TRANSFER PRICING IN ASSEMBLY INDUSTRIES

A Preliminary Analysis of the Issues in Malaysia and Singapore

Sanjaya Lall
Institute of Economics and Statistics, Oxford University
May 1977

Prepared for
The Commonwealth Secretariat
London

Table of Contents

I. Preface

This paper presents the results of a preliminary study of problems of transfer pricing in assembly industries in Malaysia and Singapore. It is based on a very brief visit - two weeks in all - to these countries. In the course of this visit I was able to interview a number of government officials and some foreign as well as domestic firms engaged in assembly operations, as well as to collect some published as well as unpublished material on assembly industries. This report summarises the information gathered and the impressions gained: since it is based on such a quick survey, it should be treated more as an exploration of the issues than as a completed piece of research.

I wish to express my gratitude to all those who helped me during my stay. Tan Sri Thong Yaw Hong, Director General of the Economic Planning Unit in Malaysia, and Dr. Michael Wong Pak Shong, of the Monetary Authority in Singapore, were kind enough to provide overall support for my research. Zainal Yusof of the EPU took an immense amount of trouble to organize my work and to accompany me in Kuala Lumpur. Pang Eng Fong, Director of the Economic Research Centre in Singapore, provided great help, and the time of his staff, in arranging interviews and meeting various people in Singapore. To them, and to everyone else who spared me time and effort, I would like to extend my thanks.

II. Introduction

This report is intended to cover two separate areas: the experience of assembly industries in Malaysia and Singapore, and the problem of transfer pricing. 'Assembly industries' may be defined to cover those manufacturing operations which consist of simply putting together imported parts and components without further processing, whether for sale domestically or abroad. In this study, we concentrate on the two major industries of this type in developing countries - automobiles and electronics.

The automobile industry is an example par excellence of import substitution behind heavy protective barriers, with its output destined almost wholly for domestic consumption, and characterized by a long-standing domination by a few transnational corporations (TNCs) from developed countries (what is known in the literature as a 'mature oligopoly'). The transnational automobile industry has been fairly widespread in the Third World for two decades or more, and its analysis can illustrate the problems that this type of import substituting, TNC-dominated industrialization raises for developing economies.

The second industry, electronics, is a very different animal. It is a relatively 'new' industry, based on a rapidly evolving technology, with a large number of competitors who are using facilities in developing areas to economise on the labour-intensive parts of the production process. Its output is intended primarily for export, so that tariff protection is irrelevant to the success of the investments. TNCs are, again very important, though their role differs from one sub-sector of the industry to the other: in the very sophisticated field of semiconductors, TNCs (especially from the U.S.) hold a virtual monopoly because of the pace and complexity of technological change; in the less demanding field of consumer electronics, domestic enterprises also play an important role, through transnational buyers as well as transnational manufacturers retain a strong hold over the marketing of the final product. The growth of the transnational electronics industry has been concentrated in a few countries of Latin America (including the Caribbean) and South East Asia, but the lessons that it may offer for the rest of the developing world - in terms of prospects for manufactured exports, employment generation, the role of TNCs, industrialization and trade policy[1] - are of vital importance.

While the present study can do no more than scratch the surface of the issues raised by these two industries, interested readers are referred to the wider literature in existence on their experience in developing countries.[2] We shall concentrate here on the specific experience of Malaysia and Singapore, though the preliminary nature of the comments should be borne in mind.

(1) See Helleiner (1973, 1976), Dela Torre (1974), Adam (1972), Watanabe (1971, 1972) and Sharpston (1975).

(2) For general works an automobiles see Baranson (1971), Jenkins (1977), Hu (1973), Sundelson (1970); on electronics see Caulkin (1977), Chang (1971), Finan (1975), Lake (1976), Moxon (1974), UNCTAD (1975) and U.S. Tariff Commission (1970).

'Transfer pricing' refers to the problems raised for economies which play host to TNCs from the fact that a large part of the imports and exports of subsidiaries takes place with related companies i.e. with firms wholly-owned or controlled by, or at least associated with, their parent. The pricing of such trade may be discretionary, allowing the TNC concerned to show higher or lower costs (and so, profits) in different countries in which it operates. The problems raised, for tax authorities, local shareholders, industrialization policy, trade unions, and so on, have been discussed at length(3), but very little progress has been made, either in terms of discovering the true extent, incidence and determinants of transfer pricing, or in terms of providing developing countries with a system which can come to grips with an extremely difficult administrative, juridical and analytical issue. I am in this paper unable to add much by way of new data on transfer pricing, but the very inability to get hard information, and the lack of a monitoring mechanism, are symptomatic of the problems which need to be solved by host countries over the long run if they are to come to terms with the new demands raised by the growth of international production.

In section III, I shall briefly review the growth and present position of the automobile and electronic industries in Malaysia and Singapore. In Sections IV and V, I shall discuss the problems of transfer pricing in assembly industries and the means to tackle them. In Section VI, I shall touch on some larger issues which should be considered when negotiating the terms of investment in these two industries.

---

(3) See Lall (1973), Vaitsos (1974), Lall and Streeten (1977), Robbins & Stobaugh (1974), Musgrave (1972), Verlage (1975) and Kopits (1976).

III. Assembly Industries in Malaysia and Singapore

III. a. Background to Foreign Investment:- Malaysia and Singapore

Malaysia and Singapore are among the few countries of the Third World which have remained consistently attractive to foreign investors over a long period, and which follow more or less open door policies to TNCs in almost every sector of their economies. Both countries have strong currencies and healthy balance-of-payments; both have a good measure of political stability (though Malaysia has recently suffered from the backlash of the Indo-China War) and an excellent record on labour relations: infrastructure is highly developed, especially in Singapore, and there is an adequate supply of skilled labour supplemented by various schemes for labour training and education; both offer substantial fiscal incentives to foreign investors in designated industries, and both offer extremely liberal terms on profit remission and capital repatriation.(4) Tax rates (at 45% plus an excess profits tax of 5% in some cases in Malaysia, and 40% in Singapore) are in line with, or slightly lower than tax rates in developed countries but the existence of several rebates lowers the effective tax rates substantially. Export-oriented investments are offered special incentives in Malaysia (in Singapore most investments are export oriented anyway, so the distinction is not particularly meaningful).

There are differences between the two countries, of course, both in terms of policy and in terms of their economic position. Malaysia is slightly more restrictive towards foreign investments than Singapore: Malaysia has launched upon a policy of achieving 'racial balance', aimed to improve the relative position of the Malay group vis a vis the Chinese and Indians, and this places certain conditions on firms as concerns their equity participation (though this is interpreted flexibly where export oriented or otherwise desirable investments are involved) and employment. Malaysia also has an expressed preference for joint ventures over wholly-owned subsidiaries. It has instituted a system, still in its infancy, of monitoring

---

(4) Details of policies on foreign investment are available from the Federal Industrial Development Authority for Malaysia, and the Economic Development Board for Singapore.

and regulating technical agreements, though an earlier attempt to fix a rate of 1-2% on royalties has been dropped. Singapore has none of these requirements (though it does have a system of wage negotiation which serves to make it slightly less 'free market' than Hong Kong, where wages are unregulated).

On terms of economic structures, Malaysia is relatively less industrialized and offers less skills and a less-developed infrastructure than Singapore - compensated in part by lower wage rates. Singapore is better located for maritime trade, and its long entrepot tradition has endowed it with an excellent international communication and financial network. Its administration is reputed for its honesty and efficiency, while its workforce is credited with high productivity, adaptability and dedication. In general, it is easy to see why both countries are favoured by TNCs, when these companies face far more restrictions, higher costs and greater risks in investing and producing in other countries of the Third World (and some of the developed world).

Let us look quickly at the role of foreign firms in the economies of the two countries. Data on Malaysia are available from three sources: (a) the Report on the Financial Survey of Limited Companies, Malaysia, (1972) (Department of Statistics), which covers all limited companies in operation in that year; (b) the Annual Report of the Federal Industrial Development Authority (FIDA), the latest being 1975, which provides statistics on pioneer establishments in the country (accounting for the bulk of foreign investments in manufacturing, though not in the automobile sector); (c) the Survey of Manufacturing Industry, Peninsular Malaysia (1972) (Department of Statistics), which provides detailed census data, though not always by foreign/local breakdown at the 4-digit level, for the Peninsular part of the country.

The Financial Survey data for 1972 covers 1,631 companies in manufacturing, of which 1,267 are locally controlled and the rest foreign controlled (divided between 294 limited companies incorporated in Malaysia and 70 branches of foreign companies). Table 1 summaries some of the main statistics extracted from this survey, and shows a number of interesting facts:

Table 1

Limited Companies in the Manufacturing Sector of Malaysia:
Main Statistics for 1972 (Million Malaysian $)

	Locally Controlled	Foreign Controlled	Total
Numbers (%)	1267 (77.7)	364 (22.3)	1631 (100)
Sales (%)	2,245.6 (39.3)	3,472.3 (60.7)	5,717.9 (100)
Sales/Firm	1.8	9.5	3.5
Profits (%)	108.8 (32.7)	224.3 (67.3)	333.1 (100)
Profit/Sales	4.8	6.5	5.8
Total Assets (%)	2,016.8 (48.0)	2,186.8 (52.0)	4,203.6 (100)
Profits/Total Assets	5.4	10.3	7.9
Exports (%)	486.2 (30.0)	1,147.8 (70.0)	1,634.0 (100)
Exports/Sales	21.7	33.1	28.6
Imports (%)	421.2 (35.2)	775.9 (64.8)	1,197.1 (100)
Goods & Services Purchased (%)	1,682.2 (38.5)	2,684.0 (61.5)	4,366.2 (100)
Imports/Goods Purchased	25.0	28.9	27.4
Total Employment '000s (%)	98.4 (61.2)	62.3 (38.8)	160.7 (100)
Net Fixed Assets/Employee ($'000)	9.3	14.0	11.1

Source: Department of Statistics, Report on the Financial Survey of Limited Companies Malaysia, 1972, Kuala Lumpur.

(i) Foreign controlled firms as a group are much larger by size of sales (M$9.5 m) than locally controlled firms (M$1.8 m).

(ii) Foreign controlled firms are also more profitable, especially when this is measured as a percentage of total assets employed.

(iii) Foreign controlled firms perform better, in terms of exports as a percentage of total sales, than domestic firms; they also tend to be more import intensive. Both sets of firms export more than they import, but the net balance of trade gain is higher for foreign controlled firms.

(iv) Foreign controlled firms generate relatively little employment, and employ far more capital per head than locally-controlled firms.

These general data do not tell us how foreign and local firms as such perform:[5] the differences may arise simply from the industries in which the two happen to be concentrated or from their relative size. One needs to allow for inter-industry differences to really discover whether or not transnationality by itself makes a firm larger, more profitable, or more capital intensive. We cannot pursue these questions here, but the figures given above suggest that foreign firms are concentrated in industries characterized by larger size, more capital-intensive techniques, greater exports and higher profitability - all according to expectation - and that they may in addition be more efficiently run.

Table 2 gives some data for 1972 (for Peninsular Malaysia only) for a larger sample of manufacturing establishments[6], based on the industrial census which covers all establishments with 5 or more employees and accounts for some 95% of value added in manufacturing industry in that area. The figures confirm the general impression conveyed by Table 1, with the additional advantage that we can now distinguish between foreign firms of different origin. We see, for instance, that U.S. firms are much larger than other foreign firms, followed at some distance by U.K. firms. Singapore firms are larger than local firms, but do not seem to use much more capital/employee, indicating that they are concentrated in industries with similar (fairly simple) technology: their higher value added/employee indicates, however, that they are more efficient or attain economies of scale. U.K. and U.S. firms seem to be the most capital intensive as well as the most productive, which suggests that they are located in the most sophisticated branches of manufacturing industry. The detailed industrial (4-digit) data given in volume 2 of the Survey contain a wealth of information which could yield extremely interesting information if one wanted it.

---

(5) For a discussion of the relative performance of TNCs and local firms and a survey of the literature see Lall (forthcoming).

(6) An 'establishment' is not the same as a firm, since a large firm could own several establishments. In the absence of firm-level data, however, we assume that the two are identical. This would probably tend to reduce the average size of the foreign firm, which are usually large and may be multi-establishment.

Table 2

Principal Statistics for the Manufacturing Sector of Peninsular Malaysia by Ownership, 1972

(M $ million)

	Total	Malaysia	Singapore	U.K.	U.S.	Japan	Other
Number of Establishments	3,685	3,134	260	105	17	7	162
Output	5,119.7	2,466.5	772.4	814.5	205.7	38.0	822.6
Output/Est.	1.4	0.8	3.0	7.8	12.1	5.4	5.1
Value added	1,524.9	665.4	221.9	278.1	81.1	13.8	264.7
V.A./Est.	0.4	0.2	0.9	2.6	4.8	2.0	1.6
V.A./Output	29.8	27.0	28.7	34.1	39.4	36.3	32.2
Fixed Assets	1,658.9	839.6	161.0	212.7	68.4	14.5	362.7
Employment ('000)	206.2	139.3	24.4	12.3	4.0	1.0	25.2
F.A./Employee ($000)	8.0	6.0	6.6	17.3	17.1	14.5	14.4
V.A./Employee ($000)	7.4	4.8	9.1	22.6	20.3	13.8	10.5
% Distribution of Output	100.0	48.2	15.1	15.9	4.0	0.7	16.1
% Distribution of F.A.	100.0	50.6	9.7	12.8	4.1	2.2	21.9
Employees/Est.	56	44	94	117	235	142	156

Source: Department of Statistics, Survey of Manufacturing Industries, Peninsular Malaysia 1972, Volume I, Table 5.

The two tables together show that just over half of total manufacturing output in Malaysia is contributed by foreign firms, and about one-third of manufacturing employment. Foreign firms dominate in the export of manufactured products, and tend to concentrate in the more capital-intensive sectors of industry. They are significantly larger than domestic firms, and far more productive, though it cannot be decided whether this is due to their size, industrial distribution or efficiency.

Finally, let us look at some figures for Malaysian 'pioneer' companies, i.e. companies given special tax incentives (for up to 8 years) because of their technological importance or export potential. Table 3 gives the most recent figures for the distribution of paid up capital by source and by industry. While these figures do not show the distinction between locally-controlled and foreign-controlled firms, they do indicate the main sectors into which foreign capital has been attracted (since pioneer establishments account for the bulk of foreign manufacturing investment). It is interesting, therefore, to note that in terms of value of paid-up foreign capital, the electrical

Table 3

Pioneer Establishments in Malaysia: Paid-Up Capital by Local/Foreign Sources by Industry, 1975

(M $ million)

	No. of Firms	Local	(%)	Foreign	(%)	Total
Food Manufacturing	36	106.2	(57.3)	79.0	(42.7)	185.2
Beverages & Tobacco	2	5.1	(14.2)	30.9	(85.8)	36.0
Textile & Products	29	98.7	(63.2)	57.4	(36.8)	156.1
Leather & Products	1	-	(-)	1.0	(100)	1.0
Wood & Products	31	90.0	(82.2)	19.5	(17.8)	109.5
Furniture	-	-	-	-	-	-
Paper & Printing	4	3.9	(61.9)	2.4	(38.1)	6.3
Chemicals	44	48.2	(44.9)	59.2	(55.1)	107.4
Petroleum, coal	5	18.6	(20.0)	74.2	(80.0)	92.8
Rubber Products	7	22.3	(35.0)	41.5	(65.0)	63.8
Plastic	16	42.1	(83.7)	8.2	(16.3)	50.3
Non-Metallic Products	15	39.7	(47.1)	44.6	(52.9)	84.3
Basic Metal Products	13	39.3	(48.5)	41.8	(51.5)	81.1
Fabricated Metal Products	27	30.6	(60.7)	19.8	(39.3)	50.4
Machinery	13	13.8	(73.0)	5.1	(27.0)	18.9
Electrical Machinery	52	36.3	(25.6)	108.9	(74.4)	145.2
Transport Equipment	6	2.8	(41.8)	3.9	(58.2)	6.7
Other (including hotels)	22	116.7	(82.5)	24.8	(17.5)	141.5
TOTAL	323	714.1	(53.6)	629.0	(46.4)	1333.1(100)

machinery sector - its most important constituent being electronics - has attracted the largest amount of foreign investment, followed by food products and petroleum. Domestic capital has gone mainly into food manufacturing, textiles and wood products (and hotels). Transport equipment has attracted very little; since the automobile assemblers are import-substituting firms, and somewhat older than other TNCs, it is likely that they were not granted pioneer status, or have outlasted them.

Let us now glance at Singapore figures.(7) The census figures do not, unfortunately, give a breakdown of foreign/local ownership by industry, so that a comparison of performance is not possible in any detail. The 1975 census does, however, give some aggregate figures for manufacturing industry (apparently for the first time) which allow us to get a clear picture

(7) The Singapore dollar is very slightly higher in value than the Malaysian Ringitt; for practical purposes we may treat them as the same.

Table 4

Singapore: Principal Statistics by Ownership in Manufacturing Industry, 1975

(S $ million)

	Total	Wholly local	More than half local	Less than half local	Wholly foreign
No. of Establishments	2,385	1,595	263	228	297
Output	12,610.1	2,276.5	1,346.2	1,901.5	7,086.0
% Distribution of Output	100.0	18.1	10.7	15.1	56.2
Output/Establishment	5.3	1.4	5.1	8.3	23.9
Value Added	3,411.1	826.4	444.3	521.4	1,617.1
V.A./Output	27.1	36.3	33.0	27.4	22.8
Employees ('000)	191.5	62.9	29.0	39.2	60.4
Employees/Establishment	80	39	109	172	203
V.A./Employee ($000)	17.8	13.1	15.3	13.3	26.8
Sales	12,401.0	2,268.7	1,233.0	1,857.1	7,042.3
Exports	7,200.7	641.8	500.6	1,295.6	4,762.7
Exports/Sales	58.1	28.3	40.6	69.8	67.6
Gross Margins a/	18.0	21.2	21.1	15.1	17.2

Source: Department of Statistics, Report on the Census of Industrial Production 1975, Singapore, Table 9.

a/ Gross profits before tax as a percentage of sales.

of the importance of foreign firms in the island's economy. Table 4 presents some of these figures and a few ratios of interest. The census covers firms with 10 or more employees.

Wholly foreign firms contribute 56% of total manufacturing output and 66% of total exports in Singapore. If we add the foreign-majority firms and half the values shown for 'more than half local' firms to cover the sector controlled by foreign investors, we find that 77% of total output and 88% of exports fall in this category - a much higher proportion than the 52% of output shown for Peninsular Malaysia in Table 2. Singapore clearly has, by any measure, foreign 'penetration' of a high degree(8) and has managed to use this to attain a close integration with the developed world.

---

(8) For data on other developing countries see Lall (forthcoming). Data on Singapore by individual industries are not available.

The average size of establishments in Singapore is nearly 4 times higher than in Malaysia, though the difference is less marked for wholly local firms than for wholly foreign ones. The 291 non-Malaysian and non-Singapore firms in Malaysia (Table 2) have an average output of M $6.5 million, as compared to S $23.9 million for the 297 wholly foreign firms in Singapore and S $17.1 million for the wholly foreign and foreign-majority firms taken together. The difference may partly be explained by the lower cut-off point of coverage for the Malaysian census, but partly it must reflect real differences in size.

Singapore firms, especially wholly foreign-owned ones, achieve a higher value added/employee than Malaysian firms, signifying higher levels of productivity (due to more capital-intensive techniques), or of efficiency, or of scale. The export performance of wholly-foreign and foreign-majority firms is distinctly superior to that of other (especially wholly local) firms in Singapore (comparable data are not available in the Malaysian census).

Profitability figures are not available for Singapore firms, but a rough indicator - commonly used in industrial organization studies for this purpose - may be calculated in terms of 'gross margins' (profits plus depreciation before tax as a percentage of rates). This variable shows, somewhat surprisingly, that local firms perform better than others, the worst being foreign-majority firms. There may be several reasons for this - lower age of foreign firms, lower levels of efficiency (this is improbable), concentration in low-profit industries (also improbable), the use of transfer pricing (discussed later) and the effects of the world-wide recession (possible). An industry-wise breakdown over a longer period would be needed to discover the true extent and causes of this phenomenon.

Let us now review the industry-wise distribution of foreign investment and its growth over 1970-75 as shown by the Annual Report 1975-76 of the Economic Development Board of Singapore. Total foreign investment has grown some $2\frac{1}{2}$ times in 5 years, an impressive annual rate of growth of some 20%.

Table 5

Singapore: Foreign Investment in Manufacturing as at end 1970 and 1975 (in terms of Gross Fixed Assets)

(S$ million)

Industry Group	1970	(%)	1975	(%)	% growth[a]
Food, Beverages & Tobacco	31	(3.1)	123	(3.6)	296.7
Textiles) Apparel and Footwear)	45	(4.5)	235	(6.9)	422.2
Leather & Rubber Products	26	(2.6)	30	(0.9)	15.4
Wood & Cork Products	17	(1.7)	160	(4.7)	841.2
Paper Products	18	(1.8)	41	(1.2)	127.8
Industrial Chemicals) Other ")	61	(6.1)	171	(5.1)	180.3
Petroleum & Products	555	(55.8)	1,426	(42.2)	156.9
Plastics	8	(0.8)	41	(1.2)	412.5
Non-Metallic Mineral Products	31	(3.1)	57	(1.7)	83.8
Basic Metals	19	(1.9)	39	(1.2)	105.3
Fabricated Metal Products) Non-electrical Machinery)	34	(3.4)	327	(9.7)	861.8
Electrical Machinery & Apparatus	82	(8.2)	354	(10.5)	331.7
Transport Equipment	81	(5.1)	209	(6.2)	309.8
Precision Equipment, Photographic) Goods) Other)	17	(1.7)	167	(4.9)	882.4
TOTAL	995	(100)	3,380	(100)	239.7

(a) Due to reclassification of companies in 1974 some industry groupings may not be strictly comparable for the two years.

Source: Singapore Economic Development Board, Annual Report 1975-76, page 12.

The largest single sector continues to be petroleum and its products, though its share has declined markedly in recent years. Some smaller sectors, like wood and cork products or precision equipment and photographic goods, have grown very rapidly but from a small base. The electrical machinery sector - including electronics - has grown faster than the average and continues to be the second largest single attractor of foreign capital. It is being rapidly overtaken by the non-electical machinery and fabricated metal sector, which has grown on average at some 170 per cent per annum (not compounded) - though the electronics sector may have slowed down because of the recession more than the machinery sector and may revive. The transport sector mainly comprises shipbuilding - automobiles have not attracted much capital. The EDB has been trying to promote the upgrading of skill, technology and sophistication in the facilities set up by foreign capital, and there is little doubt that this has been accomplished over a broad range of industries.

To sum up this section, therefore, foreign capital plays a crucially important role in the manufacturing sectors of both countries, and will continue to grow even more important if present trends continue and the governments' avowed policies are successful. Singapore has a more advanced industrial sector and greater foreign 'penetration'; to some extent it may represent the path that Malaysia may follow in terms of industrial development. Let us now come to our two assembly industries.

III. b. The Automobile Industry

The automobile industry in both Malaysia and Singapore is almost a pure 'assembly' operation based on imported CKD (Completely Knocked Down) packs. Despite efforts to raise local content and to stimulate the growth of domestic supplier industries, the vast bulk of components are imported, and many of the locally purchased ones - tyres, batteries and paint - are in fact made in foreign controlled companies. Thus, there have been very few direct 'linkages' created by this sort of assembly operation, though some small scale operations are starting in the manufacture of cables, hoses, radiator cores, pistons and filters[9] in Malaysia. The government there is constantly pressing for higher local content, but the process of building up the necessary industries has been very slow.

In Malaysia, there were several car importers supplying the market until the mid-1960's. Local assembly started in 1967, and by 1968 the Census of Manufacturing Industries in West Malaysia shows 11 establishments in operation. While the ownership breakdown is not given, it may be assumed that most of them were foreign-owned. High tariff protection and fiscal incentives were provided to local assemblers, and the number of units produced grew as follows:

Table 6

Numbers of Passenger Cars & Commercial Vehicles Assembled in West Malaysia, 1967-75

	1967	1970	1972	1974	1975
Passenger Cars	319	20,963	24,653	52,457	38,596
Commercial Vehicles	947	7,016	6,126	11,803	4,290

Source: FIDA (unpublished).

(9) See Menon (1976).

The Census does not give the number of firms which own the establishments covered (so we cannot comment on the progress of manufacturing companies), but by 1972 the number of establishments had fallen to 8. Later figures provided by FIDA show that in fact there were 9 companies in production by 1975. Table 7 gives the names of the companies and the percentage of foreign equity participation in each.

Table 7

Automobile Assembly Companies in Malaysia (1975)

(M$ thousand)

	Name of Company	Total Paid-up Capital	% Local	% Foreign
1.	Asia Automobile Industries	4,400	20.5	79.5
2.	Associated Motor Industries	3,500	-	100.0
3.	Motor Associated Services	7,500	-	100.0
4.	General Motors	6,346	-	100.0
5.	Kilang Pembina Kereta-Kereta	7,000	-	100.0
6.	Swedish Motor Industries	3,000	50.0	50.0
7.	B.G. Motors	291	100.0	-
8.	Cycle and Carriage Industries	3,500	-	100.0
9.	Sarawak Motor Industries	2,104	100.0	-
	Total	37,641 (100.0)	12.7	87.3

Source: FIDA (unpublished).

Of these firms, the two with wholly local capital do not appear to be active in the passenger car market, which is in effect completely dominated by 7 foreign (or foreign-controlled) firms. Between them, these firms assemble some 64 models of 21 different makes of cars; the maximum annual output per make reached 8,973 for Toyota, 7,263 for Datsun, 6,755 for Ford and 5,453 for Mazda in 1974 (the peak year for production): these were the market leaders. At the other end, there were only 285 Audi, 268 Vauxhall, 441 VW and 326 Honda assembled.

The 1972 Census gives a breakdown of costs of production for the car assemblers (p.302); and shows that of the total cost of raw materials, 80 per cent was accounted for by the cost of CKD packs. Since many of the assemblers undertake work on packs imported by dealers, it is not possible to get a clear picture of the costs and value added for the operation as a whole, but the nature of the industry and its ownership structure make it clear that value added accruing locally in probably small. If we take the census figures, we see that of the total value of output in 1972 of the $94.3 million, total value added was $23.1 million, of which $9.8 million accrued to wages and salaries, and the rest was spread over depreciation, profits (mostly foreign) and taxes. Employment generated in 1972 came to 3,195 at year end (of which 34 were expatriates); this had risen rather slowly from 2146 in 1968 (70 expatriates).

It is difficult at this stage to comment on the efficiency of the industry, because detailed studies and comparisons have not been carried out. However, it seems reasonable to argue - and the literature on other developing countries (see footnote 2) supports this - that the tiny scale of operations and the variety of models assembled must lead to considerable inefficiency. One plant manager commented that the number of man-hours needed to run low-volume, multi-model assembly lines were about 50 per cent higher than to run high-volume, single-model lines as in developed countries. The low wage costs do, of course, compensate for the high labour requirement, but, from the viewpoint of sheer technical efficiency, it would certainly appear extremely costly to set up industries of this sort. A FIDA official roughly estimated that local models needed up to 40 per cent protection to compete against imports.

In Singapore, the 1975 Census shows that there are 5 establishments assembling motor vehicles, of which two (Ford and Cycle and Carriage, owned by Mercedes) make passenger cars. In 1976, according to an unpublished paper by the EDB, the assemblers produced 1535 passenger cars, 2185 light commercial vehicles, 1028 heavy commercial vehicles, 400 buses and 2170 scooters. The Census figures show no exports for this industry, but apparently some components - batteries, tyres, radiators, oil-seals and brake-linings - are made locally and exported in small quantities to neighbouring countries. The government has not been encouraging the growth of the passenger-car assembly industry, though imports of finished cars are charged tariffs at 45 per cent and buses and lorries at 30 per cent (an indication of the relative inefficiency of local assembly, surprisingly close to the FIDA estimate for Malaysia). This lack of encouragement seems to be due mainly to environmental reasons, though the government is keen to participate in the manufacture of an ASEAN vehicle, and hopes to set up the manufacture of diesel engines in the island. It encourages the growth and exports of component parts.

The slowdown of demand in 1975 due to general recession created substantial excess capacity in both countries, but demand in Malaysia seems to be reviving quickly, and rather slowly in Singapore. Due to its relatively small size - it only employs 570 workers in Singapore - the car assembly industry is not an important one for Singapore, and it is unlikely that it ever will be except as part of a regional cooperation project. In Malaysia, the long-term prospects for the industry are better, but the proliferation of models and small-scale reduce the potentially beneficial effects of the activity. The government is fully aware of the problem, and the Minister of Trade and Industry said recently that

> "The development of the motor vehicle industry has fallen far below expectations. When government first envisaged the establishment of local assembly plants through strong tariff protection, great hopes were entertained that the industry would in turn create numerous ancillary enterprises... /but/ the industry has failed to generate the level of employment which we had hoped and the creation of jobs has so far been negligible compared to the costs involved".(10)

It is also reported that this Minister urged manufacturers to cut down on the number of models, but it is difficult to see how such exhortation could work without more positive steps to ensure a rationalisation of industrial structure. If the ASEAN 'complementation scheme' to concentrate production of different components in different countries does come to fruition, it may enable the rationalisation to be accompanied by rapid growth of selected parts of the industry. Otherwise the prospects in this sector are for a continuation of privately profitable but socially costly industrialization under the aegis of automobile TNCs.

III. c. The Electronics Industry

The electronics industry in developing countries has been the subject of several studies in recent years, particularly with respect to the semi-conductor sector where 'offshore processing' by TNCs has led to a new type of foreign investment and the growth of new species of manufactured exports (see references in footnote 2). While this sector is certainly the largest and most dynamic element of TNC investment in electronics in

---

(10) Quoted in Asian Business and Industry, April 1976, p.18.

developing countries, it would be misleading to concentrate all our attention on it: there are other sectors of the industry which are also of significance for domestic industrialization and export expansion, and indeed, of greater significance to the growth of indigenous industry.(11)

Let us, therefore, divide the industry into two broad groups: (a) The high technology sector, mainly producing semiconductors, heavily dominated by wholly-owned TNC subsidiaries, and (b) the medium technology sector, mainly producing consumer goods like radios, televisions, simple calculators, and so on. The distinction between them is not a very hard one, since some TNCs in the very advanced fields of consumer electronics (e.g. sophisticated calculators) are indistinguishable from those in the semiconductor field, in terms of their trade, production, structure, management and marketing policy. However, a broad separation of the two groups in a useful one, and we shall keep to it here.

(a) The high-technology sector is "characterised by very rapid technological change, especially in the semiconductor field, and a relatively short product life. Research and development results are applied very rapidly so that technologies and equipment quickly become obsolete. The trend has been for the total amount of labour and material incorporated in electronic products to decrease, and for a large number of components to be made only by sophisticated automatic machines and in large volumes. Nevertheless, the manufacture of certain electronic products or components remains quite labour-intensive. This is so because many assemblies are so complex that they are difficult to mechanise; also sophisticated automated equipment costs a lot but may rapidly become obsolete, so less specialised, more labour-intensive equipment may be preferred".(12) These factors account for the spectacular growth of offshore assembly of semi-conductors in S.E. Asian countries, led by U.S. firms (the world leaders in this technology), followed at some distance by Japanese and European firms.

---

(11) This section of the paper has benefited greatly from a paper by Lim and Pang (1976).

(12) Lim and Pang (1976) p. 9-10. For detailed description of the technology see UNCTAD (1975).

The move has been facilitated by the tariff provisions in the U.S. and other countries, which levy duties only on value-added abroad; this has led to capital and R&D intensive functions being performed in the home bases of TNCs and labour-intensive functions being located abroad.

The extreme sensitivity of the overseas investment decision to costs of production (predominantly of semi-skilled labour), the requirements of large and continuous production flows, and close vertical integration with facilities located elsewhere, has meant that TNCs choose investment bases which (i) offer an ample supply of cheap, easily trained and docile labour; (ii) are socially and politically stable; (iii) permit full ownership of foreign investments and allow the free flow of intra-firm trade; (iv) have the requisite infrastructural and transport facilities; and (v) give the maximum of fiscal, financial and infrastructural incentives. A number of countries were chosen in the S.E. Asian region, starting with Hong Kong, followed by Taiwan and Korea in the mid'60s, Singapore in 1969, and Malaysia in 1972-73.[13] As wage rates rose in the older centres, the processing activities were transformed into more skill intensive operations and the labour-intensive processes were moved to cheaper areas. The development of investment and production in electronics provides one of the clearest possible examples of the law of 'dynamic' comparative advantage which advocates of TNC growth are fond of stressing.

The main benefits to host countries offered by high technology TNC investments are in terms of employment creation. There are few other advantages, at least in the early years of offshore assembly: almost all firms operate under tax and duty-free regimes; there are few skills imported which can be used in other industries; there are practically no direct 'linkages' with other sectors, since the components are so sophisticated that local firms cannot begin to compete with large research-based TNCs. As time passes, however, some of these latter factors change, and other benefits begin to emerge. Tax holidays are running out in the older centres, so that TNCs which decide to stay on will contribute to host government finances. As labour costs rise, more skill-intensive operations are

---

(13) Average hourly earnings of workers in semiconductors in 1974 in S.E. Asian countries were (US$); Singapore 0.57, Hong Kong 0.6, Korea 0.4, Malaysia 0.37, and Philippines 0.2. (UNCTAD(1975) table 10).

undertaken - both in terms of doing more testing of semiconductors as well as in terms of producing more sophisticated products like computer, control and medical equipment - and TNCs appear eager to stay on. Thus, the host country gains by the transfer of skills and technology of a type which can create 'spillover' effects and so stimulate indigenous entrepreneurship and the upgrading of wages.

The employment potential of the high-technology electronics sector is illustrated by the data in Table 8. Our sample countries have benefited substantially from TNC investments in this sector. The figures for the very late 'newcomers' (the last three countries) are small, but, given political stability and the amenability of the labour force in host countries, and favourable conditions in home countries, may grow rapidly.

Table 8

Employment by TNCs in Manufacture of Electronic Components (1974)

Singapore	24,000
Republic of Korea	23,000
Malaysia	18,000
Hong Kong	9,000
Indonesia	2,600
Philippines	2,000
Thailand	2,000

Source: UNCTAD (1975) table 7.

(b) The medium technology sector of the industry has also expanded in developing countries because of cheap labour availability, but it differs from the high technology sector in several important respects:

- The technology is more stable, older and more widely diffused, so that local firms are capable of competing with TNCs.
- The entire product can be made in the developing countries, so that close vertical linkages with R&D centres and capital-intensive facilities in developed countries are not essential(several components

need to be imported, of course, but this may be done easily on open world markets by any producer).

- This sector is particularly conducive to subcontracting to small producers(14), who may be provided with materials, specifications and technical assistance (sometimes finance) in order to produce parts or the whole product.
- The main factor which governs the exporting of products is marketing in a broad sense: the use of well-known brand names, the availability of retail outlets, advertising and product differentiation, meeting specialist specifications, design and packaging, and so on. This gives a tremendous advantage to firms based in developed countries in handling the final product, but with two distinct effects. First, it encourages the entry of large retailing organizations into developing countries as sub-contractors to domestic firms. Second, it encourages the (competing) growth of manufacturing TNCs as direct investors, to take advantage of low wages as well as the possibilities of sub-contracting <u>within</u> host countries. In the former case, the local enterprise usually retains a fair degree of freedom in its purchasing and production practices from its buyer; in the latter, the buying, production and selling decisions of the affiliate are closely controlled by the parent company. (For the purposes of transfer pricing, we are interested more in the latter case). It appears that the TNC controlled manufacturing operations - the Philips complex in Singapore is a good example - embody a higher technology than the operations of buying groups.

It is evident that this sector creates many more domestic 'linkages' than the sophisticated components sector of the industry. Not only does it enable the growth of indigenous supplies, it also encourages the diffusion of technology and gradual improvement of skill and knowhow. The main disadvantages of this sort of activity are the risk of losing markets or the imposition of unfavourable terms by buyers (these are

---

(14) See UNCTAD (1975) P.6-7.

especially significant for small local producers in high cost areas like Singapore), and the danger of exaggerated effects of recessions in developed countries. We shall return to these below.

So much for the general background to the electronics industry. Let us now consider our two sample countries.

The electronics industry in Singapore started in the mid-1960s with the manufacture of medium technology products (TV sets) by local firms. In 1968 several U.S. TNCs set up semi-conductor assembly facilities (starting production in 1969), followed later by some European and Japanese firms. The medium technology sector continued to attract foreign and local investments over the period 1970-74 but U.S. investment trailed off after 1970 when the initial impetus of semi-conductor investments wore off. To quote Lim and Pang:

> "With the exception of two European and one local firm, all the semi-conductor firms are U.S. multinationals. Firms producing final consumer goods are of all nationalities, while firms producing other components tend to be mostly Japanese or Singaporean. As the industry has developed, it has moved from being dominated by U.S. and semi-conductor firms to being characterised by many different nationalities of investors and a greater variety of product types. In particular there is increasing investment by European and Japanese firms, and a wider development of both the electronic consumer goods industry and of electronic supporting industries supplying the consumer goods and semi-conductor sectors. In 1975 the output of the consumer goods sector outstripped that of the electronic components sector for the first time. In 1971 components accounted for over 70 per cent of electronics output". (P. 16).

Table 9 shows the evolution of different parts of the industry from 1968 to 1975. The "active" and "passive" components and industrial electronic products may be grouped into the high technology sector and consumer electronics into the medium technology sector.

Table 9

Output of the Electronics Industry in Singapore

(S $ million)

	1968	1969	1970	1971	1972	1973	1974	1975
Active Components	-	50.4	129.9	185.4	300.1	577.7	507.2	409.5
Passive Components	-	0.8	0.8	20.3	54.1	112.6	151.2	111.0
Consumer Electronic Products	8.4	15.3	35.7	84.4	155.5	307.6	485.7	640.4
Industrial Electronic Products	-	0.4	8.8	29.0	46.9	46.4	42.4	16.6
TOTAL	8.4	66.9	182.4	319.1	556.6	1,044.3	1,186.5	1,177.5

Source: Economic Development Board, 'The Development of Singapore's Electronics and Electrical Industries and the Opportunities for Further Investment', Singapore, 1976 (Mimeographed).

The relative importance of electronics to Singapore's economy may be judged from the fact that in 1974 the industry accounted for 21% of the entire manufacturing work force (the largest single employer), for 10% of manufacturing output (second to petroleum) and for 16% of manufactured exports (the largest single exporter). Details of its performance are given in Table 10.

Table 10

Singapore: Performance of the Electronics Industry,[a] 1968-75

(S$ million)

	1968	1970	1972	1974	1975
No. of establishments	n.a.	35	53	81	83
Employment	700	11,251	27,270	43,350	28,599
Output	8.4	212.8	616.8	1,379.8	1,273.2
Value added/Worker (S$ thousand)	2.0	8.8	10.5	9.5	13.6
V.A./Output (%)	16.7	40.0	44.9	29.2	30.5
Exports/Sales (%)	n.a.	86.0	93.0	92.0	88.8
Exports/Total mfg. exports (%)	n.a.	12.0	21.0	16.0	15.7

Source: Lim & Pang (1976) table IV, and Census of Industrial Production (1975).

(a) Covers items 38321, 38322 and 38329 of the Industrial Code.

If we compare some of these figures with those shown in Table 4, we see that value added per worker in electronics is clearly lower than for industry as a whole, while employment per firm (345) is higher. This is due to the nature of some of the assembly operations, especially in semi-conductors, where the bulk of local wages goes to low-paid female employees. However, value added as a percentage of sales is higher than average because of high labour content and high profit margins. Lim & Pang (1976) remark that profit rates are higher than average in semiconductors, for which they advance two reasons "First, part of the profits represents the recoupment of heavy investment in technological research and development.

Second, profits may be exaggerated through intra-firm transfer pricing to take advantage of profit tax exemption in one location" (Footnote 17, P. 18). The latter point is of obvious significance to the next section, and we shall return to it there.

A comparison of 1974 and 1975 figures for employment and production clearly shows the effects of the world-wide recession, which hit the electronics industry quite badly. Several TNCs laid off workers (Texas Instruments 1,000, Fairchild 1,167, General Electric 425, Electronic Memories & Magnetics 1,000 and so on), while some shortened the working week or got workers to agree to cuts in wages. Furthermore, "a survey conducted in August 1974 showed that at least three firms had closed down and eight others were shifting operations out of Singapore*". (Lim & Pang P. 20). Part of the trend of shifting operations reflected the longer-term trend, encouraged by the government, to reduce low-skilled labour-intensive operations in Singapore.

By mid - 1975 the recession hit bottom and the situation began to improve. By March 1976 it was reported that most factories were running at 70% of capacity and later firms were embarking on "vigorous recruitment drives" (ibid.). The EDB predicts that "1976 will be better than the previous two years for the whole industry".(15)

The policy of the government is to assist (by tax incentives) and encourage the industry to improve its skill levels, to reach more complex forms of technology and manufacture more sophisticated products. "So far there has been some limited success along this line. In the semiconductor industry, for example, the three major firms have integrated forward from assembly into testing, finishing and centralised warehousing activities, as well as automated many assembly processes. However, backward integration into silicon crystal growing, wafer slicing and diffusion has been slower to take root". (Lim & Pang P. 21).

There is a large and (allowing for the recession) thriving sub-contracting industry in Singapore, encompassing foreign buying groups as well as local TNC affiliates. The GSP scheme, to qualify for which locally

---

(15) EDB, Annual Report 1975-76, P. 14.

* Editorial note: subsequent information indicates that the eight companies were only considering shifting part of their labour-intensive operations elsewhere.

assembled products must have a certain local content, has encouraged this industry to make special efforts to develop local suppliers. One of the major problems faced by Singapore firms is their high cost of labour relative to Hong Kong and Taiwan : the fact that subcontracting has proceeded quite rapidly testifies to the skill of local entrepreneurs and their concentration on new markets in Europe where the other countries have not got entrenched. Small local firms feel the shortage of finance and technology as inhibiting factors rather than a shortage of buyers : as they are not in direct competition for markets with local TNC affiliates, they feel resentful of these giant firms only in terms of access to local finance and to official incentives. There seems to be a common feeling that the government is not doing enough to help them grow. In the long term, their survival is threatened by the growing cost of Singapore labour, and the only solution seems to lie in gaining access to better technology.

Few of the foreign firms in electronics conduct R & D in Singapore, and those that do concentrate on design rather than process improvement. This is hardly surprising, since the research-orientated part of the industry requires massive investment, and is unlikely to be located in developing countries for some time to come.

All in all, the Singapore electronic industry has been a great success. It has created substantial employment, has added to local skills and foreign exchange earnings, and seems likely to stay on in the island despite rising costs, by moving into the more technology-intensive parts of the industry. There is little evidence of 'footloose' behaviour on part of TNCs, though certainly many of them have relocated the more labour-intensive parts of their operations elsewhere, chiefly Malaysia, with the approval of the host government. The effects of the recession reflect the close integration of Singapore with the international economy. Local subcontractors to foreign buying groups may have been subjected to difficult terms and squeezed by financial and technological pressures : there are indications that new policies are needed to assist this sector of the industry.

Let us now come to Malaysia. The electronics industry here is of much more recent origin, and has been in existence only for some 4-5 years. Detailed information of the type given above is not, however, available for Malaysia : the last detailed census only goes up to 1972, and even that does not break down the electrical sector into sufficient detail to separate the electronics industry from the rest. The indications are, however, that with rising costs in the older production centres, a number of TNCs (including several from Singapore) have set-up facilities there. As the UNCTAD (1975) study notes, "In Malaysia....employment in the electronics industry at the Penang Free Zones had reached 18,000 by the end of 1973, compared with virtually zero 18 months earlier" (P. 25, para. 86). Exports of electrical machinery rose from M$38 million in 1973 to $218 million in 1974 and (despite the recession) to M$285 million in 1975; we may be safe in assuming that most of this increase after 1973 was due to the electronics sector, most of which, in turn, was accounted for by TNCs.

Data provided in the FIDA Annual Report 1975, Table IX, on projects approved show that, in 1974-75, 85 approvals were granted to the electrical and electronics industry (of which 47 had Pioneer Status), out of a total of 986 approvals. These projects were to create 16,676 jobs (the third largest job provider on the list after food manufacturing and textiles), and to use 56% of local capital (though it is not clear whether this means joint ventures or separate foreign and local firms). In view of the nature of the industry most firms in the high technology sector are wholly-owned subsidiaries of TNCs, while joint ventures and local firms are more common in other sectors. As far as profitability of the industry is concerned, figures are not available, but during interviews, a FIDA official remarked that electronics subsidiaries were (like Singapore) exceptionally profitable, though all of them were still on tax holiday.

The Monthly Industrial Statistics of Peninsular Malaysia (September 1976) gives some figures on production in the electrical applicance sector (which inludes electronics) and shows that the index (1968 = 100) rose from 313.6 in 1972 to 538.6 in 1975. It hit a peak at 648.4 in mid 1975 and fell to 482.6 in February 1976, showing a gradual if unsteady recovery since. The FIDA promotional pamphlet entitled Malaysia : Your Profit Centre in Asia, notes on page 31-32 that "there is an established electronic components industry. Practically all the multinational electronic component manufactures have set up operations in Malaysia and these include RCA, Texas Instruments, Motorola, Matsushita, Siemens, National Semiconductor and Intel. Many of those companies have expanded their operations in

Malaysia and some of them have even introduced more sophisticated products into their Malaysian operations". Table 8 of UNCTAD (1975) also names some firms, like Hewlett Packard, National, Teledyne, Litronix, Industrial Electronics, Monsanto, R.C.A., Advanced Micro Devices, Plessey, Toshiba, Sanyo and others, which have established operations there. It also notes that recently complexes like Philips' in Singapore have been developed in Malaysia by U.S., Japanese and European firms in Malaysia (Para. 46).

In the absence of better information, it is difficult to speculate on the experience of the industry in Malaysia. Clearly it is at its early stages, and shows signs of following the same pattern of development as in Singapore. Whether it will be equally dynamic and successful in extending its technological base cannot be forecast now : a great deal turns on the world-wide evolution of the electronics market and technology, and on the success of the government's new industrial policy. A simple projection of present trends, of course, shows a very bright future for the industry, and the fact that in other industries the expiration of Pioneer Status has not led to the departure of any TNCs bodes well for their presence in Malaysia.

IV. The Problem of Transfer Pricing

The problem of transfer pricing, as we noted in the Introduction, is well known in the literature and to all governments who play host to TNCs. Its emergence is only a part of the wider problems created by the rise of giant companies whose international operations bypass, or indeed encompass, the sphere of what were traditionally 'free' market transactions. With large chunks of commodity, technology, managerial and financial markets becoming internalized by these firms, prices on all such transactions between their different parts become subject to some arbitrariness. Thus, prices for intra-firm trade, managerial or technical fees, charges for patents and trademarks, interest payments, and so on, may all be manipulated by the TNC in order to achieve some objective which may not conform to the best interests of a host country.

The largest single item on which prices can be manipulated by TNCs is intra-firm trade of raw materials, intermediates and finished products. It has been observed that the proportion of intra-firm trade in TNC trade is very large and growing (see Lall (1973)), so that the scope for using transfer pricing is also large and growing; and, clearly, in the economies of Malaysia and Singapore the potential dangers of uncontrolled use of this tool in the hands of TNCs are very large. Several comments are, however, in order before we come to discuss the problems raised specifically for assembly industries.

First, the incidence of transfer pricing seems to be highly variable across different industries. Most of the examples come from the pharmaceutical industry, where many of the products traded are highly specific to particular firms and are developed after heavy R&D expenditures and considerable screening and testing. It is, therefore, very difficult to work out what the 'correct' price for such commodities should be, since this involves working out the 'right' rate of return on risky R&D investment: This, on the one hand, allows the TNC to use arbitrary prices more easily for tax minimisation, and, on the other, makes control and price comparisons extremely difficult for host governments. In other industries, where products are more standardized, it is far more difficult to use transfer pricing: comparable prices are more easily available, and there is little justification in terms of recovering

R&D expenditures. The experience of one industry cannot be generalized to that of another. The danger of losing revenue is always present where intra-firm trade and TNCs exist, but the nature of the industry determines the counter-measures to be taken by host governments.

Second, the existence of high prices for certain products sold by TNCs may not necessarily reflect a deliberate use of tax-avoidance devices so much as a use of monopoly power - high prices may, in other words, be charged to unrelated firms as well as to affiliates. The pharmaceutical industry again provides an example; new patented products, and sometimes old unpatented ones, are sold at extremely high prices to independent buyers (say in Sri Lanka, (see Lall and Bibile (1977)), and prices may be reduced by bargaining or by going to other suppliers. To the extent that this is so, host governments should aim an undercutting the monopoly power of particular TNCs, bargaining, 'shopping around' and so on, rather than simply institute mechanisms for checking transfer prices.

Third, the deliberate use of transfer pricing by TNCs varies from one firm to another, depending upon their organisational structure, their accounting and management practice, their attitude to government policy and their experience in past operations. TNCs with old-fashioned, diffuse organisations, giving relatively more freedom to subsidiaries, are far less likely to use transfer pricing as compared to those with tightly-knit hierarchical structures with authority centralized at the head office. Similarly, TNCs which use the 'profit-centre' method of accounting and managerial control, leaving each centre to maximise its profits, cannot use transfer pricing without altering the accounting and control system. In fact, there is a constant refrain running through recent business school writing on the subject, urging firms with overseas operations to rationalise their structures and concepts to make use of the potential for transfer pricing. However, as long as there are important differences between the practice of different TNCs, host governments must take this into account.

Fourth, different host countries are clearly likely to be differently affected by transfer pricing, depending on their tax and tariff rates, their socio-political situation, pressures on prices and wages, local shareholding, and the like. Governments which impose high tax rates and low tariffs invite the overpricing of imports; if the TNC is an exporter (and particularly if export subsidies are offered) they invite the underpricing of intra-firm exports. Even when tax rates are in line with those in the home countries of TNCs, some of the intra-firm trade may be routed through tax-havens and profits transferred to these havens. Countries with tough price-control policies, political pressure on TNCs, strong labour unions, or large percentage of local shareholders, are also more prone than others to losing revenue through price manipulations. There is also a countervailing point that an exceptionally tough government may keep TNCs in line simply by means of raising the risk of bad relations and retaliation if transfer-pricing misuse is discovered.

In sum, then, the potential danger of losing revenue through transfer pricing by TNCs certainly exists for every host country, but the incidence of transfer-pricing is likely to be highly uneven. How do these considerations affect the two industries in Malaysia and Singapore?

To start with, neither country is, on a priori grounds, a very strong candidate for the use of transfer pricing by TNCs: each gives liberal, stable and often generous conditions to foreign investors; each welcomes reinvestment of profits and permits free repatriation of profits or capital in a strong currency; wage or union pressures are not such as to encourage clandestine profit remissions; tax rates are more or less in line with developed countries, and distinctly lower than in the U.S., U.K., Germany or France, though slightly higher than Japan, and tax concessions on foreign investment (backed by numerous double-taxation treaties) lower the effective tax-rates substantially.[16] There are, however, other factors which may cause firms to use transfer pricing to remit profits from Malaysia: there are pressures to increase local shareholding; some sectors (like automobiles) are subject to price control, so that firms may raise the cost of inputs to secure higher price increases; and some trade may be chanelled through tax havens like Hong Kong.[17] The last factor also applies to Singapore, but the others do not.

---

[16] See table 2 of Kopits (1976).

[17] See Rea (1977) and Edwards (1975).

To place the matter in perspective let us glance at the trade figures for both countries and see how much is actually routed through Hong Kong. Table 11 gives data for 1975 and January-June 1976, and shows that for both countries such trade is minuscule, accounting for 1-2% of Malaysia's exports and imports, and about the same for Singapore's imports, but higher (7-8%)for its exports. The two countries in fact trade very heavily with each other, but in view of their similar fiscal policies this has little significance for transfer pricing problems. The Hong Kong connection is so weak that its deliberate use as a transfer pricing haven, though possible, is not of great importance.

Table 11

(US $ million)

Malaysia and Singapore: Value of Trade and Trade with Hong Kong

			1975	Jan-Jun 1976
A. Malaysia:	1.	Total Exports	3805.7	2339.3
		Exports to Industrial Countries (%)	2098.9(55)	1365.1(58)
		Exports to Singapore (%)	773.2(20)	457.4(20)
		Exports to Hong Kong (%)	43.9(1)	30.1(1)
	2.	Total Imports	3526.1	1776.4
		Imports from Industrial Countries (%)	1912.7(54)	952.3(54)
		Imports from Singapore (%)	300.5(9)	148.4(8)
		Imports from Hong Kong (%)	64.4(2)	35.3(2)
B. Singapore:	1.	Total Exports	5375.2	3004.5
		Exports to Industrial Countries (%)	2047.3(38)	1271.1(42)
		Exports to Malaysia (%)	924.4(17)	462.2(15)
		Exports to Hong Kong (%)	395.3(7)	241.9(8)
	2.	Total Imports	8133.7	4160.6
		Imports from Industrial Countries (%)	3901.0(48)	1856.1(45)
		Import from Lalaysia (%)	941.7(12)	581.4(14)
		Imports from Hong Kong (%)	179.9(2)	99.7(2)

Source: IMF, Direction of Trade, Dec. 1976.

Both assembly industries are, of course, ideal candidates for the use of transfer pricing if the TNCs were so inclined, since both depend exclusively on intra-firm imports (and, for electronics, exports). However, the electronics industry is operating almost wholly under tax holidays in both areas, though it is, as we noted above, reaching the end of this period in Singapore. There is thus no real reason why TNCs should be using intra-firm trade to remit profits abroad, and such evidence as exists on their profit (and the remark of Lim and Pang quoted previously) indicates that they are quite happy to show high profits there. The existence of double-taxation agreements, or their current negotiation with the major capital exporting countries (though Singapore does not yet have one with the U.S.), would tend to reinforce such a preference.

The situation may, of course, change once tax holidays run out, and this may be especially significant for Malaysia because of the pressure for taking on local shareholders. The Malaysian government has shown itself to be flexible on this issue as far as high technology and export-based firms are concerned, so even this may not provide a strong incentive to use transfer pricing. Taking all these factors together, <u>it is difficult to conclude that transfer pricing is, or will be, an important problem for the electronics industry</u>.

Matters may be different for automobile assembly. It proved impossible to obtain any hard data on the use of transfer pricing in either country, but a strong impression was given in Malaysia that it was being practised in the valuation of CKD packs imported from parent firms. There were two indications that this may be so: first, the incentive for such practices offered by the existence of price controls on cars (coupled with the absence of duties on imports of intermediates), which may lead firms to show high costs in order to obtain price increases; and, second, the fact that CKD packs were often priced above the cost of importing the same vehicle completely built up (CBU). It was pointed out by government officials in Malaysia that detailed cost breakdowns of the different components of the pack were never given, so that it was impossible to assess the validity of the firms' claim that the cost of packaging and handling a CKD unit (in several crates) exceeded the cost of assembling it at the TNC's home bases and transporting a single CBU vehicle (un-crated). It was also noted that when local purchase of some parts commenced, the value of the CKD pack was reduced by a much smaller value, a clear indicator of monopolistic pricing by the TNC.

The main problem in bargaining with TNCs and with assessing correct prices on intra-firm transfers was the lack of information on the part of the host government. This was stressed again and again by officials in different ministries, and we shall return to it in the next section. The inability of the government to assess the firms' declared values meant that the incidence neither of 'monopolistic' pricing (i.e. charging unduly high prices even to unrelated buyers), nor of transfer-pricing proper, could be detected, even when the revenue collection authorities were aware of the existence of such problems.

Without a detailed study of actual and alternative arms' length prices it is impossible to assess how far the Malaysian government's fears of tax avoidance in the car assembly industry are well-founded. The Singapore authorities did not feel that transfer pricing was being used against them in this or any other industry; if anything, they thought that profits were being shifted to the island than away from it. Again, only case by case studies can prove or disprove this. Such studies involve severe difficulties of their own - we shall mention these later - and a brief visit like mine certainly could not begin to resolve them.

The large potential area for the misuse of transfer prices by TNCs does require over the long run that host governments set up an apparatus for ensuring that they realize a fair share of revenues and local shareholders realize their share of profits. Thus, many developed countries, led by the U.S., have set up special divisions in their tax offices to deal with TNCs. These use various criteria to assess arms' length prices, and in recent years many have resorted increasingly to information exchange with each other. TNCs have also been put under great pressure to disclose more information about their activities and profits in different parts of the world, and to restrict their use of blatant tax evasion devices like tax havens. However, the grey area over which price fixing will always be arbitrary is bound to remain disturbingly large, and the growing stringency of tax-collection by the developed countries may mean that developing countries are squeezed even if their tax rates and general investment climates are in line with developed ones. Thus, even if the need to take transfer pricing into account for revenue purposes is not felt to be urgent, the increasingly international nature of production necessitates that official regulation keep pace by checking international transactions. We turn now to considering some of these regulations.

V. Tackling Transfer Pricing

There are two separate levels of administrative difficulties involved in setting up an apparatus to monitor intra-firm trade and profits on a regular and continuous basis. The first relates to the collection, collation and centralization of existing information on the activities of TNCs. The second relates to using such information to ensure their proper taxation.

(a) In countries like Malaysia and Singapore a host of different official bodies are concerned with collecting data at the firm level on TNC activities. The Central Bank is (occasionally) empowered to collect data on foreign exchange transactions, the Statistical Office on production, costs and profits, the Ministry of Industry on industrial matters and on royalties and fiscal incentives, Tax Authorities on profits and customs duties, Planning Ministry on investment and production, and so on. The normal collection of data clearly covers the most important aspects of TNC activities in host countries, though without more detailed investigation it is impossible to judge how comprehensive and adequate the coverage really is.

The important point is that it is only by quantifying and assessing the performance of a TNC affiliate as a whole, and taking all its financial links with the parent organisation into account, that a host government can set about realizing its proper share of revenue. The concentration on one or two aspects in each ministry or department according to function tends to disperse available information is such a way that a clear total picture of the TNC does not emerge, and so allows the firm greater freedom to pursue policies which are not in accord with the wishes of the host government. For instance, if royalties or other fees are assessed by a committee attached to the Ministry of Industry, tax incentives are decided by a foreign investment promotion authority, interest charges are vetted by the Central Bank, customs data and tax data are collected by separate departments of the Ministry of Finance, information on annual sales, costs, capacity utilization etc. are collected by the Department of Statistics, and general data on the parent company's performance do not exist at all, there is no possible way for any single authority to monitor, on a continuous and regular basis, all these data : yet they are all in some way relevant to the proper taxation of of TNCs. Royalties, fees, interest charges and transfer prices may to some extent act as substitutes for declared profits and for each other, as Robbins & Stobaugh (1974), Verlage (1975) and Vaitsos (1974) have pointed out. Unless all these items are centrally examined there is no way of telling how the financial channels are being operated. Further, there is no way of guessing at the (approximate) real profitability of a TNC's investment without knowing, first, its world wide performance in terms of profitability and growth, and, second, its relative performance in the host country concerned. If, say, the affiliate is running at full capacity, expanding and generally doing well, it should be asked to produce justification for its transfer prices if it shows lower profits than the parent company.

As matters stand, however, not only do the different departments concerned not pool their information, they are barred from doing so by legal requirements of secrecy. During my visit, I was continually impressed by the fact that one branch of the Malaysian government could not get access to data in the hands of another. In this administrative set up, it would be practically impossible to institute a monitoring system which could work on a continuous basis.

The inland revenue department does, of course, have the power to ask for any information it considers relevant when it suspects a firm of under-declaring profits, and some instances were reported to me of intra-firm transactions being reassessed. The drawbacks of this are, however, that, given the limited resources of the tax department, only those cases which arouse suspicion are checked. This does not cover a number of cases where a normal procedure of examination would reveal grounds for reassessment, and it does not provide a systematic method of monitoring TNC performance.

(b) The collection and collation of existing information is only a first step towards tackling the transfer pricing problem. Even if all the data mentioned above were centralized (and, say, computerized for easy access and calculation), how would the government set about checking the appropriateness of transfer prices on commodities and services?

The experience of the developed countries, especially of the U.S., shows that it is an extremely complex, and ultimately insoluble problem.

The complexity arises from the large number of items involved and from the internalization of markets into TNCs. The insolubility arises from the fact that once certain commodities are effectively monopolized by particular companies, so that there are no comparable arms'-length prices, there is no 'correct' solution to what the transfer price should be. Any price would have to take into account not just the cost of production (which is fairly easy), but also the proper share of overheads, R & D, marketing, technical assistance, and other related expenses. This in turn involves tricky problems of the 'right' rate of return on innovation, risk, good will, intangible knowhow, etc., all of which may legitimately be claimed to be components of a realistic arm's length price. There are no determinate solutions to these problems, and serious doubts may be raised as to what part of the returns are 'legitimate' and what are returns to undesirable monopoly power. Ultimately, therefore, the result depends upon negotiation and bargaining between the parties concerned, and bargaining in its turn depends upon the skill, knowledge, experience and economic power of each side.

The collection and centralization of information mentioned above is a first but essential step in building up negotiating capacity. The application of information to specific cases requires the development of expertise and understanding of how TNCs operate, and this can best be started by studying the experience of these countries which have tried to tackle the problem. The U.S. clearly leads the way, and a recent *Sunday Times* article by Malcolm Crawford notes that even U.K. tax authorities feel the need to learn from them.

"Following an increase in its powers of enquiry in the 1975 Finance Act, the Revenue stiffened up a small central unit which it had had for some years to deal with the problem of international shifting of profits. Previously, local tax inspectors generally had to deal with highly complex multinational companies on their own, the central unit having mainly an advisory function. Now the latter handles many more such cases. Its staff have gone to the U.S. to study how the Internal Revenue Service handles such matters, and have become much more canny and rather more aggressive in pursuit of profit shifters". [18]

---

(18) M. Crawford, 'Firms caught in New Tax Squeeze', *Sunday Times*, January 2, 1977, P. 8.

There is a clear need for developing countries to cooperate with, and learn from, tax authorities in developed ones.(19) The U.S. authorities, under Section 482 of the Internal Revenue Code, apply one of 3 methods to determine transfer prices:

- The comparable uncontrolled price method, which tries to discover actual arms' length prices for commodities where open market transactions exist:

- The resale price method, which calculates an 'applicable resale price', reduced by an 'appropriate mark-up percentage';

- The cost plus method, applied to commodities where no open-market operations exist, based on allocating an 'appropriate gross profit percentage' on top of costs of production.

The first two methods can be used fairly easily once authorities have data on comparable open market sales: there are no conceptual problems here, only one of obtaining world-wide price data (perhaps by exchanging information with other countries). The last one raises the severe analytical difficulties noted above, and can be resolved only by negotiation and bargaining. The U.S. authorities have developed detailed guidelines for determining the negotiating procedure (for pricing technology and services as well as commodities), and their example is being followed elsewhere: developing countries need to develop similar guidelines over the long run.

One of the fundamental problems that these guidelines will have to tackle is that there may be conflicts between the comparable uncontrolled price method and the cost plus method, especially when high-technology patented products are concerned. The cost-plus method, including a 'legitimate' reward for R & D, risk, and overheads, may well give a higher transfer price (lower taxes) from a comparison in the prices charged by an imitator who has not borne the expenses mentioned. This problem arises

---

(19) For a detailed discussion of the issues and the practice of several developed countries, including the U.S., U.K., Germany and France, see Verlage (1975). The International Fiscal Association (Rotterdam) has issued several papers recently on the treatment of technological payments and transfer pricing.

most commonly in pharmaceuticals, where innovators (like Hoffman La Roche) may charge prices for new drugs 4 - 5 thousand percent more than prices asked by non-patent-observing Italian firms. The Italian prices may not give the correct transfer price, nor may the price set by the TNC : the appropriate price can only be decided by negotiating the appropriate return on all the costs involved in drug innovation (with the additional complication that poor host countries may legitimately feel that they should contribute less than others for products (like tranquillisers) developed primarily for rich markets).

This discussion should have clarified that tackling transfer pricing does not simply involve the task of tracking down 'wrong-doers' by detecting the manipulation of correct prices; it largely comprises the problem of trying to replace open markets, that have disappeared into the structure of TNC operations, with an administrative machinery that tries to obtain the best possible deal for the host government. It is not an easy task. Yet if it is not undertaken, the long-term consequences may well be harmful.

Let us now mention some more specific measures that may be taken to tackle the problem in assembly industries. Since the prime need is for information in industries like automobiles (the difficult issues of high-risk innovation do not arise here), the host government can try to supplement its knowledge by

- posting members of the administration abroad to collect price data;

- exchanging price information with developing and developed governments;

- hiring consulting firms (such as the Swiss General Superintendence Company which specialises in checking price and quality on international shipments) to monitor prices; and

- launching detailed studies of the cost-price structure of the TNCs involved, in order to get a clear picture of how CKD packs are priced.

The most promising and difficult line of activity would seem to be the last one, because it is at the level of basic understanding of the TNC's manufacturing costs that the deficiencies lie. Even a detailed examination of a few TNCs would indicate the outlines of the problem - whether it exists at all, and , if so, what its rough magnitudes are. Clearly, the co-operation of TNCs would be a necessary precondition for launching the study, though a certain amount of information could be obtained from published sources.

VI. Negotiating Agreements on Assembly Industries

We now leave transfer pricing problems and return to the broader economic problems of assembly industries. The discussion of the experience of Malaysia and Singapore showed that the electronics and automobile industries raised very different sets of issues for the host economies. It would therefore be best to take the two sectors separately.

In the electronics industry the main benefits to the host economies are of employment and skill generation, and, over time, of the creation of direct linkages with domestic suppliers and subcontractors and the transfer of increasingly sophisticated technology. The main cost to the host governments seems to have been the very generous fiscal and infrastructural incentives provided to attract TNCs. In Singapore some of these costs are being phased out; Malaysia will continue to offer incentives for some time to come.

The main steps which the governments may take to ensure that TNCs have the maximum beneficial effect are:

- The encouragement of training programmes by TNCs at all levels to facilitate the speedy transfer of skills and knowhow;

- The upgrading of the skill and technology level of operations with rising wage levels;

- The creation of the greatest possible links with domestic enterprises, subject, of course, to the overriding need to maintain cost and quality standards;

- The support of domestic enterprises, by the provision of capital and technology, to enable them to compete in the booming subcontracting market and to compete with TNCs in areas where innovation has slowed down;

- The phasing out of fiscal incentives as TNCs get more firmly established and build up a stable labour force and good working relations with domestic industry and the government;

- The regulation of foreign subcontracting agreements to ensure that the terms are not too onerous and the buyers are not too 'footloose'. A 'Code of Conduct' on subcontracting, with lists of approved buyers and subcontractors would prove very useful, especially if this could be shared with the other leading subcontracting countries in South East Asia;

- The setting up of marketing and promotion agencies overseas to encourage the direct sale of domestic products, so as to bypass the monopolistic power of non-manufacturing TNCs, as well as of TNCs which offer mainly marketing benefits;

- The maintenance, despite all these efforts to strengthen domestic enterprise, of good investment climate for TNCs.

The automobile industry requires, in my view, much more drastic action. It is essentially uncompetitive, and does not offer very bright prospects for employment, skill, or technology generation for the foreseeable future. It has not led to the expected backward linkage effects on domestic suppliers, and it is likely that the setting up of many supplying industries would also be excessively costly.

At the minimum, therefore, the structure of the industry needs to be rationalised so that there are far fewer plants and models. This would permit some economies to be reaped in assembly and production of domestic components, and would permit the present high rate of protection to be reduced.

A more serious effort may, however, be made to change the whole structure of the industry - perhaps scrapping assembly operations altogether and setting up plants to make specific components on a large scale along the lines of the ASEAN complementation scheme. As we noted previously, governments in the region are acutely conscious of the problems and are already making moves in the complementation direction.

To gain the maximum of benefit from this new direction of policy, it would be advisable to keep the automobile industry in domestic hands and to acquire whatever technology is required on license. This would maximise the 'learning' effects of setting up the industry as well as the linkages' with domestic suppliers. The automobile industry in developed countries has served as the focal point for a large number of ancillary activities, and it would be a pity to lose some of these spread effects by leaving it in the hands of TNCs which have a marked preference for buying components from their own organizations.

In the shorter run, given the existing structure of production and ownership, the host governments should press ahead with the reduction of models and increase of local content (with due regard to efficiency). Short term aims should not, however, obscure the serious fundamental problems with this industry in both countries.

References

1. Adam, G. (1972), 'Some Implications and concomitants of Worldwide Sourcing', Acta Oeconomica, p.309-23.

2. Baranson, J. (1971), International Transfer of Automotive Technology to Developing Countries, New York: UNITAR, Research Report No. 8.

3. Caulkin, S. (1977), 'Carving up the Calculators', Management today, March, p.90-102.

4. Chang, Y.S. (1971), The Transfer of Technology: Economics of Offshore Assembly, The Case of Semiconductor Industry, New York: UNITAR, Report No. 11.

5. de la Torre, J. (1974), 'Foreign Investment and Export Dependency', Economic Development and Cultural Change, p. 133-50.

6. Edwards, C. (1975), 'protection, Profits and Policy - An Analysis of Industrialization in Malaysia', Ph.D. Thesis, University of East Anglia.

7. Finan, N. (1975), 'The International Transfer of Semiconductor Technology Through U.S. Based Firms', New York: National Bureau of Economic Research, Working paper No. 118.

8. Helleiner, G.K. (1973), 'Manufactured Exports from Less-Developed Countries and Multinational Firms', Economic Journal, p. 21-47.

9. Helleiner, G.K. (1976), 'Transnational Enterprises, Manufactured Exports and Employment in the Less-Developed Countries'. Economic & Political Weekly, Annual No. p.247-62.

10. Hu, Y.S. (1973), U.S. Investment and the European Automobile and Computer Industries, New York: Praeger.

11. Jenkins, R. (1977), Dependent Industrialization in Latin America: The Automotive Industry in Argentina, Chile and Mexico, New York: Praeger.

12. Kopits, G.F. (1976), 'Taxation and Multinational Firm Behaviour: A Critical Survey', IMF Staff Papers, p.624-73.

13. Lake, A. (1976). 'Transnational Activity and Market Entry in the Semiconductor Industry', New York: National Bureau of Economic Research, Work Paper N. 126.

14. Lall, S. (1973), 'Transfer Pricing by Multinational Manufacturing Firms', Oxford Bulletin of Economics and Statistics, p. 173-95.

15. Lall, S. (forthcoming), 'Transnational Corporations and Linkages with Domestic Enterprises in LDCs: A Survey of the Literature' (manuscript), Oxford University Institute of Economics & Statistics.

16. Lall, S. and Streeten, P.P. (1977), Foreign Investment, Transnationals & Developing Countries, London: Macmillan.

17. Lall, S. and Bibile, S. (1977), 'The Political Economy of Controlling Transnationals: The Pharmaceutical Industry in Sri Lanka 1972-76', World Development, July.

18. Lim, L. and Pang Eng Fong, (1976), 'The Electronics Industry in Singapore: Structure, Employment, Technology and Linkages', University of Singapore: Economic Research Centre (mimeo).

19. Menon, B. (1976), 'The Motor Assembly Industry', The Economic Bulletin (Kuala Lumpur), June, pp. 19-22.

20. Moxon, R.W. (1974), 'Offshore Production in the the Less-Developed Countries: A Case Study of Multinationality in the Electronics Industry', The Bulletin, New York Graduate School of Business Administration, July.

21. Musgrave, P.B. (1972), 'International Tax Base Division and the Multinational Corporation', Public Finance p. 394-413.

22. Rea, K. (1977), 'How Illicit Profits are Hidden in Hong Kong', Asian Business and Industry, January, p.52-7.

23. Robbins, S.M. and Stobaugh, R.B. (1974), Money in the Multinational Enterprise, New York: Basic Books.

24. Sharpston, M. (1975), 'International Subcontracting', Oxford Economic Papers, p. 94-135.

25. Sundelson, J.W. (1970), 'U.S. Automotive Investments Abroad', in C.P. Kindleberge (ed.), The International Corporation, Cambridge (Mass.): The MIT Press.

26. UNCTAD, (1975), International Subcontracting Arrangements in Electronics Between Market-Economy Countries and Developing Countries, New York: United Nations.

27. U.S. Tariff Commission (1970), Economic Factors Affecting the Use of Item 807.00 and 806.30 of the Tariff Schedules of the United States, Washington D.C.: Government Printing Office.

28. Vaitsos, C.V. (1974), Intercountry Income Distribution and Transnational Enterprises, Oxford: Clarendon Press.

29. Verlage, H.C. (1975), Transfer Pricing for Multinational Enterprise, Rotterdam: Rotterdam University Press.

30. Watanabe, S. (1971), 'Subcontracting, Industrialization and Employment Creation', International Labour Review, p. 51-76.

31. Watanabe, S. (1972), 'International Subcontracting, Employment and Skill Promotion', International Labour Review, p. 425-49.