

CHAPTER 1

INTRODUCTION AND OVERVIEW TO “SUSTAINING COMPETITIVENESS IN THE NEW GLOBAL ECONOMY: A CASE STUDY OF SINGAPORE”*

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1. Introduction

The rapid evolution of Singapore from a modest trading post under colonial rule to a modern, prosperous, self-confident and sovereign nation must rank as among the more notable success stories of the second half of the 20th century. The Singapore economy has experienced one of the highest rates of growth in the world over the past three decades, its Gross Domestic Product (GDP) appreciating at an annual average rate of about 8 % during the period 1970-2000. The growth has in turn propelled Singapore’s average real per capita income from US\$ 3,365 in 1965 to its current level of over US\$ 28,000, which is one of the highest in the world, surpassing most developed countries (Figure 1)¹.

In recognition of its economic success, a number of other developing countries - or at least states and cities within larger countries - have drawn inspiration from the Singapore experience. Each has been eager to learn relevant lessons from the city-state in their individual quest for rapid development and economic prosperity.

All this seems to suggest that Singapore currently has all the right ingredients for succeeding in the global economy in the new millennium. But does it really? Questions have recently been raised about the sustainability of the Singapore development model and its relevance in the global economy. As Singapore’s Deputy Prime Minister, Tony Tan, observed

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The economic model which we have successfully implemented for the last 30 years has given us extraordinary economic growth. But with changed world circumstances, this economic model needs not only re-tuning, it needs fundamental change².

There are a number of reasons as to why doubts about the sustainability of Singapore's growth have been raised at this stage.

First, following the sharp downturn in the global electronics industry and the sluggish regional and global growth, the Singapore economy experienced an acute economic contraction in 2001; the recession was the worst in thirty years (Table 1 and Figure 2). Its impact on unemployment, financial and asset markets and consumer and business sentiment and other areas have proven to be deep and wide-spread (MAS, 2002).

Second, while the intensity of the recession experienced by Singapore is due to the confluence of a number of negative factors, including the horrific events of September 11, 2001, the fact that the downturn in 2001-02 has come so soon after the slowdown during the Asian crisis in the latter half of the 1990s is worrisome. All of a sudden the Singapore economy appears relatively fragile and much more at risk to boom-bust cycles³. As with most other developing countries, the absence of generous social safety nets in Singapore (which are viewed by Singapore's policy makers as inhibiting growth) makes the populace particularly vulnerable to sudden and sharp downturns (we return to this point in Section 2.3).

Third, prior to the Asian crisis of 1997-98 when the Southeast Asian countries were booming, Singapore consciously attempted to lever on the dynamism of the region. The severity of the downturn in the regional economies and the apparent inability of some of these economies to make the hard choices necessary to rediscover the growth momentum has required a fundamental rethinking of Singapore's place in the region and the world. To be sure, as the external Southeast Asian economic environment has turned out to be much less favourable than before, Singapore has suddenly found itself with a much smaller and far less lucrative

hinterland. This point is further emphasized in a recent empirical paper which examines the engines of growth in Singapore (MTI, 2001). In particular, it finds that the Singapore economy may have lost about 2 percentage points in GDP growth since the regional crisis of 1997-98 due to the slowdown in Malaysia and Indonesia.

Fourth, advances in the Information systems, Communications and related technologies (ICT) have significantly shrunk economic distances between nations and markets and may well be reducing the demand for some conventional roles such as entrepot, overseas headquarters (OHQs) and other hub services and ancillary services. This, along with the fact that Singapore is among the most open economies in the world, at least with regard to merchandise trade and direct investment flows, with few natural resources to speak of, implies the need for the city-state to be particularly aware of and responsive to the powerful forces that are transforming markets and dramatically changing ways of doing business, so as to remain “ahead of the game”. This is especially so given that the competition for investments, export markets and skilled labor intensifies as more economies embrace open door trade and investment policies and some of Singapore’s hub roles are duplicated by lower cost regional rivals.

In recognition of the foregoing concerns, the Singapore government established an Economic Review Committee (ERC) in December 2001 to carry out a comprehensive review of the city-state’s growth strategy and economic policies and put together a “blueprint” to restructure and chart new directions for the economy⁴.

The next eleven chapters in this volume examine a number of related issues pertaining to national competitiveness and structural and macroeconomic concerns and policy options for the Singapore economy in order for it to sustain its economic viability in the global economy. The objective of this volume is to examine issues analytically rather than to describe the performance of the Singapore economy in any great detail.

2. Economic Globalization

2.1 Definition and Trends

By way of background, **Chapter 2 by Kym Anderson** offers an overview of the general notion of economic globalization and issues surrounding it. Economic globalization, broadly defined as the shrinkage of economic distances (i.e., costs of doing business) between nations, is more accurately seen as consisting of two separate but not necessarily mutually exclusive trends: *globalization of production and trade* and *globalization of finance and capital flows*. Both aspects of globalization have been aided and abetted by three factors. First, are the innovations and advances in transportation, information and communications technologies such as the Internet (Baldwin and Martin, 1999 and IMF, 1997). Second, is the push by the various international institutions towards global economic liberalization (i.e., reduced policy barriers to trade and investment) through the General Agreement on Tariffs and Trade (GATT) and the World Trade Organisation (WTO) in the case of world trade in goods and services, and the International Monetary Fund (IMF) in the case of global finance and capital flows. Third, is the shift in perceptions about the appropriate role of government and near-global consensus on the need for extensive, albeit judicious use of market incentives for economic success (Rajan, 2001a)⁵.

The process of economic globalization, though having intensified since the Second World War, is by no means unprecedented. In fact, the world economy is no more - and, in some instances, is actually *less* - integrated than it was at its peak in 1913, when cross-border transactions costs were significantly reduced by the advent of the railroad, steam ship and the telegraph in the 19th century and by the automobile and airplane in the early 20th century. However, while technological progress continued unabated, the “triple whammy” of World War I (1914 to 1918), the Great Depression (1929 to mid 1930) and then World War II (1939 to 1945)

effectively halted the initial upward trend in economic globalization that took place under the gold standard until the 1970s. In other words, an index of the intensity of globalization over the last century would reveal a U-shape, with a trough - an elongated one - depicting the period from about 1914 to 1960.

The one area of globalization that has lagged now compared to the 19th century is that of movement of people, especially unskilled ones, across national borders. These flows remain tightly controlled. There is, however, an intensified competition between countries for skilled personnel (“global talent”). In Singapore’s case, it can ill-afford to ignore this dimension of openness. As the country’s Senior Minister, Lee Kuan Yew, has remarked

(W)e must continue to attract as many able and talented men and women from China, India, the region and from developed countries, to add to our team. Without this input of foreign talent, even the USA could not have been so successful...(E)very year thousands of talented professionals, academics, researchers, writers are drawn from UK and EU to US because they are made welcome in America and given the facilities for their research or become successful in their professions or business. This has enhanced America’s high performance. If America with 280 million people needs to top up with talent, Singapore with 3 million must do so or we will be relegated to the second or third division. To attract to Singapore good sportsmen, artists, painters, dancers, musicians from abroad we need to make them feel they are a part of the Singapore team (Lee, K.Y., 2002)⁶.

Similarly, Brantley (2002) notes

(The) Singapore government is prepared to purchase, train, and/or subsidize whatever talent the R&D organization or academic institution needs. In the global account of intellectual capital, Singapore shows a continually positive balance (p.11).

2.2 The Role of Economic Geography: Agglomeration versus Fragmentation

Anderson emphasizes that an important characteristic of the global economy has been the tendency for agglomeration, i.e. the geographical concentration of industries in particular countries and particular regions within a country (also see Audretsch, Chapter 9). This phenomenon of “firm-congestion” or bunching together spatially helps explain why regions with similar underlying characteristics sometimes

turn out to be very different, i.e. “history matters for economic geography”. The new economic geographers and old school development economists have stressed the existence of scale economies (or market size effects and linkages), thick labor markets and pure external economies as reasons for this cumulative causation and specific spatial configurations of production (Hanson, 2000 offers a recent literature review). However, these “centripetal forces” could just as easily be rationalized by the Knickerbocker Oligopolistic theory of multinational enterprises (MNEs), which argues that a MNE will tend to enter a market in which a rival has already done so (“follow-the-leader” strategy) or to pre-empt competitors’ entry (“first-mover-advantage”). Alternatively, one may explain these “band-wagon” or “herding” effects by arguing that the existence of foreign investors may act as a signal to other potential investors about the extent of investment-conduciveness of the country’s overall policy regime. This reduces uncertainty and therefore increases *ex-ante* expected returns. Regardless, all three bodies of the literature share a common thread in the sense of explicitly or implicitly assuming strategic complementarity as defined and discussed by Bulow, et. al. (1985), i.e. the output expansion of one firm raises anticipated profits of the other.

These forces of agglomeration suggest that there may be room for active industrial policy in terms of targeting industries and taking a number of strategic initiatives to encourage investments in the selected areas. Thus, Singapore, for instance, has actively targeted the biomedical science cluster which comprises biotechnology, pharmaceuticals, medical devices, and health care services with the aim of making the city the biomedical hub of Asia (Brantley, 2002, DBJ, 2001a, Triendl and Yoon, 2001)⁷. However, Anderson does highlight the need to ensure that any growth-enhancing policy intervention not be sectorally biased⁸. Apart from a stable and conducive macroeconomic policy environment and transparent regulatory regime, he lays emphasis on incentives to develop the stock and quality of human

capital as well as enhance Research and Development (R&D) capabilities, as opposed to promoting specific sectors. (We take this issue up again in Section 5). The government for its part appears to have appreciated this point. As Tharman Shanmugaratnam, Senior Minister of State of Trade, Industry and Education recently noted

Within manufacturing and services, we will have to leave it to the market to spot future winners. Some broad clusters of growth activity are clear enough in global markets - within manufacturing, these include electronics - notwithstanding its cyclical gyrations - chemicals and the biomedical sciences. But we cannot tell what proportions of Singapore manufacturing each of these clusters will occupy in future, or which firms and which specific industries within these clusters will remain winners. Nor can we tell if other new clusters will emerge as major growth potentials for Singapore. We should therefore leave room for more 'white space' in our economic structure. The Government can support market players where they decide it is worth basing their operations in Singapore. But we should aim to make our tax system and other incentives less targeted and more broad based, so as to accommodate a greater degree of market experimentation, whether in manufacturing or services (Shanmugaratnam, 2002a).

The problem with the early literature on agglomeration was the near absence of considerations of factor costs and prices in the analyses. However, following Krugman and Venables (1995) and Krugman (1999), there has been a recognition that, in the presence of fixed or immobile factors (like land), and as long as there is imperfect substitutability between these factors and those which may have a perfectly elastic supply, agglomeration will eventually lead to a rise in production costs. These factor cost appreciations and other "congestion effects" may at some stage offset the "concentration effects", hence leading to a dispersion of economic activity to peripheral regions (Hanson, 2000). In other words, dispersion occurs when the centrifugal forces outweigh the centripetal ones. But what are the dynamics of these centripetal forces?

The new economic geography literature noted in Section 2 has largely been silent on the specifics of dispersion of economic activity. If anything, the dynamics described previously - whereby there will come a time when the centrifugal forces

offset centripetal forces - suggests that the longer-run shift of production from the core to the peripheries will be a zero-sum game, with the latter gaining at the expense of the former (Hanson, 2000). To quote Krugman and Venables (1995)

(B)oth concerns about uneven development and worries about maintaining First World living standards in the face of Third World competition have some justification. In particular, they seem to correspond to different stages in the process of globalisation....an early stage of growing world inequality...As transport costs continue to fall...there eventually comes a second stage of convergence in real incomes, in which the peripheral nations definitely gain and the core may well lose (p.859).

Given this perception, in the face of possible “hollowing out” or de-industrialization due to escalating costs and concomitant diminishing attractiveness, might there not be a case for the core or developed countries to take remedial measures? In particular, a plausible case might exist for the erection/escalation tariffs and other trade barriers so as to decelerate the centrifugal forces by diminishing the feasibility of moving to the outlying regions and servicing the core through trade. However, this policy conclusion runs contrary to conventional wisdom regarding the benefits of free trade and the general presumption that factor intensities of goods and factor endowments of countries play a significant role in international trade.

The implicit assumption in the agglomeration literature is the inability to unbundle products into its parts, components and accessories or PCAs (also see Section 4). With the major improvements in transportation, coordination and communication technologies, globalization provides vastly increased opportunities for the fragmentation of previously integrated goods and activities into their constituent PCAs. This in turn may be spread across countries on the basis of comparative advantage. The importance of such production fragmentation or production sharing is that it suggests that globalization, by expanding opportunities for international specialization and trade, will be beneficial to all parties involved (i.e. the ones in the

“core” as well as those in the “periphery”⁹). Thus, in the longer-term, globalization and free trade ought to be an unambiguously positive-sum game¹⁰.

2.3 Globalization, Insecurity and Social Insurance

Anderson also cautions that while economic globalization provides innumerable opportunities for small and open economies, especially those like Singapore which emphasize good economic governance, it can and does carry risks. In particular, openness raises the level of economic instability and sense of vulnerability of small states which have limited domestic markets and are therefore especially susceptible to external shocks. The IMF (2001b) has stressed that the spread of the Information technology (IT) revolution has strengthened real and financial linkages between countries, and sharp swings in the terms of trade of IT goods has left middle and high income Asian economies exposed to sharp boom and bust cycles.

As noted in Section 1, the issue of economic insecurity and a growing sense of vulnerability has afflicted Singapore in recent times. As Rodrik (1999) has observed

While the fear of drastic reduction in income associated with job loss and unemployment is an important component of economic insecurity, another is sheer volatility in the household income stream (p.12).

Some concrete evidence of the more “volatile” growth is clear from Figure 3 which reveals the sharp rise in the coefficient of variation of the city-state’s rate of growth since the 1990s, especially since the regional crisis of 1997-98¹¹.

In view of this increased sense of economic insecurity, a number of informed observers have suggested that as an economy liberalizes and integrates with the world economy, there may be a need for a more comprehensive social insurance program to protect the most vulnerable in society in the event of economic downswings¹². It is almost inevitable that as individuals face greater market risks,

which are at least partly an outcome of increasing globalization of economic activities, there will be a yearning for economic security which the government will need to respond to. Rodrik (1997) has underscored the foregoing point better than most

(I)t is not whether you globalize.., it is how you globalize. The world market is a source of disruption and upheaval as much as it an opportunity for profit and economic growth...It has now become commonplace to point out that market-oriented reforms require social safety nets to prevent people from falling through the cracks...(T)he provision of social insurance is an important component of market reforms – it cushions the blow on those most severely affected...and it avoids a backlash against the distributional and social consequences of globalization (p.11, 13 & 14)¹³.

However, an important caveat is in order. When one thinks more seriously about the role of government in social policies, it is particularly important to be absolutely clear about the issues involved and what type of government role is envisaged. While there is universal agreement about the need to offer a helping hand to the least well-off and most vulnerable in society, there is much less certainty or agreement about the role of government beyond that. A number of questions need to be considered in this regard.

One, how does one define economic insecurity (wages, savings, growth, unemployment, etc). Two, is the issue at hand one of *actual* insecurity or the *perception* of insecurity (downward mobility). For instance, as the populace gets wealthier, the threshold for uncertainty and some discomfort probably declines sharply, but does that necessarily imply a role for government beyond managing expectations?¹⁴ Three, even if one agrees that there is a need for some sort of social policy, what should these policies entail and how should they be designed. For instance, is one advocating the provision of unemployment insurance, the facilitation of precautionary savings, the subsidization of human capital, or something else (Gill and Ilahi, 2000 and Rodrik, 1999). In the Singapore context, while the government has offered direct handouts to the least well off in society (though one could always

question whether the magnitudes involved are sufficient), it also has in place some policies and strategies that buttress precautionary savings and enhance human capital (especially the latter)¹⁵. However, the government remains philosophically opposed to the provision of unemployment insurance, holding the view that it engenders perverse incentives among the populace¹⁶.

While some of the chapters in this volume broach the issue of social insurance in the Singapore context (see Section 4), they do so only as an aside to discussing other economic issues. The discussion of social protection policies per se is admittedly rather general, not being the central focus of this volume. We accept and concur with the following observation regarding social protection policies by Gill and Ilahi (2000):

Ideally, for tackling a problem as complex as this, policymakers should have unambiguous definitions of the main concepts, a tight framework that links them, and clear rules for identifying the role for and appropriate design of public policy...(T)he state of thinking on these matters..is far from ideal (p1).

3. Industrial Competitiveness

Having defined the process of economic globalization and discussed its key characteristics, the next two chapters turn their attention to the notion of “national competitiveness” in the global economy.

Policy makers and the popular press often invoke the term “competitiveness” and make frequent reference to well-known indices of competitiveness such as the ones by the World Economic Forum (WEF) or the Swiss-based International Management Development (IMD). Singapore is no exception in this regard, and is in fact probably exceptional in the degree of attention and emphasis paid to these indices. Thus, the web site of the Ministry of Trade and Industry of Singapore (www.mti.gov.sg) makes the following statement

Competitiveness of the Economy: Maintaining international competitiveness is a fundamental tenet of Singapore's economic philosophy and Singapore has constantly ranked high against the

world's most competitive nations... Singapore is ranked the fifth most competitive economy by the International Institute for Management Development (IMD) in its World Competitiveness Yearbook 2002. The competitiveness ranking is based on four categories measuring economic performance, government efficiency, business efficiency and infrastructure... Singapore is ranked the fourth most competitive economy by the World Economic Forum (WEF) in its Global Competitiveness Report 2001-2002. The growth competitiveness ranking analyses the extent to which individual national economies have the structures, institutions, and policies in place for economic growth over the medium term. In terms of current competitiveness, which measures the conditions that determine a nation's sustainable level of productivity, Singapore is ranked tenth. The current competitiveness ranking is based on two components that measure the sophistication of company operations and strategy and the quality of business environment within an economy¹⁷.

In **Chapter 3, Sanjaya Lall** argues that competitiveness indices are, in principal, extremely useful to benchmark a country's economic performance, particularly those like Singapore that have deeply integrated with global markets. However, he goes on to express deep scepticism towards the WEF and IMD indices which he describes as suffering from "various analytical, methodological and data weaknesses".

After offering a detailed critique of the more popular WEF index, Lall proposes an alternative index of industrial competitiveness that he has developed for the United Nations Industrial Development Organization (UNIDO). The so-called "Competitive Industrial Performance" (CIP) index has two distinct components. The first set defines "performance" with reference to four variables: manufacturing value added per capita (MVA), manufactured exports per capita, and shares of medium and high technology products in MVA and exports¹⁸. The second set of five measures is referred to as "drivers" of performance: skill levels, technological effort, FDI inflows, other purchases of foreign technology; and physical infrastructure.

In terms of the CIP's performance index Singapore ranked first in 1998 among 87 countries, a rise from its sixth place in 1985, suggesting a sharp increase in the city-state's manufacturing prowess in high-end products. Similarly, Singapore

performs well when some drivers like FDI inflows, physical infrastructural facilities are considered. However, a major area of relative weakness is the low skill index level as well as low technological effort. The former is of particular concern as Singapore's skill index ranking appears to have worsened between 1985 and 1998¹⁹.

All in all, while the CIP index does appear to be an improvement over the more popular indices, it has three important limitations.

First, the index only considers the economic and structural determinants of industrial competitiveness. The service sector is ignored altogether. Given that the service sector constitutes about two-thirds of Singapore's aggregate output and about three-fourths of its employment (Table 2), any index of competitiveness that ignores this sector must be considered of rather limited relevance²⁰.

Second, even if the focus is just on the industrial sector, the CIP index, like any other index, is open to the criticism of being overly simplistic and subjective in the choice of variables. In the case of the CIP index, it assumes that medium and high technology products and performances are the main drivers of national competitiveness. However, most international economists would argue that a competitive economy is one in which there are no significant market distortions that might prevent the country from fully exploiting its comparative advantage. It ought to be immaterial whether the comparative advantage is resource, labor, capital or technology intensive²¹.

Third, even abstracting from the problems of subjectivity and partial in coverage, as noted by Lall himself, many academic economists have tended to be sceptical about the analytical relevance of the notion and assessments of competitiveness as it relates to countries (as opposed to companies or products). Competitiveness is largely a partial equilibrium concept unlike the conventional principle of comparative advantage. Many would probably concur, at least partly with

the forceful critique by Krugman (1994a,c) regarding the notion that countries are competing against one another in a zero-sum game²².

This said, Lall offers a revealing discussion of the rapid emergence of China as a global manufacturing power and its implications of this for Singapore and the rest of Southeast Asia.

4. International Trade, Comparative Advantage and the Role of Services

In **Chapter 4**, **Sven Arndt** makes the important point that it “is not a country’s raw ability to compete, but its relative or ‘comparative’ ability that matters.” While Lall’s chapter focussed on the former, Arndt focuses on the latter. In particular, he elaborates on the notion of “production fragmentation” or “production sharing” in general (noted in Section 2.3), its relevance to Singapore, and its implications thereof.

Arndt also points out the important comparative advantage that Singapore has as a premier regional service hub, as extensive networks of service links are invariably needed to coordinate the cross-border production sharing and regional production networks that may develop across Asian economies. This is especially so as some Singapore-based manufacturers have gone on to outsource a significant portion of their actual low-end manufacturing activities while using Singapore as a hub to coordinate their regional production networks. The Singapore government has maintained that manufacturing and services are to remain “twin engines of growth”.

The Economic Development Board of Singapore (EDB) has specifically targeted this role by putting in place overseas and regional Headquarter (OHQ and RHQ) schemes as a part of its International Business Hub 2000 (IBH2000) strategy²³. The IBH2000 strategy draws inspiration from the fact that key economic activities involved in the services sector, viz. transportation, finance, telecommunications, and IT functions are concentrated in a few strategic centres in the world, and that Singapore could secure a first mover advantage in this area by

planning ahead and investing in human capital and infrastructure to have a competitive edge (Chia, 1998)²⁴. Thus, the OHQ/RHQ schemes under this program are aimed at inviting international businesses to set up their headquarters in Singapore (DBJ, 2002b). Of the 27 companies that established their HQs (both RHQs and OHQs) in Singapore in 1999, 15 were from the US, and 6 each are from Europe and Asia. The HQs cut across diverse industries, including chemicals, electronics, engineering, life sciences, logistics/supply chain management, hospitality, information and communication technology and media services.

Elaborating on the theme of trade in services, in **Chapter 5, Findlay and Sidorenko** explore Singapore's comparative advantage in international trade in services. The authors provide some useful information on the importance of the service sector to Singapore. Indeed, despite its microscopic physical size, the World Trade Organization (WTO) ranked Singapore as the tenth largest merchandise trading nation in the world (fifth largest merchandise trading nation in Asia) and among the top twenty for cross-border trade in commercial services (Table 3)²⁵.

Findlay and Sidorenko observe that unlike trade in merchandise goods, Singapore has been relatively less aggressive in deregulating its services sector. Anderson (Chapter 2) is similarly critical of what he refers to as Singapore's "protectionist bias toward the service sector". Drawing on work by the Australian Productivity Commission, Findlay and Sidorenko offer quantitative evidence of the extent of barriers in some of Singapore's service sectors. They go on to link the relative closed-ness of the service sector to recent evidence which suggests that the total factor productivity or TFP (which is a rather imperfect measure of overall change in output that is not attributable to factor inputs) of Singapore's service sector has been low, certainly lower than manufacturing. The authors argue that greater openness of the service sector to the vagaries of the global economy should go some way in accelerating the sectors (and overall economy's) productivity. In view of

this, it is noteworthy that there have been significant moves recently by the Singapore authorities to deregulate the banking, telecommunication and other services on a multilateral basis as well as part of a package of measures negotiated with trading partners bilaterally²⁶. -- This of course leads to the question as to whether Singapore's recent trade policy, which has involved attempting to source a number of bilateral trade pacts with a whole host of other trading partners, is advisable. While Findlay and Sidorenko briefly broach this issue and are generally critical of this strategy, as is Anderson (Chapter 2), the policy of regionalism or bilateralism has not been discussed in a systematic manner in this volume as it has been tackled elsewhere (for instance, see Rajan et al, 2001 and Rajan and Sen, 2002a,b)²⁷.

5. Outward Investments and Government-linked Companies (GLCs)

According to the Findlay and Sidorenko, apart from the impact on *domestic* income, liberalization of the service sector ought also to boost Singapore's outward or offshore investments which in turn has implications for the city-state's *national* income. This distinction between gross national income and gross domestic income is of particular relevance to Singapore which has, since the late 1980s, and especially the 1990s, undertaken an aggressive strategy of building up its external wing by investing heavily in regional and extra regional trading partners (Sitathan, 2002 and Yeung, 2000). While there has been a sharp rise in external investments, there has not been a discernible rise in the GNP to GDP ratio over the 1990s except for a sudden spurt in 1996-97 (Figure 4)²⁸. Indeed, there has been a marked decline in the GNP to GDP ratio share between 1997 and 1999, largely due to the output collapses in the regional economies in 1997-98 and continued sluggish growth in the largest Southeast Asian economy, especially Indonesia, in which Singapore invested in fairly heavily (Peebles, 2002). The government remains committed to developing a

breed of world-class companies with a global reach. The government-linked companies (GLCs) are viewed as the “primary instruments through which the state inaugurates the regionalization drive” (Yeung, 2000, p.21)²⁹. The GLCs have played a “strategic and important role in economic development” since they were established by the government following independence (Sun Qian, 2002).

In **Chapter 6, Linda Low** describes and critiques “Singapore Inc”, which broadly refers to a strong development state which has a monocentric power structure and controls vast amount of real and financial resources and is an agenda-setter, prime-mover, facilitator, market player and quasi-entrepreneur³⁰. As Low notes, GLCs constitute an integral aspect of Singapore Inc. She therefore focuses on the extent to which a GLC-dominated industrial structure is compatible with remaining competitive in a knowledge based new global economy which is a investment holding company through which the government maintains stakes in and controls GLCs. As LaMoshi (2002) notes

When people talk about Japan Inc or the US military-industrial complex, they are referring to a metaphorical representation of a perceived phenomenon. But when they talk about Singapore Inc, they mean Temasek Holdings.

Consequently, Low considers the potential effects of recent changes in the Charter of Temasek Holdings. She notes that the Charter confirms/endorsees the key role to be played by GLC in building Singapore’s external wing via acquisitions and expansions overseas. Notwithstanding this new charter, one thing that is clear is that GLCs will remain a prominent feature of Singapore’s economic landscape.

6. Structural and Budgetary Policy Challenges

6.1 Structural Issues

The overall theme of Singapore’s GLCs and the city-state’s domestic industrial structure is the specific focus of **Chapter 7 by Manu Bhaskaran**. While acknowledging the world-class technocratic capabilities of the Singapore

government, Bhaskaran suggests that the state's role in Singapore might have become more of a liability and needs to be rolled back in certain areas³¹. In particular, he argues that the government intervention in terms of its ownership and management of the majority of land and other critical resources has distorted relative prices, while the domination of GLCs in local economic activity has curbed private sector initiative by pre-empting local business opportunities. Bhaskaran is certainly not alone in this criticism regarding "over-intrusive" economic role of the state. For instance, the IMF (2000) makes the following observation

Although the GLCs have been expected to operate on a competitive basis in both domestic and international markets (and indeed most of them have remained profitable, generating large operating surpluses), their overwhelming market power is likely to have crowded out local private enterprises and thus prevented the development of a large and dynamic network of local corporations, contributing to the widely perceived lack of corporate dynamism in Singapore (p.11).

Bhaskaran further opines that the increasingly complex and unpredictable global economic environment makes policies of "picking winners" extremely hazardous and probably ought to be forsaken. While the government has in recent times taken a number of noteworthy steps to try and encourage domestic enterprise, he argues that the channelling of a large portion of domestic savings away from the private sector through the central provident fund or CPF (the mandatory-defined benefits pension scheme) hurts budding domestic entrepreneurs who are unable in many cases to raise much needed private capital due to low discretionary household savings³².

6.2 Fiscal Policy and Savings Rate

Bhaskaran also highlights the extremely low real returns that Singapore residents earn on their provident savings which acts as a form of implicit tax³³. However, this guaranteed nominal return on the CPF savings is buttressed to some extent by the absence of investment management charges and taxation (on CPF

balances and well as the rate of return). In addition, the CPF has, since the 1980s, “been transformed from a simple pension fund to a multi-purpose scheme, which has been used both as a channel of resource allocation and as a macroeconomic stabilization device” (IMF, 2000, p.60). It serves a number of other social goals, including housing, medical care, share investments, and education. Indeed, the CPF has been especially successful in the objective of giving residents a chance to own their own homes, resulting in Singapore boasting one of the largest home-owning populations³⁴. The relatively low returns on CPF balances, along with the large pre-retirement withdrawals, especially for housing, has led to the observation that Singaporeans are, on average, “asset rich but cash poor”. Whether this multi-purpose use of the CPF is desirable is an open question that needs to be more objectively debated in the policy arena. The IMF (2000) makes a strong case for the need to refocus the CPF’s attention towards the goal of ensuring financial security during retirement, especially given the rapidly greying population.

The issue of Singapore’s savings regime is taken up further in **Chapter 8 by Mukul Asher** who concentrates on the long-term fiscal policy challenges facing the Singapore economy. After offering a fairly comprehensive overview of Singapore’s fiscal system, Asher highlights three fiscal challenges faced by the Singapore: the role of the state; coping with the demographic challenges; and issues relating to the appropriate design and structure of the revenue system³⁵. With regard to the role of the state, Asher’s assessment broadly concurs with that of Bhaskaran in Chapter 7. Both are of the view that while the government has served Singapore’s commercial interest extremely well in the past, going forward, it may need to be scaled back to be consistent with the goals of promoting greater private sector initiative (and nurturing entrepreneurship, creativity and risk-taking). Asher also discusses some of the issues pertaining to GLCs and the new Temasek Charter noted by Low in chapter 6.

Asher then tackles the issue of the aging of the population, which is probably the single most important long run fiscal issue facing the city-state, as it is in other developed countries (Gruber and Wise, 2001)³⁶. He notes that Singapore's persistently high national savings have been due to large government savings which in turn are a result of years of running persistently large budget surpluses³⁷. There is no doubt that a prudent fiscal policy has been the cornerstone of Singapore's macroeconomic management. These surpluses may be all the more important for counter-cyclical and social insurance purposes if, as discussed previously, the economy can be expected to face less durable growth rates. But how much is enough? While this is an extremely difficult question to answer objectively, the important point that Asher stresses is that because of the authority's fiscal prudence, Singapore is one of the few countries in the world that is well positioned to meet the fiscal challenges posed by an ageing society as well as to fund a more comprehensive (but well-targeted) social protection program *if it so chooses*³⁸.

Whether the government chooses to do so, and whether it opts to heed the call to scale back its economic activities while simultaneously developing a more comprehensive, well-functioning safety net, is largely a political economy issue which is partially tackled by Asher in his discussion of the role of the state as well as by Low in Chapter 6. As part of their discussions of the role of the state, both Asher and Low also discuss some specific recommendations recently made by the government-appointed Economic Review Committee (ERC).

7. Entrepreneurship and Productivity

Chapter 9 by David Audretsch examines the role of entrepreneurship, which was highlighted as a key area of concern by the previous set of papers. He notes that in the new global economy, comparative advantage is based increasingly on knowledge and creativity than on traditional factor inputs. Entrepreneurship is,

according to him, the “conduit between investments in knowledge and economic growth”. There is in fact a fairly new and growing body of econometric evidence which suggests that entrepreneurship is a key determinant of economic growth in a knowledge-based economy.

The Singapore government has recognized the importance of nurturing local entrepreneurship. For instance, the city-state’s Minister for Manpower, Lee Boon Yang, has noted

Value-creation through creativity, innovation and entrepreneurship
Second, the new economy is driven by innovation and value-creation. To prosper, we have to become a high value-added knowledge-based economy. To succeed in this environment, you must be creative and entrepreneurial. The ability to generate new ideas, and bring them to market before your competitors, is very important. Singaporeans are disciplined and productive workers. They said we are good at execution but lacking in creative thinking. We must be bolder and more innovative in order to succeed. We must also be more entrepreneurial so as to transform ideas into value. Every good idea has to be developed into marketable goods and services. We need more Singaporeans who are prepared for the risk and rewards of bringing ideas to the market (Lee, B.Y., 2002).

The government has, accordingly, forged a commitment to create an environment conducive for entrepreneurial activity and fostering a “culture of learning and experimentation” (Shanmugaratnam, 2002a,b). In this regard, it has offered a number of targeted incentives to promote entrepreneurship and risk-taking so as to develop start-ups, especially in the area of high technology (i.e. so-called “technopreneurship”). Among the more important schemes is the “Startup Enterprise Development Scheme” (SEEDs) managed by the Economic and Development Board of Singapore. The SEEDs helps fund new start-up and by matching investor’s investments dollar-for-dollar to a maximum of S\$ 300,000. The government has also established a “Technopreneur Pass scheme” that offers foreigners the opportunity to establish residence in Singapore without any hassle as long as they have a sound, high-tech business plan (The Straits Times, October 14, 2002).

Despite these innovative pro-business schemes and incentives, there remains some skepticism as to whether they will offset the “top-down command system that is anathema to the spirit of innovation and creativity” (Yap, 2001)³⁹. Added to this is the concern that continued dominance of GLCs in the domestic economy could crowd out the private sector and curb entrepreneurship (elaborated upon in the previous three chapters).

Audretsch offers a number of useful lessons for Singapore from theory and cross-country experiences (particularly the US and Germany) in promoting innovation and entrepreneurship. Among the many interesting observations he makes is that large firms seem more proficient at exploiting knowledge “created in their own laboratories”, while SMEs tend to exploit spillovers from university laboratories. Continuing with theme of knowledge spillovers, **Chapter 10 by Thangavelu and Toh** focus on the nexus between ownership structures, productive performance (measured by TFP) and productive spillovers in Singapore’s manufacturing industries.

There has been a more general and long-standing concern about the city-state’s longer term growth sustainability due to supposed low overall TFP growth over the last few decades. By way of background, utilizing conventional empirical growth accounting studies, Young (1994, 1995) found that the fast-growing East Asian economies experienced low-to-nil total TFP growth over the last two to three decades. Drawing primarily on this study, in a very publicized and somewhat controversial paper, Krugman (1994b) suggested that the growth of the East Asian economies including Singapore was bound to taper off in the not-too-distant future. It should be noted, however, that the sources of growth in Singapore remain open to debate, with Hsieh (2002), Sarel (1995, 1997) and Nelson and Pack (1999), Felipe (2000) suggesting that the Young studies are respectively empirically and conceptually flawed for various reasons. While there is some evidence that

Singapore's TFP growth has enjoyed a spurt since the mid 1980s (after its last recession in 1985-86), it is fair to say that the city-state's growth has largely been investment-driven rather than TFP-led (IMF, 2000, Owyong and Thangavelu, 2002 and Toh and Ng, 2002). Therefore, technological deepening is imperative.

Using panel data at an industry level, Thangavelu and Toh find that the foreign owned industries tended to experience higher TFP growth rates than do wholly locally owned industries. They further find that local public capital and R&D investments have had a positive impact on the productive performance of foreign-owned industries but not so wholly locally owned industries. An issue that needs to be further considered is to what extent these differences in TFP growth across ownership structures are attributable to ownership structures per se or to other factors that have not been uncontrolled for, such as differing industries/sectors. For instance, it is plausible that domestic enterprises tend to have a relatively greater presence in the nontradables sector than do foreign ones⁴⁰.

While one can quibble about the limitations about the details of the empirics (as is usually the case), the authors do make the important point that there is a need to strengthen the base of small and medium local enterprises (SMEs) and to fortify strategic partnerships and skill linkages between SMEs and MNEs by promoting local sourcing, sub-contracting and technological and R&D spillovers and capabilities (also see Hu and Shin, 2002). While Singapore has hitherto been supported by a two-legged MNC-GLC combination, going forward, there is a need to strengthen the third leg pertaining to entrepreneurship and SMEs. It goes without saying that a three-legged stool is more stable and durable than a two-legged one! The government has taken some steps in this direction by launching an international SME Business Centre that facilitates the establishment of SMEs in Singapore.

8. Exchange Rates, Monetary and Financial Policies

8.1 Exchange Rate Management

When economists think about competitiveness, the issue of maintaining the real exchange rate at an “appropriate level” usually comes to mind⁴¹. Accordingly, in **Chapter 11, Ramkishen Rajan and Reza Siregar** estimate Singapore’s “equilibrium” real exchange rate using the concept of the “Natural Equilibrium Real Exchange Rate” (NATREX). They find that Singapore’s monitoring band-based exchange rate regime *a la* Williamson (1998), Bird and Rajan. (2002b) and Rajan (2002a), accompanied by a policy of crawling appreciation since 1981, has been relatively successful in insulating the domestic economy from external shocks until mid 1997. This rather discretionary exchange rate-centered monetary policy operated by the Monetary Authority of Singapore (MAS) has ensured that Singapore’s real exchange rate was maintained at a level that has generally been consistent with the underlying macroeconomic fundamentals of the economy in the 1990s.

8.2 Non-Internationalization of the Singapore Dollar and “Original Sin Phenomenon”

In addition to the foregoing, a perpetual concern that many small, trade dependent economies have about a relatively flexible exchange rate is their “excessive” volatility. It is admittedly quite difficult to define what exactly is meant by the term “excessive”. However, a reading of the relevant empirical literature reveals evidence of excessive exchange rate variability to come in a number of forms (Bird and Rajan, 2001a,b). For instance, a number of surveys of foreign exchange (forex) market participants clearly indicate that short-term/high-frequency exchange rate movements are caused by “speculative” or “trend-following” elements rather than underlying macroeconomic fundamentals. The problem of destabilizing speculation and consequent excessive or self-aggravating exchange rate volatility and dominance of fads and bubbles appears to be personified in developing countries,

making a flexible regime especially unviable/unsuitable to them. This is particularly so since thin markets, which exist in developing countries, imply that a few transactions can lead to extreme exchange rate fluctuations. Singapore has, to a large extent, avoided these excesses while enjoying the benefits of a flexible regime in part due to its policy of non-internationalization of the Singapore dollar. This policy (MAS Notice 757), though relaxed considerably in recent times, essentially allows the monetary authorities to tightly limit the extent of short selling of the currency, hence preventing “overshooting” of the currency.

The IMF has, to some extent, been supportive of such a policy. For instance, a recent IMF study has concluded that measures to limit the offshore trading of currencies “could be effective if they were comprehensive and effectively enforced, and were accompanied by consistent macroeconomic policies and structural reforms” (Ishii, et al., 2001, p.1). Nevertheless, such types of restrictions that effectively reduce the degree of internationalization of currencies - and therefore the ability as well as willingness of non-residents to hold the currency - could aggravate the “original sin” problem that plagues many developing countries. This phenomenon refers to the case where a country is unable to borrow overseas in its domestic currency, resulting in an accumulation of foreign currency debt liabilities that are primarily dollar-denominated and unhedged (i.e. “liability dollarization”)⁴². In such countries, sharp currency depreciations magnify the domestic value of their external debt and hence slash the net worth of individuals, corporations and the domestic financial system at large (Bird and Rajan, 2002a and Rajan and Shen, 2002). This “balance sheet” effect could potentially lead to massive bankruptcies. In view of this, it is of no surprise that devaluation in both Mexico in 1994-95 and East Asia in 1997-98 led to plummeting exchange rates, intensified capital outflows, severe output collapses, and left the economies in a tailspin. Things got much worse before they got better (Rajan, 2001b).

Chapter 12 by Ngiam Kee Jin and Lixia Loh examines the relevance of the “original sin” phenomenon in the Singapore context as well as the city-state’s policy of non-internationalization of its currency⁴³. While the authors argue convincingly that Singapore is not subject to the “original sin”, their primary focus is on describing Singapore’s debt markets and suggesting strategies to further develop them. Indeed, an issue that resonates from Chapters 6 and 7 of this volume is the need for the “restructuring” of savings in Singapore and developing an efficient intermediation process via which the savings might be channelled to productive uses. This makes the issue of the development of a viable and active bond market particularly relevant, especially so if Singapore is to remain a vibrant and competitive regional and international financial services hub (IMF, 2000 and 2001a).

9. Concluding Remarks

The competitiveness of an entire economy is hard to define. As with other terms like “love” or “freedom”, national competitiveness means different things to different people. This volume has taken a broad definition of economic competitiveness which is viewed as important not for its own sake, but as a pre-requisite for rapid and sustained growth, which in turn is important to enhance society’s overall quality of life. Some important issues that have a bearing on the sustainability of competitiveness such as labor market policies have not been directly tackled here (see Hui, 2002). Nonetheless, the chapters assembled in this volume have been fairly comprehensive and may be broadly divided into four broad sections:

- i) Economic globalization, competitiveness and comparative advantage.
- ii) Structural and fiscal challenges and the political economy of the role of the state.
- iii) Entrepreneurship, technology transfer and productivity.

iv) Exchange rate and financial policies.

In conclusion, the economic successes of Singapore over the last three and a half decades have been exceptional. The many accolades the policy makers and populace of this tiny city-state have received for the economic achievements have been well deserved. This said, past performance is by no means a guarantee of future success. True to form, Singapore's policy makers have recognized this and are consciously and continuously looking for new strategies for Singapore to remain "competitive" in the new global economy. "Constant re-invention and re-tooling to remain relevant" is a phrase that best describes Singapore's approach to managing and surviving in the global economy⁴⁴. The chapters in this volume make no attempt to offer specific policy prescriptions for Singapore. This is probably not the comparative advantage of most academic economists. Rather, the aim of this volume is to offer an analytic compass for policymakers who are tasked with sustaining and building upon the nation's economic prosperity.

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Endnotes

¹ While Singapore's per capita income is amongst the world's highest, the share of labor and consumption in the city-state's income is relatively low. This has given rise to the oft-noted observation that Singapore has first world per capita income but third world income and consumption structures (Soon and Ong, 2001).

² Business Times, Singapore (November 5, 2001).

³ Singapore was one of the few economies in East Asia to have staved off outright contraction that year despite the city-state's intensive trade and financial linkages with the other crisis-hit economies. This admirable performance was due to a combination of strong fundamentals of the economy and prompt devaluation of the Singapore dollar (unlike the rigidity of the Hong Kong dollar, for instance) (see Section 6). Somewhat less certain was the impact of the set of cost measures including a 10 % reduction in the employers' contribution to the Central Provident Fund (a mandatory pension fund, voluntary wage reductions), cuts in nominal wages, government-controlled rentals for commercial and industrial properties and utility charges for electricity and telecommunications (Rajan et al., 2002). While these interim recommendations of the Committee on Singapore's Competitiveness (CSC) were meant to have positive supply side and signalling effects, they may have had negative demand-side effects in the short-run.

⁴ Details of the ERC are available on the website of the Ministry of Trade and Industry in Singapore (MTI) (www.mti.gov.sg/).

⁵ Note that the use of markets does not by any means imply complete *laissez faire*. As Rodrik (2000) has noted

The idea of a mixed economy is possibly the most valuable heritage that the twentieth century bequeaths to the twenty-first in the realm of economic policy...(W)e enter the twenty-first century with a better understanding of the complementarity between markets and the state...(and)...a greater appreciation of the virtues of the mixed economy. That is the good news. The bad news is that the operational implications of this for the design of development strategy are not that clear. There remains plenty of opportunity for renewed mischief on the policy front...(T)he state and the market can be combined in different ways. There are many different models of a mixed economy. The major challenge facing developing nations in the first decades of the next century is to fashion their own particular brands of the mixed economy (pp.1 & 3).

According to him, the five essential functions that public institutions must serve for adequate functioning of markets are: protection of property rights, market regulation, macroeconomic stabilization, conflict management, and social insurance. We revisit the issue of social insurance in Section 2.4.

⁶ Low (2000) discusses Singapore's immigration policy which she describes as "highly selective...tending to..elitist" (p.16).

⁷ Why has Singapore focused on the biomedical/life sciences cluster? According to the Chairman of Singapore's Economic Development Board, Philip Yeo, "We were looking for something Singapore could be active in the post-genomic era. We've already got engineering industries, shipyards, semiconductors and chemical manufacturing, so we needed to do something else." (quoted in Brantley, 2002, p.3).The following website is dedicated to news of life sciences in Singapore: <http://www.biomed-singapore.com/> . Brantley (2002) details how active government policy by the government facilitated the development of thus Biomedical cluster in Singapore. A number of other regional countries such as India, Korea and Taiwan are also actively targeting the biotechnology sector specifically. Australia too is aggressively promoting this sector.

⁸ The issue of industrial policy is a theme that permeates throughout the volume, and is discussed further in Section 4 (especially note 19).

⁹ The term “production sharing” is used Yeats (1999), while the term “production fragmentation” is used by Jones and Kierzkowski (2000). Other terms sometimes used in the literature to describe this phenomenon include “intra-product specialization” (Arndt, 1996, 1998), “super-specialization” (Arndt, 2001), “disintegration of production” (Feenstra, 1998), “Heckscher-Ohlin (HO)-plus-production fragmentation” (Knetter and Slaughter, 2000), and “slicing the value chain” (Krugman, 1995). Both Anderson (Chapter 2) and Lall (Chapter 3) also briefly discuss the importance of production fragmentation and global value chains.

¹⁰ Needless to say that this statement presupposes that the necessary institutional structures are in place to allow for a country to exploit the opportunities that are available in the global market place.

¹¹ More precisely, the preceding is a measure of income volatility in the *macro sense*. As is easily shown, income volatility at a *household level* can be broadly sub-divided into (a) volatility of the national income (described above); (b) the volatility of relative household income (i.e. purely idiosyncratic shocks that hit a given household); and (c) the degree to which the household’s relative income co-moves with aggregate income. See Rodrik (1999).

¹² As Anderson further notes, it is important that constituencies in favour of globalization must continuously and consciously be built. This point is also emphasized in Rajan (2001).

¹³ Also see Rodrik (2000).

¹⁴ Rodrik (1999) also stresses the importance of workers needing to feel a sense of control over their work environment and that their views are being heard, i.e. “process matters even if outcomes are identical”. This takes us partly to the realm of behavioural economics which is a relatively new and interesting field in economics (for instance, see Asher, 2002b and references cited within).

¹⁵ For instance, the government offers subsidized means-tested support to help laid off and older workers upgrade their skills via a Skills Development Fund established in 2001 as well as through a “Life-long Learning endowment” established in 2000. DBJ (2002a) outlines some of the financial assistance schemes available to the less well off in Singapore.

¹⁶ See DBJ (2002a) which describes the manner in which the unemployment situation is handled in Singapore as well as the state’s view of unemployment benefits.

¹⁷ As apparent in the foregoing quote, the WEF index has two separate sub-indices, one measuring “current competitiveness” while the other considers “growth competitiveness”. Sanjaya Lall discusses this in his chapter.

¹⁸ For details on the evolution of sectoral shares of MVA in Singapore between 1980 and 1999, see IMF (2001a).

¹⁹ Of course, two years do not indicate much about trends.

²⁰ A comparison of sectoral share of Singapore’s output in 1980-90 and 1990-2000 reveals that while the shares have not changed significantly with time, Singapore has always been highly service-oriented. It would be reasonable to expect that the increased globalization process, which will increase the demand for all kinds of services, especially those related to business and professional services (viz. consultancy, management development, marketing and sales training, etc.), ought to lead to the service sector in Singapore maintaining if not raising its share in overall output.

²¹ This said, “new” trade theory suggests that the nature of specialization does matter to growth, either because of rapid technological progress of that industry (Grossman and Helpman, 1991) or because the industry has high potential for learning-by-doing benefits (Young, 1991). Bensidoun et al. (2001) offer some new empirical evidence in favour of this thesis. However, they also note that specialization in electronics as well as textiles have been

growth promoting relative to primary products. All in all, the link between product or sectoral specialization and growth remains to be proven

²² In fairness, Lall recognizes and highlights this point but remains convinced about the usefulness of such indices in benchmarking national competitive capabilities, as do many policy makers.

²³ According to Brantley (2002, p.12), the success of EDB in facilitating development and restructuring of the city state is due to the following: (a) independence from politics and bureaucracy; (b) ability to lead by coordinating various activities; (c) ability to lead by achieving consensus among competing interests; (d) pool of some of Singapore's best and brightest researchers, planners and thinkers; (e) wide latitude to act to include creating or changing policies when appropriate; (f) broad authority to commit government resources to include funding, staff, infrastructure; (g) virtually unlimited investment capital (h) understanding of and respect within the (global) private sector; (i) dedication to principle and Singapore's economic success; and (j) a global vision

²⁴ In November 1998, the Committee on Singapore's Competitiveness (CSC) have identified a number of hub services for Singapore to focus on. These are education, health care, information technology, engineering, transport and logistics, exhibition management, marketing, international trading, financial, tourism, leisure and entertainment, lifestyle retail management and communications and media.

²⁵ The commercial services category in the WTO is defined as being equal to services minus government services, n.i.e. (not included elsewhere). Commercial services are further subdivided into transport, travel, and other commercial services (includes, communication, construction, financial, insurance, computer and information services and other business services).

²⁶ Rajan and Sen (2002c) discuss issues relating to the liberalization of the banking and telecommunications sectors in more detail, especially as they pertain to selected Southeast Asian economies.

²⁷ This of course leads to the question as to whether Singapore's recent trade policy, which has involved attempting to source a number of bilateral trade pacts with a whole host of other trading partners, is advisable. While both Arndt (Chapter 4) and Findlay and Sidorenko (Chapter 5) briefly broach this issue and are critical of this strategy, as is Anderson (Chapter 2), the policy of regionalism or bilateralism has not been discussed in a systematic manner in this volume as it has been tackled elsewhere (for instance, see Rajan et al, 2001 and Rajan and Sen, 2002a,b). Dent (2001) suggests that a "deep security complex" drives the city-state's foreign economic policies, including its regionalization drive as well as the pursuit of trade pacts.

²⁸ Care must be taken when evaluating the magnitude of Singapore's overseas investments as the official figures on these seem to include both investments abroad by both locally controlled as well as foreign-controlled companies (Chuang, 2002).

²⁹ The Business Times (July 2002) makes the following observation about GLCs:

The Singapore GLC, or government-linked company, was a necessary Singapore invention. At a time when the local economy was a fledgling, this breed of corporation helped it to take flight. Since the time Temasek..(Holdings)..was formed in 1974 as the government's investment holding arm, it has grown to include 65 major companies, with a myriad of subsidiaries and associate companies in almost every economic sector, with a workforce totalling 150,000. The top 22 GLCs accounted for 13 per cent of the country's gross domestic product in 1998. The top seven listed GLCs had a market capitalisation of \$72 billion as at end-May, or 21 per cent of the Singapore Exchange's total capitalisation.

The government, through its investment vehicle, Temasek Holdings, has significant equity in many of Singapore's largest companies in vast areas of the economy including port and marine, shipping and logistics, banking & financial services, real estate, airline, telecommunications and media, power and utilities (www.temasekholdings.com.sg/).

³⁰ The term "Singapore Inc" has drawn two extreme responses - accolades from business leaders worldwide for the emphasis on efficiency, flexibility and dynamism, to less favourable comments such as that by Yap (2001) who notes that the term sounds cold and clinical, invoking relationships which are hierarchical and contractual, based on rank, efficiency and productivity. Once you fall behind or outlive your usefulness, you get the boot.

³¹ In this respect, Bhaskaran's views on industrial policy coincide with those of Anderson (Chapter 2) and Arndt (Chapter 4), but are in divergence with those of Lall (Chapter 3) who is far more confident and encouraging of the use of selective strategic intervention, at least in the particular case of Singapore.

³² The issue of entrepreneurship is taken up further in Section 5.

³³ See Asher (2001) for a detailed description and informed critique of the CPF. He notes that the implicit tax of the CPF is regressive as low-income individuals hold proportionally greater wealth in the form of CPF balances (also see Asher, 1999). - See Mukhopadhaya and Rao (2002) for a recent discussion of income inequality in Singapore. - Bhaskaran also offers evidence of declining returns on equity of both foreign as well as local firms, further fuelling concerns about Singapore's long run growth sustainability. IMF (2000) also highlights the issue of low returns on investments in Singapore. Peebles (2002) reviews some of the literature on savings and investment in Singapore.

³⁴ Asher and Karunaratne (2001) offer a detailed description of social security arrangements in Singapore.

³⁵ Asher (2002a) focuses specifically on Singapore's tax system; while Asher and Rajan (2001) discuss the implications of globalization on tax structures in Southeast Asia.

³⁶ For a recent discussion of the changing dynamics of Singapore's population and labor force, see Shantakumar (2002). Lim (2002) discusses ways of enhancing the financial security of Singapore's ageing population.

³⁷ Indeed, as Asher notes, Singapore's budgetary expenditures have averaged around 23 % between 1991-2001 which is far lower than the OECD average of 39 %. This difference is largely due to the higher transfer payments and social security benefits by the OECD governments.

³⁸ Asher also argues convincingly for the need for much greater fiscal transparency in Singapore's fiscal accounts which currently leaves a lot to be desired in view of the abundant quasi fiscal operations, off-budget reporting and limited information disclosure by government-linked companies or GLCs. Such transparency is crucial for careful and constructive fiscal analysis in the future.

³⁹ The term "technopreneurship" broadly refers to entrepreneurship in knowledge-based activities ranging from IT to biotechnology. DBJ (2001a) and Ho et al. (2002) discuss the steps that might be taken to facilitate the growth of technopreneurship in Singapore. The Singapore authorities have set up the following website dedicated to technopreneurship in Singapore: <http://www.techsingapore.com.sg/>

⁴⁰ In Chapter 7 of the volume, Manu Bhaskaran discusses the returns to the domestic corporate sector.

⁴¹ See Wilson and Abeysinghe (2002) for a recent discussion of Singapore's international competitiveness which emphasizes issues pertaining to unit labor costs and real exchange rates.

⁴² Rajan (2002b) elaborates on some of these points.

⁴³ The IMF (2001a) traces the evolution of the policy of non-internationalization of the Singapore dollar since the 1980s to present day.

⁴⁴ As noted by Singapore's Senior Minister, Lee Kuan Yew

In the midst of these uncertainties, the only certainty is that we in Singapore must prepare ourselves to meet these radically different international and regional conditions. We must get ourselves trim, and be ready to adapt to external events as they develop (Lee, K.Y., 2002).