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by

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ABSTRACT

In this paper we explore the links between Singapore's foreign exchange rate regime since 1981 and the broader aspects of its political economy. Singapore has been remarkably successful in achieving fast growth, low and stable price inflation and a strong external position. An important part of this strategy has been its managed floating exchange rate regime, which is generally regarded as being successful, but this needs to be viewed within the broader context of the government's 'pragmatic socialism' to keep inflation low and stable as the bedrock for attracting inflows of mobile foreign capital to sustain long-run export competitiveness, and an economic strategy based on high levels of centralized saving and investment, a high degree of government involvement in the economy and the relentless accumulation of foreign exchange reserves. Indeed, part of the reason why managed floating has been successful in Singapore has been because the credibility of monetary policy has been enhanced through the government's command over resources and its ability to respond quickly and flexibly to changes in economic circumstances using, where necessary, unorthodox policies of demand management to cut business costs. Exchange rate policy, therefore, becomes an integral part of the policy to redistribute income to capital to sustain employment and prevent mobile firms from leaving Singapore. By the early 1990s the imperative became to diversify the structure of the economy away from exclusive reliance on a predominantly foreign manufacturing base and to reduce the extent of government involvement in the economy and it became harder to justify high levels of centralized saving and investment. The dilemma is that the government is finding it difficult to extricate itself from the economy without compromising policy effectiveness, and there is little evidence that dependence of the economy on foreign capital and labour has diminished.

Don't Frighten the Horses – the Political Economy of Singapore's Foreign Exchange Rate Regime since 1981[1]

"*The misery of being exploited by capitalists is nothing compared to the misery of not being exploited at all*". Joan Robinson, *Economic Philosophy* p. 46.

"I do not believe that democracy necessarily leads to development. I believe that what a country needs to develop is discipline more than democracy." Lee Kuan Yew cited in *the Economist*, August 27, 1994, p. 15.

I. Introduction

In this paper we explore the links between Singapore's foreign exchange rate regime since 1981 and the broader aspects of its political economy since independence in 1965.

Singapore has been remarkably successful in the last two decades in delivering fast growth, low and stable price inflation and a strong external position without the need for a deliberate weakening of the currency. Much of this success can be attributed to a combination of 'capitalism' in the form of mobile foreign capital and economic and political 'discipline' through the continuous rule of the People's Action Party (PAP), and until 1990, its Prime Minister Lee Kuan Yew.

Macroeconomic policy in Singapore has largely been directed towards generating high savings and investment through forced saving and budget surpluses to provide the infrastructure and tax incentives to attract foreign direct investment to the Republic. Since 1981 an important part of this strategy has been a managed floating exchange rate regime in which the Singapore dollar is managed with reference to an undisclosed trade-weighted basket of currencies primarily to achieve low and stable domestic price inflation. As with many developing countries at the time, Singapore was, and still is, reluctant to adopt a clean float given the imperfections in international capital markets, risks of serious misalignment and destabilizing speculation. On the other hand a fixed rate regime was seen as giving insufficient maneuverability for exchange rate policy to influence domestic costs and prices through changes in the nominal and real effective exchange rate.

Although there is some debate about the impact of Singapore's managed float on long-run export competitiveness, its exchange rate regime is generally regarded as

[1] My thanks go to participants at the Claremont Conference on the Political Economy of Exchange Rate Regimes in April 2004 for their helpful suggestions for improving the paper.

being very effective and a good example of the successful implementation of an intermediate regime or 'middle way' between fixed and floating. It is especially impressive given the ineffectiveness of traditional monetary and fiscal policies in Singapore and its susceptibility to external shocks, which are a consequence of extreme openness to international trade and close integration with international financial markets.

But Singapore's exchange rate policy needs to be viewed within the broader context of the PAP's strategy of 'pragmatic socialism' since independence, in particular the need to keep inflation low and stable as the bedrock for sustaining long-run export competitiveness through inflows of mobile foreign capital, and an economic strategy based on high levels of centralized saving and investment, a high degree of government involvement in the economy and the relentless accumulation of foreign exchange reserves. In fact one could argue that part of the reason why managed floating has been successful in Singapore has been due to the enhanced credibility of monetary policy through the government's command over resources and its ability to respond quickly and flexibly to changes in economic circumstances using, where necessary, unorthodox policies of demand management to cut business costs. Exchange rate policy, therefore, becomes an integral part of the policy to redistribute income to capital in the belief that this will sustain employment and prevent mobile firms from leaving.

This has not been without its problems. By the early 1990s the imperative over the longer run became to diversify the structure of the economy away from exclusive reliance on a predominantly foreign manufacturing base to raise the amount of local value-added, and to reduce the extent of government involvement in the economy. It also became harder to justify an economic strategy which continued to be based on high levels of centralized saving and investment. The dilemma for the government is that it is finding it difficult to extricate itself from the economy without compromising policy effectiveness, and there is little evidence that the economy has become less dependent on foreign capital and labour.

II. The Exchange Rate Regime

Managed floating

In June 1973 Singapore moved to a floating exchange rate regime and in September 1975 the Monetary Authority of Singapore (MAS) began to actively manage the dollar in relation to an undisclosed basket of the currencies of its major trading partners. In 1981 monetary policy became almost exclusively allied to a policy of managed floating and a strong dollar policy to neutralize the effects of imported inflation and promote sustained non-inflationary growth by keeping the nominal effective exchange rate (NEER) within an undisclosed band given the level of world inflation and domestic price pressures.[2] Periodically the MAS also intervenes to smooth excess volatility ('lean against the wind') through spot intervention, currency swaps and uses money market operations to control the level of liquidity in the banking system. The placing of the large forced savings from the Central Provident Fund (CPF) and government fiscal surpluses in deposits with the MAS withdraws liquidity from the banking system which can then be offset by money market or foreign exchange intervention.

The policy band for the NEER can be fairly wide and there is no automatic intervention unless there are strong inflationary pressures or significant departures from fundamentals as, for example, when a 'speculative' capital inflow fuels a stock or property boom. If inflationary pressures are subdued and external demand is weak, as in the middle of 2001, then a more neutral stance can be taken with a policy band centred on a zero per cent appreciation of the NEER (Monetary Authority of Singapore 2001c).

A critical factor in shaping Singapore's economic policy, including its reliance on the exchange rate as an effective means of macro-stabilization, has been its extreme openness to, and heavy dependence on, international trade.

With a combined merchandise trade to GDP ratio in 2000 of 296% (Table 1), the total volume of trade is very large compared to annual production making Singapore one of the most open economies in the world. Indeed, according to Sachs and Warner (1995), Singapore is one of only eight developing countries which have always been open since independence, where openness is measured more broadly to incorporate low tariffs and non-tariff barriers to trade, the absence of a pervasive black market for

[2] In this respect Singapore is breaking the famous Tinbergen (1952) assignment rule in as much as the MAS has, since 1981, assigned one instrument - the nominal exchange rate - to the twin targets of low and stable inflation and external competitiveness.

foreign exchange, state monopolies over exports, or the trappings of a socialist economy.

Singapore's import dependence is a direct consequence of extreme openness, a very low level of protection and resource deficiency. It is almost totally dependent on imported fossil fuels for its energy needs, more than half of its potable water is imported from Malaysia and about 90 percent of its food is imported. It does possess a small agricultural sector but it focuses mainly on eggs, fish and vegetables for local consumption and on orchids and ornamental fish for export.

What makes Singapore unusual is its exceptionally high import content of exports. A dollar of final expenditure sucks in approximately 54 cents worth of imports in total, 60 cents worth for each dollar of exports, and 69 cents for manufactured exports. The highest figure (90 cents) is for petroleum-based exports (mainly for ships and aircraft), which is not surprising, since all petroleum is imported (Peebles and Wilson 2002, Table 4.1).

The policy of targeting the NEER has been justified on the grounds that both conventional fiscal and monetary policy tools are relatively ineffective for demand management purposes in Singapore, whilst external monetary policy is very effective. This is largely because the extreme openness of the Singapore economy which means that policy induced changes in the exchange rate have a powerful effect on domestic prices and costs enabling it to neutralize inflation through managed appreciation of the currency which quickly translates into export competitiveness by lowering the Singapore dollar prices of exports.[3] On the other hand, trying to increase export competitiveness by deliberately depreciating the currency produces only transitory benefits until nominal exchange rate changes pass through to domestic costs and prices and put upward pressure on the REER.

The impotence of monetary policy in Singapore follows from the high degree of integration of Singapore's financial markets with the rest of the world, including a prominent position for foreign financial institutions, an active offshore Asian dollar market, an absence of capital controls, and an open arms policy towards foreign direct investment. The consequence is that a large proportion of changes in the domestic quantity of money are attributable to flows of external sector net foreign assets.

[3] The strength of these links has been confirmed in simulations by the Monetary Authority of Singapore (20001b) by comparing the effects of a one-off increase in import prices on the consumer price index

Hence, controlling the 'domestic' money supply is limited to narrow money aggregates such as M1, but this has little impact on ultimate targets such as inflation. M2 and M3, on the other hand, are neither stable nor controllable since they are dominated by international money markets, so as far as Singapore is concerned, there is almost perfect short-term capital mobility and asset substitutability. Interest rates in Singapore cannot be used as effective instruments either since they are tied to international rates and are almost entirely determined by offshore US$ interest rates adjusted for exchange rate expectations, and even if the MAS decided to use monetary policy for domestic goals, the effectiveness of open market operations is severely limited by the small domestic secondary market for government securities.

It is well known that fiscal policy is relatively ineffective as a stabilization tool in open economies with flexible exchange rates and high short-term capital mobility, but other factors come into play in Singapore. In particular, the wealth effect of tax policy is significantly reduced by the high compulsory contributions by employers and employees to the CPF. The capacity to 'crowd out' domestic investment through fiscal-induced changes in interest rates is also limited since interest rates are set by the world market; and the very high marginal propensity to import substantially reduces the multiplier effects on domestic income of any fiscal expansion or contraction. Singapore has tended to use fiscal policy more as a longer-term device to mobilize resources for exports, such as tax breaks to attract foreign MNCs, or for case-by-case social programs, such as encouraging families to have more children.

Has exchange rate policy been successful?

III. The Economic Record

Economic growth and structural change

Singapore's output growth has been high and remarkably consistent over long periods of time (Figure 1 and Table 2). It was most rapid in the 1970s but the average for the 1960s was not much less. In the period after 1980 growth rates were lower but not significantly so. Up to 2000 there were only three years of falling output: in 1964, during the recession of 1985-6, and during the Asian financial crisis in 1998. As a rule departures from high growth are quickly reversed.

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and GDP with similar increases in wages. The conclusion that exchange rate depreciation would not be an effective method of improving international competitivess is also supported by Toh (1999).

By 1999 the growth of output had put Singapore in the top seven countries in the world ranked by GNP per capita and apart from certain quirks arising from its history as an entrepot trading centre and island city state bereft of natural resources, Singapore's structural change began predictably with labor-intensive industrialization in the late-1960s and the economy has moved steadily up the value-added ladder ever since (Table 2). Agriculture and fishing (including quarrying) have been negligible contributors to GDP since the mid-1960s, construction was relatively more important in the early years, manufacturing probably peaked in the first part of the 1990s, while financial and business services are still on the rise.[4]

Macroeconomic stability

From the macro-stabilization perspective exchange rate policy appears to have been very successful in the last two decades in delivering fast growth, low and stable price inflation, and a strong external position without the need for a deliberate weakening of the currency. As a general rule countries which grow fast and undergo a period of rapid economic growth often find that excess demand for goods and services in an open economy tends to spill over into inflationary pressures at home, and deficits occur in the current account balance of payments as imports are sucked in faster than exports can be produced. Since developing countries have, until recently, tended to prefer fixed rather than flexible exchange rate systems, these deficits often resulted in a fall in foreign exchange reserves to critical levels and sharp cuts in government spending or a currency devaluation to 'cure' the underlying imbalances in the current account.

Singapore's record of fast economic growth and structural change, however, has not been at the expense of macroeconomic instability measured in terms of persistent and high inflation, balance of payments problems or high levels of international debt. From 1960 to 2000 the average annual inflation rate was 3.4% with only two periods of significant deviation from this low average: 1973 and 1974 when commodity prices (especially oil) rose dramatically, and in 1980 and 1981 due to the delayed effects of the second oil shock of 1979 (Figure 2). The current account was in persistent deficit

[4] Although there are some recent concerns about income distribution, levels of stress and the prevalence of 'rich country' diseases, Singapore does well on aggregate measures of economic welfare, such as those in the United Nations Human Development Report (2000) and in terms of more disaggregated indicators such as nutrition level, access to health care, housing, social infrastructure, level of crime, absolute poverty, and number of beggars (Peebles and Wilson, 2002 ch. 7).

up to the mid-1980s (Table 3) with the surplus in services insufficient to offset the large negative goods balance but was more than covered by a high level of national savings and a continuous inflow of productive export-oriented foreign direct investment generating an overall surplus and a steady accumulation of foreign exchange reserves. The current account deficit was thus entirely sustainable and a natural consequence of rapid growth and industrialization based on imports of long-term capital and intermediate goods rather than consumer goods and was balanced to some extent by the surplus in services, especially in transportation.

From 1985 onwards, the balance of payments was characterized by current account surpluses and the income balance turned positive as income from past investment abroad of the official foreign exchange reserves and public sector surpluses exceeded the repatriation of profits by foreign companies. This is why GNP exceeded GDP from 1989 onwards. On the other hand, the capital and financial account was negative in the 1990s due to local firms investing abroad and further official investment abroad. Since the current account surplus is more than sufficient to offset this capital outflow the result is substantial overall surpluses (in excess of 10 per cent of GNP 1990-96), and an accumulation of reserves, averaging over S$9 billion per year between 1990 and 2000.

As far as international debt is concerned, Singapore has never been an important recipient of foreign aid or built up any significant official foreign debt. Multilateral organizations estimated its overall external debt to GNP ratio at around 297 per cent in 1998, well above the Singapore Department of Statistics' own estimate, and at face value this looks unsustainable and suggests a high risk of a financial crisis. The Singapore view is that the international numbers exaggerate its vulnerability and do not take into account its unique role as an international hub and host for global funds. Foreign companies account for most of the debt and choose to raise capital from abroad. Multinational corporations, for instance, often rely for their financing on loans and trade credits with their parent companies. If interbank loans, non-resident bank holdings and secondary debt (such as trade credits) are omitted, the magnitude of Singapore's financial liabilities are much smaller and sustainable.

Crisis management

The Singapore dollar has been quite stable and the absence of frequent speculative attacks suggests that foreign exchange market participants regarded the Singapore

balance of payments as 'fundamentally' sound. The policy not to internationalize the S$ too quickly may also have helped. Although the government has encouraged the development of offshore financial markets it has preferred to keep these markets separate from the onshore financial system. This is so that competition with the offshore market would not impede the progress of the domestic financial system and to discourage speculation and the build up of a large pool of dollars outside Singapore leading to a further loss of control over domestic monetary policy. Targeting the Singapore dollar to keep inflation low and stable would be made more difficult if an increasing amount of the money supply were outside Singapore and was not controllable by the monetary authorities.

As a rough and ready measure of currency volatility, the standard deviation of the Singapore dollar NEER (1.48 per cent) has been lower than the US$ NEER (3.52 per cent) and yen NEER (4.61 per cent) between 1980 and 2000. Compared to other (non-pegged) countries in the region Singapore suffered a relatively mild 15 per cent cumulative depreciation against the US$ during the Asian financial crisis.[5]

Singapore emerged from the Asian financial crisis of 1997 relatively well compared to other countries in the region. The only important negative impact was on the financial sector with falling stock prices, property prices and asset wealth as the currency lost value and incomes fell. Export growth was negative in 1998 but had resumed its 1997 growth rate by 2000. At the height of the crisis in 1988, Singapore's overall balance of payments surplus fell to its lowest level of the 1990s but this was almost entirely due to a sharp outflow of short-term capital, mostly bank related. Taking the period as a whole from 1997 to 2000 as a percentage of GNP (Table 2) the Singapore balance of payments looks extraordinary strong.

There are a number of reasons why Singapore escaped relatively unscathed. Capital inflows into Singapore tend to be dominated by productive foreign direct investment which translates ultimately into exports, rather than short-term capital which may be more speculative in nature and fuel domestic consumption. Fiscal conservatism also dampened liquidity from the inflow and timely pre-emptive regulations had been introduced in May 1996 to cool the property market ahead of the boom.

[5] Of course one could always argue that the large surplus on the overall balance of payments was a sign of disequilibrium in the balance of payments in as much as it implies that Singapore is not lending enough to the rest of the world or consuming enough imports and in this sense is over-saving (see below).

But exchange rate policy was also instrumental in helping Singapore cope with the influx of foreign capital in the 1990s much better than did neighboring countries since the MAS did not fall into the trap of trying to manage the currency too tightly against the American dollar to maintain export competitiveness in the US market, but was prepared to allow the local currency to appreciate in the face of capital inflows, especially if this kept down import prices. Singapore has the lowest dollar peg coefficient in the region.[6] The fact that Singapore had no official foreign debt, the domestic banks did not build up large liabilities in foreign currency (interest rates were generally lower in Singapore) and the presence of restrictions on the lending of the Singapore dollar by domestic banks to foreigners also reduced the scope for a speculative attack on the local currency.

The success of macro-stabilization policy in Singapore is particularly impressive given its vulnerability to external shocks, whether it be a slowdown in export growth, a sharp exodus of short-term capital, a change in world interest rates, or an increase in imported inflation.[7] On average, between 1992 and 2000, changes in external demand (exports) accounted for over three-quarters of the changes in real total demand, while changes in domestic demand accounted for less than a quarter (Peebles and Wilson 2002, Table 7.10). This contrasts markedly with other industrialized economies such as Japan and the USA where domestic demand is the prime mover in total demand. No wonder forecasting the Singapore economy is so difficult and dependent on forecasts of external demand.

Singapore's growth cycle can also be significantly affected by external swings in demand, such as the slowdown in the economy in the second and third quarters of 1996 and in 2001 (Abeysinghe and Wilson, 2001a). In both cases a downswing in the global electronics cycle played a prominent part. Electronics accounts for about 15 per cent of Singapore's GDP, almost half of manufacturing output and almost two thirds of non-oil exports. Since almost half of Singapore's electronics exports are destined for the US market, swings in the demand for new orders of electronics in that market play a critical part in Singapore's business cycle.[8]

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[6] For further details on this, see Wilson (2005).

[7] For an analysis of Singapore's economic history in the context of the 'export instability' debate, see Wilson (1994, 1995).

[8] As expected, shocks originating in Japan, the USA and the rest of the OECD have relatively strong effects on Singapore but less obvious is the fact that countries with a larger trading volume generate more spin-off effects even though their direct trade links with Singapore might be weak (Abeysinghe, 2001). It is for this reason that the contagion effects of the Asian financial crisis affected Singapore not

Unorthodox policies

Despite the reliance on external monetary policy for macro-stabilization, it is unlikely that it would have been as effective over the longer-run without the use of accompanying less orthodox policies of demand management. These have included the use of public construction projects as a countercyclical measure when external demand falls (as in 1992) and increases in public expenditures in 1998 when private expenditures fell thus preventing a greater slowdown. An earlier example is the cutting back on imported labor as a stabilization device when unemployment rises, as during the 1985-6 recession. Of the net reduction of 96,000 jobs, three-fifths were foreign (Huff, 1995: 753).

Also, if costs in Singapore appear to be moving significantly out of line with regional competitors, as in the build-up to the 1985-6 recession and during the early stages of the 1997 Asian financial crisis, then direct action to reduce the real exchange rate by cutting costs is preferred to a large currency depreciation which would shake confidence in the currency, lower the value of savings, and would provide only a transitory improvement in competitiveness until import price rises are passed on to domestic prices and wages. In 1985-6 a government-induced fall in wages and business costs helped to lower the REER (Figure 3) and in 1999 a package of cost cuts reduced utility charges and the employer rate of contribution to the CPF was lowered. These measures, together with productivity improvements and wage restraint, effectively cut unit business costs by an impressive 12% in 1999 compared to the previous year.

Cost-cutting in Singapore is best seen as aimed at redistributing income to capital in the belief that this will sustain employment and prevent firms from moving from Singapore.

Unfortunately the data available do not show the surpluses of the public and private sectors separately, but an official study (*The Income Approach to Gross Domestic Product*, Department of Statistics 1998) has concluded that ‘Singapore has the most competitive wage structure with the lowest remuneration share’. Singapore’s wage share, at 43 per cent of GDP in 1997, for example, was substantially lower that in the United Sates (58%) and Japan (55%) and Hong Kong (46%). The profit-to-

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so much through direct trade links with countries such as Thailand, Indonesia, and Malaysia, but through indirect links with countries with large trade volumes, such as Japan, Hong Kong and Korea.

remuneration ratio was the highest (at 1.11) of eight economies with the nearest being Hong Kong at 1.05. Furthermore, the high profit share is taken to mean that 'Singapore has been able to remain competitive, and provides adequate returns to corporations operating in Singapore.' These two statements in an official statistical report encapsulate the government's view that competitiveness can be associated with a low wage share and that it is important to maintain corporate profitability as, although not mentioned directly, a substantial number of those corporations are foreign owned. Many government polices can be understood in these terms. Furthermore, the statisticians observed a relationship between changes in the profit-to-remuneration ratio and output growth. Figure 4 shows the share of GDP being paid as compensation to employees and the gross operating surplus share. A rise in the compensation rate compared to the surplus, as observed over the period 1980 to 1985, is taken to predict a slowdown in growth and can be seen to underlie government policy. The reaction to the 1985-86 recession was to 'cut costs' with the aim of reducing the compensation rate and as the Figure shows this was achieved and output growth rates increased. This incidence has formed the basis of thinking about anti-recession policies in Singapore.

Table 4 shows that the cost-cutting measures, together with a slight increase in unemployment and wage restraint, produced an absolute fall in the amount of remuneration in 1998 and negative growth in 1999, and the operating surplus increased as a share of GDP in 1999. We cannot establish here the relative effects on foreign and local firms, but the thrust of the policy is explicitly aimed at maintaining the incomes of possible mobile foreign firms. In 1999 the earnings of resident foreigners and resident foreign firms increased by 3.8% compared to a rise in the earnings of Singaporeans by 2.6% and in 2000 the respective numbers were 15.9% and 9.9% and this raised the share of foreigners earnings in GDP to almost 35% (*Yearbook of Statistics Singapore 2001*, p. 61).

The flexibility of the Singapore system and the extent of public sector involvement mean that off-budget changes can be introduced quickly. There has been no attempt to formalize a social security system to help the unemployed but they have benefited from a whole range of subsidies, rebates and ad hoc assistance provided on a discretionary basis. These are simply the latest examples of an unorthodox, but highly successful approach to macro-stabilization. A good illustration of the flexibility of 'Singapore socialism' (see below) was the announcement by the cooperative

movement that its supermarkets would reduce the prices of basic items by up to 20 per cent as part of the cost-cutting measures in 2001.

The Singapore export paradox

The impact of exchange rate policy has been more controversial from the longer run point of view as rapid economic growth, an exceptionally high savings rate, a strong overall balance of payments position[9] have given rise to substantial periods of both nominal and real effective exchange rate appreciation since 1980 (Figure 3), with a lull in the mid-1980s followed by a sustained rise up to the Asian financial crisis of 1997.

The paradox is that this does not appear to have adversely affected aggregate export performance (Figure 5) and over the long term Singapore has been a model of export-led growth (Figure 6).[10] Table 5 identifies the sources of manufacturing growth and overall GDP growth for Singapore taking averages for a number of periods between 1964 and 1992 based upon a growth accounting methodology originally devised by Chenery et al. (1986). Using value-added data to take into account Singapore's high import content of exports, the contribution to overall GDP growth and manufacturing growth is decomposed into export expansion, expansion of domestic demand and import

Substitution. The key observation from this table is the overwhelming contribution to growth from growth in exports, especially from the 1970s on. Domestic demand, on the other hand, was most important in the 1960s through infrastructure and housing expenditure. Import substitution is negative except for a small contribution to overall GDP growth between 1980 and 1992 as a result of a slowdown in export growth during this period. Negative import substitution is the counterpart to Singapore's heavy import penetration.

Singapore is not unique in achieving rapid export growth in the face of persistent nominal and real exchange rate appreciation as Japan managed the same feat between 1985 and 1995. It is also plausible that the very high import content of Singapore's exports, together with the MAS policy of appreciating the NEER when inflationary

[9] Faster productivity growth in the traded goods sector compared to the non-traded goods sector may have contributed to the appreciation through the Balassa-Samuelson effect (Monetary authority of Singapore 2001a).

[10] When the link between imports and exports is taken into account (Khalid and Cheng, 1997) there is support for the export-led growth hypothesis for Singapore between 1978 and 1996.

pressures threaten, has kept domestic costs and prices from rising too fast and that exporters, particularly MNCs, have priced to market, thereby limiting the pass-through from currency changes to export price changes.[11]

But at the micro level there has always been concern in Singapore about its ability to compete and a perception that Singapore become over-represented in Asian markets and over-specialized in electronics and chemicals in the 1990s and lost ground in other areas of manufacturing to its emerging competitors in the region (Monetary Authority of Singapore, 1998a, 1998b, Wilson 2000b, Ting et al. (2002, 2003). Compared to 1970 there has indeed been a sharp redirection of total exports and imports away from Europe as a whole and towards the north-east Asian economies of Hong Kong, Taiwan, South Korea and China (Table 6) and an increase in Singapore's trade intensity with countries in the region (Table 7). The composition of trade has also produced some commodity concentration in terms of electronics and chemicals (Table 8). Oil exports have fallen in significance after a peak in the early 1970s, as have traditional entrepot re-exports, leading to a steady rise in the importance of non-oil domestic exports, which accounted for about half of total exports by 1990. Crude materials and manufactured goods fell sharply after 1980 as Singapore's exports became dominated by machinery and equipment, particularly office machines and electronic components and parts which together made up nearly 60 per cent of total non-oil domestic exports in 2000. Chemicals are also a rising star at just under 10 per cent in 2000.

But it is important to put these changes into some perspective. Clearly Singapore has benefited from the rising share of its regional partners in world trade as they became more open and successfully pursued export-oriented industrialization and one would expect some 'catch-up'. Moreover intra-industry trade has increased over time as industrialization, the process of vertical integration by MNCs and trade liberalization have brought these countries closer to Singapore's manufacturing structure, especially Malaysia. By 1990 almost half of Singapore's trade with the USA and European Union in manufactured goods consisted of intra-industry trade and a fifth of the trade with Japan (Chow et al 1994, Table 1). This process continued in the 1990s (Table 7) and increased the complementarities between Singapore and its regional partners, particularly in electronics.

[11] This 'puzzle' is analysed in more detail in Abeysinghe and Wilson (2001b).

A good example is the increasing integration between Singapore and Malaysia. In 2000 the proportion of total trade (exports plus imports) with Malaysia exceeded that with the USA, although the positions are reversed if domestic exports (excluding reexports) are used (Table 6). One reason for the rise in Singapore-Malaysia trade has been the increase in foreign direct investment in Malaysia by both Singapore-based companies and US and Japanese firms directly, which has led to increased production and hence bilateral trade. The industrial base in Johor Bahru (JB), the capital of Johor and closest Malaysian state to Singapore is still relatively weak in managerial 'know-how', so a major motive for multinational companies to locate in JB appears to be its geographical proximity to Singapore's managerial and professional expertise (Konstadakopulos, 2000). On the other hand, a large proportion of high-tech Singapore based firms have been expanding into Malaysia, and to JB in particular, looking for relatively well-developed infrastructure (the export processing free zone and expanding port facilities) and lower cost land and labor. This has not, however, reduced the extent of their operations in Singapore. In other words, firms on both sides of the causeway are taking advantage of complementarities between the two locations, with Singapore firms establishing manufacturing operations in JB whilst retaining their headquarters and research and development activities in Singapore.

IV. The Political Economy

Since independence in 1965 there has been a remarkable degree of continuity in Singapore's economic policy. The government has substituted for the absence of an adequate indigenous supply of industrial entrepreneurs by mobilizing domestic resources, pursued an active export promotion strategy with low levels of conventional protection, extended an open arms policy towards foreign MNCs and labour, and manipulated domestic costs through the exchange rate and more unorthodox measures of demand management to keep mobile capital in Singapore. Singapore's exchange rate policy, therefore, needs to be viewed within the broader context of the PAP's economic strategy since independence, in particular the need to keep inflation low and stable as the bedrock for sustaining long-run export competitiveness through inflows of mobile foreign capital, high levels of centralized saving and investment, a high degree of government involvement in the economy and the relentless accumulation of foreign exchange reserves. Indeed one could argue that a good part of the reason why managed floating has been successful in Singapore has

been due to the enhanced credibility of monetary policy through the government's command over resources and ability to respond quickly and flexibly to changes in economic circumstances using, where necessary, unorthodox policies of demand management to cut business costs. Exchange rate policy, therefore, becomes an integral part of the policy to redistribute income to capital in the belief that this will sustain employment and prevent mobile firms from leaving.

Mobilization of domestic resources

Singapore's economic strategy has been characterized by high ratios of gross national savings and investment to GNP (Figure 7). By 1975 the savings ratio had reached 25 per cent. In 1985 it exceeded domestic investment for the first time so the current account balance of payments became positive. By the 1970s when industrialization was well underway investment rates were high and associated with constant government consumption and falling private consumption (Table 2). With such a large fall in private consumption it is obvious that domestic saving must have risen over this long period. Although there are no official data to allow us to assess the relative importance of the public and private sectors in generating saving it seems likely that the high national savings rate in Singapore has been attributable to both a high concentration of savings in the hands of the government through budgetary surpluses and other forms of government revenues, and the forced savings generated through the CPF.[12]

Established by the British colonial administration in 1955 as a retirement scheme for civil servants the CPF was subsequently extended to all employees (self-employed can opt-in). Contributions can be withdrawn at age 55 except for a minimum sum, and over the years withdrawals have been allowed for approved purposes such as public housing, education, and investment in approved instruments. Contribution rates were increased steadily to a peak combined rate of 50 per cent in July 1984 and by 1994 the long-term goal of having equal contribution rates of 20 per cent from both employer and employee had been achieved (Peebles and Wilson, 2002, ch. 4). The scheme has attracted positive attention by such political parties as Britain's New Labour and is thoroughly condemned by others as a further means used by the PAP to ensure

[12] Asher (1999) has consistently made the point that conventional tax revenue measures understate the size of public sector saving since they ignore other sources of revenue such as receipts from land

workers' enslavement to the state and capital (Tremewan, 1994, pp. 53-62). Because the rate paid to members is lower than what is thought to be the return the government gets on using these funds there is an implicit tax on member's funds and because of other features of the system. Asher (1999, p. 2) cites the view that the CPF system could be defined as taxation. Balances used by members for their own investments have to be paid back into their accounts with interest and only capital gains can be retained for the member to determine the use of. So we can see that the CPF system has been used to obtain funds from the population at low rates, restrict their consumption and direct it into areas such as house purchase, education and health care that the government seems to think households would ignore. It has also used the liberalisation of the use of this large fund as an incentive for attracting foreign fund managers to Singapore. The irony here is that Singapore has the highest national saving rate in the world and a compulsory saving system but the government worries about the adequacy of the personal savings for retirement of a large part of the population. This is easily explained by remembering that much of the national savings by the private sector, CPF funds, have been used for house purchase and that many working families have had low life-time earnings so, even with forced saving, would not be have been able to build up large sums for retirement. This has led to the characterization of Singaporeans as being 'asset rich but cash poor'.

The role of foreign resources

One consequence of Singapore's outward orientation policy has been to increase the importance of the role of private foreign resources. Indeed Huff (1999) regards the attraction of mobile foreign capital together with high subsidies to investment and infrastructure administered by the government, as the key to Singapore's success. Between 1980 and 1984 Singapore alone received almost 12 per cent of the total FDI going to developing countries, twice that of its nearest rival, Hong Kong. After 1985 China emerged as the biggest recipient and after 1996 Singapore's share fell to 3-4 per cent, but unlike the other older tigers such as Taiwan, Korea and Hong Kong who have become net exporters, Singapore has remained a net importer. Of the total investment commitments in manufacturing in 1999 79 per cent was still from foreign sources. Singapore also stands out in terms of the share of foreign direct investment in

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leasing. Huff (1994) also argues that the 'driving force in Singapore's savings process was public sector saving – the current surplus in the consolidated accounts of the public sector.'

gross fixed capital formation reaching almost 30 per cent between 1985 and 1996. This share also fell in the late1990s, but at around 20 per cent is higher than for China and Malaysia and has remained at the same level as in the early 1980s (Peebles and Wilson, Table 7.7).

Singapore's success in attracting FDI undoubtedly has something to do with its strategic location in Asia and relatively skilled labor force, but it also has much to do with the government's determination from the mid-1960s onwards to extend a warm welcome to foreign MNCs and to keep mobile foreign capital in Singapore by providing social and economic stability, excellent infrastructure and tax incentives for research and development and exports. There is a consistency in treatment, a well-developed structure of administrative support and legal protection and macroeconomic policies have delivered low and stable inflation over decades, a relatively stable exchange rate and cuts in business costs where necessary to maintain profitability.

Much more controversial is the importance of foreign workers. The authorities have been very reluctant to release data on this in the past as it is one of those sensitive areas in the political arena, but they made up approximately 29 per cent of the working population in 2000, and growth accounting estimates produced by the Ministry of Trade and Industry in 2001 (Table 9) suggest that the contribution of foreign labor is substantially above that of local labor in the 1990s. These numbers support the present official view that foreign labor is very important to Singapore's growth.

Pragmatic socialism[13]

Singapore has been described as 'government-made' (Low 1999) and this has been an important factor determining the ability of the PAP and the bureaucracy to mobilize domestic resources, attract and keep mobile foreign capital in Singapore and reinforce exchange rate policy with less orthodox methods of demand management. Since 1959 the government has been formed by PAP and from 1959 to 1990 its Prime Minister

[13] For some background on the history of the PAP, its version of democracy, and the influences on it, including Fabian socialism, see Peebles and Wilson (2002, ch. 2) and George (2000).

was Lee Kuan Yew. PAP rule has been described as 'authoritarian capitalism' (Lingle, 1996), but it might be more accurately described as 'pragmatic socialism'.[14] The PAP rationalizes its economic strategy in terms of economic success and the fact that the dominance of the PAP can be seen to reduce uncertainty as far as foreign investors are concerned since there is not going to be a change in government through which a populist, redistributive party gained power. Its policies are essentially pragmatic, meaning that they do not push policies that are derived from ideology but only ones that they think will contribute to economic growth. Singapore is regularly rated as the least risky economy to invest in.[15]

One curious 'socialistic' aspect of Singapore is its co-operative movement, with 972,000 members in 1998, which has significant firms in retailing and insurance. NTUC Fair Price is the largest supermarket retailer and operates 80 stores. Membership is only open to trade unions and they benefit by receiving a rebate on their purchases just as the case with most retail cooperatives, and a dividend on their shares. Their shops are open to any customer and it sees itself as having an important social role by keeping down the cost of living of the poorest members of society and their pricing policy puts competitive pressure on new entrants into retailing. The other significant cooperative is NTUC Income, an insurance company. It develops products that fit in with the government's changes in the CPF scheme and operates the largest taxi cab company.

Barr (2000, pp. 63-5) argues that apart from socialist influences the most important factor behind Lee Kwan Yew's approach is that of the 'Challenge and Response' thesis of Arnold Toynbee which has led to Singapore being governed under the fear of crisis, including the exodus of foreign capital and labour, internal and external enemies and the need to respond to some new crisis which needs all to 'stand up for Singapore' and support the PAP. This is also consistent with Singapore's reluctance to accept reclassification as a fully developed country and the desire to manufacture a uniquely Singapore identity and the PAP's obsession with campaigns. If Singapore is

[14] Compared to other countries in the region, such as Taiwan and the Philippines, the transfer of power within the PAP has been very orderly. In 1990 when Goh Chok Tong succeeded Lee Kuan Yew as Prime Minister, the latter became 'Senior Minister' in the Cabinet. When Lee Kuan's Yew's son Lee Hsien Loong became Prime Minister in 2004, Goh Chok Tong became Senior Minister and Lee Kuan Yew was given the new title of Minister Mentor.

[15] The Economist Intelligence Unit in 2000 ranked Singapore as the least risky followed by Hong Kong, Chile, Botswana and the United Arab Emirates (*The Economist*, 10 March 2001, p. 116). Similarly, the World Bank ranks Singapore as a very low risk country with a high institutional investor credit rating (World Bank, 2000, Table 17, p. 307).

'underdeveloped' it still requires an authoritarian political system and state-led economic institutions as a substitute for the private sector. [16]

The government as entrepreneur

Characterisations of Singapore as a free-market economy with few state enterprises or state control are misleading. Many aspects of the government's influence over the economy's resources are not revealed in such numbers as the proportion of government-linked companies or the public sector in output, and ownership is not the main factor but rather how the government can mobilise resources and allocate them where it sees fit. Another aspect to note is the close links between the business sector, especially the financial sector, and the political elite and the view that the bureaucracy has little independent strength Hamilton-Hart (2000).

In the early days of Singapore's modern economic growth the government played the role of entrepreneur in the sense of establishing organisations necessary to support economic growth. The indigenous capitalist sector was limited to the financial and trading sectors and there was little experience in manufacturing. The manufacturing sector was built up by relying on foreign firms but large amounts of the necessary support was from Statutory Boards (SBs)and government-created companies, now called government-linked companies (GLCs) which are owned by four major government holding companies and statutory boards. They are influential in all areas of economic activity including strategic sectors and finance. The most important SBs are the public Utilities Board (PUB), the Port of Singapore Authority (PSA) and the Housing and Development Board (HDB). The latter has provided public housing in which about 86 per cent of Singaporeans live and 90 per cent of them own their flats. The Central Provident Fund (CPF) mobilises domestic compulsory savings (see below), and the Government of Singapore Investment Corporation (GIC) is a private company wholly owned by the Ministry of Finance which invests part of the foreign exchange reserves abroad.

The Economic Development Board (EDB) has played the most important part in planning the development of the Singapore economy by attracting foreign investment and acting as a coordinating agency with other public sector bodies to ensure that they respond to the needs of foreign investors. In its early days it quickly gained a

[16] For a discussion of the reasons for Singapore's reluctance to accept re-classification as a fully developed country, see Wilson (2000a).

reputation for professionalism and an ability to respond very quickly to enquires and make decisions so that foreign investors found they could start operations within a very short period, much sooner than if they had gone to other countries. The EDB enters into joint ventures with foreign firms thus receiving revenue which makes up for the fact that many investors are given generous tax breaks. It also conducts training courses for workers.

Another important institution is the Jurong Town Corporation (JTC). Jurong is the eastern part of Singapore where the swamps were first drained and industrial estates were built. The JTC now operates throughout Singapore by building and managing industrial and commercial premises as well as the Science Parks. It can offer ready-built factories or will prepare land and required supporting infrastructure for those investors who require specific features in their factories. This has become more important as some factories such as those in the three wafer fabrication parks require buildings that are not subject to vibrations and must be protected from the outside environment.

An important feature of the Singapore economy that allows SB's and GLCs to do their work efficiently is the government's policy towards land. Over the period 1968 to 1971 the British military were organising their withdrawal and handing over the land and bases, together making up about 11 per cent of the land area, including valuable docks and an airport. The government ensured that these resources were immediately put to productive economic use by attracting foreign investors into them or to locate nearby. In addition the government has used its power of compulsory land acquisition to the extent that now about 80 per cent of Singapore's land area is state land. It is not clear what the precise motivation was behind the policy of increasing the extent of state ownership but some have speculated on its Ricardian roots as a means of capturing land rents for the community and have linked this to the thinking of Henry George (Phang, 1996).

As far as wage policy is concerned the National Wages Council, which was established in 1972, is an independent tripartite organization with members being drawn equally from the government, the trade unions and from the business community, including employers' representatives from foreign companies. It does not report to parliament nor to any minister though its annual recommendations are endorsed by the cabinet and have been both quantitative and qualitative on the extent of wage and salary adjustments. It does not plan wage changes for any sectors of the

economy but suggests overall national guidelines which have been influenced by the Council's concern with the international competitiveness of the economy and the belief it should build flexibility into wages. As a result most salaries and wages in Singapore contain a substantial variable component which is reduced when the economy fails to achieve a pre-specified rate of growth.

The PAP does not implement radical socialist redistribution policies through high taxes on higher earners or on corporate profits to generate revenues for the provision of social welfare and unemployment. Rather it has sought to benefit the general population through job creation and the provision of public housing, education and medical services and the way in which it manages public housing and provides benefits, such as upgrading of public housing flats and related urban facilities, has a crucial impact on the value of most people's assets. Sources of finance other than high taxes on earned incomes were used for the social provisions.

V. Back to the Future

Although Singapore's economic strategy, including its exchange rate policy, has been very successful, it has not been without its problems. By the early 1990s the imperative became to diversify the structure of the economy away from exclusive reliance on a predominantly foreign manufacturing base and to reduce the extent of government involvement in the economy. It also became harder to justify high levels of centralized saving and investment and government involvement in the economy. The dilemma is that the government is finding it difficult to extricate itself from the economy without compromising policy effectiveness, and the dependence of the economy on foreign capital and labour does not appear to have diminished.

Dependence on foreigners

The notion that dependence on foreign multinationals located in Singapore represents an Achilles heel for Singapore is also a recurrent theme in the literature.[17]Huff (1995,

[17] For example Richardson concludes that: Singapore will be 'first-world' in terms of income and wealth and will also have a 'first-world' economic structure in that there will be a highly developed services sector, with a more specialized, high value-added manufacturing base. He continues: 'But Singapore will remain economically vulnerable in a way that 'first-world' countries are not. The predominance of foreign-owned firms in its manufacturing base will continue and a substantial proportion of these will remain US-owned. These firms have no underlying reasons to remain in

p. 754), for example has emphasized the implicit subsidization of foreign businesses who benefited from the ready-made factory sites, technical education and training, and education in English, and because government injections were strongly complementary to the private sector there was a degree of 'crowding-in' of private investment. The negative counterpart to this, however, was that the private sector investment crowded in was largely foreign and reinforced Singapore's longer-run dependence on foreigners.

It is difficult to imagine that Singapore could have achieved such high growth over a long period without the contribution of MNCs, but the MNCs have themselves obtained high returns. Compared to other NIEs, companies in Singapore have a relatively low remuneration share, which has helped to keep the Republic competitive, and a high profit share generating 48 percent of GDP and exceeded only by Thailand (The Business Times 31 August 2001). Since a large part of Singapore's GDP is produced by foreign companies and workers and so is not earned by Singaporeans, the Department of Statistics has come up with its own unique concept of 'Indigenous GDP' (IGDP). In 2000, for example, 35 per cent of GDP was owned by foreigners so that indigenous GDP was only 65 per cent of GDP (Peebles and Wilson, 2002, p. 136).

Part of the problem arises from the dualistic nature of the Singapore labor market. In the financial and business services sector and in professional jobs earnings are kept high by an excess demand for foreign 'talent' for which there is no obvious local substitute, whilst at the other end of the labor market wages are kept low by a steady inflow of unskilled labor from abroad employed in manual jobs. The 1980s saw a steady rise in the Gini coefficient as the process of restructuring and upgrading the manufacturing sector and the movement of resources into high income services reduced the demand for unskilled workers and increased wage differentials in favor of professional and skilled workers. [18]

There has never been any pronounced 'dependence' psychology in Singapore or generalized resentment against foreigners as in many developing countries in the

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Singapore and if economic or political circumstances forced them elsewhere, Singapore would find it difficult to fill the void.' (Richardson, 1994, p. 97).

[18] By the end of the 1990s Singapore had managed to stabilize the Gini coefficient at around 0.47 to 0.48 as spending on education increased educational opportunities, particularly at the tertiary level, but it remains relatively high and household income inequality also appears to have increased in the latter part of the 1990s as a result of relatively faster income growth for higher income households. Even if

past[19], but by the early 1990s the problem of 'dependence' had became inextricably linked to the imperative over the longer run to diversify the structure of the economy away from exclusive reliance on a predominantly foreign manufacturing base and to raise the amount of local value-added. This was not seen as a negative reaction to foreigners or foreign capital per se but as a positive move towards a more diversified economy and developed country status.[20] This fitted in nicely with the concept of 'Asian values' and the view that Singapore could find an alternative Asian model of development different from the 'western' model.

By the late 1990s the debate over Asian values had largely receded into the background and emphasis in government policy reverted to the view that resources in Singapore are essentially complementary to foreign resources. Foreign talent is now actively sought and certainly for the immediate future Singapore will continue to rely on foreign talent. Part of the problem stems from the low rate of technical progress as measured by total factor productivity growth and low industrial R&D compared to other industrialized countries (Bloch and Tang, 2000). The rapid growth in output in Singapore's industries has largely been due to increasing returns to scale and rapid growth of factor inputs in export-oriented foreign MNCs who do not engage in substantial R&D in Singapore.

The rise in unemployment during the recession of 2001 did see an increase in resentment against foreigners[21] focusing on their housing subsidies and the fact that they do not need to do national service (Shu, 2001), and from time to time there are complaints about the inequalities in income distribution in Singapore and concern about foreign workers taking the jobs of locals. Singapore has never espoused the welfare state as conventionally defined, since this might diminish the work ethic, but there has always been a sort of safety net for the very bottom of society and a policy of giving extra resources to disadvantaged groups, subject to stringent means tests. In

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the top and bottom extremes of the distribution are removed, the ratio of the 9th to the 2nd decile still increased sharply (Mukhopadhaya, 2001).

[19] A possible exception is that of water supplies from Malaysia which is subject to periodic negotiation of a highly politicized nature to the extent that Singapore has declared itself ready to invest in expensive de-salination plants to reduce dependence on Malaysia in the longer run.

[20] ' MNCs and borrowed technology have helped us rapidly leap from a poor trading village to an NIE, and in time to come to a developed economy'....'Foreign MNCs will continue to play a dominant part in our development. But to break through to the next level of development, we have to increasingly develop our home-grown talent and our own MNCs.' (Prime Minister Goh Chok Tong, The Business Times, 25-26 March 1995, p. 1).

[21] Chee (2001, pp. 11-3, 66-8) indicates some reasons for Singaporeans' resentment of foreigner workers.

his National Day Rally in 2001 the Prime Minister felt it necessary to stress the need to attract foreigners by noting that, even though there would be increasing unemployment, foreign talent was necessary not least as 'our own talent is being creamed off'. He put it as 'a matter of life and death for us in the long term. If we do not top up our talent pool from outside, in ten years' time, many of the high-valued jobs we do now will migrate to China and elsewhere, for lack of sufficient talent here.' (Goh, 2001, p. 20).

Lack of domestic competition?

Closely related to the view that Singapore is still heavily dependent on foreigners is the accusation that the government, by continuing to assume a dominant role in the economy, has restricted domestic competition, produced an over-regulated and over-cautious approach to the financial services sector and has encouraged over-saving. Singapore appears to do well in aspects of international competitiveness which are directly controllable by government,[22] but according to Cardarelli et al (2000) the intensity of local competition is the most important single variable in the microeconomic competitiveness index, especially the quality and network of domestic suppliers and related industries, since this competition acts as a training ground for international competition. Yet this is major weakness in Singapore. Examples cited include the lack of choice in media services and insufficient institutions in Singapore devoted to intermediating savings towards private sector entrepreneurial activities. Many of the international panels advising the government have stressed the need to transform the economy from 'investment-led' to 'innovation-led' growth. Harvard Business School Professor Michael Porter (Business Times 6 August 2001) has chastised Singapore for its pursuit of an activist industrial policy, heavy government involvement in the economy, and attempts to 'pick winners'. He suggested that the focus should shift much more towards services and creating the conditions for 'clusters' of activity to flourish, with stronger competition policies and more privatization of GLCs, and policies to "create a more chaotic and heterogeneous

[22] Typical is the Lausanne based International Institute for Management Development *World Competitiveness Yearbook 200*1 which ranks Singapore second after the USA, with strong scores in economic performance, government efficiency, business efficiency and infrastructure. Singapore scores less highly in managerial entrepreneurship, the competency of local managers, the brain drain, new business start-ups, and the cost of living. Singapore was also well placed in the macroeconomic competitiveness rankings of the World Economic Forum 1999 but this contrasts sharply with its ranking of twelve in the World Economic Forum microeconomic competitiveness index.

society" which is more flexible and tolerant of different groups of people with new ideas, tastes and beliefs.[23]

Porter also stressed the need for the government to reduce its involvement in the economy, particularly as it has not been able to foster innovation and he repeated the point being made in Singapore that association with the government has been a problem for some companies when trying to expand overseas. Although GLCs operate on a competitive basis and generate operating surpluses, they may have crowded out local private firms and this may partially explain why locally-controlled companies are smaller and less efficient than foreign-controlled companies, especially in manufacturing.

Allied to the criticism that Singapore has not generated sufficient domestic competitiveness is the assertion that its growth has largely been derived from 'perspiration' and not 'inspiration' (Krugman, 1994) or essentially input driven rather than by total factor productivity growth (TFPG). There have been a number of further studies for Singapore, some confirming Krugman and others revising up the contribution made by TFPG but even estimates produced by the Singapore Department of Statistics (Table 10) tend to confirm the heavy role played by capital and labor inputs in Singapore's growth rate historically and the relatively small contribution from TFPG (see Peebles and Wilson, 2002, chapter 3 for a review).

The official Singapore view seems to be that the numbers may be correct for the past and reflect Singapore's small indigenous manpower base and lack of home-grown industrial entrepreneurs, but they are not a good guide to the future, giving support to their view that Singapore is not yet a developed country. They are encouraged in this respect by empirical studies which suggest that TFPG may have increased in recent years, and are optimistic that it can be increased through policy and will increase of its own accord as past investment in education and infrastructure bear fruit.

Just in case this is not enough, the Ministry of Trade and Industry in 1995 established the Singapore productivity and Standards Board whose aim is to sustain total factor productivity's contribution at 2 per cent per year. A high level committee on

[23] 'While it has made substantial progress since its formation, Singapore remains a factor-driven economy. Singapore is largely a production base for foreign multinationals. Attracted by Singapore's relatively low-cost, well-educated workforce and efficient infrastructure including roads, ports, airports and telecommunications. Indigenous companies have yet to develop to a significant extent, nor have they been given much emphasis in economic policy. Singapore's improvement in living standards has come from upgrading the quality of human resources and infrastructure in order to upgrade the quality of jobs,' (Porter, 1990, p. 566).

Singapore's competitiveness presented its recommendations in November 1998 and outlined a vision of turning Singapore into an advanced globally-competitive knowledge-intensive economy. Incentive schemes such as a Skills Development Fund and Promising Enterprise Programme are aimed at encouraging local talent and persuading successful Singaporean émigrés to return or at least 'network' with the mother country. Work has begun on building 'Biopolis', a science park that will specialize in providing homes for firms and researchers in the field of life sciences and to attract venture capitalist firms to the site as well as academics and journalists interested in the field. Students from Singapore's national university will be sent abroad to places that are thought to epitomize the innovation and creativity necessary for creating the New Singapore such as Bangalore, Boston, Silicon Valley and Shenzhen in China.

Over-regulation

In contrast to Singapore's prominence in foreign exchange dealing and in international banking domestic capital markets are still relatively underdeveloped in terms of fixed-income and equity instruments and the fund management industry. At the same time changes in global financial markets are leading to greater competition and consolidation of activity into fewer centers, and developments in technology, which ensure that money can be managed from a wider range of locations than in the past, are eroding Singapore's locational advantages. Not surprisingly, CPF holders are demanding a wider range of products with higher returns than are available in the local bank-dominated environment.

Part of the problem again arises from the dominant role that the government has played in the creation of Singapore as a financial center. The ADBM, for example, was started in 1971 by the Development Bank of Singapore (largely government–owned). A tradition of looking to the government for initiatives, combined with a reputation for a tight regulatory framework and generally conservative approach by the MAS also led to criticisms that the regulatory mechanism was complicating business practices and constraining private sector financial innovation and market development. Not least because such innovation would require time consuming consultations with the MAS. The comparison was often made with Hong Kong. Both built up a reputation for sound open financial systems and a large presence of foreign financial institutions. In Singapore, however, the authorities have been very pro-active

with tight controls and conservative prudential standards, while Hong Kong is altogether more laissez-faire with minimal controls, no reserve requirements, no central bank (until recently) and little government interference. Tax rates are lower, onshore and offshore markets are fully integrated and resident/non-resident activities are treated the same. Perhaps the old adage is correct: 'In Hong Kong anything not expressly forbidden is permitted, in Singapore anything not expressly permitted is forbidden'.[24]

It was partly in response to such criticisms that the Singapore government set up the Financial Sector Review Group in 1997 and began to implement some of its sub-committee recommendations as they were made public during 1988 and early 1999 (see the summary in Pebbles, 1998, p. 1067 and Cardarelli et al. 2000). The result has been a comprehensive set of reforms to promote Singapore as a full service international financial centre.[25] Reforms were also introduced to move Singapore companies closer to the US system of disclosure and to bring regulatory and supervisory practices in line with current best practice.

Over-saving

A key feature of Singapore's economic strategy has been the generation of high levels of centralized saving and investment. Before 1985 one could justify such resource mobilization (Sandilands 1992) as part of a successful non-inflationary development strategy geared towards specific normative goals, including the spread of home ownership and sufficient reserves to ensure external security. However, since 1985 it has became harder to justify this strategy, having already achieved the essential development infrastructure and given the opportunity costs in terms of private consumption and the over-centralization of savings and investment decisions. There have been large surpluses in the balance of payments, both on current account and capital account and a relentless accumulation of reserve assets.

[24] Especially controversial was the policy of discouraging the internationalization of the Singapore dollar. Although probably instrumental in keeping the S$ stable and preventing currency crises (see II above) this may have obstructed the progress of Singapore as a financial center, not least by reducing competition and synergies between the off-shore centers and the domestic market and the MAS might have been overly-cautious in this respect. Most of the restrictions have, however, now been removed.

[25] These included further widening of the scope for investment of CPF funds by increasing investment limits on unit trusts, the lifting of fixed commissions in the stock broking sector, a speeding up of the development of the domestic asset management industry by increasing the range of retirement products and allocating more government assets to selected fund managers located in Singapore, and a more pro-active attempt to develop the local debt market.

The debate in Singapore has also been complicated by the secrecy which surrounds the official foreign exchange reserves and the fact that the returns on public savings and reserve assets are not public information and it is virtually impossible to disentangle the flow of funds between the CPF, other Statutory Boards, the budget accounts, and the reserves at the MAS and GIC.[26]

Singapore does not have the highest absolute reserves in the world but it does have the highest per capita at almost US$ 26 000 in 1999 (Peebles and Wilson, 2002, Table 8.7) as a consequence of both a high level of absolute reserves and a relatively small population. The reserves have grown rapidly since the mid-1960s at 15 percent per annum 1963-69, 18 percent 1970-79, 13 percent 1980-89, in line with surpluses in the overall balance of payments. Growth slowed somewhat between 1997 and 2000 (7%) as a result of the Asian financial crisis, but was still 12 per cent on an annual average basis between 1990 and 2000.

The official view is that a high level of reserves is necessary given Singapore's import dependence, to instill confidence in Singapore as an international monetary centre, and to be able to intervene, when necessary, to combat inflation or improve export competitiveness through the policy of managed floating. They are also essential as a 'war chest' or a 'shock absorber' against an unexpected outflow of capital. A more subtle justification, however, is the need for the reserves to grow in line with the increase in the (aging) population and living standards, to provide a 'nest-egg' to cover future liabilities to CPF holders. The reserves have always been regarded in Singapore as a component of the nation's wealth with the Government as the custodian, and an integral part of the broader development strategy translating forced savings through the CPF and budgetary surpluses into investment, whilst over time some of these funds were converted into a portfolio of foreign assets at the MAS and GIC. At times one might be forgiven for thinking that the objective is maximization of the reserves.

VI. Conclusion

[26] Access to the foreign media is often the only way to find out where the GIC has been investing. For example, in September 2000, the Dutch financial daily Financieele Dag reported that the GIC had bought a stake in Hegenmeyer and was now the biggest shareholder. This was later confirmed by the GIC as an 8 per cent stake and one of a string of investments including the purchase of the Korean Airlines office in Seoul (The Business Times Online Edition, 22 September, 2000).

In this paper we have explored the links between Singapore's foreign exchange rate regime since 1981 and the broader aspects of its political economy since independence in 1965.

Singapore has been remarkably successful in the last two decades in delivering fast growth, low and stable price inflation and a strong external position without the need for a deliberate weakening of the currency. Macroeconomic policy has largely been directed towards generating high savings and investment through forced saving and budget surpluses to provide the infrastructure and tax incentives to attract foreign direct investment. Since 1981 an important part of this strategy has been a managed floating exchange rate regime in which the Singapore dollar is managed with reference to an undisclosed trade-weighted basket of currencies primarily to achieve low and stable domestic price inflation.

Although there is some debate about the impact of Singapore's managed float on long-run export competitiveness, its exchange rate regime is generally regarded as being a good example of the successful implementation of an intermediate regime. It is especially impressive given the impotence of traditional monetary and fiscal policy in Singapore and susceptibility to external shocks, which are a consequence of its extreme openness to international trade and close integration with international financial markets.

But Singapore's exchange rate policy needs to be viewed within the broader context of the PAP's economic strategy of 'pragmatic socialism' since independence, in particular the objective to keep inflation low and stable to sustain long-run export competitiveness through inflows of mobile foreign capital, and high levels of centralized saving and investment, a high degree of government involvement in the economy and the relentless accumulation of foreign exchange reserves. Indeed, part of the reason why managed floating has been successful in Singapore has been the ability of the government to enhance the credibility of monetary policy through its command over resources, and to respond quickly and flexibly to changes in economic circumstances using, where necessary, less orthodox policies of demand management to cut business costs. Exchange rate policy, therefore, becomes an integral part of the policy to redistribute income to capital in the belief that this will sustain employment and prevent mobile firms from leaving Singapore.

The PAP model based on a combination of foreign capitalism and domestic discipline has not been without its problems. By the early 1990s the imperative over the longer

run became to diversify the structure of the economy away from exclusive reliance on a predominantly foreign manufacturing base to raise the amount of local value-added, and to reduce the extent of government involvement in the economy. It also became harder to justify an economic strategy which continued to be based on high levels of centralized saving and investment and concerns were raised about dependence on foreigners, lack of domestic competition, over-regulation of the economy and over-saving. The dilemma for the government is that it is finding it difficult to extricate itself from the economy without compromising policy effectiveness, and there is little evidence that Singapore is less dependent on foreign capital and labour than in the past.

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Table 1 Singapore's dependence on trade 1970 to 2000

	Trade	Domestic Exports	Oil exports	NODX	Entrepot exports	Total exports	Value-added exports
	% of GDP						
1970	212	32	19	13	50	82	11
1975	364	56	19	37	39	95	16
1980	370	107	59	48	64	171	27
1985	277	84	42	42	45	129	23
1990	302	93	26	67	48	141	32
1995	290	83	12	71	58	141	-
2000	296	85	14	71	64	149	-

Notes: Trade comprises merchandise exports plus merchandise imports; domestic exports are merchandise exports less officially defined re-exports; NODX are domestic exports less oil exports; Value-added exports are total exports less re-exports and imported intermediate inputs based on Lloyd and Sandilands (1986) and Tan (1995).
Source: *Yearbook of Statistics, Singapore,* various years*; Economic and Social Statistics, Singapore, 1960-82*.

Table 2 Economic indicators for Singapore since 1960

	Real GDP growth				
1960-69	8.7				
1970-79	9.4				
1980-89	7.4				
1990-99	7.6				
1970-2000	8.0				
% of GDP	Private consumption	Government consumption	Investment	Net exports	
1960-69	74	10	29	-6	
1970-79	59	12	42	-9	
1980-89	48	11	42	1	
1990-99	43	10	37	11	
% of GDP	1970	1980	1990	2000	
Agriculture and fishing	1.9	1.0	0.2	0.1	
Manufacturing	25.0	29.7	28.6	26.8	
Utilities	1.7	1.8	1.8	1.6	
Construction	10.0	7.5	5.5	6.2	
Commerce	23.4	20.1	18.8	17.5	
Transport & communications	6.7	11.0	12.8	11.1	
Financial & business services	16.9	20.5	26.3	25.6	
Other services	14.4	11.4	10.8	11.1	

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Table 3 Trends in Singapore's balance of payments, 1960 to 2000

	1960-69	1970-79	1980-85	1986-89	1990-96	1997-2000
	Annual average S$ billion					
Goods balance	-0.80	-4.57	-9.62	-4.01	-1.16	16.24
% GNP	-24.5	-36.6	-28.6	-8.3	-1.2	10.5
Services balance	0.52	3.19	8.35	6.11	12.77	9.48
% GNP	17.8	24.9	24.1	14.5	13.3	6.2
Goods and services (net)	-0.28	-1.38	-1.27	2.10	11.61	25.72
% GNP	-6.7	-11.7	-4.6	6.3	11.9	16.9
Income balance	0.06	-0.08	-0.22	0.92	1.96	10.02
% GNP	1.8	-0.6	-0.6	1.9	2.0	6.5
Current transfers (net)	-0.04	-0.06	-0.38	-0.55	-1.20	-1.97
% GNP	-1.2	-0.4	-1.1	-1.1	-1.2	-1.3
Current account	-0.26	-1.52	-1.87	2.47	12.37	33.77
% GNP	-8.0	-12.2	-5.6	5.1	12.7	21.9
Capital and financial account	0.10	1.49	3.82	0.73	-2.21	-26.16
% GNP	3.1	11.9	11.4	1.5	-2.3	-17.0
Net errors and omissions	0.34	0.96	0.43	-0.14	-0.28	1.39
% GNP	10.4	7.7	1.3	-0.3	-0.3	0.9
Overall balance	0.18	0.93	2.38	3.06	9.88	9.00
% GNP	5.5	7.4	7.1	6.3	10.1	5.8
Official reserves (net)	-0.18	-0.93	-2.38	-3.06	-9.88	-9.00

Notes: This Table follows the latest (revised) format for the Singapore balance of payments. The figures prior to 1990 for the income balance refer to investment income and the capital and financial account was previously the capital account. The trade balance is now the goods balance and unrequited transfers are renamed current transfers.

Sources: *Economic and Social Statistics, Singapore 1960-82*, Table 4.10; *Yearbook of Statistics Singapore*, various issues.

Table 4 Change in factor payments and factor shares, 1996-2000

Percentage change over previous year	1996	1997	1998	1999	2000
Compensation of Employees	10.0	9.2	4.1	-3.0	9.6
Gross Operating Surplus	7.8	8.5	-6.4	11.3	11.9
of Financial Corporations	1.7	28.5	-6.1	26.3	3.3
of Non-Financial Corporations	9.0	5.2	-5.9	9.9	14.4
Others	9.4	11.6	-1.8	4.5	3.5
Per cent of GDP	**1996**	**1997**	**1998**	**1999**	**2000**
Compensation of Employees	43.3	43.2	45.9	43.1	42.2
Gross Operating Surplus	46.6	46.2	44.1	47.5	47.5
of Financial Corporations	6.4	7.5	7.2	8.7	8.1
Others	9.9	10.0	10.0	10.1	9.4
of Non-Financial Corporations	36.3	34.9	33.5	35.6	36.4

Note: Figures do not add to one hundred as the statistical discrepancy has been omitted.
Source: Calculated from *Yearbook of Statistics Singapore 2001*, Table 5.9.

Table 5 Sources of export growth for Singapore, 1964 to 1992

	Contribution from expansion in:		
	Exports	Domestic demand	Import substitution
% of manufacturing GDP			
1964-70	24	121	-46
1970-80	76	44	-20
1980-92	98	44	-20
1964-92	89	42	-31
% of GDP			
1964-70	35	99	-35
1970-80	76	50	-26
1980-92	58	29	12

1964-92	62	63	-26

Source: Tan (1995, Tables 3.4 and 3.8).

Table 6 Singapore's exports and imports, 1970 to 2000

	Exports				Imports			
	1970	1980	1990	2000	1970	1980	1990	2000
(% of total exports or imports)								
USA	11.1	12.7	21.3 (26.6)	17.3 (24.6)	10.8	14.1	16.0	15.0
Japan	7.6	8.1	8.7 (9.9)	7.5 (7.7)	19.4	17.8	20.2	17.2
Australia	3.5	4.1	2.5 (2.6)	2.3 (2.6)	4.5	2.3	1.9	1.7
France	2.0	2.2	1.6 (1.9)	1.5 (2.0)	1.1	1.4	2.4	1.6
Germany	2.9	3.0	4.0 (4.5)	3.1 (3.3)	3.4	3.3	3.6	3.1
Netherlands	1.5	1.9	2.1 (2.1)	3.0 (4.1)	1.2	1.0	0.9	1.0
UK	6.8	2.6	3.2 (3.6)	2.6 (5.1)	7.6	3.4	3.1	2.0
Europe	23.9	16.0	17.4 (18.4)	14.6 (19.5)	18.6	13.7	15.9	14.2
Malaysia	21.9	15.0	13.1 (8.4)	18.2 (12.1)	18.6	13.9	13.6	17.0
Thailand	3.3	4.3	6.6 (7.3)	4.3 (3.7)	2.0	2.0	2.7	4.3
Philippines	0.3	1.4	1.3 (1.1)	2.5 (1.9)	0.4	0.3	0.5	2.5
Brunei	1.6	1.4	1.0 (0.5)	0.4 (0.2)	0.0	0.8	0.2	0.2
Indonesia	-	4.8	1.3 -	2.2	-	10.4	3.1	5.7
ASEAN-4	27.1	22.1	22.0 (17.3)	25.4 (17.9)	21.0	17.0	17.0	24.0
Hong Kong	4.1	7.7	6.5 (6.9)	7.9 (7.6)	2.5	2.1	3.1	2.6
Taiwan	0.8	1.7	3.6 (3.7)	6.0 (4.3)	1.7	2.4	4.3	4.4
South Korea	0.7	1.5	2.2 (2.1)	3.6 (2.5)	0.5	1.1	2.9	3.6
China	1.5	1.6	1.5 (1.4)	3.9 (3.4)	5.1	2.6	3.4	5.3
India	0.6	2.3	2.1 (1.3)	2.0 (1.7)	0.9	0.5	0.6	0.8
NEASIA-4	7.1	12.5	13.8 (14.1)	21.4 (17.8)	9.8	8.2	13.7	15.9

Note: Domestic exports in parentheses are for 1999; ASEAN-4 includes Malaysia, Thailand, Philippines, Brunei; NEASIA-4 comprises Hong Kong, Taiwan, South Korea, China; the data for Indonesia are from the *Direction of Trade Statistics*, various years, converted into the Singapore dollar at the prevailing exchange rate. The latest figure is for 1999.

Source: Economic Survey of Singapore, 2000.

Table 7 Singapore's trade linkages

	Singapore's Trade intensity average 1992-6		Singapore's Intra-industry trade % total	
	Exports	Imports	1992	1996
With:				
ASEAN-3	7.0	7.9	52	65
North-east Asia	1.3	1.6	47	55
EU-13	0.3	0.3	32	38
North America	1.0	1.0	38	45

Notes: Trade intensity indices measure bilateral or regional trade flows relative to the partner's share of trade with the rest of the world. Intra-industry trade is measured by the Grubel-Lloyd index; ASEAN-3 is Malaysia, Thailand and the Philippines; North-east Asia includes Japan, China, South Korea and Hong Kong; EU-13 refers to 13 members of the European Union.
Source Monetary Authority of Singapore (1998b).

Table 8 The composition of Singapore's exports, 1970 to 2000

	1970	1980	1990	2000
(% of total exports)				
Oil exports	17.3	35.1	18.2	9.6
Non-oil domestic exports	21.9	28.0	47.9	47.5
(% of non-oil domestic exports)				
Crude materials	2.9	1.3	1.0	0.6
Chemicals	4.7	4.9	7.9	9.5
Manufactured goods	30.2	27.6	15.3	11.6
Machinery and equipment:	19.0	56.5	70.9	75.9
Office machines	3.3	2.3	31.8	34.0
Electronics components and parts	-	18.9	11.3	24.7

Source: *Economic Survey of Singapore, 2000*, Table A6.1, A6.5, A6.7.

Table 9 Estimates of contributions to GDP growth stressing foreign labour 1986 to 2000

Period	GDP growth	Capital Stock	Local labour	Foreign workers with employment passes	Foreign workers with work permits	Total Factor Productivity
1991Q1-	7.79	2.06	1.10	2.87	0.30	1.47
2000Q4	(100)	(26.4)	(14.1)	(36.8)	(3.9)	(18.9)

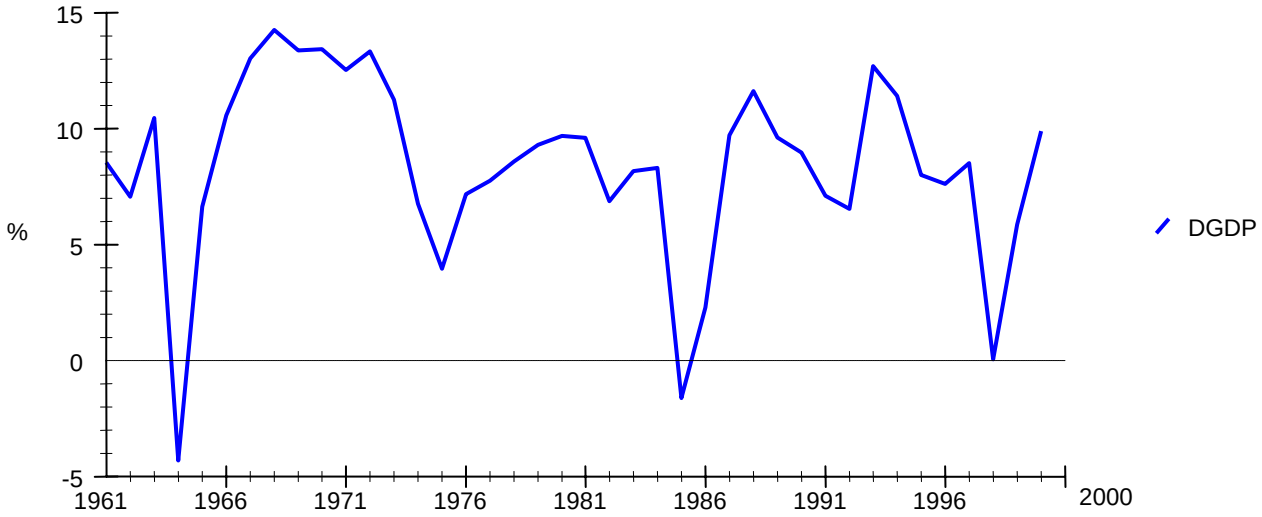
Source: Estimates by the Ministry of Trade and Industry, Singapore, cited from *The Straits Times*, 1 November 2001, p. S12.

Table 10 Factor input contributions to real GDP growth rate 1973-1996

	Contribution to Real GDP growth (in percent of the growth rate) of			
Period	Capital Input	Labour Input	MFP	MFP contribution in percentage points of GDP growth
1973-1996	66.5	20.0	13.5	1.0
1973-1980	85.3	22.2	-7.4	-0.5
1980-1985	98.6	11.8	-10.3	-0.6
1985-1990	37.3	16.2	46.5	3.8
1990-1996	51.1	26.1	22.8	1.8

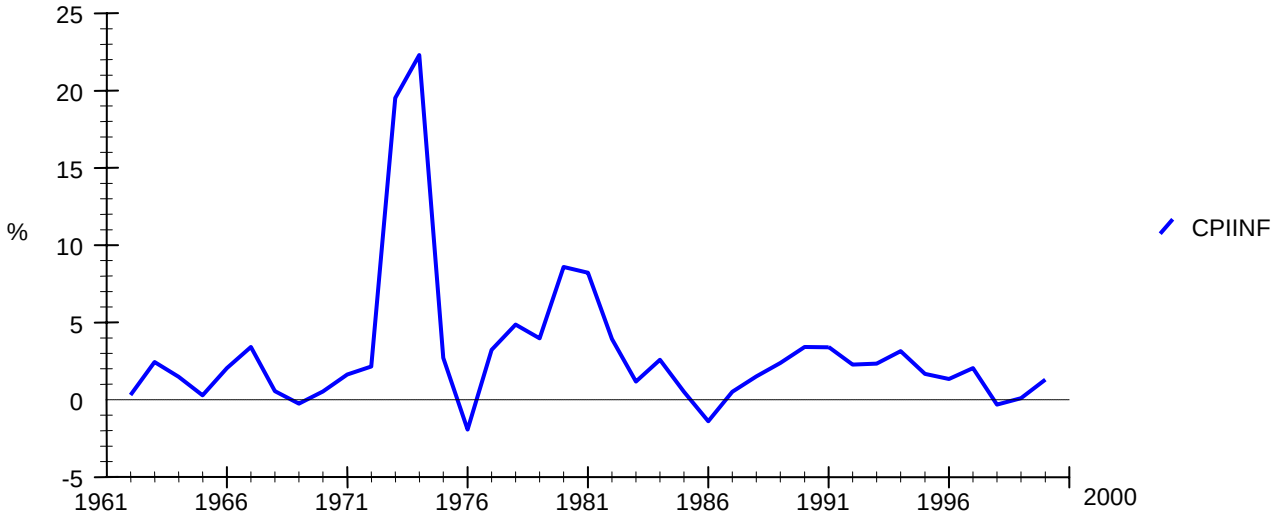
Source: 'Multifactor Productivity Growth in Singapore: Concepts Methodology and Trends', Department of Statistics (1997, Table 1 and Appendix 2), cited with permission.

Figure 1 Annual real GDP growth 1961-2000



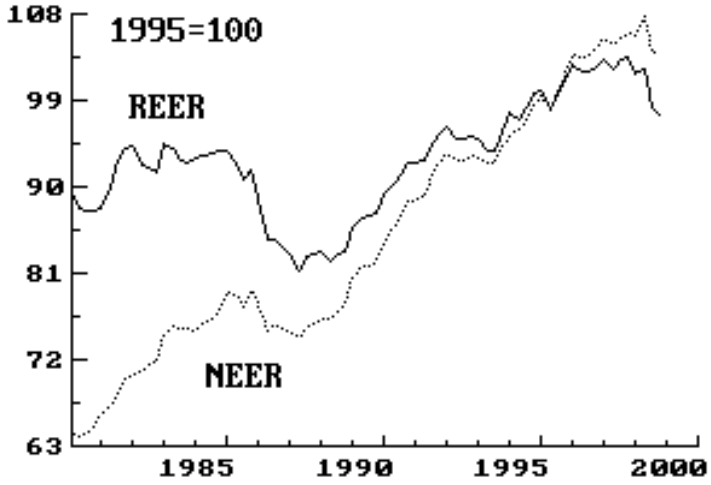
Source: Peebles and Wilson (2002, Table A.1).

Figure 2 Annual consumer price inflation 1961-2000



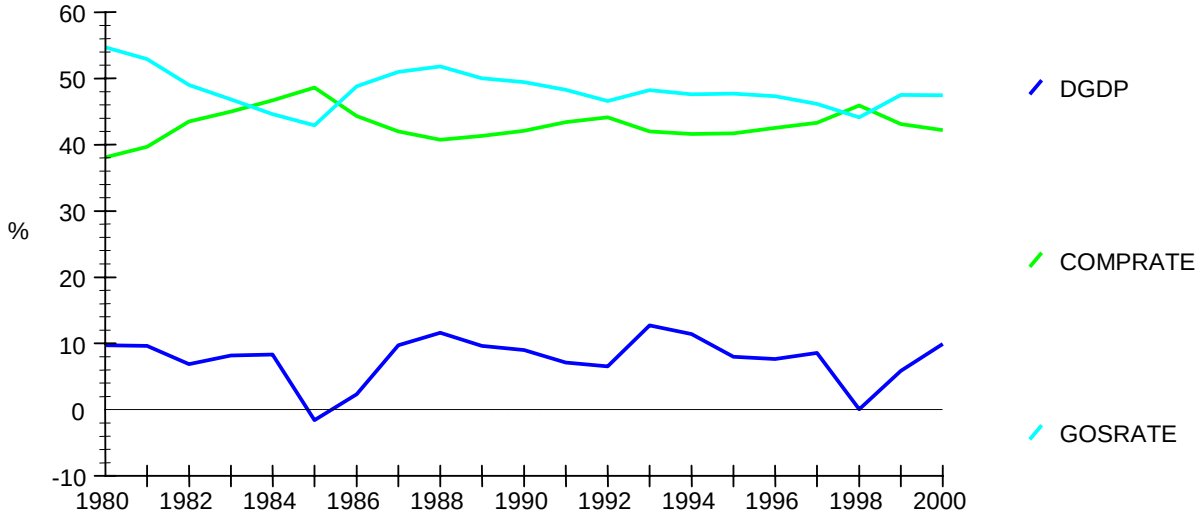
Source: Peebles and Wilson (2002, Table A.1).

Figure 3 Nominal and real effective exchange rates, 1980 to 1999



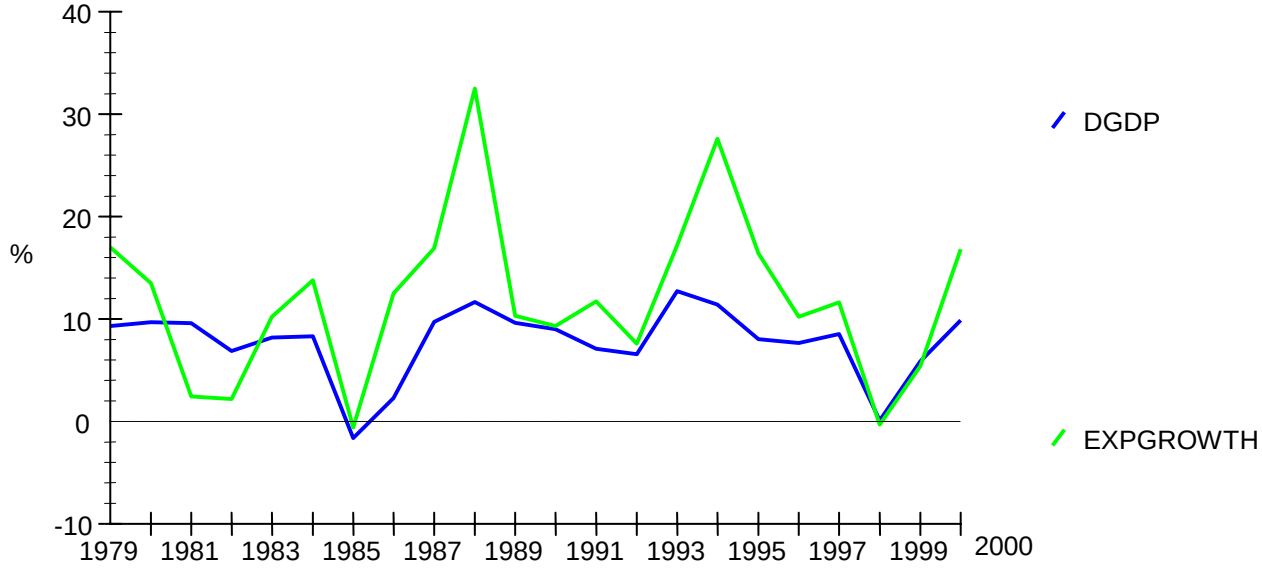
Source: Abeysinghe and Wilson (2001b).

Figure 4 Factor shares and GDP growth 1980-2000



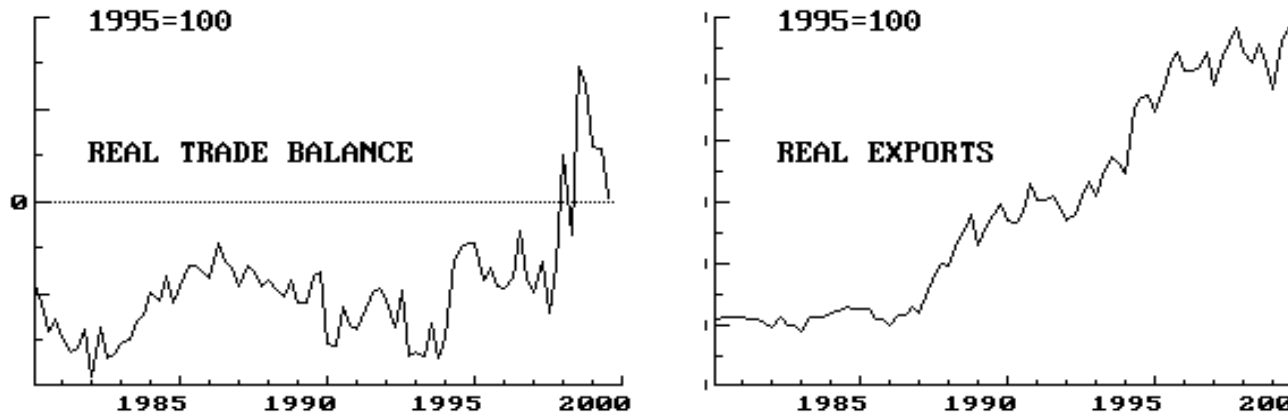
Sources: Peebles and Wilson (2002, Table A.1).

Figure 5 Export growth and real GDP growth 1979-2000



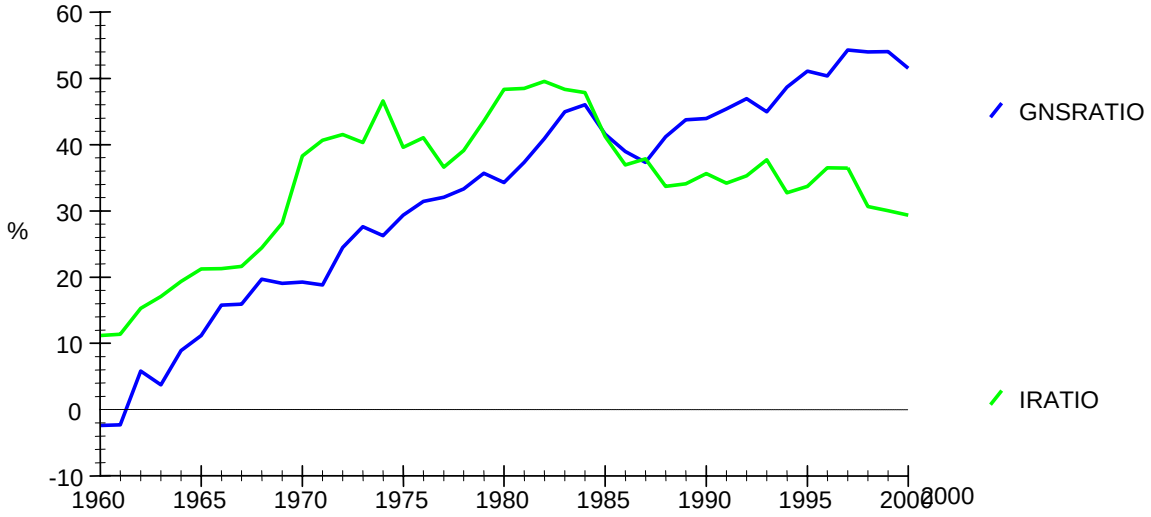
Source: Peebles and Wilson (2002, Table A.1).

Figure 6 The real trade balance and real exports, 1980 to 1999



Source: Abeysinghe and Wilson (2001b).

Figure 7 Saving and Investment as ratios of GNP 1960-2000



Source: Peebles and Wilson Table A.2.