1955–67*, Kuala Lumpur, Heinemann Educational Books, 1972.

Rasmussen, P. N., *Studies in Intersectoral Relations*, Amsterdam, North Holland Publishing Company, 1956

Silcock, T. H., and Fisk, E. K. (eds.), *The Political Economy of Independent Malaya*, Canberra, Eastern Universities Press Ltd., 1963.

Vogt, W., *Theorie des wirtschaftlichen Wachstums*, Berlin, Frankfurt, Vahlens Handbücher der Wirtschafts und Sozialwissenschaften, 1968.

Yamane, T., *Statistics: An Introductory Analysis*, 2nd edition, New York, Harper and Row, 1970.

III. ARTICLES

Alejandro, C. F. Diaz, 'On the Import Intensity of Import Substitution', *Kyklos*, Vol. 20, 1965.

——, 'Import Substitution, Ceteris Paribus and Mutatis Mutandis: Reply', *Kyklos*, Vol. 20, 1967.

Ariff, K. A. M., 'Protection for Manufactures in Peninsular Malaysia , *Hitotsubashi Journal of Economics*, Vol. 15, No. 2, 1975.

Arrow, K. J., Chenery, H. B., Minhas, B. S., and Solow, R. M., 'Capital-Labour Substitution and Economic Efficiency', *The Review of Economics and Statistics*, Vol. 43, 1961.

Baran, P. A., 'On the Political Economy of Backwardness, *Manchester School*, Vol. 20, 1962.

Bhagwati, J., 'Immiserizing Growth: A Geometrical Note', *Review of Economic Studies*, Vol. 25, 1958.

Bruton, H. J., 'The Elasticity of Substitution in Developing Countries', *Williams College, Research Memorandum*, No. 45, Williamstown, Massachusetts, 1972.

Caldwell, J. C., 'The Demographic Background of Malaya', in T. H. Silcock and E. K. Fisk (eds.), *The Political Economy of Independent Malaya*, Canberra, Eastern Universities Press Ltd., 1963.

Casanegra de Jantscher, M., 'Steueroasen—Pro und Contra', in *Finanz und Entwicklung*, Vol. 13, No. 1, March 1976.

Chenery, H. B., 'Patterns of Industrial Growth', *American Economic Review*, Vol. 50, 1960.

Corden, W. M., 'The Structure of a Tariff System and the Effective Protection Rate', *Journal of Political Economy*, Vol. 74, June 1976.

Diwan, R. K., 'An Empirical Estimate of the Elasticity of Substitution Production Function', *The Indian Economic Journal*, Vol. 12, Bombay, 1964/65.

Dhrymes, P. J., 'Some Extensions and Tests for the CES-Class of Production Functions', *The Review of Economics and Statistics*, Vol. 47, Cambridge, Massachusetts, 1965.

Donges, J. B., 'A Comparative Survey of Industrialization Policies in Fifteen Semi-Industrial Countries', *Weltwirtschaftliches Archiv*, Vol. 112, 1976.

Echterhoff-Severitt, H., 'Forschung und Entwicklung in der Wirtschaft', *Wirtschaft und Wissenschaft*, H. 4 (1975), Beilage, Stifterverband für die Deutsche Wissenschaft.

Edgeworth, F. Y., 'The Theory of International Values I', *Economic Journal*, Vol. 4, 1899.

Ethier, W., 'General Equilibrium Theory and the Concept of Effective Protection', in H. G. Grubel and H. G. Johnson (eds.), *Effective Tariff Protection*, Geneva, Graduate Institute of International Studies and GATT, 1971.

Eysenbach, M. L., 'A Note on the Growth and Structural Change in

Pakistan's Manufacturing Industry 1954–1964', *Pakistan Development Review*, Vol. IX, Karachi, 1969.

Fane, G., 'Import Substitution and Export-Expansion: Their Measurement and an Example of their Application', *Pakistan Development Review*, Vol. XI, Karachi, 1971.

______, 'The Choice of Industry-Mix in the Division of Labour between Developed and Developing Countries', *Weltwirtschaftliches Archiv*, Vol. 108, 1972.

______, Schatz, K. W., and Wolter, F., 'Der Zusammenhang zwischen Produktionsstruktur und Entwicklungsniveau', *Weltwirtschaftliches Archiv*, Vol. 106, Kiel, 1971.

Fleck, F. H., Finkbeiner, B., Casutt, R., 'Die CES- und VES-Produktionsfunktion: Eine kritische Gegenüberstellung', *Kyklos*, Vol. 24, Basel, 1971.

Girgis, M., 'Aggregation and Misspecification Biases in Estimates of Factor Elasticity of Substitution—The Case of Egypt', *Weltwirtschaftliches Archiv*, Vol. 110, Kiel, 1974.

Griliches, Z., 'Specification Bias in Estimations of Production Functions', *Journal of Farm Economics*, Vol. 39, Menasha, Wisconsin, 1957.

Hoffmann, L., 'The Import Intensity of Import Substitution: Ceteris Paribus versus Mutatis Mutandis', *Kyklos*, Vol. 20, 1967.

______, 'Import Substitution—Export Expansion and Growth in an Open Developing Economy: The Case of West Malaysia', *Weltwirtschaftliches Archiv*, Vol. 109, No. 3, 1973.

______, and Tan T.N., 'Pattern of Growth and Structural Change in West Malaysia's Manufacturing Industry 1959–68', *Kajian Ekonomi Malaysia*, Vol. VIII, December 1971, reprinted in David Lim (ed.), *Readings on Malaysian Economic Development*, London, Oxford University Press, 1975.

______, and Tan S. E., 'Employment Creation Through Export Growth: A Case Study of West Malaysia's Manufacturing Industries', in H. Giersch (ed.), *The International Division of Labour—Problems and Perspectives*, Tübingen, J. C. B. Mohr (Paul Siebeck), 1974, reprinted in David Lim (ed.), *Readings on Malaysian Economic Development*, London, Oxford University Press, 1975.

______, and Weber, B., 'Economies of Scale, Factor Intensities and Substitution: Micro Estimates for Malaysia's Manufacturing Industries', *Weltwirtschaftliches Archiv*, Vol. 112, No. 1, Kiel, 1976.

Jorgenson, D. W., 'The Development of a Dual Economy', *Economic Journal*, Vol. 71, 1961.

Kanapathy, V., 'Foreign Investment in Malaysia: Experience and Prospects', *United Malayan Banking Corporation Economic Review*, 1970.

Kmenta, J., 'On the Estimation of the CES Function', *International Economic Review*, Vol. 8, Osaka, 1967.

Kuznets, S., 'Qualitative Aspects of Economic Growth of Nations', *Economic Growth and Cultural Change*, Vol. 5, October 1956.

Leontief, W. W., 'Factor Proportions and the Structure of American

Trade—Further Theoretical and Empirical Analyses', *Review of Economics and Statistics*, November 1956.

Lim, D., 'Capital Utilization of Local and Foreign Establishments in Malaysian Manufacturing', *The Review of Economics and Statistics*, Vol. LVIII, 1976.

——, 'On the Measurement of Capital Utilization in Less Developed Countries', *Oxford Economic Papers*, Vol. 28, No. 1, March 1976.

Lu Yao-chi and Fletscher, L. B., 'A Generalization of the CES Production Function', *Review of Economics and Statistics*, Vol. 50, 1968.

MacDougall, G. D. A., 'The Benefits and Costs of Private Investment from Abroad: A Theoretical Approach', *Economic Record*, Vol. 36, 1960.

Morawetz, D., 'Employment Implications of Industrialization in Developing Countries—A Survey', *The Economic Journal*, Vol. 84, London, 1974.

Morley, S. A., and Smith, G. W., 'On the Measurement of Import Substitution', *American Economic Review*, Vol. LX, 1970.

Nadiri, M. I., 'Some Approaches to the Theory and Measurement of Total Factor Productivity: A Survey', *Journal of Economic Literature*, Vol. 8, Menasha, Wisconsin, 1970.

Power, J., 'The Structure of Protection in West Malaysia', in Bela Balassa and Associates (eds.), *The Structure of Protection in Developing Countries*, Baltimore, Johns Hopkins Press, 1971.

Quayum, A., 'Models of Balanced and Maximum Growth in Dualistic Economies', in H. C. Bos (ed.), *Towards Balanced International Growth*, Amsterdam, London, 1969.

von Rabenau, K., 'Empirical Problems of Effective Rates of Protection: An Evaluation of Past Experiences', *Pakistan Development Review*, Vol. XIV, No. 2, Summer 1975.

——, 'Trade Policies and Industrialization in a Developing Country: The Case of West Malaysia', *Malayan Economic Review*, Vol. XXI, No. 1, April 1976.

Reddaway, W. B., Potter, S. J., and Taylor, C. T., 'Effects of UK Investment Overseas, Final Report', in *Survey of Current Business*, various issues.

van Rijckeghem, W., 'The Import Intensity of Import Substitution', *Kyklos*, Vol. 19, 1966.

Streeten, P., 'Nouvelles Manières d'Aborder le Problème l'Investissement Privé dans les Pays en Boie de Développement', *Revue de la Société d'Etudes et d'Expansion*, Vol. 238, 1969.

Sunkel, O., 'La Tarea Política y Teórica del Planificador en America Latina', *Revista de la Sociedad Interamericana de Planificacion*, Vol. II, No. 8, 1968.

Vanek, J., 'The Natural Resource Content of Foreign Trade 1870–1955 and the Relative Abundance of National Resources in the United States', *Review of Economics and Statistics*, May 1959.

Wheelwright, E. L., 'Industrialization in Malaya', in T. H. Silcock and

E. K. Fisk (eds.), *The Political Economy of Independent Malaya*, Canberra, Eastern Universities Press Ltd., 1963.

Winston, G. C., 'Factor Substitution, ex-ante and ex-post', *Journal of Development Economics*, Vol. 1, Amsterdam, 1974.

IV. UNPUBLISHED MATERIALS

Bode, T., and Müller-Debus, T. E., 'Die Auswirkungen von Direktinvestionen auf das wirtschaftliche Wachstum, die Beschäftigung und die Zahlungsbilanz von Malaysia 1962–1972', Regensburg University, 1975 (mimeo).

Chee Peng Lim, 'The Role of Small-Scale Industry in the Malaysian Economy', Unpublished Ph.D. Thesis, University of Malaya, 1975 (mimeo).

Economic Planning Unit (EPU), 'Effective Protection and Industrialization Policies', Kuala Lumpur, Prime Minister's Department, April 1975 (mimeo).

______, 'Tax Incentives for Industry', December 1975 (mimeo).

Edwards, C., 'Protection, Profits and Policy—An Analysis of Industrialization in Malaysia', University of East Anglia, Norwich, July 1975 (mimeo).

Federal Industrial Development Authority (FIDA), 'Tariffs: Structure for an Efficient Utilization of Resources for 1971–75', Kuala Lumpur, 1970 (mimeo).

______, 'Survey of Pioneer Companies', Kuala Lumpur, 1970 (mimeo).

Hoffmann, L., 'Interim Report on Methodology and Results of the Hoffmann-Export Survey', Regensburg University, 1974 (mimeo).

International Bank for Reconstruction and Development (IBRD), 'Current Economic Position and Prospects of Malaysia', Washington, D.C., 1972 (mimeo).

Lall, S., and Elek, A., 'Balance of Payments and Income Effects of Private Foreign Investment—Case Studies of India and Iran', TD/B/C. 3 (V), Misc. 1, Geneva, November 1971 (mimeo).

______, Mayhew, K., and Page, S., 'Balance of Payments and Income Effects of Private Foreign Investment in Manufacturing: Case Studies of Columbia and Malaysia: Study prepared at the request of UNCTAD', TD/B/C 3 VI/Misc. 1., GE 74-74088, Geneva, 1973, (mimeo).

Lim, D., 'Capital Utilization in West Malaysian Manufacturing', University of Malaya, June 1975 (mimeo).

O'Mara, G. T., 'An Econometric Analysis of Small-Scale Industry in Malaysia', Northwestern University and IBRD, 1975 (mimeo).

Panchamukhi, V. K., 'Effective Protection and Intraregional Trade—A Case Study of Malaysia', ECAFE Secretariat, Bangkok, 1972 (mimeo).

Pearson, D. S., 'Review of Project Processing Procedures and Policies', FIDA, Kuala Lumpur, 1970 (mimeo).

Research & Forecasts Inc. (New York), 'A Survey of US-Investment in Southeast Asia', Kuala Lumpur, 1971 (mimeo).

Shankland Cox Partnerships, 'Klang Valley Regional Planning and Development—Draft Final Report', Kuala Lumpur, December 1972 (mimeo).

Shepherd, G., 'Industrial Growth during the First and Second Malaysia Plan', IBRD, Washington, 1975 (mimeo).

Tan T. N., 'Import Substitution and Structural Change in the West Malaysian Manufacturing Sector 1959–1970', University of Malaya, Kuala Lumpur, 1973 (mimeo).

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