# JOHORE PORT: ITS ROLE IN THE GROWTH OF SOUTH PENINSULAR MALAYSIA

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## I. INTRODUCTION

In the 1960s, industrialization in Peninsular Malaysia has led to the development of the Klang Valley (which includes Kuala Lumpur, the capital city) as the major industrial and commercial hub of the country. One of Malaysia's developmental goals, over the 1970s and the 1980s, is the reduction of economic and social disparity among the various regions in the country. The government's concern for the existence of significant inequalities amongst the regions is manifested in the setting of specific targets for narrowing inter-state and inter-regional income differentials [6, pp. 99–114, 178]. Programs, designed to attain these targets, included the provision of incentives for location of industry in the less developed regions, the construction of infrastructural facilities, the development of new agricultural schemes and modernization of existing agricultural areas, and deliberate urbanization through the creation of growth centers. The implementation of these strategies would, hopefully, induce flows of labor and capital in the desired directions, leading to a narrowing of inter-regional income differentials[1] [2] [13] [16].

These "growth-center creation" policies, implemented since the early 1970s, have led to the evolvement of Penang as the growth center for North Peninsular Malaysia, Kuantan for the East, and Johore Baru for South Peninsular Malaysia[2] [4] [17]. However, Malaysia's experience with the growth-pole approach to development have been mixed. While Penang has become a truly successful growth center for North Peninsular Malaysia, hopes of a thriving massive urban center in Kuantan are dampened considerably by the lack of skilled manpower and delays in the completion of various projects, particularly the Kuantan Port project. More importantly, the massive 1.01 million hectares Pahang Tenggara scheme, a major hinterland of Kuantan, did not achieve its desired targets; and these targets have to be scaled down continuously. With respect to the development of Johore Baru as the southern growth center, ever

1 Regional investment and its role in regional growth have been discussed extensively in regional economics.

2 The growth-pole development approach has been adopted by the Malaysian government as one of its developmental strategies since the early 1970s. Through this approach it is hoped that more Malays can be induced to settle in the urban areas, contributing to the achievement of the objectives of the New Economic Policy of eradication of poverty, and restructuring of society to eliminate the identification of race with economic functions, as spelled out in the Second Malaysia Plan [5].

since the idea was first mooted, considerable controversies were generated. While it was deemed "politically necessary" to develop Johore Baru as a counterbalance to Singapore, economically, it was argued that it would be unfeasible to transform the town into a thriving urban center because of the far better service and industrial sectors of Singapore. In any event, political considerations of the day prevailed, and numerous projects were implemented with the aim of transforming not only Johore Baru, but also the whole of South Peninsular Malaysia, into an economically advanced region.[3]

In this paper, we shall focus our attention on evaluating the so-called "south growth-pole" strategy of the government, and examine the role that Johore Port —a major infrastructural project within this strategy—plays in the growth of South Peninsular Malaysia.

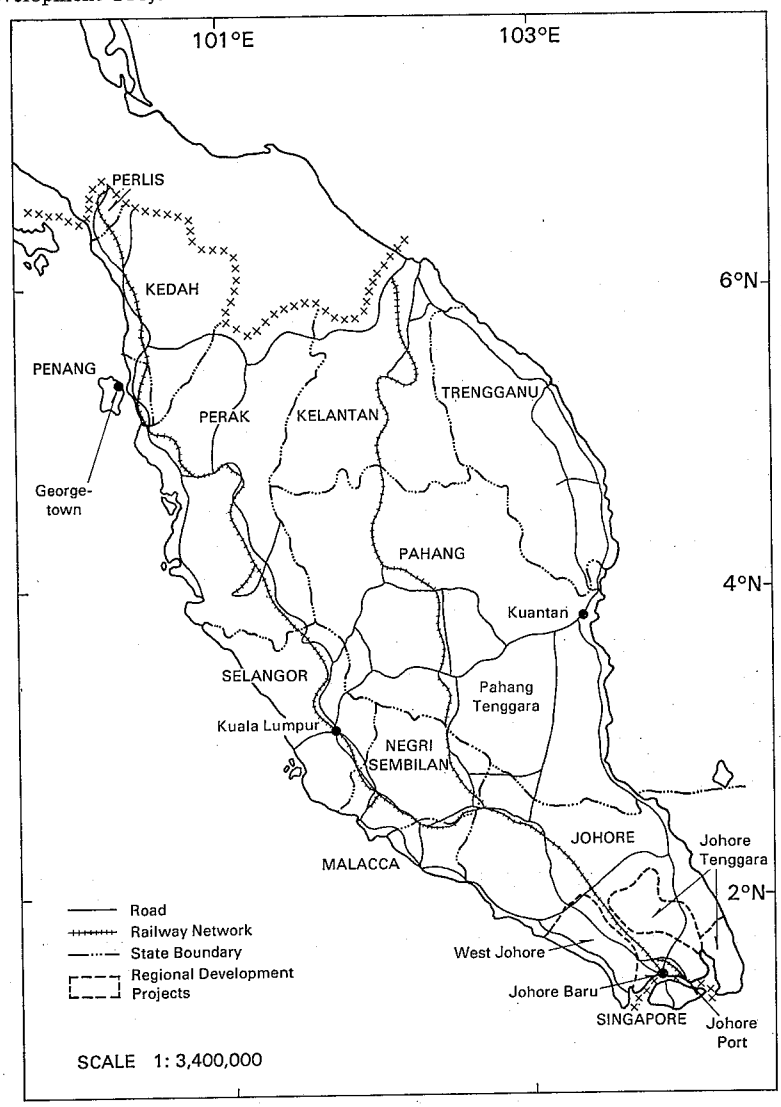
In the next section, we shall discuss the strategy for accelerating economic growth in South Peninsular Malaysia. The history and growth of the Johore Port is elaborated in Section III. The role that Johore Port plays in the promotion of industrial and agricultural development of Johore is elaborated in Section IV. In Section V, we shall then discuss the role that Johore Port plays in attracting Peninsular Malaysia's external trade away from its traditional dependence on Singapore, with consequent benefits to the whole of South Peninsular Malaysia. The consumption benefits accruing to the region, as a result of the employment opportunities generated by the Port, are also discussed in the same section. Finally, in Section VI we provide a summary of conclusions and policy implications.

## II. STRATEGY FOR ACCELERATING GROWTH IN SOUTH PENINSULAR MALAYSIA

A major instrument for effecting the desired pattern of economic development in South Peninsular Malaysia is the development of *new land schemes* in Johore, Negri Sembilan, and Malacca. Amongst the most important new land schemes implemented is the 300,000 hectares Johore Tenggara Scheme located in the center and south of Johore (see Figure 1). This massive project, initiated in the 1970s, is scheduled to be completed by 1990 at a cost of M$750 million. The scheme involves, principally, the development of new agricultural land for oil palm and rubber plantations; more than 41,000 hectares have been developed, or are in the process of being developed, for planting of oil palm and rubber by the various development authorities like the Federal Land Development Authority (FELDA) and the Johore Tenggara Development Authority (KEJORA). Other development projects implemented include livestock breeding, the development of resource-based industries, tourist centers, and the building of two new towns (Johore Tengah New Town and Tanjung Penggerang) for the settlement of over 100,000 people [12].

[3] Tun Ismail, the deputy prime minister of Malaysia in the early 1970s, was from Johore. He took a great interest in the development of Johore and Johore Baru, and personally saw to it that the plans formulated were implemented rapidly.

Fig. 1. Peninsular Malaysia: Location of Johore Port and Johore Regional Development Projects




A second important instrument for accelerating development in South Peninsular Malaysia is *in situ* development, which involves integrated development and modernization of existing backward agricultural areas in West Johore (see Figure 1). In fact, the West Johore *in situ* project is one of the major *in situ* projects in the country[4] [18]. The M$600 million World Bank–financed project, initiated in the mid-1970s, will take more than ten years to complete; on completion, it will improve the livelihood of more than 500,000 people in the area

[4] Other major *in situ* projects include the Muda Project in Kedah, and the Kemubu Scheme in Kelantan.

through the establishment of an integrated irrigation system to improve the soil conditions, the modernization of farming methods, and the development of industries based on rubber, palm oil, and pineapple products.

A third major instrument for accelerating development in South Peninsular Malaysia is the provision of incentives and facilities for the dispersal of industries and services to South Peninsular Malaysia; these include the provision of fiscal incentives, development of industrial estates and other infrastructural support systems like transportation and utilities. The instrument centers around the development of Johore Baru as the service center. Johore Baru, situated on the southern tip of Peninsular Malaysia, just opposite Singapore, has strategic importance to Malaysia; its accelerated development would narrow the differences between South Peninsular Malaysia and the Klang Valley, and reduce the economic dependence of South Johore upon Singapore.

The major components of this instrument include the development of the Senai Airport and Johore Port to facilitate movement of goods into and out of the region, the completion of a new railway-line linking the new port to the national railway system, and the improvement of the roads linking Johore Baru, Johore Port, and the Senai Airport to the national road system. Another major component of this instrument is the development of the areas around Johore Port into an industrial area for agro-based and heavy industries. This industrial estate, known as the Pasir Gudang Industrial Estate, has a planned area of about 900 hectares for industries and over 400 hectares for housing. It is envisaged that Pasir Gudang, when fully completed, would transform South Johore into a major industrial region of the country.

Having briefly elaborated the south growth-pole strategy, we shall next describe the growth of Johore Port, which is the major infrastructural facility under this strategy.

## III. HISTORY AND GROWTH OF JOHORE PORT

During the decades of the 1950s and 1960s, more than a third of Peninsular Malaysia's external trade used the Port of Singapore [6]. In the mid-1960s, the development of a port in the southern tip of Peninsular Malaysia, just a short distance away from Singapore, to attract the external trade of Peninsular Malaysia away from Singapore was first mooted. In 1971, the Malaysian government approved an allocation of M$30 million for the construction of Johore Port, in Pasir Gudang, some twenty kilometers east of Johore Baru. Construction of the port began in 1972; it commenced full operations in 1977.

The Port is divided into two zones, namely, the Liquid and Dry Cargo Zone. The Liquid Cargo Zone is served by the twin-berth oil jetty, which is designed for oil tankers of 30,000 deadweight tonnes (dwt) with water depth alongside of eleven meters at zero tide. The oil jetty, backed by an array of tank farms, has a capacity of about 1.5 million tonnes of liquid cargo per annum.

The Dry Cargo Zone is served by two ocean wharves and one coastal wharf. The ocean wharves, totalling 365 meters in length with eleven meters depth of

TABLE I

TOTAL TONNAGE HANDLED AT JOHORE PORT, 1977–82

(1,000 tonnes)

| Type of Cargo Handled at the Port Facilities | 1977 | | 1979 | | 1982 | |
|---|---|---|---|---|---|---|
| | Exports | Imports | Exports | Imports | Exports | Imports |
| Liquid cargo: | | | | | | |
| 1. Palm oil | 173.8 | 23.8 | 419.7 | 35.4 | 1,082.2 | 50.2 |
| 2. Chemical | — | 7.1 | 0.6 | 9.7 | 18.3 | 31.7 |
| 3. Diesel | — | — | — | 9.3 | — | 63.6 |
| 4. Soya bean oil | — | — | — | — | 2.1 | — |
| 5. Others | 1.1 | — | — | — | 1.0 | — |
| Subtotal: liquid cargo | 174.9 | 30.9 | 420.3 | 54.4 | 1,103.6 | 145.5 |
| Dry cargo: | | | | | | |
| 1. Logs | — | — | 3.2 | 19.5 | 22.7 | — |
| 2. Sawn timber | — | — | 45.9 | — | 14.4 | — |
| 3. Fertilizer | — | 157.1 | 1.7 | 313.3 | — | 357.1 |
| 4. Wheat grain | — | 63.1 | — | 65.2 | — | 63.1 |
| 5. Maize grain | — | 6.2 | — | 42.2 | — | 9.4 |
| 6. Palm kernel expellers | — | — | 59.5 | — | 106.0 | — |
| 7. Rice | — | 9.3 | — | 26.1 | — | 28.6 |
| 8. Refined oil in drums | — | — | 1.5 | — | 15.7 | — |
| 9. Iron and steel | — | — | 0.9 | 1.8 | 0.2 | 140.6 |
| 10. Machinery and component parts | 0.2 | — | — | 2.5 | 3.8 | 4.3 |
| 11. Soya bean | — | — | — | — | — | 88.2 |
| 12. General cargo | 30.4 | 0.6 | 57.2 | 0.7 | 80.5 | 1.2 |
| 13. Others | — | 0.3 | 2.7 | 3.0 | 137.6 | 125.0 |
| Subtotal: dry cargo | 30.6 | 236.6 | 172.6 | 474.3 | 380.9 | 817.5 |
| Total | 205.5 | 267.5 | 592.9 | 528.7 | 1,484.5 | 963.0 |
| Grand total (exports+imports) | 473.0 | | 1,121.6 | | 2,447.5 | |

Source: Johore Port Authority, Pasir Gudang, Johore, 1983.

water, are again designed for cargo vessels up to 30,000 dwt. The coastal wharf, with a wharf length of 106 meters and 5.5 meters water depth, can handle coastal vessels of up to 2,000 dwt. The total throughput capacity of the dry wharves is about 0.8 million tonnes of dry cargo per annum.

The Port is accessible from Johore Baru by a newly completed four-lane dual carriage-way and a railway-line linking the Port to the existing railway network. Since its opening, the Port has performed very well. Total cargo handled by the Port increased from 0.47 million tonnes in 1977 to 1.12 million tonnes in 1979, and 2.45 million tonnes in 1982 (see Table I). For purpose of comparison, Port Klang, Malaysia's premier port, handled about 10 million tonnes of cargo in 1982; the corresponding figure for Penang, Malaysia's second most important port, was 7 million tonnes. There was also a substantial increase in the number of vessels calling at Johore Port since 1977. In 1977, the number of vessels which called at the Port was 252; by 1980 this had increased to 727. In 1982, this

number further increased to 1,036. Because of the great number of vessels calling at the Port, the berth occupancy rate increased from 49 per cent in 1977 to 89 per cent in 1982. This has stretched the Port's handling capacity to its limit, causing congestions and long waiting periods of up to several days for some vessels.[5]

The congestion problem encountered by the Port, since 1979, accelerated the implementation of a M$149 million second-phase expansion plan for the Port. Under this expansion plan, by late 1985, three additional dry berths—of which two would be for bulk cargo with the third for container and general cargo—would be completed. In addition, a new back-up area of about 166 hectares would be constructed to accommodate the required facilities such as a transit shed, warehouses, and a transhipment center. On completion of the second-phase expansion, the throughput capacity of the Port would be increased to about 3.1 million tonnes per annum.

## IV. ROLE OF JOHORE PORT IN THE GROWTH OF JOHORE

Having described the growth of Johore Port, we shall now discuss the growth of Johore, the major state in South Peninsular Malaysia, and examine the extent to which the Port has been instrumental in this growth.

### A. *Catalytic Role in Industrialization*

Rapid industrialization in Johore began in 1968, as a result of the implementation of policies to develop Johore Baru as the south growth center. In 1974 (see Table II), the total industrial value added of Johore had increased to M$387.5 million, which is about 3.7 times the corresponding 1968 figure; in 1978, the industrial value added increased further to M$694 million. By 1979, the effects of the growth of the industrial structure of Johore were even more pronounced; the total industrial value added rose to M$882 million, an increase of 30 per cent over the corresponding 1978 figure. In 1979, the industrial sector employed a total work force of 56,000 people (or a 40 per cent increase over the corresponding 1974 figure).

As can be seen from Table II, in 1979 there were significant increases in the industrial value added of resource-based industries such as food manufacturing, rubber and wood products, and export-oriented industries such as textiles and electrical machinery. A large part of these increases in industrial value added was a direct result of the operation of the Johore Port; this is clearly indicated in Table III, which presents the details of the industrial estates established in Johore up to mid-1981. Of the 1,007 hectares of industrial land developed in Johore, 555 hectares of these are in the Pasir Gudang Industrial Estate; the industries located in this estate are mainly the industries that require the services of a port, such as light export-oriented industries, primary and secondary palm oil refining, and heavy industries. By 1979, there were 48 factories operating in the Pasir Gudang Industrial Estate, contributing some M$711 million of

[5] Communications with Johore Port Authority, Pasir Gudang, Johore, 1982.

TABLE II

INDUSTRIAL STRUCTURE OF JOHORE, 1968–79

( Value added in M$ million; employment in 1,000 persons)

| Major Industries | 1968 | | 1974 | | 1978 | | 1979 | |
|---|---|---|---|---|---|---|---|---|
| | Value Added | Total Employment | Value Added | Total Employment | Value Added | Total Employment | Value Added | Total Employment |
| Processing of estate-type agriculture products in factories off estate | 20.4 | 3.1 | — | — | — | — | — | — |
| Food manufacturing | 15.9 | 3.4 | 105.9 | 6.9 | 224.3 | 8.6 | 268.8 | 9.4 |
| Beverage industries | — | — | 3.7 | 0.4 | 11.2 | 0.6 | 11.1 | 0.6 |
| Tobacco manufactures | — | — | 0.04 | 0.05 | — | — | — | — |
| Textile manufacturing | 12.1 | 2.5 | 30.2 | 4.6 | 60.1 | 6.6 | 72.2 | 6.8 |
| Manufacturing of wearing apparel except footwear | — | — | 5.8 | 1.8 | 28.8 | 2.7 | 16.7 | 3.3 |
| Leather and leather products, substitutes, and fur except footwear and cork weaving apparel | — | — | 0.6 | 0.3 | 1.2 | 0.2 | 1.3 | 0.3 |
| Wood and cork products except furniture | 14.3 | 3.1 | 54.1 | 6.5 | 95.4 | 7.9 | 125.7 | 8.9 |
| Furniture and fixtures except primarily of metal | — | — | 1.5 | 0.4 | 2.0 | 0.5 | 5.6 | 0.6 |
| Paper and paper products | — | — | 3.7 | 0.5 | 5.4 | 0.8 | 6.4 | 0.9 |
| Printing, publishing, and allied industries | — | — | 4.3 | 0.8 | 4.9 | 1.0 | 7.1 | 1.1 |
| Manufacturing of industrial chemicals | — | — | 5.7 | 0.3 | 17.5 | 0.4 | 19.1 | 0.5 |
| Other chemical products | 3.5 | 0.9 | 7.3 | 1.0 | 13.1 | 1.4 | 16.0 | 1.4 |
| Rubber products | 6.0 | 2.0 | 94.4 | 5.5 | 88.8 | 4.5 | 127.4 | 4.1 |
| Plastic products | — | — | 6.2 | 1.2 | 8.6 | 1.4 | 1.0 | 1.5 |
| Nonmetallic mineral products | — | — | 6.2 | 1.2 | 3.6 | 1.0 | 4.5 | 0.8 |
| Glass and glass products | — | — | — | — | — | — | 8.0 | 0.7 |
| Basic metal industries | — | — | — | — | 1.9 | 0.1 | 0.4 | 0.1 |
| Manufacturing of furniture | — | — | — | — | 10.4 | 1.6 | 14.1 | 1.9 |
| Fabricated metal products except machinery | 5.1 | 1.0 | 16.2 | 1.7 | 29.8 | 2.5 | 37.5 | 2.9 |
| Machinery except electrical | — | — | 2.2 | 0.5 | 3.3 | 0.6 | 8.1 | 1.0 |
| Electrical machinery, apparatus, appliances | 5.9 | 0.4 | 15.8 | 2.8 | 32.3 | 4.6 | 47.0 | 4.8 |
| Transport equipment | — | — | 11.8 | 1.4 | 33.7 | 2.9 | 73.4 | 3.2 |
| Other manufacturing industries | 20.7 | 6.0 | 11.9 | 2.1 | 6.8 | 0.7 | 5.5 | 0.8 |
| Others | — | — | — | — | 11.0 | 1.0 | 4.6 | 0.5 |
| Total | 103.9 | 22.4 | 387.54 | 39.95 | 694.1 | 51.6 | 881.5 | 56.1 |

Sources: [11, various years] [8]. The figures for 1978 and 1979 are from unpublished data extracted from the records of the Department of Statistics.

## TABLE III

INDUSTRIAL ESTATES ESTABLISHED IN JOHORE, AS AT JUNE 30, 1981

(Hectares)

| Name of Industrial Estate | Location | Total Planned Area excluding Housing | Industrial Land | | | | Types of Industries Preferred |
|---|---|---|---|---|---|---|---|
| | | | Developed | Saleable | Sold | Still Available | |
| 1. Larkin and Tampoi | 2 miles from Johore Baru | 167 | 167 | 159 | 159 | 0 | General |
| 2. Pasir Gudang | 18 miles from Johore Baru | 928 | 555 | 520 | 437 | 83 | Heavy industries |
| 3. Tanjong Agas | 1 mile from Muar | 98 | 74 | 69 | 64 | 5 | General |
| 4. Tongkang Pecah | 3.5 miles from Batu Pahat | 15 | 15 | 13 | 13 | 0 | General (water supply not suitable for canning and bottling industry) |
| 5. Senai Free Trade Zone | 18 miles from Johore Baru | 40 | 40 | 32 | 30 | 2 | Export-oriented industries general |
| 6. Segamat Industrial Estate | 3 miles from Segamat | 39 | 39 | 36 | 36 | 0 | General |
| 7. Parit Raja | 13 miles from Batu Pahat | 38 | 38 | 32 | 26 | 6 | General/light industries |
| 8. Sri Gading | 4 miles from Batu Pahat | 121 | 5 | 5 | 5 | 0 | |
| 9. Bandar Tenggara | 40 miles from Johore Baru & 27 miles from Senai Airport | 116 | 72 | 72 | 42 | 30 | General |
| 10. Bandar Penawar | 60 miles from Johore Baru | 29 | 2 | 2 | — | 2 | General |
| Total area | | 1,591 | 1,007 | 940 | 812 | 128 | |

Source: Malaysian Industrial Development Authority, 1982.

TABLE IV

JOHORE: GROSS DOMESTIC PRODUCT BY INDUSTRY OF ORIGIN, 1971–80

| Sector | 1971 | | 1980 | |
|---|---|---|---|---|
| | M$ Million | % | M$ Million | % |
| Agriculture, forestry & fishing | 625 | 43.5 | 938 | 32.8 |
| Mining & quarrying | 32 | 2.2 | 12 | 0.4 |
| Manufacturing | 217 | 15.1 | 679 | 23.8 |
| Construction | 32 | 2.2 | 99 | 3.5 |
| Utilities | 23 | 1.6 | 52 | 1.8 |
| Transport, storage & communications | 76 | 5.3 | 156 | 5.5 |
| Wholesale & retail trade, hotels & restaurants | 111 | 7.7 | 296 | 10.4 |
| Finance, insurance, real estate & business services | 112 | 7.8 | 211 | 7.4 |
| Government services | 162 | 11.3 | 353 | 12.4 |
| Other services | 46 | 3.3 | 61 | 2.0 |
| Total | 1,436 | 100.0 | 2,857 | 100.0 |

Source: [6, pp. 101–2, Tables 5.1 and 5.2].
Note: All dollar values are in 1970 prices.

industrial value added.[6] Over 80 per cent of the production—or about M$570 million of industrial value added—of these factories are exported via the Johore Port.[7]

The other important industrial estates in Johore are the Larkin and Tampoi Industrial Estates near Johore Baru, the Sri Gading Industrial Estate near Batu Pahat, and the Bandar Tenggara Industrial Estate within the Johore Tenggara area. However, as can be seen in Table III, these industrial estates are small when compared to the Pasir Gudang Industrial Estate. Hence, it is clear that without the Port, the pace of industrialization in Johore could not have been as rapid as is shown in Table II. Further, over the remaining part of this decade, the major focus of industrialization in Johore will be on the continued development of the Pasir Gudang Industrial Estate. By 1990, when all the planned 1,591-hectare industrial land are developed, 928 hectares—or 58 per cent of the total area—will be in the Pasir Gudang Industrial Estate alone, with the Johore Port serving as the main outlet for the exports and imports of the factories in the estate. This demonstrates clearly the continued importance of Johore Port, as the catalyst for industrialization of Johore and South Peninsular Malaysia, over the coming decade.

B. *Accelerating Agricultural Development*

In spite of rapid industrialization, agriculture continues to be the mainstay of Johore's economy, accounting for almost a third of the state's gross domestic

[6] Communications with the State Economic Development Corporation (SEDC), Johore, Johore Baru, 1982.
[7] Communications with SEDC, Johore, Johore Baru, 1982.

TABLE V

AGRICULTURE HECTAREAGES IN JOHORE, 1968–90

(1,000 hectares)

| | 1968 | 1971 | 1974 | 1977 | Projected 1985 | Projected 1990 |
|---|---|---|---|---|---|---|
| Rubber | 315.3 | 300.9 | 311.1 | 315.1 | 434.5 | 438.5 |
| Oil palm | 72.8 | 101.5 | 171.1 | 224.5 | 323.5 | 370.8 |
| Pineapples | 15.4 | 17.4 | 19.2 | 20.7 | 19.1 | 20.1 |
| Coconuts | 54.5 | 50.5 | 55.3 | 66.8 | 68.5 | 69.4 |

Sources: [10, 1968–77] [9, 1968–77].

Note: Projections for 1985 and 1990 are based on extensive reviews of plans of the relevant agricultural development authorities (e.g., FELDA, KEJORA, etc.) and private estates.

product in 1980 (see Table IV). In fact, Johore is the most important agricultural state in Peninsular Malaysia; it is the Peninsula's largest producer of rubber, palm oil, and pineapple.

Although the Johore Port does not, by itself, accelerate the agricultural development of the state, it *does facilitate* the agricultural development of the state by enabling rapid export of agricultural products such as refined palm oil. Further, it facilitates the imports of the agricultural sector's requirements for fertilizers and agricultural equipment.

### C. *Palm Oil Sector Development*

Oil palm is the fastest growing agricultural crop in Johore. As can be seen in Table V, the hectareage of oil palm in Johore tripled from 73,000 hectares in 1968 to 225,000 hectares in 1977. In terms of production, as can be seen from Table VI, it has increased from 0.42 million tonnes in 1975 to 0.73 million tonnes in 1979. With the opening of new oil palm plantations in Johore Tenggara, its production is expected to increase to 1.09 million tonnes in 1985, and 1.33 million tonnes in 1990. Johore is the largest palm oil producer in Peninsular Malaysia, accounting for 32 per cent of the total hectareage, and 40 per cent of the total output, in Peninsular Malaysia in 1977.

Since refined palm oil is a perishable product—it oxidizes rapidly when stored in storage tanks—the viability of an oil palm estate, as a producer and exporter of palm oil, hinges crucially upon the proximity of the plantation to a port. In this sense, the Johore Port has accelerated the development of vast tracts of virgin land into oil palm estates in Johore; it is an excellent location for the siting of palm oil refineries and for the subsequent rapid export of the refined palm oil and palm oil products. As can be seen from Table I, in 1982, out of the 1.48 million tonnes of cargo exported through the Port, 1.08 million tonnes were in the form of palm oil and palm oil products; the 1.08 million tonnes of palm oil products exported represented about 69 per cent of the total production of palm oil products in the whole of Johore. These figures indicate vividly the important role the Port plays in accelerating the development of the palm oil sector in Johore and South Peninsular Malaysia. In fact, out of the sixty-four

TABLE VI

AGRICULTURAL PRODUCTION OF JOHORE, 1975–90

(1,000 tonnes)

| | 1975 | 1976 | 1977 | 1978 | 1979 | Projected 1985 | Projected 1990 |
|---|---|---|---|---|---|---|---|
| Rubber | 492.1 | 514.8 | 499.8 | 530.6 | 542.8 | 637.8 | 728.7 |
| Palm and palm kernel oil | 419.3 | 430.4 | 531.3 | 568.2 | 729.3 | 109.6 | 1,331.4 |
| Pineapples | 215.2 | 204.3 | 200.2 | 195.7 | 100.8 | 276.0 | 402.9 |
| Coconuts | — | — | — | 23.2 | 23.2 | 23.7 | 24.0 |
| Timber products: | | | | | | | |
| Saw logs | 802.0 | 1,082.7 | 1,092.6 | 969.9 | n.a. | 6,355.9 | 7,062.1 |
| Sawn timber | 492.2 | 789.1 | 791.4 | 761.2 | n.a. | 2,189.3 | 2,824.9 |

Sources: [15] [10, 1975–77] [9, 1975–77].

Note: Projections for 1985 and 1990 are based on extensive reviews of plans of the relevant agricultural development authorities and private estates. Projections of timber products are based on plans of the State Forestry Department.

palm oil refineries in Peninsular Malaysia in 1982, eleven are located in Pasir Gudang alone.[8]

From the above discussions, it is clear that although some oil palm estates could have been developed in Johore without Johore Port, it is nevertheless the presence of the Port which has enabled the tripling of the hectareage under oil palm over the decade of the 1970s. With the continued expansion of oil palm plantations over the coming decade, the crucial role that Johore Port plays in increasing the viability of these estates, by allowing the production to be refined and exported rapidly, cannot be overemphasized.

### D. *Rubber Sector Development*

In 1968, the total hectareage under rubber in Johore was 0.32 million hectares (see Table V); this hectareage had remained essentially steady over the 1970s. However, in terms of production, despite the constant hectareage, rubber production has increased from 0.49 million tonnes in 1975 to 0.54 million tonnes in 1979 (see Table VI). Johore continues to be Peninsular Malaysia's largest producer of rubber, accounting for, for example, 26 per cent of the country's hectareage, and 33 per cent of its output, in 1977.

With respect to the role that Johore Port plays in enhancing the development of the rubber sector in Johore, from Table I, it can be seen that very little rubber products had been exported through Johore Port. Hence, it appears that the development of the rubber sector in Johore has been fairly independent of the Port.

Given that there are about 320,000 hectares of rubber in Johore, and that Johore is the largest rubber producer in Peninsular Malaysia, the absence of any rubber export through Johore Port is surprising. This, however, could be explained by the peculiarity of the rubber-export trade. Rubber is exported predominantly in the form of rubber sheets or latex. In either form, it is a non-

[8] Communications with Palm Oil Research Institute, Malaysia (PORIM), 1982.

perishable product, allowing it to be stored in warehouses or godowns over a long period before shipment. Further, the government imposes an excise duty —based on a certain percentage of the prevailing market price for rubber— upon all the rubber sheets and latex exported. Due to the lack of a free trade zone in Johore Port, and infrequent freight carriers for rubber cargo calling at the Port, traders who export their rubber through Johore Port are not certain of the export excise duty charged until the very day when the rubber are loaded onto the ship. In periods of rising prices, any prolonged wait at the Port, before loading onto a freight carrier, would mean an increase in the payment of excise duty; hence, South Peninsular Malaysia's rubber exporters find it more prudent to export their rubber through Singapore, where the export excise tax is calculated on the day that the rubber is processed through the customs at the Johore Baru to Singapore Causeway. A similar reasoning accounts for lack of export of sawn timber through Johore Port.

The Johore Port Authority is now holding intensive discussions with the Prime Minister's Department on its proposal for the delineation of a suitable area adjacent to the Port as a free trade area, with appropriate customs clearing facilities and bonded warehouses. This proposal is expected to be officially gazetted by late 1984. When implemented, the proposal would go a long way in attracting the export of Peninsular Malaysia's rubber away from Singapore to Johore Port. This point will be elaborated further in the next section.

E. *The Pineapple Sector*

Johore is also, by far, the largest producer of pineapples in Peninsular Malaysia, producing about 95 per cent of the Peninsula's pineapples. However, the hectareage under pineapples is small relative to the hectareage under rubber and oil palm. As can be seen from Table V, the hectareage under pineapples in 1968 was about 15,000 hectares; this increased to about 21,000 hectares in 1977. Production of pineapples, nevertheless, decreased from 0.21 million tonnes in 1975 to 0.10 million tonnes in 1979 (see Table VI). However, with the completion of the West Johore *in situ* project, the production of pineapples is projected to increase to 0.28 million tonnes in 1985 and 0.40 million tonnes in 1990.

Since canned pineapple is mainly exported in container form, the bulk of Johore's export of canned pineapples had been exported via Singapore. Nevertheless, with the scheduled completion of container handling facilities in Johore Port by 1985, a substantial proportion of Johore's pineapples could be attracted from Singapore Port to Johore Port. This point will again be discussed further in the next section.

F. *Fertilizer Imports*

A further contribution of Johore Port, in accelerating the development of the agricultural sector in South Peninsular Malaysia, is its facilities in handling the import of fertilizer raw materials—such as potash, calcium products, and urea— as bulk products from Japan and other countries. After being unloaded at the

Port, these raw materials are then mixed in the required proportions in fertilizer factories situated in the Pasir Gudang Industrial Estate. They are then transported to the plantations requiring them. As can be seen from Table I, fertilizer raw materials constituted the major portion of the import cargo—about 37 per cent in 1982—of Johore Port. Thus, the Port has contributed towards improving the yields of the various agricultural sectors, by enabling the appropriate fertilizers to be made available to these sectors rapidly and cheaply. In fact, the Port has been so successful in attracting fertilizer plants to Pasir Gudang that special bulk unloading facilities have been built at the Port, for the purpose of unloading the fertilizer raw materials directly from the ships, through conveyor belts, to the fertilizer factories. As at 1982, out of the twelve fertilizer plants in Malaysia, six of them are located in the Pasir Gudang Industrial Estate alone. This overconcentration of fertilizer plants in Pasir Gudang is expected to continue with the further expansion of the industrial estate.

## V. DIVERSION OF TRADE AND EMPLOYMENT GENERATION

In this section, we shall discuss the role that Johore Port plays in the development of South Peninsular Malaysia by attracting the international trade of Peninsular Malaysia away from Singapore through the improvement of its facilities, and the creation of direct and indirect employment opportunities.

### A. *Attraction of International Trade Away from Singapore*

As was pointed out previously, prior to the early 1970s, more than a third of Peninsular Malaysia's international trade was exported or imported through Singapore. The principal reason behind Peninsular Malaysia's heavy dependence on Singapore during this period was the absence of a deep-sea port in South Peninsular Malaysia. Further, the range and frequency of shipping services available in Singapore made it very convenient for traders in South Peninsular Malaysia to designate Singapore as their port of origin and destination.

Before we can analyze the extent to which Johore Port has, and can, successfully attract Peninsular Malaysia's international imports and exports *via* Singapore, we have to analyze the past trend of Peninsular Malaysia's imports and exports *via* Singapore. The annual trade statistics of Peninsular Malaysia give the figures for Peninsular Malaysia's trade *to* Singapore and Peninsular Malaysia's trade *to and via* Singapore. The difference between the two trade figures will, therefore, give the value of Peninsular Malaysia's external trade *via* Singapore.[9] Further, in order to estimate the value of Peninsular Malaysia's external trade *via* Singapore that can be diverted to Johore Port, we have to break down the external trade by imports and exports, and by category of goods.

Table VII shows the present and projected tonnage of goods exported *via* Singapore. The projected figures represent the potential cargo that may be

[9] For example, if the amount of Malaysia's external trade to and via Singapore is $A, and the amount of Malaysia's external trade to Singapore is $B, $A−$B gives the amount of Malaysia's external trade via Singapore.

TABLE VII

PENINSULAR MALAYSIA EXPORTS AND IMPORTS VIA SINGAPORE, 1972–90

(1,000 tonnes)

| | 1972 | 1974 | 1978 | 1983 | 1985 | 1990 |
|---|---|---|---|---|---|---|
| Export items: | | | | | | |
| 0. Food | 66.1 | 59.1 | 54.6 | 40.0 | 36.6 | 36.1 |
| 1. Beverages & tobacco | 18.7 | 0.7 | 0.2 | — | — | — |
| 2. Crude materials, inedible: | | | | | | |
| Rubber | 16.2 | 28.0 | 100.0 | 133.0 | 250.0 | 500.0 |
| Timber | 353.6 | 465.6 | 950.0 | 1,000.0[a] | 1,000.0[a] | 1,000.0[a] |
| 3. Mineral fuels, lubricants, etc. | 1.7 | 0 | 0.2 | — | — | — |
| 4. Animal & vegetable oils & fats (palm oil) | 30.5 | 27.8 | 110.5 | 70.1 | 287.7 | 387.1 |
| 5. Chemicals | 0.3 | 0.4 | 0.2 | — | — | — |
| 6. Manufactured goods | 117.6 | 163.0 | 320.5 | 540.2 | 789.3 | 1,414.6 |
| 7. Machinery & transport equipment | 0.8 | 1.5 | 2.5 | 9.3 | 13.1 | 23.3 |
| 8. Miscellaneous manufactured articles & transactions | 595.8 | 220.2 | 289.0 | 280.0[a] | 280.0[a] | 280.0[a] |
| Total exports | 1,201.3 | 966.3 | 1,827.7 | 2,072.6 | 2,656.7 | 3,641.1 |
| Import items: | | | | | | |
| 0. Food | 289.4 | 172.4 | 457.4 | 800.3 | 1,008.3 | 1,296.9 |
| 1. Beverages & tobacco | 1.6 | 1.9 | 2.5 | 2.9 | 3.6 | 4.9 |
| 2. Crude materials, inedible | 44.4 | 40.5 | 67.5 | 105.1 | 138.1 | 225.0 |
| 3. Mineral fuels | 304.2 | 108.7 | 152.8 | 165.8[b] | 165.8[b] | 165.8[b] |
| 4. Animal & vegetable fats & oils | 7.4 | 5.6 | 3.3 | 5.3[b] | 5.3[b] | 5.3[b] |
| 5. Chemicals | 455.6 | 469.6 | 621.5 | 800.2 | 955.1 | 1,360.4 |
| 6. Manufactured goods | 500.1 | 417.3 | 402.7 | 452.3 | 582.8 | 518.4 |
| Total imports | 1,602.7 | 1,216.0 | 1,707.7 | 2,331.9 | 2,858.9 | 3,576.7 |

Sources: [7, various years]. The figures for 1983 onwards are projections based on multiple regression analyses of past exports (and imports). See also [1].

[a] Projection set roughly equal to annual value for 1976–78.

[b] Projection based on a value equal to average of value for 1972 to 1978.

exported via Singapore, in an environment of free-market competition, and in the *absence* of policies by the Malaysian government to deliberately curtail Peninsular Malaysia's exports via Singapore. The projections have been estimated on the basis of the following regression equations (based on the data for 1970–78):

0 Food (mainly pineapple):

$$y_0 = 44.91 + \underset{(1.42)}{0.050}\, c_p - \underset{(0.54)}{3.57}\, g_i ; \qquad (\bar{R}^2 = 0.43)$$

2 Crude materials, inedible (rubber):

$$y_2 = 95.76 + \underset{(0.31)}{0.077}\, r_p - \underset{(1.53)}{24.04}\, g_i ; \qquad (\bar{R}^2 = 0.44)$$

4 Animal and vegetable oils and fats (palm oil):

$$y_4 = -141.63 + \underset{(2.54)}{0.32}\, p_p + \underset{(0.66)}{18.24}\, g_i ; \qquad (\bar{R}^2 = 0.72)$$

6 Manufactured goods:

$$y_6 = -140.37 + 0.103\, g_m; \qquad (\bar{R}^2 = 0.78)$$
$$(4.17)$$

7 Machinery and transport equipment:

$$y_7 = -1.95 + 0.0017\, g_m; \qquad (\bar{R}^2 = 0.33)$$
$$(0.76)$$

where

$y_0$ = pineapple exported (1,000 tonnes),
$y_2$ = rubber exported (1,000 tonnes),
$y_4$ = palm oil exported (1,000 tonnes),
$y_6$ = manufactured goods exported (1,000 tonnes),
$y_7$ = machinery and transport equipment exported (1,000 tonnes),
$c_p$ = pineapple production of South Peninsular Malaysia, i.e., Johore, Negri Sembilan, and Malacca (1,000 tonnes),
$r_p$ = rubber production of South Peninsular Malaysia (1,000 tonnes),
$p_p$ = palm oil production of South Peninsular Malaysia (1,000 tonnes),
$g_m$ = GDP of manufacturing sector in South Peninsular Malaysia,
$g_i$ = per capita GNP growth rate of OECD countries.

Coefficients of determination are adjusted for the degree of freedom; figures in parentheses are $t$-values.

From Table VII, it can be seen that the three major categories of Malaysia's exports via Singapore that can be attracted to Johore Port, by improving the competitiveness of the Port through policy measures, are the *crude materials sector* (rubber and timber; by the establishment of a free trade area), *manufactured goods* (by the establishment of more ancillary port services), and *vegetable oils* (palm oil; by the construction of an additional tank farm for storage). From Table VII, it can also be seen that the tonnage of these commodities, exported via Singapore, is projected to be about 2.3 million tonnes in 1985 and 3.3 million tonnes in 1990. Given the magnitudes of these tonnages, the possibility of attracting a significant proportion of these cargo to Johore Port looks bright, if the necessary policy measures are implemented immediately.

With respect to Peninsular Malaysia's import via Singapore, these figures are obtained by subtracting the values of imports *originating* from Singapore from the values of imports *from and via* Singapore.[10] Table VII also presents the present and projected tonnages of Peninsular Malaysia's imports via Singapore. Again, the projections are based on the continued existence of a free-market competitive environment, and that there are no deliberate policies undertaken by the government to curtail this trade. The projections are estimated on the basis of the following regression equations (using the data for 1970–78):

0 Food:

$$z_0 = -2730.7 - 0.21\, g_p + 290.2\, t_p; \qquad (\bar{R}^2 = 0.69)$$
$$(0.59) \quad (1.13)$$

[10] For example, if the amount of Malaysia's import from and via Singapore is \$C, and the amount of Malaysia's import from Singapore is \$D, \$C−\$D gives the amount of Malaysia's import via Singapore.

1 Beverages and tobacco:

$$z_1 = 6.78 + \underset{(0.69)}{0.0017}\, g_p - \underset{(0.37)}{0.69}\, t_p ; \qquad (\bar{R}^2 = 0.48)$$

2 Crude materials, inedible (e.g., industrial raw materials):

$$z_2 = 8.94 + \underset{(2.19)}{0.014}\, g_m ; \qquad (\bar{R}^2 = 0.49)$$

5 Chemicals:

$$z_5 = 352.6 + \underset{(1.13)}{0.067}\, g_m ; \qquad (\bar{R}^2 = 0.42)$$

6 Manufactured goods:

$$z_6 = -2183.6 - \underset{(1.21)}{0.45}\, g_p + \underset{(1.09)}{300.23}\, t_p ; \qquad (\bar{R}^2 = 0.43)$$

where

$z_0$ = food imported (1,000 tonnes),
$z_1$ = beverages and tobacco imported (1,000 tonnes),
$z_2$ = crude materials, inedible, imported (1,000 tonnes),
$z_5$ = chemicals imported (1,000 tonnes),
$z_6$ = manufactured goods imported (1,000 tonnes),
$g_p$ = per capita GNP of South Peninsular Malaysia,
$t_p$ = total population of South Peninsular Malaysia.

Coefficients of determination are adjusted for the degree of freedom; figures in parentheses are $t$-values.

From Table VII it can be seen again that should the Malaysian Authorities want to attract some of the trade via Singapore to Johore Port, the categories of goods that can potentially be diverted to the Port include (i) the food sector, (ii) the crude materials sector (for example, iron and steel inputs), and (iii) mineral fuels. The projected imports, for these three categories, via Singapore is about 1.3 million tonnes in 1985, and 1.7 million tonnes in 1990.

Having discussed the nature of Peninsular Malaysia's international trade via Singapore, we shall now try to estimate the magnitudes of these trade that can be diverted to Johore Port through policy measures. Given that the railway-link between the Port and the national railway system, and the improvements to the Johore Baru–Johore Port Highway have been completed, the successful attraction of these throughputs depends on the establishment of a free trade area for export of commodities like rubber and timber, and the completion of the phase-two expansion plan, together with all the ancillary facilities, by 1985. With these assumptions, we estimate conservatively that 30 per cent of the export of food, rubber, and timber could be attracted to Johore Port by 1985, increasing to 50 per cent in 1990. Similarly, with the industrial commodities exported and all items imported via Singapore, we estimate conservatively that about 20 per cent of these cargo could be diverted in 1985, increasing to 30 per cent in 1990. The total amount of throughput that can possibly be attracted to Johore Port are presented in Table VIII; these amount to 1.4 million tonnes in 1985, and

TABLE VIII

PENINSULAR MALAYSIA EXPORTS AND IMPORTS VIA SINGAPORE THAT CAN BE ATTRACTED TO JOHORE PORT, 1985–90

(1,000 tonnes)

| | 1985 | 1990 |
|---|---|---|
| Export items: | | |
| Food | 10.9[a] | 18.1[c] |
| Crude materials, inedible: | | |
| Rubber | 75.0[a] | 250.0[c] |
| Timber | 300.0[a] | 500.0[c] |
| Animal & vegetable oils & fats | 86.3[a] | 193.6[c] |
| Manufactured goods | 236.8[b] | 424.4[a] |
| Machinery & transport equipment | 3.9[b] | 7.0[a] |
| Miscellaneous manufactured articles | 84.0[b] | 84.0[a] |
| Total exports | 796.9 | 1,477.1 |
| Import items: | | |
| Food | 201.6[b] | 389.1[a] |
| Beverages and tobacco | 0.7[b] | 1.5[a] |
| Crude materials, inedible | 21.0[b] | 67.5[a] |
| Mineral fuels | 33.2[b] | 49.7[a] |
| Animal & vegetable oils & fats | 1.1[b] | 1.6[a] |
| Chemicals | 191.0[b] | 408.1[a] |
| Miscellaneous manufactured goods | 116.5[b] | 155.5[a] |
| Total imports | 565.1 | 1,073.0 |

Note: The above projections are based on the scheduled completion of infrastructural facilities in Johore Port, and realistic government policies to enhance the competitiveness of Johore Port.

[a] Diversion based on 30 per cent of projected tonnage as shown in Table VII.

[b] Diversion based on 20 per cent of projected tonnage as shown in Table VII.

[c] Diversion based on 50 per cent of projected tonnage as shown in Table VII.

2.6 million tonnes in 1990. Considering that the 1982 throughput of Johore Port was 2.5 million tonnes, these diverted trade may be considered fairly substantial but realistic.

With respect to the foreign exchange that may be saved by the attraction of Peninsular Malaysia's trade to Johore Port, if we use the conservative estimate that each tonne of throughput exported or imported via Singapore involves a handling fee of M$50 (i.e., for insurance, storage, and loading and unloading charges), the estimated foreign exchange that could be saved would amount to M$70 million in 1985, and M$130 million in 1990. These are fairly substantial foreign exchange savings and indicate the economic value of the Port to not only Johore, but also the whole of South Peninsular Malaysia.

B. *Employment Creation*

The growth in throughput handled by the Port, though impressive by itself, has also other important tangible benefits for the region. Among other benefits, this growth has contributed towards the creation of employment—both direct and indirect—in the area. With respect to direct employment, the number of

staff employed directly by the Johore Port Authority was about 105 persons in 1976; this work force increased to 179 persons in 1982. The Port also employed a large contract work force for loading and unloading of cargo; in 1982, the contract work force employed was about 300 persons. Hence, in 1982, the direct work force created by the Port amounted to about 479 persons.

Besides the creation of direct employment, the Port is also instrumental for the creation of a large number of indirect employment opportunities. In 1978, the Pasir Gudang Industrial Estate, whose existence is totally dependent on Johore Port, employed an estimated work force of about 2,000 people [14]. In 1982, this work force was estimated to have increased to 9,000. Besides the indirect industrial employment generated in Pasir Gudang, the Port also contributed towards the generation of employment in other service sectors, such as transport, communications, and retailing, in the area. Estimates of these indirect employment figures are, however, difficult and are left out in this paper.

Notwithstanding this, from the direct employment generated by the Port itself, and the indirect industrial employment created in Pasir Gudang, it can be inferred that in 1982 the employment generated by the Port in the region amounted to about 10,000 jobs. Working on the basis of four dependents per job created, this meant that the Port in 1982 supported about 40,000 people in the region. Based on an average of M$50 consumption per person per month,[11] this implies that the Port has generated an annual incremental consumption benefit of M$24 million. This is not an inconsiderable figure, and indicates the level of the consumption benefits that the Port has brought to the region.

## VI. CONCLUSIONS AND POLICY IMPLICATIONS

In this paper, we have examined the south growth-pole strategy of Peninsular Malaysia, specifically by examining the extent to which the Johore Port has accelerated the growth of South Peninsular Malaysia. From the analysis, it was found that Johore Port has played the pivotal role in accelerating the pace of industrialization of South Peninsular Malaysia in general, and Johore in particular, since 1977 when the Port commenced operations. Without the Port, the present industrial structure of Johore could not have been achieved.

We have also shown that the Port also played a fundamental role in accelerating the development of the oil palm sector in Johore; by enabling the successful planting and operation of vast tracts of oil palm plantations, through providing the necessary facilities for the efficient import of the required fertilizers, the speedy processing of the fresh-fruit-bunches harvested into refined palm oil and palm oil products, and the rapid export of these products.

Although the Port has yet to facilitate the export of substantial quantities of rubber, pineapple, and timber products from South Peninsular Malaysia, we have shown that, by 1985, with the necessary infrastructural facilities established

[11] It should be noted that for a family of four, an average household income of M$200 per month is considered to be about the minimum level of subsistence [5].

in the Johore Port area, a substantial proportion of these commodities—currently exported mainly through Singapore—can be exported via Johore Port. Hence, the role of Johore Port in accelerating the development of the agricultural sector will be further enhanced in the remaining part of the 1980s; it will then accelerate not only the expansion of the oil palm sector, but also the rubber, pineapple, and forestry sectors.

Besides contributing towards the development of both the industrial and agricultural sectors in South Peninsular Malaysia, Johore Port has played, and can continue to play, an important role in reducing the dependence of Peninsular Malaysia on Singapore for international trade. With the scheduled completion of the second-phase expansion of the Johore Port, and a consequent improvement in its competitiveness vis-à-vis Singapore Port, the Port will be able to attract a greater proportion of Peninsular Malaysia's international trade away from Singapore, leading to further savings in foreign exchange; about M$70 million in 1985 and about M$130 million in 1990.

With respect to employment creation, in 1982, the Port had created a total of about 10,000 jobs in the region; and these jobs supported a total of about 40,000 people. The incremental consumption benefits that the Port has brought to the region is estimated to be about M$24 million per annum, a considerable figure by any comparison.

When the Port was conceived in the 1960s, many planners viewed it as a prestigious project without much economic viability; but had to be implemented because of political and strategic considerations [3]. However, our analyses of the achievements, and contributions, of the Port since 1977 have proved these critics to be wrong. The Port is not only an economically viable project, but is also an infrastructural investment that has induced tremendous growth in South Peninsular Malaysia. With the continued development of the Pasir Gudang Industrial Estate, the expansion of the agricultural sector in Johore, and the implementation of appropriate government policies to enhance the competitiveness of the Port vis-à-vis Singapore, the role that Johore Port can play in accelerating the economic development of South Peninsular Malaysia could be further expanded. In this respect, it must be emphasized that the policies that should be adopted ought to be the ones that enhance the efficiency of the Port in an environment of free-market competition; and *not* the ones that would lead to the curtailment of free movement of goods to Singapore, or the limiting of Malaysian traders' current wide accessibility to Singapore. Then, and only then, could Johore Port's contribution be considered to be consistent with the good of its societal environment. Some of the policies that can be adopted to improve the operations and competitiveness, in this respect, of Johore Port, include the rapid completion of the free trade area—together with the appropriate customs facilities and bonded warehouses—near Johore Port, the provision of better ancillary services, such as container handling facilities and roll-on roll-off services, and telecommunication facilities, in the Port area to port users, and the designation of Johore Port as a scheduled port for freight liners so that more scheduled liners would call at the Port. These policies, implemented in conjunction with

efficient management of the Port's resources, would enable Johore Port to play an even bigger role in accelerating the development of South Peninsular Malaysia; leading, ultimately, to the achievement of its vision of being the "model" Malaysian port.

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