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SINGAPORE’S EXPORT PROMOTION STRATEGY AND ECONOMIC GROWTH (1965-84)

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SINGAPORE’S EXPORT PROMOTION STRATEGY AND ECONOMIC GROWTH (1965-84)

1. INTRODUCTION

Singapore is the smallest state in South East Asia. It has no hinterland nor other natural resources, and yet it is the country which has enjoyed the most remarkable economic growth in the last three decades. Between 1965 and 1990 real GDP grew on average 6.5 percent per annum (World Bank, 1992: table 1). Today, with an average wealth of $306,000 per person, Singapore has been ranked 23rd among the world's wealthiest nations (EDB 1999). The city-state now has a mature economic structure, with the modern service sector accounting for a larger share of GDP than manufacturing. The 1999 world competitiveness ranking, moreover, showed Singapore as the second most competitive country in the world (the first was United States).1

Parallel to Singapore’s miraculous growth was an even more spectacular increase in exports. Referring to table 1.1, between 1965 and 1988 Singapore’s annual growth of exports was 7.6 percent in constant prices — twice that of the middle-income country. The economy is very open (export as a percentage of GDP was nearly 200 percent) and is much more developed as an exporter of manufactures (manufactured exports accounted for 75% of total export earning). Manufactured exports include not only ‘first generation’ textiles, but also ‘second generation’ electronic goods, petroleum refining and semiconductors. Yet in 1960 manufacturing accounted for only 7.2% of GDP, with more than one-third of employment geared towards traditional production for the small domestic market in industries such as food and beverages (Lim and Fong 1986: Tables 12 and 14). All this transformation without, since the late 1960s, balance of payment problems, rapid inflation, and high levels of foreign borrowing.

If this is a miracle, it is not beyond explanation. On the contrary, according to the generally accepted view the success of Singapore and other NICs is due to a thoroughgoing application of the theorems of neoclassical economics. Neoclassical proponents stressed a high degree of commitment by the Singapore government to laissez-faire market economics. Moreover, they stressed the ‘free trade’ tribe of these economies as an explanation of success. For example:

Detailed and historical studies...have provided an impressive empirical validation of the theoretical case for the view that...free trade remains the best policy for developing countries. (Lai, 1983, p. 27-28)

Experience has been that growth performance has been more satisfactory under export promotion (trade) strategies…than under import substitution strategies…There is little doubt about the link between export performance and growth rates (Krueger 1980, p. 288-89).

Table 1.1 Export Performance of Singapore, 1965-1988

<table>
<thead>
<tr>
<th>Country</th>
<th>Growth of exports, (% per year)</th>
<th>Exports in GDP</th>
<th>Manufactured exports in total exports</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singapore</td>
<td>7.6</td>
<td>198</td>
<td>75</td>
</tr>
<tr>
<td>Middle-income countries</td>
<td>3.6</td>
<td>27</td>
<td>68</td>
</tr>
</tbody>
</table>


The evidence is quite conclusive: countries applying outward-oriented development strategies had a superior performance in terms of exports, economic growth, and employment whereas countries with continued inward orientation encountered increasing economic difficulties. (Balass 1981, p. 16-17)

An important point should be made clear. The neoclassical definition of an ‘export promotion’ (EP) strategy is substantially different from the definition used by other scholars. Neoclassical economists state that a country is following the EP strategy if the effective exchange rates for the country’s exports is equal to its imports (Bhagwati, 1990: 17). In other words, an EP strategy is a neutral trade strategy - i.e. no bias against exports - and is close to free trade (Bhagwati, 1990: 18). In contrasts, an EP strategy is commonly referred, by other scholars, as “governmental efforts to expand the volume of a country’s exports through export incentives (i.e. public subsidies, tax rebates, and other kinds of financial and non-financial measures designed to promote a greater level of economic activity in export industries) and other means in order to generate more foreign exchange and improve the current account of its balance of payments”
Thus, there is a lack of empirical evidence to show that export promotion (EP) in Singapore entailed substantial government intervention, and that government intervention has promoted remarkable growth in Singapore. The other aim is to examine other factors that are necessary to economic growth (e.g. foreign capital and external conditions) which have often been undermined by both neoclassical proponents and revisionists.

This paper is organised as follows. Chapter 2 provides the theoretical supports for Singapore’s export promotion (EP) strategy which can be found in Hechshser-Ohlin factor endowment trade theory and the theory of developmental state. The aim is to provide a theoretical framework for analysis. Part 1 examines Singapore’s EP strategy and its impact on economic growth and structural change. It is chronologically divided into three chapters: labour intensive export-oriented manufacturing (1965-73, Chapter 3); upgrading and diversifying (1972-79, Chapter 4); and economic restructuring (1979-84, Chapter 5). Part 2 examines the causes of Singapore’s economic growth. The objective is to examine the importance of the EP strategy and foreign capital to economic growth. The process involves examining the components of growth in Singapore using growth accounting data (Chapter 6). Then we will examine the external conditions that facilitated Singapore’s economic growth (Chapter 7). We will also examine the negative consequences of relying on foreign capital and technology (Chapter 8). Finally we present a summary of findings.

2. THEORETICAL FRAMEWORK

It is important to state our definition of ‘export promotion’ (EP) strategy in order understand...
the theoretical framework. We define it as *governmental efforts to expand the volume of a country’s exports through industrial policies (e.g. export incentives), foreign investment policies and other interventionist policies, in order to achieve sustained economic growth*. The theoretical support for our EP strategy can be found in Hechsher-Ohlin factor endowment trade theory (2.1) and the theory of developmental state (2.2).

### 2.1 Hechsher-Ohlin Trade Theory

The H-O factor endowment trade theory is an extension of the classical comparative advantage theory of free trade. The classical free trade theory is a static model based strictly on a one-variable-factor (labour cost), to demonstrating the gains from trade. This theory was modified by Eli Heckscher and Bertil Ohlin, to take differences in factor supplies (mainly land, labour, and capital) on international specialisation. Unlike the classic labour model, however, where trade arises because of fixed but differing labour productivities for different commodities in different countries, the H-O factor endowment model assumes away inherent difference in relative labour productivity by postulating that all countries have access to the same technology. If domestic factor prices were the same, all countries would use identical methods of production and would therefore have the same relative domestic product price ratios and factor productivities. The basis for trade arises not because of inherent technological differences in labour productivity but because countries are endowed with different factor supplies. Given different factor supplies, relative factor prices will differ (e.g. labour will be relatively cheap in labour-abundant countries), and so too will domestic commodity price ratios and factor combinations.

Provided demand patterns do not differ much between countries, the Hechsher-Ohlin theorem of trade states that: "countries will export those goods whose production is relatively intensive in the factor with which they are well endowed" (Winters, 1991: 31). The H-O trade theory provides the rational to justify our export promotion strategy because it is logical that industrial countries, which had plenty of capital, should specialise in capital-intensive sectors of the economy while less developed countries (LDCs), with their cheap labour, should invest in labour-intensive industries (Biel, 2000: 81).

### 2.2 Theory Of Developmental State

In this paper, the only other rational for our EP strategy is the theory of developmental state which justifies state interventions in East Asia. It is suggested that “the phenomenon of successful ‘late development’ – whether ‘capitalist’ (Japan, South Korea) or ‘socialist’ (the Soviet Union, China) should be understood in terms of Listian ‘political economy’ - concretely as a process in which states have played a strategic role in taming domestic and international market forces and harnessing them to a national economic interest” (White and Wade, 1988: 1). That “the modern notion of ‘development’ rests on a concept of the state as the *primum mobile* of socio-economic progress. It draws on the historical argument (Gerschenkron, 1966) that successful ‘late development’ takes a form very different from that of the early industrialisers, notably United Kingdom: it is less ‘spontaneous’, more the subject of teleological determination, which the state playing the role of historical animateur. The ideology of ‘developmentalism’ and the idea of the interventionist state are thus inseparable” (White and Wade, 1988: 1, 2).

‘Guided market economies’ are market economies in which the state tries to achieve its objective by influencing the market - by shifting the composition of what is profitable (White and Wade, 1988: 5). The state constrains market rationality by the priorities of industrialisation. Industrialisation per se has been the priority, not considerations of maximising profitability based on current comparatively advantage. To achieve industrialisation, the government may intervene aggressively in the markets to bring about specific allocative effects – in addition to measures designed to safeguarding the self-regulating parts of the market. Therefore, the government does not limit itself to the provision of infrastructure. Nor has it intervened in industries when they are in trouble, as has been the tendency of the West.6

The approach has been based on the argument that some industries are more important for the future growth of the economy than others. Some industries have accordingly been highly subsidised, promoted, and directed by the government; others have experienced policy intervention to a lesser scale; the rest have been left to take care of themselves within a framework of regulation. It is not that the government has prevented investment in non-strategic industries; it has simply not given such industries much help. It has also retained enough instruments of control to make sure that whatever happens in the rest of the economy, enough promotion and investment is forthcoming for the strategic industries. In this way the market is guided by the conception of a long term national rationality of investment formulated by government officials; the content of industrialisation is not totally left to the market (White and Wade, 1988: 1).
The developmental state is governed by an authoritarian-corporatist type of political system - the rules for selecting the rulers give little scope for the expression of popular preferences, and especially, do not allow competition between political parties. This type of political system enables the political leaders to exercise much influence over public investment decisions and policy choices.

2.3 Theories of Economic Growth

The theory of economic growth allows us to decompose the sources of growth. This is important because it allows us to (i) measure the contributions of EP to the sources of growth; and (ii) examine the hypothetical other causes of growth (e.g. foreign capital). The first model of economic growth was put forward by Harrod and Domar (Ray 1998). The model states that there is a strict link between physical capital formation and economic growth. If demand conditions are made right, said the model, the only bottleneck to growth is a lack of physical capital. Moreover, the model suggests growth depends on ICOR – the efficiency of investment. The Solow model modified the Harrod-Domar model by saying that the long run per capita growth is determined by the growth rate of technological progress (Promfret, 1997: 51). It suggests that increases in investment have only transitory effects on the growth rate due to diminishing returns to capital accumulation. The Solow model shows how growth could be decomposed into contributions from the growth of ‘Total Factor Inputs’ (TFI) and growth of ‘Total Factor Productivity’ (TFP). TFI measures the contribution of increases in the amount capital and labour, and TFP is a residual which among all other factors includes increases in output resulting from greater efficiency and better technological knowledge. In chapter 6, Solow growth accounting is used to measure the sources of Singapore’s growth and examine the hypothetical other causes of growth e.g. foreign capital.

PART I SINGAPORE’S EXPORT PROMOTION STRATEGY

In Singapore, throughout the 1950s, the Communists were serious contenders for political leadership. After electoral victory in the self-rule elections in 1959, the liberal PAP (People’s Action Party) leadership purged the left wing. To minimise organisational weaknesses at the grass roots, PAP leaders embarked on a one-party dominant system. Since then, the state of Singapore has been controlled strongly by a party that had an asymmetrically strong political power in the society.

In many aspects the State of Singapore fits well with the developmental state theory. The state guides the market. The economy is guided by an authoritarian-corporatist kind of political system which does not allow competition between political parties. This type of political system enables the political leaders to exercise much influence over public investment decisions and policy choices. The top priority of state action is industrialisation rather than maximising profitability based on current comparative advantage. The state guides the market, with development strategies formulated by an elite economic bureaucracy, led by a pilot agency – the EDB. We can divide Singapore’s export promotion strategy into two phases: labour intensive export-oriented manufacturing (1965-73) (Chapter 3); diversifying and restructuring (1973-84) (Chapter 4).

3 LABOUR-INTENSIVE EXPORT-ORIENTED MANUFACTURING (1965-73)

Before 1961 Singapore’s factor endowment i.e. labour abundance and geographic location enabled it to become specialised in entrepot trade and the services supporting this trade (such as banking, regional shipping, warehousing and transportation). However, in 1961 the entrepot trade was assessed by the state as having “very limited possibilities for expansion” (Soon and Tan, 1993: 8). Since then the state had plans to diversify Singapore’s economic activities. The government first thought was to encourage import-substitution industrialisation (ISI) in manufacturing. But these hopes were dashed...
with the separation from Malaysia in 1965. Singapore’s domestic market was too small to support ISI and the government thought to turn towards export manufacturing instead.

To extend Singapore’s economic activities into export manufacturing was a difficult task for the state. At the time, there was little incentive for industrial investment. Local investment was heavily concentrated in services, real estate, and domestic trade – conservative in outlook and with little experience in manufacturing, local firms seemed unlikely to spearhead growth (Haggard and Cheng, 1987: 105). Moreover, uncertainty of demand and risks due to lack of information made investment unattractive. Under these conditions, the state sought an export promotion strategy based on an alliance with foreign firms. More specifically, the state decided on an aggressive export-based industrial growth financed by foreign capital. To attract foreign investment the government adopted a free trade regime; it provided incentives to attract foreign capital; and exercised extensive controls over labour and forced savings. Moreover, to control over the economy the state was engaged in direct production.

3.1 Free Trade Regime

Neoclassical proponents support free trade because by eliminating trade barriers, adopting realistic exchange rates, and above all, to allow the free play of market forces, such policy would bring a country’s production structures in line with comparative advantage. It is clear that the government of Singapore did adopt a free trade regime. According to Soon and Tan (1993) since 1969 trade has been continuously liberalised and by 1973, all quotas and almost all import tariffs were eliminated (Soon and Tan, 1993: 31). In fact, table 3.1 shows that Singapore is based on free trade in the sense that the average incentives to sell on the domestic market are about equal to the average incentives to sell on the export market. Moreover the exchange rate was freed to become an instrument targeted specifically on inflation (Monetary Authority of Singapore, 1984: 4).

However, the Singapore government did not leave it up to free trade and market forces to bring the island’s production structures in line with comparative advantage. The aim of the trade liberalisation was to attract export-oriented industries and encourage foreign investments. Moreover, industrialisation behind tariff walls was clearly not a feasible option for a small city-state with no raw materials.

3.2 Incentives to Attract Foreign Investment

To attract foreign investment into labour-intensive industries the government, established ‘free zones’ and particularly Export Processing Zones (EPZ). The EPZs have two important characteristics. First, they are industrial sites with excellent physical infrastructure at highly subsidised rates. Second, the EPZs allow the duty-free entry of goods destined for re-export. The zones thus seek to attract 100 percent of foreign-owned subsidiaries that are vertically integrated into the investing firm’s marketing and production structure. As a corollary, the zones often have few economic linkages with the domestic economy other than the wage bill. To attract investors into the free zones and EPZs, the government increased tax incentives steadily since 1967. First, new industries qualified for ‘pioneer’ status are exempted from the 40% profits tax for a period of 5, 10, or more years. Then, under the Industrial Expansion Ordinance No.2, income taxes were reduced for firms that expanded in order to produce approved products (Deyo, 1981: 53-54). Thirdly, to induce investment and expansion of export-oriented industries, export incentives, introduced in 1967, provide a 90% tax exemption for 5-15 years for export profits derived from sufficient large investments. By 1983 twenty-one EPZs were in operation, covering 2,895 foreign and indigenous companies, and having nearly 212,000 employees (Mirza 1986: 84). It should be noted that the whole effort was coordinated by the Economic Development Board (EDB) – the state’s pilot agency. The EDB determines priorities in manufacturing and related sectors, decides on the scale and format of taxes and other incentives.

| Table 3.1 Differences between effective subsidy for export sale and for domestic market sale (%) |
|---------------------------------|---------|---------|---------|---------|
| Korea                          | Singap  | Israel  | Argentina |
| All manufacturing industries  | 7       | -5      | 44       | -145    |
| By trade orientation          |         |         |         |         |
| Export                        | 31      | 0       | -130     | -91     |
| Import-competing              | -61     | -3      | -88      | -190    |
| Export & Import-competing     | -46     | -7      | -65      | -164    |
| Non-import-competing          | 16      | 3       | -5       | -153    |

Source: B. Balassa 1982, table 2.5
3.3 Controls Over Labour and Forced Saving

At the beginning of the 1960s, Singapore remained a high cost producer by Asian standards (U.N. 1961: 310), but during the decade wages only rose moderately. The great reliance on labour-intensive industrialisation as the basis for national economic development and the reduction of unemployment, led the government to impose authoritarian corporatist controls over labour in order to stabilise labour costs, enhance productivity and industrial stability, and low-cost availability to foreign investors (Deyo, 1981: 110). In 1961 the government split labour movement by forming its own unions. Moreover, in 1968 it reduced its own unions. However, in 1968 it reduced the range of issues over which a union could confront an employer and expanded the state’s power of arbitration, while also drastically reducing overtime pay, retirement benefits, and maternity and sick leave (Haggard and Cheng, 1987). Unionism, firmly under party and state control, was henceforth to be an instrument for mobilising labour around the government’s political and developmental aims leave (Haggard and Cheng, 1987). The important political precondition is Singapore’s single party system which enabled the political leaders to exercise much influence over policy choices. This permitted them to control labour, and subdue political opposition. By 1970, Singapore’s unit labour costs were among the lowest in Asia, and for an assembly worker in the semiconductor industry the wage was about one-tenth of those in the US (Huff, 1987: 311).

Apart from controls over labour, the government also forced the private sector to save through a social security scheme taken from the colonial government – the Central Provident Fund (CPF). These savings are used by the government to finance planned investment, for example, EPZs and in state owned enterprises (SOEs).

3.4 Direct State Production

The government has pursued a strategy of state entrepreneurialism. State entrepreneurialism helped Singapore solve common handicaps of ‘late industrialisation’ as a dearth of entrepreneurial, technological and even capital resources by concentrating the economy’s efforts (R. Wade, 1992: 286). As the former Prime Minister, Lee Kuan Yew, recently said:

entrepreneurs and companies must be encouraged to become too complex take over (Lee 1991)

By the early 1980s, the government (through the Jurong Town Corporation) ran 21 industrial estates and export processing zones. Moreover, the government owned Singapore Airlines, INTRACO (a trading company), in manufacturing, held a 100% or majority equity stake in firms in food, textiles, wood, printing, chemicals and petrochemicals, iron and steel, engineering, and shipbuilding and repair (Young, 1992: 21). It is estimated that state-owned enterprises (SOEs) and statutory boards (e.g. the EDB) generated a return of $5-7 billion in 1983, or roughly a third of GDP or a half of indigenous GDP (Mirza, 1986: 110).

These interventionist policies, together with cheap labour and a good investment climate, were extremely successful in attracting foreign capital, generated growth and employment. Direct foreign investment (DFI) in manufacturing which averaged less than S$151 million per annum in 1968 had reached S$708 million by 1972 (Young, 1992: 21). Most of this investment went into petroleum refineries, electronics, textile & garment industries (Soon and Stoever, 1987: 323). Petroleum refining and electronics exploded in the late 1960s, with the share of manufacturing value added accounted for by capital intensive petroleum rising from 13.6 percent in 1965 to 19.2 percent in 1970, while the share of manufacturing employment accounted for by consumer electronics and electrical machinery leap from 3.3 percent in 1968 to 11.3 percent in 1970 (Young, 1992: 27). Textiles & garment industries generated more than half of the growth in manufacturing employment (147,500 jobs) in the period of 1968-72 (Soon and Stoever, 1987: 323). GDP grew at an impressive compound rate of 13.0 percent annually (Soon and Tan, 1993: 12), with manufacturing share rising sharply from 16.3 percent to 22.5 percent (Huff, 1987: table 2).

3.5 Summary

H-O trade theory states that countries will export those goods whose production is relatively intensive in the factor with which they are well endowed. In the case of Singapore, as we have seen, this is correct. Singapore’s factor endowment was relatively labour-abundant and capital-scarce, thus it specialised in labour-intensive industries such as textiles. However, the initial conditions were not suitable for industrial development and there were few incentives for industrial investment. Under these circumstances the state guided the market - by systematically
distorting incentives in order to industrialise – that is, to facilitate the establishment and growth of industrial sectors that would not have thrived under the working of comparative advantage. This was done by an alliance with foreign capital: by attracting MNCs into the targeted industry and area through the construction of EPZs, the various investment incentives to go with them, state-direct production, and controls over labour and forced saving. As Amsden (1989) rightly asserts “economic expansion depends on state intervention to create price distortions that direct economic activity towards greater investment. State intervention is necessary even in the most plausible cases of comparative advantage, because the chief asset of backwardness – low wages – is counterbalanced by heavy liabilities” (Amsden, 1989: 84). These interventionist policies successfully attracted foreign capital, generated economic growth and structural change.

4 UPGRADED AND DIVERSIFYING (1972-79)

By the early 1970s, Singapore had reached full employment, labour surplus was replaced by labour shortage. To ensure competitive labour costs, a large number of workers were imported from neighbouring countries – between 1966 and 1980 Singapore hosted around 100,000 ‘guest workers,’ principally from Malaysia (Huff, 1987: 311). In 1972, the Economic Development Board (EDB) first attempted to restructure its manufacturing sector. Unfortunately this policy had to be abandoned due to problems arising from the first oil price shocks. The EDB selected a number of capital and technology-intensive industries to promote, including petrochemicals, machine tools, precision engineering, sophisticated electronics and office equipment and machinery. It guided MNCs to these industries by investment incentives. A special tax concession - five-year tax holiday was given to industries with desired levels of technology (Soon and Tan, 1993: 12).

The government also took measures to diversify Singapore’s economic activities by aggressively building on Singapore’s comparative advantage in financial and business services. As early as 1968 the government, in consultation with international banks, spotted the possibility of an Asian dollar market similar to that for Eurodollars. The government immediately reacted by abolishing for deposits made by Asian Currency Units (ACUs) – any banking unit operating in the Singapore Asian Dollar Market – a withholding tax of 45 percent on interest paid to non-residents (Huff, 1994: 342). In 1971, the government also established the Monetary Authority of Singapore, with the mission of turning Singapore into an international financial centre (A. Mirza, 1986: 37). It should be noted that these activist policies ‘stole the march on Hong Kong’, where the government lacked a similar development commitment (Huff 1994: 342). The Asian dollar market (ADM) attracted a large number of foreign banks resulting in the phenomenal growth of more 20 percent per annum in the period 1980-90. The subsequent expansion of financial services also facilitated the inflow of DFI by making financial services available.

Despite the first oil crisis in 1973, and the world recession that followed in 1974-76 Singapore’s real GDP grew by 7.4 percent a year in the period of 1974-79. During the world recession growth came from infrastructural investment and financial services (reflecting the expansion of the ADM). Meanwhile the ISIC sector 38 (fabricated metal products, machinery, equipment, and electronics) continued to grow. Employment in the ISIC sector 38 rose from 35.8 percent of total manufacturing employment to 57.3 percent by 1980 (Young, 1992: 27).

5 ECONOMIC RESTRUCTURING (1979-84)

In 1979, the government launched what was termed a ‘Second Industrial Revolution’ to deliberately engineer Singapore’s comparative advantage into high-value activities. This was because Singapore faced the ever-present threat of protectionism in developed country markets. Moreover the industrial countries were entering a period of slowed growth. High levels of trade dependence required Singapore to find new niches based on higher productivity and higher value-added activities. The government identified five pillars of growth: manufacturing, trade, tourism, transport and communication, and “brain” services (including financial, medical and architectural services) (Lim and Fong, 1986: 17-18).

This period saw an intensification of government intervention. First, the government introduced a high-wage policy to discourage labour-intensive activities. The aim was to induce a shift from unskilled to skilled labour intensive activities, in which higher labour productivity would allow higher wages without granting specific advantages to physical capital-intensive industries (William et al. 1987: 42). After an early announcement legal wages were raised in several successive increments by a total of about 80 percent over the 1979-81 period (Lee and Naya, 1988: S139). Meanwhile the government took measures to upgrade the quality of labour. It established a Skills Development Fund to provide subsidies to companies for the training of their staff, and
provided fiscal incentives to encourage automation, mechanisation, computerisation, and R&D. The government also used large state owned industries to promote restructuring and undertake targeted activities. The Development Bank of Singapore and Keppels Shipyards, for example, promoted Singapore’s diversification into higher technology, higher value added products and services, creating the image of ‘Singapore Inc.’ (Mirza, 1986: 110-111).

To stimulate investment in desired high-value activities, the government again modified fiscal incentives (it also introduced new ones). First, the tax rate for export was cut from the usual rate of 40 percent to 4 percent only (Lim and Fong, 1986: 19). Second, there was an investment scheme for an approved manufacturing project. The project can claim, up to 50%, a tax credit for fixed investment in plant and machinery. Third, the government has a variety of other incentives to encourage plant expansion, automation, computerisation and R&D spending: there was a “Warehousing Incentive”, an Investment Allowance Incentive, an International Consultancy Services Incentive, an Approved Foreign Loan Scheme, and an Approved Royalties provision” with which “in general, all capital equipment can be completely written off in 5-10 years, and R&D spending can be double deducted, as can all expenses for export promotion” (Young, 1992: 23). In short, compared with last two phases, the investment incentives are now more selectively awarded. This is because the government has favoured projects that are technologically sophisticated and also capital- and skill-intensive. The investments are awarded according to government’s list of industries for priority development.²⁹

These interventionist policies were extremely successful in attracting direct foreign investments and inducing them into the desired industries. Net investment commitments from 1980 to 1984 averaged S$1.7 billion per year, led by strong expansion in new, higher valued-added industries such as computers, electronic machinery, printing, and pharmaceuticals (Soon and Tan, 1993: 14). In 1980 Singapore did not produce any computer components or peripherals. By 1983 Singapore was the largest exporter of disk drives in the world (Young, 1992: 27). The island’s success in building up a skilled work force and in drawing in higher value-added activities is reflected in value added per worker. Between 1973 and 1982 value added per worker in Singapore manufacturing increased from about one-quarter to almost two-fifths of that in US manufacturing (Huff, 1987: 315). However, this also shows the distance Singapore would still have to traverse for its manufacturing to be on the same level in terms of value added with a developed country. Nevertheless, during this period, financial and businesses developed rapidly in response to the expansion of the ADM and the inducements of the Monetary Authority of Singapore. As table 4.1 shows the share of financial and business services accounted for 13.9 percent of GDP in 1965 reached 17.8 percent in 1980, and an incredible 25 percent by 1985. Note that as early as 1985, the island had a mature structure with the financial and business service sector accounting for a larger share of GDP (25 percent) than manufacturing (19 percent). The development of Singapore as the region’s financial centre utilises Singapore’s relative factor endowment (i.e. geographic location) to the best advantage. For example, Singapore advantageously bridges the time zone gap between the New York/London and Hong Kong markets for foreign exchange. As early as 1986 average daily turnover on the Singapore foreign exchange market had reached to roughly half that in New York (Huff, 1994: 341).

It should be noted that, the success of the economic restructuring was highly dependent on maintaining the large inflow of foreign

<table>
<thead>
<tr>
<th>Table 5.1 Singapore GDP by Industrial Sector, (1960-1985) (percentages)</th>
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<tbody>
<tr>
<td>Year</td>
</tr>
<tr>
<td>------</td>
</tr>
<tr>
<td>1965</td>
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<tr>
<td>1970</td>
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<tr>
<td>1978</td>
</tr>
<tr>
<td>1980</td>
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<tr>
<td>1985</td>
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</tbody>
</table>

Sources: Department of Statistics, 1988: 45; Ministry of Finance: 73; Ministry of Finance, 1986: 89.
Singapore, 7,065 (33.1 percent) had some foreign participation and of these, 2,965 firms (42 percent) were wholly foreign owned (Soon and Stoever 1996: 325).

5.1 Summary

Neoclassical proponents asserts that “as export and income growth leads to higher savings, and as education spreads and workers become more skilled, industrialising countries shift to new exports, such as steel...and electronics, that use more capital and more skilled workers.” Moreover, “Well-functioning labour and capital markets ought to generate such transformation automatically” (Gillis, 1992: 468). In this and last section, however, we saw that the state played a crucial role in transforming Singapore’s economic structure. In the 1970s we saw the state aggressively build on Singapore’s comparative advantage in financial and business services. In the 1980s we saw the state lead Singapore into high value activities. This was done using distorting incentives to guided MNCs into targeted industries and to pull up skill and technology levels, using state-owned industries to undertake targeted activities, and using high wages to discourage labour-intensive industries. These interventionist policies successfully attracted direct foreign investment into the desired industries and generated growth and structural change.

Part II is divided into two chapters. In Chapter 6 we present empirical evidence to show the contributions by the EP and foreign capital to Singapore’s growth experience, using growth accounting data. Then in Chapter 7 we examine the reasons why foreign countries mainly from US and Japan invested heavily abroad during this period (i.e. the external conditions of Singapore’s economic growth). Finally in Chapter 8 we examine the negative effects of Singapore’s ‘dependent development’.

6 GROWTH ACCOUNTING

Slow growth accounting shows how growth could be decomposed into contributions from the growth of ‘Total Factor Inputs’ (TFI) and growth of ‘Total Factor Productivity’ (TFP). TFP measures the contribution of increases in the amount capital (human and physical capital) and labour (population increases), and TFP measures increases in output resulting from greater efficiency and better technological knowledge.

In order to show that Singapore’s growth experience was dependent on foreign investment, it is necessary to find the sources of growth. Alwyn Young (1992) has estimated the sources of growth for Singapore during the period, shown in table 6.1. During the period of 1970-90, economic growth in Singapore came mainly from increases in population (25 percent) and investment in human and physical capital (83 percent). This suggests that Singapore has grown nearly entirely through unusually high capital accumulation, not technical progress. Young’s explanation focuses on the nature of the growth policies in Singapore:

…the Singaporean government has, since the early 1960s, pursued the accumulation of physical capital via forced national saving and the solicitation of a veritable deluge of foreign investment… these policies had been astonishing successful, with the share of gross investment in Singapore’s GDP rising from 9% in 1960 to a high of 43% in 1984. (Young, 1992: 14.)

<table>
<thead>
<tr>
<th>Table 6.1 Contributions to growth, 1970-90</th>
</tr>
</thead>
<tbody>
<tr>
<td>Output growth</td>
</tr>
<tr>
<td></td>
</tr>
<tr>
<td>1970-75 0.454</td>
</tr>
<tr>
<td>1975-80 0.408</td>
</tr>
<tr>
<td>1980-85 0.300</td>
</tr>
<tr>
<td>1970-90 1.545</td>
</tr>
</tbody>
</table>

Source: Adapted from Young, 1992: table 5 and 6.

PART II ECONOMIC GROWTH

In the first part of this paper, we presented empirical evidence to show that export promotion (EP) in Singapore entailed substantial government intervention. In particular, most of the effort has gone into creating attractive conditions for foreign investment. MNCs not only provided high levels of technology and management skills, but they also ensured access to world markets, that Singapore, as a small player, would have trouble penetrating alone (Vogel, 1991: 77-78). As we have seen, the city state has achieved substantial economic growth with structural transformation.
In contrast to other Asian Tigers, Singapore has grown not through technical progress. This is because the Singaporean government has pursued an active policy of industrial targeting which has pushed production from one sector to another (textiles to electronics and refining then to clothing and electronics and banking services) too rapidly for there to be enough time for higher productivity rates to be achieved (Young 1992). It should be noted that it does not really matter if TFP growth is low or zero. For example, Switzerland is the richest country in the world yet its TFP growth is zero (Reebles and Wilson, 1996: 204). In short, growth during this period came mainly from investment in human and physical capital, and the role of the EP in this had been crucial to mobilise domestic capital and attract foreign capital.

Singapore’s growth experience was dependent on high capital accumulation from foreign capital and domestic savings. Let us first measure the contribution of growth made by foreign capital. Table 6.2 shows that in the period of 1970-90 DFI contributed about 24 percent to the accumulation of physical capital. Moreover, table 6.3 shows that in 1990 nearly 90 percent of the investment in manufacturing was committed from foreign capital, dominated by the US (42.4%) and Japan (28.4%). Foreign direct investment (DFI) in Singapore is also concentrated in services; on average it accounted for a third of FDI during the period of 1967-82 (Chowdhury and Islam, 1993: table 7.2).

Apart from DFI, the other main source of growth was investment by the state in the economy. This is explained by the fact that from the beginning of Singapore’s development process, the state has been acting as a central agent of capital accumulation. To attract foreign capital and maintain its constant inflow, the state had to continuously invest in physical infrastructure and in education and training (to upgrade labour skills). Moreover, the state also had to give attractive incentives to foreign capital (e.g. EPZs and fiscal incentives). To solve the common ‘late industrialisation’ handicap of a dearth of entrepreneurial and technological skills, the state itself engaged in direct production via state-owned enterprises.

Table 6.4 shows throughout the period of 1967-1990 that the average investment by the public sector was about 30 percent.

To summarise, Singapore has grown entirely through high capital accumulation from domestic savings and foreign capital. The EP strategy played a major role in the accumulation of physical capital via forced national saving and the policies to attract foreign capital. Much of the government’s physical capital accumulation was conducted to attract foreign capital, that is, to maintain the constant inflow of foreign investment by continuously investing in physical infrastructure and upgrading labour skills and by giving attractive fiscal incentives to foreign firms (including EPZs). On the other hand, most foreign capital (mainly from US and Japan) was invested in manufacturing and increasingly in services. This suggests that economic growth during the period of 1965-84 was highly dependent on foreign capital. In the next chapter we will examine the reasons why foreign countries invested abroad during this period (i.e. the external conditions that facilitated Singapore’s development). We will also examine the negative effects of Singapore’s ‘dependent development’ (i.e. economic growth that is dependent on the investment by other countries).

Table 6.2 Foreign direct investment as a share of gross domestic capital formation in Singapore, 1967-1990 (1985 market prices, annual averages)

<table>
<thead>
<tr>
<th>Year</th>
<th>Gross fixed capital formation (GFCF)</th>
<th>Foreign direct Investment in Singapore</th>
<th>% of GFCF</th>
</tr>
</thead>
<tbody>
<tr>
<td>1967/69</td>
<td>2382.2 $m</td>
<td>219.0 $m</td>
<td>9.2</td>
</tr>
<tr>
<td>1970/79</td>
<td>6648.6 $m</td>
<td>1471.3 $m</td>
<td>22.1</td>
</tr>
<tr>
<td>1980/90</td>
<td>16297.1 $m</td>
<td>4012.5 $m</td>
<td>24.6</td>
</tr>
<tr>
<td>1970/90</td>
<td>22945.7 $m</td>
<td>5483.8 $m</td>
<td>23.9</td>
</tr>
</tbody>
</table>

Sources: Adapted from Huff, 1993, table 11.22.

Table 6.3 Singapore investment commitments in manufacturing, 1990 ($m)

<table>
<thead>
<tr>
<th>Year</th>
<th>Total (%)</th>
<th>Local (%)</th>
<th>Foreign (%)</th>
<th>US (%)</th>
<th>Japan (%)</th>
</tr>
</thead>
<tbody>
<tr>
<td>1990</td>
<td>2,484.3 $m</td>
<td>266.8 $m</td>
<td>2,217.5 $m</td>
<td>1,054.8 $m</td>
<td>708 $m</td>
</tr>
<tr>
<td></td>
<td>(100%)</td>
<td>(10.7%)</td>
<td>(89.2%)</td>
<td>(42.4%)</td>
<td>(28.4%)</td>
</tr>
</tbody>
</table>

The neoclassical school does not explain the connection between the change in external conditions and the development to Singapore. To the neoclassical eye all countries should be able to industrialise simultaneously. There is no inherent reason why some must remain behind others, no inherent hierarchical ordering. The experience of Singapore is taken to validate the belief that the opportunities for rapid development are virtually unlimited and open to any economy. When Singapore began her rapid rise up the world wealth hierarchy in the mid-1960s, several circumstances came together in the world economy that facilitated Singapore's development. Nonetheless, Singaporean elites were able to capture the opportunity by export promotion and took the advantage offered.

US investment

A combination of factors prompted US to invest abroad to search out low-cost production bases in faraway places. First, transport costs and trade barriers in core markets (North America and North-western Europe) were tumbling. Second, competition intensified within the US market, especially with the entry of Japanese manufactures. Third, the accumulation of higher skills in the core work force made 'unskilled' labour scarcer and therefore more expensive, which enhanced the comparative advantage of lower-income countries with a less-skilled labour force and created a demand to invest in the production of goods produced by such labour (Wade, 1992: 310-11). As Bienfeld (1981) asserts "the development of the 1970s are fundamentally related to the long term decline in the competitiveness of the United States" (Benfield, 1981: 91). In addition, the huge government borrowing during the Reagan period kept the dollar at unrealistically high levels, which meant that US firms began to invest increasingly abroad in pursuit of low-cost production bases. The investment by big US transnationals started in the garment industry and repeated in electronics and home appliances in the 1970s and 1980s. In the personal computer sector today, Singapore's foreign MNEs (especially from US) supply at least half of world production of disk drives (Huff, 1994:322). In the 1970s and early 1980s, between 26% and 32% of total exports (mainly manufactures) from the Four Tigers were directed to the US market (Numazaki, 1998: table 9).

Japanese investment

In the late 1960s investing countries both within and outside the East Asia began to search for new investment locations due to uncertainties over the future of Hong Kong, the procurement of the Vietnam war, and rising Japanese costs due to the revaluation of the yen. In the past the Japanese had been allowed to maintain an undervalued currency: this helped them to export industrial goods, and Americans feared that deindustrialisation would happen in the US as a result. In the second half of the 1980s, to prevent this, the US and Europe got together to force Japan to revalue the yen – it doubled in value against the dollar in the period 1985-88 (Biel, 2000: 204). The response was a surge in Japanese investment abroad, as companies sought a base from which they could export. In the second half of the 1980s Japanese investment in manufacturing projects abroad amounted to nearly US$600 billion (Biel, 2000: 204). In Singapore, in 1990, Japanese DFI in manufacturing was the second largest, accounting for 28.4 percent. However, when Japanese companies set up their labour intensive manufacturing production bases in Singapore, they did not bring with them the basic industries that supplied the key components and tools. Thus vital parts and key components and the tools and machinery necessary for the production still had to be imported from Japan. This explains why Singapore enjoys a trade surplus with the US but suffered a trade deficit with Japan in the 1980s and early 1990s, as table 7.1 demonstrates. The fact that key components

| 1967/69 | 2,382.2 | 716.4 | 30.2 | 1,652.2 | 69.8 |
| 1970/79 | 6,648.6 | 1,800.3 | 27.4 | 4,782.1 | 72.6 |
| 1967/79 | 9,030.8 | 2,516.7 | 28.8 | 6,434.3 | 71.2 |
| 1980/90 | 16,297.1 | 4,692.6 | 28.8 | 11,604.5 | 71.2 |

Sources: Adapted from Huff, 1994, table 11.21
and tools necessary for production were imported from Japan, suggests that Japanese firms were clearly looking for a base from which they could export.

Singapore depended heavily on the US for capital, technology, and for ‘the’ market for export-oriented industrialisation (EOI). Singapore also depended heavily on Japan for capital for ‘the’ supplier of the tools needed for EOI. Singapore’s technology and key components and tools were dependent on US and Japan because the EOI did not result in the balanced development of all industries. No Tiger achieved ‘full-range industrialisation’

<table>
<thead>
<tr>
<th>Table 7.1 Singapore’s Trade Balance with Japan and the US in 1980, 1985, 1990 and 1994 (Billions of US dollars).</th>
</tr>
</thead>
<tbody>
<tr>
<td>Singapore</td>
</tr>
<tr>
<td></td>
</tr>
</tbody>
</table>

Source: Adapted from Numazaki, 1998, table 12.

The outcome of EOI in the Four Tigers was the limited development of particular segments of the economy or “fragmentary industrialisation” as Numazaki (1998: 80) calls it. We will now examine in more detail the negative consequences of relying on foreign capital and technology.

8 DEPENDENT DEVELOPMENT

Recall that Singapore’s economic growth was heavily dependent on foreign capital. Singapore’s case confirms the process of dependent development, whose industrial growth is export-led, labour-intensive and under partial or complete control of international monopoly capital. It is dependent because it is indelibly characterised by continued dependence on foreign capital, technology, and trade, and development because it is markedly characterised by capital accumulation and differentiation of productive structure (e.g. the dominance of DFI in both labour intensive and capital intensive industries) (Lim, 1985: 4-5).

The effects of dependent development are both positive and negative. The positive effect is, as examined in Part 1 of this paper, a considerable degree of economic growth and structural change. The negative effect is the fact that foreign subsidiaries tend to prefer home technology. Consequently they tend not to integrate with local suppliers or to share their technology. Indeed studies of the foreign firms in Singapore find a very limited local sourcing and forward and backward linkages in the economy (Chia 1986; Chng 1986; Lim et al of foreign firms can stimulate indigenous entrepreneurship. However, Chng et al. (1986) observes that the presence of foreign firms did not stimulate the growth of local entrepreneurship. The class of local professional managers that has emerged made up largely of functionaries of foreign firms (Chng et al. 1986: 24; Chowdhury and Islam 1993: 114).

In addition, one concern that emerged in the 1980s was the failure of indigenous enterprises to develop into substantial competitors. The EDB expanded its Local Industries Unit to nurture their growth, possibly through joint ventures with foreign firms. However, critics argued that the growth potential of indigenous enterprises was constrained by their inability to compete with the MNCs in either the product or the factor markets – a crowding out effect (Soon and Tan, 1993: 15). The crowding out effect explanation is further supported by findings that foreign firms are likely to pay more than the local firms (Hill 1990; Chowdhury and Islam 1993: 115). This has implications for overall income distribution and crowding out of local entrepreneurship. Furthermore, it is claimed that foreign firms tend to have greater market power. Chia (1986) found that foreign firms in Singapore are found to be uniformly larger than domestic firms in the same industry and therefore have greater market power (Chia 1986; Chowdhury and Islam 1993: 114). The high degree domination by MNCs leaves Singapore with a minimum of ‘bargaining advantage’. The problem is that these manufactured exports are subjected to the decision of foreign firms over which Singapore (the host country) can have little influence. For example, in Singapore, new product development, choice of techniques, and market locations are entirely decided by MNCs.

As Dos Santos rightly asserts that the dependent country’s economy is “conditioned by the development and expansion of another economy”, that the dependent country can expand only as a reflection of the expansion of the dominant countries (Dos Santos, 1970).
Singapore, exports as a percentage of GNP was 138 percent in 1982 (Naya, 1988: table 3.2). The heavy dependence on external market and technology exposes the industry to large fluctuations in production and employment. For example, in the electronic industry in Singapore, market and technological development have subjected the industry to wide cyclical fluctuations every three years or so. From the second half of 1974 to end of 1975, the down turn in the electronic industry coincided with the general world recession to hit the industry with the most severe recession so far. “Singapore was perhaps the worst affected offshore location” in the electronic industry, some two thirds of the 20,000 workers retrenched during this period (Frobel et al. 1980: 368). The fact that the majority of the workers were retrenched also indicates that Singapore has little influence over the decision of foreign firms.

9 CONCLUSION

Between 1965 and 1990 real GDP grew on average 6.5 percent per annum. Parallel to this miraculous growth was an even more spectacular increase in exports. Between 1965 and 1988, exports grew on average 7.6 percent per annum, with manufactured exports accounting for 75 percent of export earnings. Manufactured exports included not only textiles but also electronic goods. Yet in 1960 manufacturing accounted for only 7.2 percent of GDP, with more than one-third of employment engaged in traditional production. If this is a miracle, it is not beyond explanation. According to the generally accepted view, the success of Singapore is due to a high degree of commitment by the Singapore government to laissez-faire market economics which stressed ‘free trade’ as an explanation for success. On the contrary, in this paper we have argued that the architect behind the emergence of this new “Asian Tiger” is a strong, developmental state, which has willingly and abundantly provided incentives to attract foreign capital, controlled labour and forced savings, raised wage rates and upgraded labour skills. The encouragement of an export-oriented industrial growth finance by foreign capital has been an active policy since 1965, following an unsuccessful attempts at import substitution.

The first phase (1965-73) of the export promotion (EP) strategy involved the establishment of virtual free-trade regime by the government. The incentives made to foreigners took the form of tax holidays and export incentives. Moreover, the government established free zones and EPZs. EPZs are highly subsidised industrial sites which allow the duty-free entry of goods destined for re-export. To make the island a source of cheap labour, the government enacted strict labour legislation and took control of trade unions. Furthermore, the state forced the private sector to save through a social security scheme – the Central Provident Fund, so that the state could finance planned investment such as EPZs and the state-owned enterprises (SOEs). Finally the state itself undertook production via the SOEs. These interventionist policies, together with cheap labour and favourable external conditions successfully attracted foreign capital, generated growth and employment. Most of the investment went into petroleum refineries, electronics, textile & garment industries. In this phase, the case of Singapore fits the H-O theory in that Singapore was labour-abundant and capital-scarce so she specialised in labour intensive manufacturing.

The second phase of Singapore’s EP strategy (1972-79), involved upgrading and diversifying Singapore’s export activities. But the attempt to upgrade the manufacturing sector was abandoned due to the oil price shocks. Nonetheless the state diversified Singapore’s export activities by building on Singapore’s comparative advantage in financial and business services. The Monetary Authority of Singapore was established to promote Singapore into an international financial centre. During this period, the government successfully promoted the development of the Asian dollar market. Compare to the previous phase, Singapore now specialised in the production of such new products as machinery equipment and electronics, that used more capital and more skilled workers. Moreover, we began to see the government promoting services-based development which uses Singapore’s relative factor endowment to the best advantage: location, rather than cheap labour, was the island’s most abundant factor.

The third phase of Singapore’s EP strategy (1979-84) involved an economic restructuring programme which aimed to lead Singapore into high-value activities. The government identified five pillars of growth: manufacturing, trade, tourism, transport and communication, and “brain” services (including financial, medical and architectural services). To restructure the economy, the government intensified its intervention. The government used distorting incentives to guide MNCs into desired high-value activities. It also introduced a high-wage policy to discourage labour-intensive activities, while at the same time taking measures to upgrade the quality of labour. In addition, the government used state owned industries to promote restructuring and undertake targeted activities. These interventionist policies successfully attracted foreign capital into the desired industries. In
1980 Singapore did not produce any computer components, by 1983 Singapore was the largest exporter of disk drives in the world. In the area of financial and business services, by the late 1980s Singapore was already the region’s financial centre, having utilised her relative factor endowment i.e. geographic location. For example, Singapore advantageously bridges the time zone gap between the New York/London and Hong Kong markets for foreign exchange.

This paper presents empirical evidence to show the contributions of the EP strategy and foreign capital to Singapore’s economic growth, using growth accounting data. We found that Singapore has grown entirely through high capital accumulation from domestic savings and foreign capital. The EP strategy played a major role in the accumulation of physical capital via forced national saving and the policies to attract foreign capital. Much of government’s physical capital accumulation was conducted to attract foreign capital, while most of foreign capital concentrated in the manufacturing sector and increasingly in services. The main reason that facilitated the US to invest abroad in search of low-cost production was the long term declining competitiveness of the US, especially with the entry of Japanese manufactures into the US market. Also, the huge government borrowing during the Reagan period kept the dollar at unrealistically high levels, prompting US firms to invest increasingly abroad in pursuit of low-cost production bases. Declining competitiveness eventually led the US and Europe to gang up to force Japan to raise the value of yen. Faced with rising Japanese costs due to the revaluation, Japanese firms also invested heavily abroad to look for low cost export bases. Consequently, both US and Japan investment abroad surged.

Singapore’s case strongly confirms the process of dependent development because capital accumulation was characterised by continued dependence on foreign capital, technology, and trade. There are a number of negative effects associated with dependent development. First, MNCs tended not to integrate with local suppliers. Thus, multiplier effects on the rest of the economy have been limited. Second, foreign firms tended to crowd out indigenous enterprises. Third, the high degree domination by MNCs leaves Singapore with a minimum of ‘bargaining advantage’. The problem was that these manufactured exports were subjected to the decisions of foreign firms over which Singapore (the host country) could have little influence, e.g. decisions over product development, choice of techniques, and market locations.

Singapore’s ‘dependent development’ suggests that in order to sustain economic growth, she has to continue to attract MNCs. This requires the government to constantly upgrade the levels of skills and infrastructure, so that MNCs are attracted, this time into higher value-added activities which do not depend purely on cheap labour. As we have seen, Singapore has been successful in doing this, for example, in export-oriented services - such as financial and business services - where the main factors shaping the comparative advantage are the availability of physical and human capital and geographic location.

It should be noted that although Singapore’s growth is dependent on foreign capital, technology, and trade, it has increasingly invested capital in and traded with countries in South East Asia and China. This is why export-oriented industrialisation in developing countries has brought about changes in the international division of labour. The prospects offered by the opening of South-South trade are tremendous. In fact, “South-South trade could be the most dynamic component of world trade” (Milner, 1990: 55). South-South integration suggests that developing countries could co-operate and benefit from the comparative advantage of each country. For example, within an electronic product, India specialises in programming, Singapore produces machinery for production, China manufactures the parts, and Malaysia assembles the product.
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Web sites

This research was carried out by the International Institute for Management Development (IMD). See Economic Development Board, 1999.

For example, referring to the East Asian five, Chen asserts that “State intervention is largely absent. What the state has provided is simply a suitable environment for the entrepreneurs to perform their functions” Chen, E. V.K. 1979:183-4.

Trade in which goods can be imported and export without any barriers in the form of tariffs, quotas, or other restrictions.

See for example, Lau, 1990, Alam, 1989, Governments and markets in economic development strategies: lessons from Korea, Taiwan and Japan.

In market economies enterprises are mostly privately owned, and profits are mostly privately appropriated.

For example, the British government tried to prevent the collapse of the British steel industry in the 1930s-1940s and the cotton industry in the 1940s.

ICOR stands for Incremental Capital Output Radio.

This procedure is known as growth accounting.

Capital includes both human and physical capital.

Population increases.

In the case of Taiwan the government was controlled strongly by military groups.

The triple alliance in Korea is different from Singapore in that the state brokered Korea into the international capitalist system via the local bourgeoisie rather than via multinational. See Lim 1985.

Note that by comparison with other developing countries in the same table, Singapore has had much freer trade.

Defined as “geographical areas offering tariff, tax and/or regulatory relief to business located within their boundaries” Sabre Foundation, 1983: 3.

Firms selected on the basis of capital expenditure and type of technology.

This is under Pioneer Industries Ordinance No. 1. See Young, 1992: 23.

A good investment climate was prompted by political stability, low inflation, and good physical infrastructure (concentrating on telecommunications, port, and air services).

5 year 50% tax exemption on profits in excess of a fixed base for firms investing in warehousing.

The list includes industries making such product as computers, telecommunication equipment, advanced electronic components, solar cells and optical fibres, precision machine tools, robotics, aircrafts and automotive components, and pharmaceuticals and engineering plastics.

In 1986, about 97 percent of the value of net investment commitments came from the US, Japan, and Europe, with Japan accounting for the largest share (411.3 percent), followed by the US (S$443.5 million, or 37.4 percent). See Soon and Stoever 1996: 339.

The negative effects of the dependence on foreign firms is discussed in part 2.

A 1993 study of 47 countries by Business Environment Risk Intelligence shows that on the basis of a weighted composite index, which measures the number of skilled and technically trained people against market requirements, the Singaporean labour force ranks best in the world in productivity – ahead of its counterparts in runners-up Switzerland, Japan and Belgium. See Mitterman 1995: 278.

State owned corporations and statutory boards earned profit equal to S$10 to S$15 billion, which roughly one-third of GDP. See Young 1992: 21.

The simultaneity of the success of other three tigers (Taiwan, South Korea, and Hong Kong) adopting similar strategies confirms a possible common cause.