

Singapore and the New Regionalism: Bilateral Trade Linkages with Japan and the US

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1. INTRODUCTION

SINGAPORE has enjoyed one of the highest rates of growth in the world over the past three decades, with its GDP appreciating at an annual average rate of about eight per cent during the period 1970–1999 (Table 1). A key component of the city-state's growth strategy has been its outward orientation, particularly its openness to trade and investment flows. With a trade-to-GDP ratio of over 250 per cent in 1999, Krugman (1995) places the country in the league of 'super-trading' nations. Accordingly, Singapore has been a leading advocate of global trade liberalisation and the free flow of goods and services across international borders. Nonetheless, recognising that it has highly limited influence in the multilateral arena, where recent progress on many important issues relating to trade and investment liberalisation is perceived to have been disappointingly slow and negotiations rather protracted and cumbersome (Sager, 1997), Singapore has simultaneously pursued a second track to liberalisation by means of the regional route. Regionalism has involved both the Southeast Asian region via the ten-member ASEAN grouping and the larger Asia and Pacific region via the twenty-one members APEC grouping.¹

However, the recent financial crisis in Southeast and East Asia in 1997–98 has held up the pace if not commitment by some of the ASEAN members to trade

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¹ ASEAN refers to the Association of Southeast Asian Nations and APEC refers to Asia Pacific Economic Cooperation. Chang and Rajan (1999) discuss the responses of ASEAN and APEC to crisis-hit member economies.

TABLE 1
Singapore: Major Macroeconomic Indicators 1970–99

	1970	1980	1990	1995	1999	1970– 99	1970– 80	1980– 90	1990– 95	1995– 99
Real GDP growth (%)	14.60	9.70	9.00	8.70	5.40	8.0	9.4	7.6	8.7	5.9
Exports growth (%)	0.32	33.98	9.29	13.70	5.73	14.1	23.2	11.4	11.7	5.8
Imports growth (%)	20.70	33.90	13.36	12.74	7.57	12.9	22.2	10.7	10.6	4.1
Inflation rate (%)	1.70	8.50	3.50	1.70	0.00	3.7	6.7	2.9	2.7	1.0

Source: The World Bank, *World Development Indicators CD-Rom*.

liberalisation and appears to have depleted the institution's collective economic strength;² while APEC has become large and unwieldy and appears ill-equipped to handle substantive trade and investment liberalisation issues effectively (Ravenhill, 2000). Accordingly, Singapore policy makers have underscored the need to explore alternative (i.e. third and fourth track) liberalisation paths. Free Trade Agreements (FTAs) have, therefore, become an integral part of Singapore's trade policy.³

FTAs appear to be increasingly regarded by policymakers around the world as effective and expeditious instruments for achieving trade liberalisation among 'like minded' trading partners (Schiff et al., 2000). Formation of bilateral FTAs among such partners is also seen as a way to overcome the so-called 'convoy problem', whereby the pace and depth of trade integration is held back by the 'least willing member.'⁴ FTAs are viewed as a means of maintaining forward momentum towards trade and investment liberalisation, failing which it was feared that there might be a lapse into protectionism, i.e. the so-called 'bicycle theory' (Bergsten, 1998). To the extent that contracting parties to an FTA agree to move beyond their respective WTO commitments, there may be a demonstration effect that motivates future rounds of broader multilateral negotiations under the

² As reportedly noted by Singapore Deputy Prime Minister, Lee Hsien Loong: 'the crisis caused some ASEAN countries to hold back from pushing ahead with the ASEAN Free Trade Area (AFTA) and the ASEAN Investment Area (AIA), to give struggling domestic industries some breathing space . . . ASEAN members who were doing relatively better – such as Thailand, Malaysia, Singapore and Brunei – should take the lead and work to put ASEAN cooperation on track again (*Business Times*, Singapore, 1 December, 2000).

³ Given the definition of FTAs, Jagdish Bhagwati notes that term 'preferential trade areas' (PTAs) is a more apt description (Bhagwati, 1995).

⁴ Or, as it is sometimes said, 'those who can run faster should run faster and ought not to be held back by those who choose not to run or do so at a snail's pace'. While the argument that negotiating regional trade pacts are easier to conclude and can be done at a faster pace than global negotiations may not hold true as a general rule (Baldwin, 1997; and Bhagwati, 1995), it does seem appropriate in the case of Singapore which sets strict deadlines for completion of discussions (though this may have its own problems; see Section 5).

auspices of the WTO. Since trade agreements nowadays go well beyond trade in goods to encompass an increasing number of complex areas and issues, FTAs could act as a 'testing ground or pilot project for exploring complex trade issues' and establish some sort of precedent or benchmark for trade negotiations involving a larger number of countries, including one at the multilateral level (Sager, 1997, p. 242).

A 'first-mover advantage' in forming FTAs with a large number of different countries early on takes the shape of a 'hub' of overlapping arrangements (Wonnacott and Lutz, 1989). Producers in the hub have cost advantages *vis-à-vis* producers in the 'spokes', being able to obtain more of their intermediate goods at lower prices. Further, since exports originating from Singapore are given preferential access to a number of other markets (with which Singapore has trade pacts), this may encourage the transshipment of goods through Singapore ports, hence fortifying its already dominant role as an entrepot point. Of course, it is for this very reason that FTAs have special provisions or rules of origin (ROOs) that are meant to prevent goods being re-exported from the lower tariff country to the higher tariff country one (i.e. trade deflection). However, this in turn may lead to a shift of export platforms from other regional developing economies to Singapore in order to enjoy duty-free market access.⁵

Singapore has already established a bilateral FTA with New Zealand and is in the process of implementing another one with Japan. It is also negotiating FTAs with the US, Australia, the European Free Trade (EFTA), Chile, Mexico and many other countries worldwide. This paper examines the shift in Singapore trade policy towards FTAs in general, with particular focus on the city-state's bilateral trade relations and proposed trade pacts FTAs with Japan and the US. While there are several important issues pertaining to the interests that the US and Japan have in formation of trade pacts generally and with specific reference to Singapore, this paper is much more narrowly focused on the Singapore perspective.

Why are Singapore's bilateral trade initiatives with the US and Japan of particular significance? As will be discussed in the following sections, Singapore's interests in freer trade with Japan and the US reflect its *de facto* close trade and investment linkages with and dependence on the two markets. Entering into broad-ranging trade pacts with these two economic superpowers is not only seen as a means of gaining greater market access (with Japan in particular), but also as a way of avoiding the imposition of possible protectionist measures in the future (with regard to the US in particular) and managing future trade tensions (including establishing orderly dispute settlement mechanisms). Being among the first

⁵ Care must however be taken to ensure that ROOs are not manipulated in a way that partners gain *de facto* protection for their goods in the Singapore market.

few countries to establish a number of FTAs with these two and other economically significant economies also ensures that Singapore is not discriminated *ex-post* in the event that its 'competitors' form FTAs with third countries.⁶

While the US has signed a series of bilateral FTAs with Canada, Israel, Mexico and Jordan, most recently, the announcement of the US-Singapore FTA is considered especially significant as it is the first such one that the US may sign with an Asian economy. The conclusion of a Japan-Singapore FTA is of significance as Japan and Hong Kong have been the only two economies that have hitherto not participated in any FTAs. A possible Japan-Singapore FTA is interpreted by some as an important signal of Japan's weakening adherence to non-discriminatory multilateralism, not unlike the shift in the trade policy stance by the US in the 1980s, which led to the proliferation of regional blocs. In addition, rightly or wrongly, the Japan-Singapore FTA has been viewed as a precursor to the formation of an East Asia-wide FTA between countries in Southeast Asia plus Japan, Korea and China (ASEAN plus Three or APT).⁷

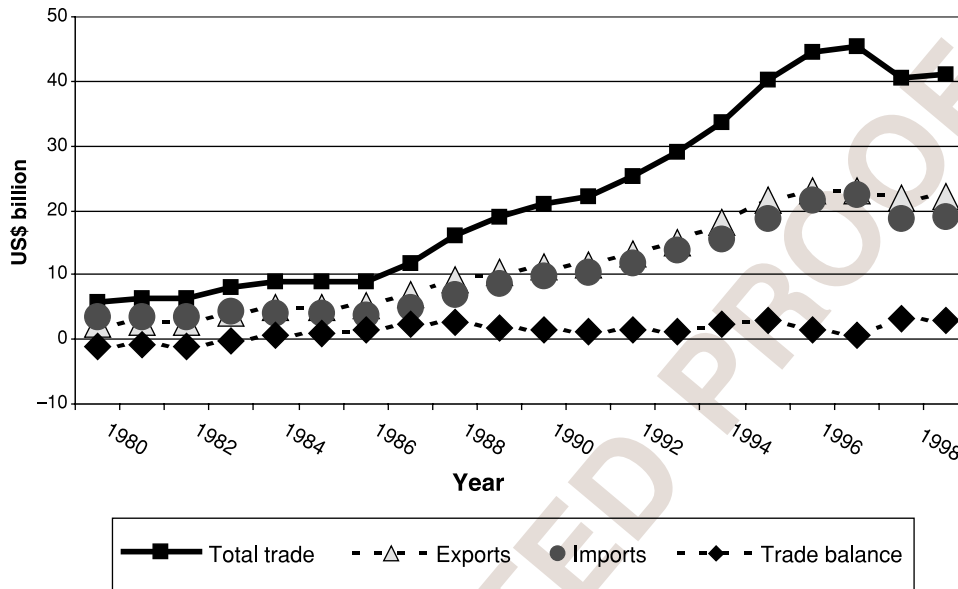
Having outlined the main rationale for Singapore's recent surge in interest in forming FTAs, the rest of this paper is organised as follows. Section 2 examines various aspects of Singapore's trade linkages with the two economic superpowers in some detail. Section 3 considers the determinants of Singapore's merchandise exports to the US and Japan as well as estimates the impact of these exports on the city-state's overall aggregate demand. Section 4 offers an overview of the so-termed 'Japan-Singapore Economic Partnership Agreement' or JSEPA for short. As the discussion will highlight, the trade agreement is highly multifaceted, also encompassing services trade, issues relating to investment (principles of national treatment and the right of establishment) and many other dimensions. Popular discussion of FTAs gives one the appearance that such a trade policy is entirely benign. Accordingly, Section 5 concludes the paper by sounding a cautionary note, highlighting some reasons to be concerned with Singapore's recent embracement of the 'new regionalism'.⁸ Two technical appendices (A and B), which describe the construction of variables for the export demand functions and examine empirically the impact of growth variations in the US and Japan on the city-state, follow the main-text.

⁶ Analysis of trade patterns generally reveals that Taiwan, in particular, but also Malaysia, Korea and Hong Kong are among Singapore's closest export competitors.

⁷ In a recent meeting in Singapore it was agreed that the APT would explore the possibility of holding an East Asian summit as well as consider the establishment of an APT FTA and investment area (*Business Times*, Singapore, 25 November, 2000). The APT has taken some concrete steps toward enhancing monetary and financial cooperation (Chang and Rajan, 2001).

⁸ The term 'regionalism' is not meant to have any geographic connotation, referring to any trade initiatives that are not multilateral in nature.

FIGURE 1
Singapore's Merchandise Trade with the US



Source: IMF, *Direction of Trade Statistics Yearbook*, various issues.

2. MERCHANDISE TRADE LINKAGES: TRENDS, PATTERNS AND COMPOSITION

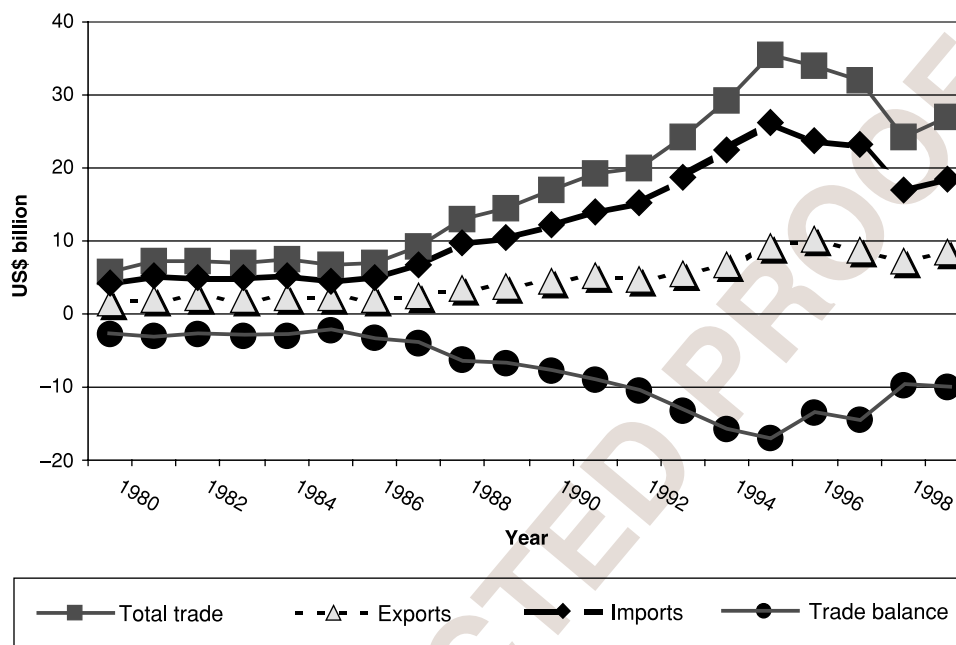
It is critical that pre-FTA trade patterns are carefully documented so as to be able to investigate the changes attributable to Singapore's FTAs with the US and Japan in the future. This being said, the intention here is *not to* systematically evaluate the welfare consequences for Singapore of these bilateral FTAs in the conventional sense (i.e. *trade creation* versus *trade diversion*). Indeed, Singapore has one of the most liberal trade and investment regimes in the world, and the near zero tariff rates on most goods (and limited non-tariff barriers) implies that the scope for trade diversion (i.e. replacement of lower cost suppliers from non-member countries) from Singapore's vantage point is quite small.⁹

a. Trade Flows

Figures 1 and 2 exhibit trends in Singapore's total merchandise trade with the US and Japan respectively over the period 1980–99. Together they constituted

⁹ Assuming of course that the ROOs are not prohibitive. ROOs are discussed in more detail in Section 5. Ninety nine per cent of Singapore's imports are not dutiable. Tariffs are only imposed on alcoholic beverage imports while excise duties are imposed on tobacco products, automobiles and gasoline. During the Uruguay Round, Singapore agreed to bind 70 per cent of its tariff lines.

FIGURE 2
Singapore's Merchandise Trade with Japan



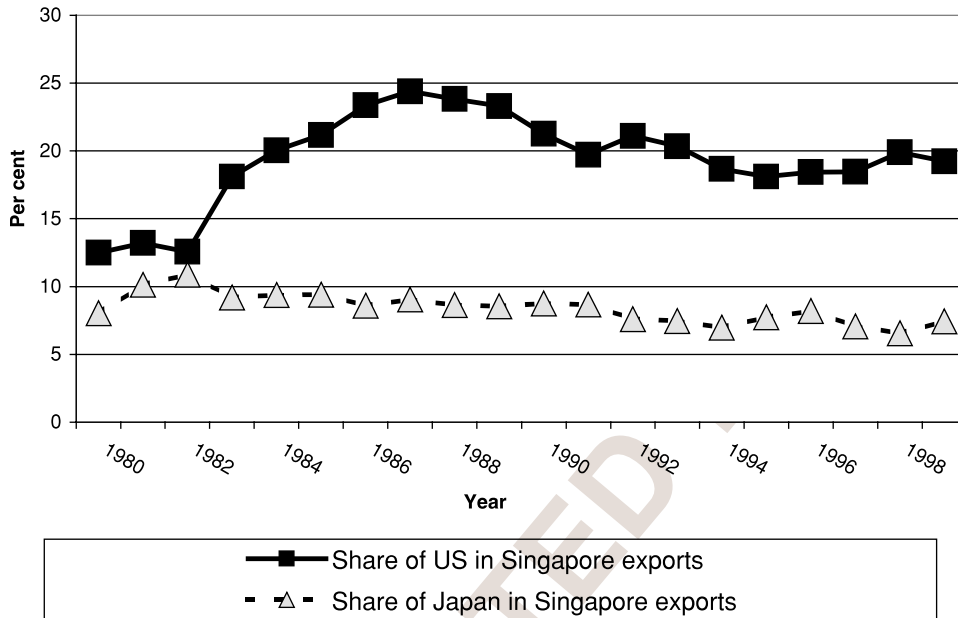
Source: Calculated from IMF, *Direction of Trade Statistics Yearbook*, various issues.

one third of Singapore's total merchandise trade (the US, 18 per cent and Japan, 12 per cent). While the share of Japan in Singapore's overall trade has not varied by much over the entire period under consideration, that with the US increased by over eight per cent in the early 1990s, declined slightly thereafter, but increased again from 1995 onwards. In contrast, trade with Singapore constituted a mere two per cent of the US's global trade in 1999 and three per cent in the case of Japan. Nevertheless, despite the city-state's microscopic physical size, it was the US's tenth largest export market and the twelfth largest source of imports in 1998. Singapore was the sixth largest export market for Japanese goods and Japan's thirteenth largest import source in 1999 (IMF, 2000).

While growth of Singapore's exports to Japan have outpaced that to the US as well as Singapore's global trade as a whole, given the relatively lower base, exports to Japan as a share of Singapore's world exports declined from 11 per cent in 1982 to nearly eight per cent by 1999 (Figure 3). In contrast, the share of exports to the US increased sharply from 13 per cent in 1982 to nearly 20 per cent of Singapore's global exports by 1999.

Since Singapore is an entrepot economy, it is necessary to disaggregate Singapore's exports into its two component parts, *viz.* domestic exports and re-exports (i.e. little or no value-added/transformation in Singapore) (Table 2). Nearly a

FIGURE 3
Singapore's Merchandise Exports to the US and Japan



Source: Calculated from IMF, *Direction of Trade Statistics Yearbook*, various issues.

quarter of Singapore's exports to the US included an entrepot component, this figure being about a third in the case of Singapore's exports to Japan.

On average, Japan and the US respectively, constituted about 20 and 15 per cent of Singapore's total imports. However, averages fail to capture the entire picture. For instance, imports from the US have appreciated from 15 per cent in 1995 to almost 20 per cent in 1998, while those from Japan declined from 21 per cent to 17 per cent over the same period (Figure 4).

b. Trade Balances

Singapore has recorded a persistent and growing bilateral trade balance with the US since the mid 1980s, peaking at slightly over US\$ 3 billion in 1998–99 (Figure 1). These surpluses are a relatively low share of overall US-Singapore trade, averaging about nine per cent). In contrast, Singapore has been running persistent bilateral deficits with Japan which have been increasing both in magnitude as well in terms of Singapore's total trade with Japan, especially during the period 1985–94. The deficit was around US\$ 10 billion in 1999, constituting about 45 per cent of Singapore's bilateral trade with Japan (Figure 2).

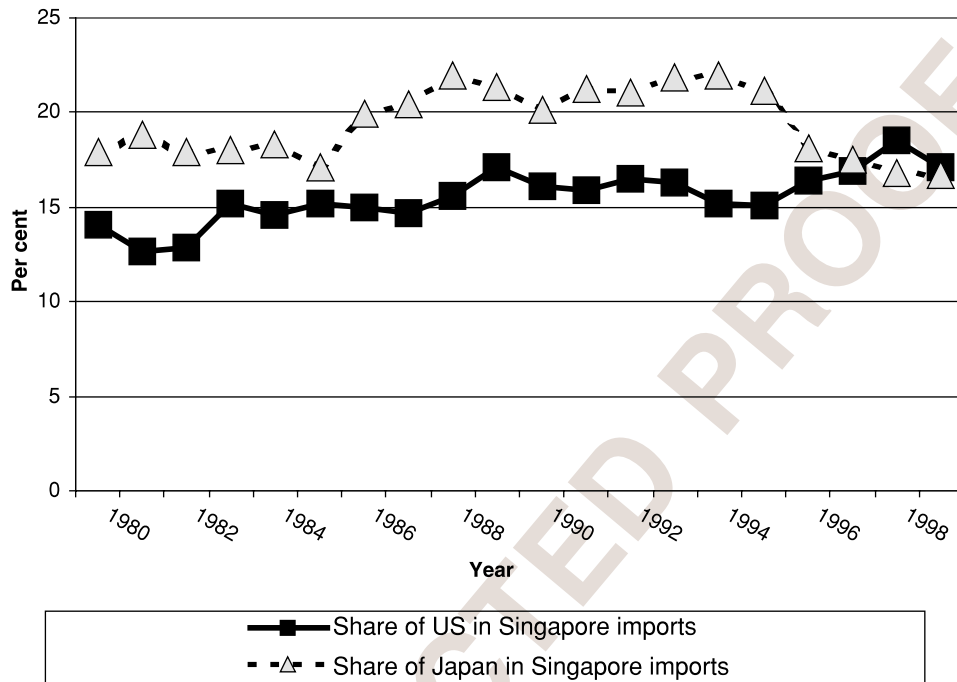
Persistent trade deficits with Japan might at least partly be a reflection of the inability of foreign (including Singapore) exporters to penetrate the Japanese

TABLE 2
Singapore's Domestic Exports to US and Japan, 1984–99

Year	Total Domestic Exports to the World (DW_x)	Annual Growth Rate (Per cent)	Total Domestic Exports to US (DU_x)	Annual Growth Rate (Per cent)	Total Domestic Exports to Japan (DJ_x)	Annual Growth Rate (Per cent)	Share of Total DU_x in Total Singapore Domestic Exports	Share of Total DJ_x in Total Singapore Domestic Exports
1984	15517		3718		1862		24.0	12.0
1985	14807	-4.6	3709	-0.3	1755	-5.7	25.0	11.8
1986	14707	-0.7	4356	17.4	1515	-13.6	29.6	10.3
1987	18517	25.9	5801	33.2	1966	29.8	31.3	10.6
1988	24654	33.1	7769	33.9	2426	23.4	31.5	9.8
1989	28334	14.9	8479	9.1	2851	17.5	29.9	10.1
1990	34671	22.4	9212	8.6	3431	20.4	26.6	9.9
1991	38222	10.2	9525	3.4	3493	1.8	24.9	9.1
1992	40723	6.5	10787	13.2	3135	-10.3	26.5	7.7
1993	46661	14.6	11907	10.4	3591	14.5	25.5	7.7
1994	57962	24.2	14225	19.5	4556	26.9	24.5	7.9
1995	69476	19.9	17083	20.1	6386	40.2	24.6	9.2
1996	73465	5.7	18219	6.6	6942	8.7	24.8	9.4
1997	72424	-1.4	18082	-0.7	5358	-22.8	25.0	7.4
1998	63287	-12.6	16598	-8.2	4151	-22.5	26.2	6.6
1999	68628	8.4	16858	1.6	5303	27.8	24.6	7.7

Source: Computed from Singapore Trade Development Board, Singapore Trade Statistics, Singapore and IMF, Direction of Trade Statistics Yearbook, various issues.

FIGURE 4
Singapore's Merchandise Imports from the US and Japan



Source: Calculated from IMF, *Direction of Trade Statistics Yearbook*, various issues.

market due to the maintenance of both official and (especially) unofficial non-tariff barriers (NTBs) (Lawrence, 1987). Indeed, these barriers have in turn often led to the accusation that Japan 'imports too little' from its trading partners (Takeuchi, 1989), with a survey of Singapore exporters in the late 1980s revealing them to be 'generally overawed by the Japanese "closed market" image' (Lim, 1988, p. 100). In the context of a Japan-Singapore FTA, this factor could be of potential importance, as a bilateral FTA ought to provide Singapore preferential access to the Japanese market.¹⁰ Conversely, given continued aggregate trade deficits faced by the US, protectionist pressures in case of an economic slowdown may emerge in that country. Thus, a US-Singapore FTA might serve as an 'insurance policy' against the future imposition of US unilateral trade barriers.¹¹

¹⁰ Since the focus of this paper is on Singapore, the potential welfare effects of possible trade diversion in the case of Japan (or the US) is not tackled here.

1 ¹¹ This being said, insofar as the bulk of Singapore's exports to the US have been concentrated in the SITC 76 and 84 categories (TDB, 1992), and most of US import restrictions have generally fallen on those categories (DeRosa, 1986, p. 180), Singapore may be especially vulnerable to protectionist measures that might be imposed by the US.

The assemble-and-export strategy, whereby Japanese multinationals in East Asia import intermediate products and capital goods from Japan, assemble them locally and re-export the finished goods to the US and other third countries, is a further reason for Japan's persistent bilateral trade surplus with Singapore as well as the rest of East Asia.¹² On the other hand, US subsidiaries abroad have contributed to the US trade deficit with East Asian economies as they exported relatively more back to the US (i.e. 'reverse imports') than they sourced from it (Encarnation, 1992). This phenomenon appears to be especially true in the case of Singapore, with early studies suggesting that between four and 60 per cent of output by US multinationals in Singapore has been exported back to the US, while the corresponding figure in the case of Japan is estimated at only around five per cent (Hill and John, 1985).¹³

c. Commodity Composition of Merchandise Trade

The preceding analysis focuses only on broad trends in aggregate trade relations. An examination of the commodity composition of trade is necessary to obtain a fuller understanding of Singapore's trade linkages with Japan and the US.

Table 3 compares the composition of Singapore's overall imports and exports to the US and Japan specifically by commodity groups at the SITC 3-digit level in 1999. Singapore's global exports are concentrated in five product categories, viz. Electronics and petroleum refined products (SITC 776, 752, 759, 334 and 764), which constituted nearly 60 per cent of Singapore's total world exports. Electronic valves (SITC 776) itself accounted for about 20 per cent of Singapore's global exports as well as exports to the US and Japan specifically, making it the second most important Singapore export to both markets. Data Processing Machines (SITC 752), which is the second most important Singapore export globally, but was the most important one to both the US and Japan. This product accounted for nearly 20 per cent of Singapore's exports to Japan and 40 per cent of Singapore's exports to the US. The top five product categories of Singapore's overall exports noted above are among the highest categories of Singapore's exports to the US and Japan, accounting for almost three-quarters and one half of the city state's total exports to both trading partners, respectively. In fact, seven of the top ten exports from Singapore to both the US and Japan overlap, indicating a high degree of similarity in commodity composition of Singapore's exports

¹² It is this phenomenon which is thought to have contributed to an increase in Singapore's imports from Japan particularly after 1987–88, with Singapore being one of the largest recipients of Japanese FDI due to various push factors in Japan (Rajan, 1996).

¹³ Julius (1990, p. 75) has suggested that about 50 per cent of the US imports from Singapore and Malaysia were from US affiliates in Singapore.

TABLE 3
Singapore's Leading Product Groups of Exports to the World, US and Japan in 1999
(SITC 3-digit level)

<i>Rank</i>	<i>Product Code</i>	<i>Product Description</i>	<i>Exports to the World Share (Per cent)</i>
1	776	Electronic Valves	20.1
2	752	Data Processing Machines	17.3
3	759	Parts for Office & D/P Machines	8.8
4	334	Petroleum Products Refined	7.5
5	764	Telecommunications Equipment	4.5
6	772	Electrical Circuit Apparatus	2.5
7	778	Electrical Machinery	2.1
8	898	Musical Instrument & Parts	1.7
9	515	Organo-inorganic Compounds	1.4
10	931	Special Transactions	1.1

<i>Rank</i>	<i>Product Code</i>	<i>Product Description</i>	<i>Exports to US Share (Per cent)</i>
1	752	Data Processing Machines	39.3
2	776	Electronic Valves	20.0
3	759	Parts for Office & D/P Machines	12.7
4	764	Telecommunications Equipment	3.5
5	772	Electrical Circuit Apparatus	1.8
6	515	Organo-inorganic Compounds	1.7
7	334	Petroleum Products Refined	1.5
8	845	Apparel Articles of Textile	1.5
9	931	Special Transactions	1.2
10	874	Measuring Instruments	1.1

<i>Rank</i>	<i>Product Code</i>	<i>Product Description</i>	<i>Exports to Japan Share (Per cent)</i>
1	752	Data Processing Machines	20.8
2	776	Electronic Valves	16.1
3	898	Musical Instrument & Parts	10.3
4	759	Parts for Office & D/P Machines	7.7
5	334	Petroleum Products Refined	5.2
6	764	Telecommunications Equipment	2.6
7	931	Special Transactions	2.4
8	112	Alcoholic Beverages	2.3
9	772	Electrical Circuit Apparatus	1.5
10	716	Electric Plant & Parts	1.4

Source: Singapore Trade Development Board, *Singapore Trade Statistics*, December 1999.

to both countries.¹⁴ Of these, petroleum products are of relatively lower importance in Singapore's exports to the US compared to the former's exports to Japan. This is true even if focus is limited to Singapore's domestic exports to these countries.

¹⁴ This result remains unaltered even if periods prior to the crisis in 1997–98 are considered.

TABLE 4
Singapore's Leading Product Groups of Imports from the World, US and Japan in 1999
(SITC 3-digit level)

<i>Rank</i>	<i>Product Code</i>	<i>Product Description</i>	<i>Imports from the World Share (Per cent)</i>
1	776	Electronic Valves	19.9
2	759	Parts for Office & D/P Machines	7.9
3	333	Petroleum Crude	4.8
4	752	Data Processing Machines	4.7
5	334	Petroleum Products Refined	4.2
6	764	Telecommunications Equipment	3.9
7	772	Electrical Circuit Apparatus	3.0
8	778	Electrical Machinery	2.5
9	792	Aircraft	2.0
10	874	Measuring Instruments	1.9

<i>Rank</i>	<i>Product Code</i>	<i>Product Description</i>	<i>Imports from US Share (Per cent)</i>
1	776	Electronic Valves	18.2
2	792	Aircraft	8.9
3	759	Parts for Office & D/P Machines	6.7
4	874	Measuring Instruments	5.5
5	898	Musical Instrument & Parts	4.8
6	752	Data Processing Machines	4.6
7	723	Civil Engineering Equipment & Parts	4.5
8	728	Specialised Machinery	3.3
9	931	Special Transactions	3.0
10	772	Electrical Circuit Apparatus	2.7

<i>Rank</i>	<i>Product Code</i>	<i>Product Description</i>	<i>Imports from Japan Share (Per cent)</i>
1	776	Electronic Valves	21.8
2	764	Telecommunications Equipment	5.3
3	759	Parts for Office & D/P Machines	5.1
4	778	Electrical Machinery	4.9
5	772	Electrical Circuit Apparatus	4.6
6	728	Specialised Machinery	4.3
7	752	Data Processing Machines	4.2
8	793	Ships & Boats	2.8
9	874	Measuring Instruments	2.5
10	882	Photographic Supplies	1.9

Source: Singapore Trade Development Board, *Singapore Trade Statistics*, December 1999.

Table 4 documents the commodity composition of Singapore's imports from the US and Japan in 1999. While Electronic Valves (SITC 776) is the top ranked product in Singapore's overall imports, constituting nearly one-fifth of the total, the import shares of other electronic products and refined petroleum products are much smaller compared to their corresponding export shares. Seven commodity groups, six of them in the categories of electrical and electronic goods and

equipment, are also among the top ten commodities of both Singapore's overall exports and imports. Four out of these seven product groups overlap in Singapore's exports to and imports from the US (SITC 776, 759, 752, and 772), and five in the case of Singapore's trade with Japan (SITC 334 and SITC 778, being the exceptions).¹⁵ All this suggests *a priori* a high presence of intra-industry trade (IIT).¹⁶

3. IMPACT OF CHANGES IN FOREIGN DEMAND ON THE SINGAPORE ECONOMY VIA THE EXPORT CHANNEL

The section is divided into three parts. We first estimate a set of merchandise export demand functions so as to ascertain whether foreign (i.e. US and Japanese) incomes and prices (competitiveness factor) are statistically significant variables impacting Singapore's exports to the US and Japan. We then proceed to estimate a model which relates the aggregate demands of Singapore to the country's exports to the US and Japan.

The objective here is to determine the statistical significance of the contributions of these exports on the aggregate output performance of the Singapore economy. To complement the formal tests undertaken in the first two parts of the section, in the third part of this section we construct a 'direct trade effect index' *a la* Conway (2001) in order to quantify the *economic* impact of an economic slowdown in Japan and the US on the Singapore economy. This being said, the aim here is solely to highlight the degree of closeness of the city-state's trade and economic relations with the Japan and the US, a point that is repeatedly noted by its policymakers in justifying the need to form comprehensive bilateral trade pacts. Admittedly, this type of empirical exercise is just as valid for multilateral liberalisation; the aim here is by no means to offer justification for bilateralism *per se* (indeed, see Section 5).

a. Export Demand Functions

2 There are two primary determinants of export demand (Dornbusch, 1988; and Hooper and Marquez, 1993). First, is the foreign income variable (Y_{us} and Y_{jpn}).

¹⁵ For instance, SITC 752 (Data processing machines), which has constituted nearly 40 and 20 per cent of Singapore's exports to the US and Japan, respectively, is only five per cent of Singapore's imports from the US and 4.2 per cent from Japan. Refined petroleum products do not figure at all in the top ten items of imports from either country to Singapore.

¹⁶ In 1999, these seven commodity groups (i.e. SITC 776, 759, 752, 334, 764, 772 and 778) accounted for 63 per cent of Singapore's total exports and 46 per cent of its total imports, respectively. A recent study by Rajan et al. (2001) estimated that the total value of US-Singapore IIT was US\$38 billion (constituting nearly 92 per cent of Singapore's total trade with the US) in 1999, while Japan-Singapore IIT was worth US\$17 billion (constituting nearly 63 per cent of Singapore's total trade with Japan) in the same period.

TABLE 5
Variable Description (quarter 1, 1981–quarter 4, 1996)

<i>Variable</i>	<i>Descriptions</i>	<i>Source</i>
<i>Ysg</i>	Gross Domestic Product of Singapore	IFS CD-Rom
<i>Xsgus</i>	Export of Singapore to the US market	IMF, Direction of trade statistics
<i>Yus</i>	Gross Domestic Product of the US	IFS CD-Rom
<i>Psgus</i>	Terms of Trade of Singapore's products against the US products	Authors' own calculations. The primary data to construct the index are from IFS CD-Rom
<i>Xsgjpn</i>	Export of Singapore to the Japanese market	IMF, Direction of trade statistics
<i>Yjpn</i>	Gross Domestic Product of Japan	IFS CD-Rom
<i>Psgjpn</i>	Terms of Trade of Singapore's products against the US products	Authors' own calculations. The primary data to construct the index are from IFS CD-Rom
<i>Vus</i>	Real Exchange Rate Volatility Index of the Singapore dollar against the US dollar	Authors' own calculations
<i>Vjpn</i>	Real Exchange Rate Volatility Index of the Singapore dollar against the Japanese Yen	Authors' own calculations

Second, is the relative price or terms of trade variable (competitiveness factor) with respect to the US products (*Psgus*) and the Japanese products (*Psgjpn*) (Appendix A). Forbes (2001) has emphasised that price and income effects are among the most important determinants explaining trade fluctuations between economies. In addition, sharp gyrations in the foreign exchange markets in the last decade (Bird and Rajan, 2001) necessitate that the exchange rate volatility be taken into account as another explanatory variable in the export demand function (Chowdhury, 1993; Chou, 2000; Daly, 1998; and McKenzie, 1998). We do so by constructing a volatility index (*Vus* and *Vjpn*).¹⁷

Descriptions of the variables and sources of the data are presented in Table 5 and Appendix A. Δ denotes the first difference of the log forms of the variables.

Before constructing an empirical model it is necessary to examine the basic unit-root properties of the relevant variables. Based on the ADF-statistics, we conclude that all the variables are integrated of order 1 or are I(1), with the exception of the volatility index of the real exchange rate which is I(0) (Table 6). In order to discount the possibility of the regressions capturing spurious movements in the variables, we construct the export demand functions in the following manner:¹⁸

¹⁷ See Appendix A for the constructions of volatility index.

¹⁸ Since the variables *Xsgus*, *Xsgjpn*, *Yus*, *Yjpn*, *Psgus* and *Psgjpn* are integrated of order 1 (i.e. their means and variances do not fluctuate around a constant), while the variables *Vus* and *Vjpn* are stationary (constant mean and variance), the results of the regressions of these variables in levels may represent a totally spurious relationship. The *R*-square may be high, but more often than not, one finds the Durbin-Watson to be very low (indicating the presence of serial correlations). To address this problem, we regress the relevant variables in terms of first differences, except for the volatility index (as shown in equations (1) and (2)).

TABLE 6
ADF Unit-Root Test

$$\Delta X_t = \delta_1 + \delta_2 t + \delta_3 X_{t-1} + \sum_{i=1}^k \delta_i \Delta X_{t-i} + \varepsilon_t$$

Variable ^a	ADF-statistics (X_t)	ADF-statistics ($X_t - X_{t-1}$)
Ysg^c	-1.1124 (lags = 2) ^b	-5.2012 (lags = 2)
$Xsgus^c$	-1.2475 (lags = 2)	-6.2064 (lags = 2)
Yus^c	-2.9938 (lags = 2)	-3.7485 (lags = 2)
$Psgus^c$	-1.5363 (lags = 4)	-5.1177 (lags = 4)
$Xsgjpn^c$	-2.7714 (lags = 1)	-7.3959 (lags = 1)
$Yjpn^c$	-2.5202 (lags = 2)	-3.7049 (lags = 2)
$Psgjpn^c$	-2.2834 (lags = 4)	-3.9561 (lags = 4)
Vus^d	-3.9965 (lags = 1)	- not relevant -
$Vjpn^d$	-4.1253 (lags = 2)	- not relevant -

Notes:

^a All variables are in the log-forms.

^b The number of lags is determined by Akaike Information Criterion (AIC).

^c These variables are found to be an integrated of order 1 series (I(1)) at five per cent critical value.

^d These variables are found to be an integrated of order 0 series (I(0)) at five per cent critical value.

$$\Delta Xsgus_t = \alpha_1 + \beta_{11} \Delta Yus_{t-i} + \beta_{12} \Delta Psgus_{t-i} + \beta_{13} Vus_{t-i} + \beta_{14} \Delta Xsgus_{t-i} + \beta_{15} Du + \varepsilon_{1t} \quad (1)$$

$$\Delta Xsgjpn_t = \alpha_2 + \beta_{21} \Delta Yjpn_{t-i} + \beta_{22} \Delta Psgjpn_{t-i} + \beta_{23} Vjpn_{t-i} + \beta_{24} \Delta Xsgjpn_{t-i} + \beta_{25} Du + \varepsilon_{2t} \quad (2)$$

Following Chowdhury (1993) and Daly (1998), we also include a lag variable of change in exports ($\Delta Xsgus_{t-i}$ and $\Delta Xsgjpn_{t-i}$). The inclusion of this variable is meant to capture the impact of past export growth on current exports, i.e. a so-called 'adjustment factor' *a la* Goldstein and Khan (1976).

It is important to note that the Monetary Authority of Singapore (MAS) switched to a policy of a steady appreciation of the local currency against its key trading partners' currencies in the early 1980s, culminating with the recession in 1985–86 (Rajan and Siregar, 2002). Accordingly, we include a Dummy variable (Du) to capture the impacts of the shift in this exchange rate policy and the 1985–86 recession. This variable is equal to 0 from quarter 1, 1981 to quarter 4, 1986; otherwise it is equal to 1. ε_{1t} and ε_{2t} are error terms, while α_1 and α_2 are constant terms.

(i) *Theoretical preliminaries*

A priori we expect the coefficient estimates for β_{11} and β_{21} to be positive, as rising aggregate demand (income) in Japan and the US ought to stimulate Singapore's exports to the respective markets. As for the coefficient estimates for β_{12} and β_{22} , the signs are expected to be negative. The rise in the price of the domestic

good relative to the foreign good worsens the competitiveness of, and therefore the demand for the local (Singapore) good in the foreign markets (Japan and the US). The coefficient of the Volatility index (β_{13} and β_{23}) can either be positive or negative (Bailey, 1987; Daly, 1998; and Giovannini, 1988). If firms are risk-averse, exchange rate volatility acts as a negative shock, causing the export price to rise and the export volume to fall. On the other hand, risk-neutral firms with export prices invoiced in domestic currency may cut prices in response to exchange rate volatility, hence causing the export demand (volume) to rise. The coefficient estimates for β_{14} and β_{24} are expected to be negative as high growth in export demands during the period $(t - i)$ will, in all likelihood, lead to weaker export demand at period (t) .

Our observation period covers the time prior to the breakout of the 1997/1998 East Asian crisis (quarter 1, 1980 to quarter 2, 1997). We conduct the standard OLS tests on both equations. Following the commonly used process of general-to-specific methodology (see Hendry, 1974 and 1977), we include four-quarter lags $(t - 4)$ of the key explanatory variables in the first stage of the OLS test. On the next sequential stages, we drop all the insignificant lags and only consider the significant ones for the final stage of the estimating equation.¹⁹

(ii) Results

The main results of the regressions are as follows (Tables 7 and 8). The coefficient estimates for the determinant variables (income, price and volatility index variables (for the Japan case)) are statistically significant and theoretically consistent. We dropped the Dummy variable due to low t -statistics. The F -statistics and the R -square confirm the overall soundness of the model, in the sense that all the explanatory variables in each equation contribute significantly in explaining the variations in the export demands of Singapore to Japan and US. In addition, we are able to reject any presence of serial correlation problems in both regressions on the bases of the Durbin-Watson and the Arch-LM test statistics (equations (1) and (2)).

The roles of both the US and Japanese aggregate demands (incomes) are statistically significant explanatory variables in the performance of the Singapore's exports to the respective markets. The estimated coefficients for the foreign income variable for each export function are found to be the largest among all the explanatory variables. The relative price (competitiveness) factors also play an important role in Singapore's exports to both Japan and the US. In addition, we find that an increase in the volatility of the real exchange rate impedes exports of Singapore to Japan and to the US. Based on the t -statistics of the coefficient

¹⁹ We tried to go beyond four quarters-lag, but none of those extra lags is found to be significant. This process of 'general-to-specific' methodology was introduced by Hendry (1974 and 1977) and has since become commonplace (for instance, see Chowdhury, 1993; and Daly, 1998).

TABLE 7
Export Function Model (For Singapore – the US)
Dependent Variable: $\Delta Xsgus_t$,
Sample Period: Quarter 1, 1980 – Quarter 2, 1997

<i>Variable</i>	<i>Coefficient</i>	<i>t-statistics</i>
$\Delta Xsgus_{t-1}$	-0.321	-2.8317
ΔYus_{t-2}	1.508	1.6274
$\Delta Psgus_{t-1}$	-0.556	-1.8865
Vus_{t-2}	-0.036	-1.2826
Constant	0.033	2.7902

Notes:

R -squared = 0.2051; F -statistics = 4.2574; Durbin-Watson = 2.0834;
ARCH-LM = 0.7605 (Probability of no serial correlation = 0.3832).

TABLE 8
Export Function Model (For Singapore – Japan)
Dependent Variable: $\Delta Xsgjpn_t$,
Sample Period: Quarter 1, 1980 – Quarter 2, 1997

<i>Variable</i>	<i>Coefficient</i>	<i>t-statistics</i>
$\Delta Xsgjpn_{t-1}$	-0.348	-3.1347
$\Delta Yjpn_{t-2}$	2.222	1.8592
$\Delta Psgjpn_{t-2}$	-0.731	-1.7075
$Vjpn_{t-4}$	-0.112	-1.7107
Constant	-0.003	-0.1576

Notes:

R -squared = 0.2242; F -statistics = 4.696; Durbin-Watson = 1.8049;
ARCH-LM = 0.0628 (Probability of no serial correlation = 0.8021).

estimates, the volatility index appears more significant in case of Singapore's exports to Japan than in the case of Singapore's exports to the US market.

b. Significance of Foreign Exports to Aggregate Demand in Singapore

Having formally confirmed the significance of the US and the Japanese incomes in explaining the performance of Singapore's merchandise exports to both markets, we proceed to evaluate the role of these exports in explaining the growth performance of the Singapore economy. To formally capture this second link, we will test the following empirical model:²⁰

²⁰ From the standard text-book construction of the aggregate demand (income) of an open economy, we can express the aggregate demand function from the expenditure approach:

$$Y = C + I + G + (X - M)$$

TABLE 9
Cointegration Test
Sample Period: Quarter 1, 1982 – Quarter 2, 1997

<i>Eigne value</i>	<i>Likelihood Ratio</i>	<i>5 Per Cent Critical Value</i>
0.2792	31.05 ^a	29.68
0.1612	10.69	15.41
0.0004	0.316	3.76

Notes:

^a Likelihood Ratio test indicates 1 cointegrating equation at the five per cent significance level.

Normalised Cointegrating Coefficients:

$$Ysg_t = 6.219 + 0.4936 Xsgjpn_t + 0.4138 Xsgus_t;$$

(0.1885) (0.1763)

() represents the standard errors.

$$Ysg_t = \alpha_t + F(X_{(i \rightarrow j)_t}) + \varepsilon_t \quad (3)$$

where: $F(\cdot)$ represents a general functional form; Ysg denotes aggregate demand of Singapore. $(X_{(i \rightarrow j)_t})$ are exports of Singapore to the US and Japan ($Xsgus_t$ and $Xsgjpn_t$); α_t and ε_t are respectively an intercept and an error term.

(i) *Long run relationships*

Since all the relevant variables in equation (3) are integrated of order 1 or $I(1)$, we proceed to test the possible existence of long run or cointegrating relationship between the three variables in question (using log forms). The Johansen Maximum Likelihood test results are summarised in Table 9. We conclude that there exists one cointegrating relationship between these three variables. Furthermore, from the normalised coefficient estimates, we can further confirm that the variables $Xsgus$ and $Xsgjpn$ contribute significantly and positively to the overall fluctuations of Singapore's aggregate demand/output during the period of quarter 2, 1982 to quarter 2, 1997.

(ii) *Error correction model: short run scenario*

We proceed to examine the case of the short run. To understand the short run impact of $Xsgus$ and $Xsgjpn$ on Singapore's output, we test the following error correction model (ECM):

$$\Delta Ysg_t = \delta_{11} \Delta Xsgus_{t-1} + \delta_{12} \Delta Xsgjpn_{t-1} + \delta_{13} Du + \delta_{14} ECM_{t-1} + \delta_{1t}. \quad (4)$$

where: Y is the aggregate demand; C is the household's consumption; I is the investment variable; G is the government expenditure; X is total exports; and M is total imports. Since our main interest is to estimate the role of export in explaining the performance of the aggregate demand, our general empirical model can be simplified as in equation (3).

TABLE 10
 OLS Test on the Error Correction Model
 Dependent Variable: ΔY_{sg} , (GDP of Singapore)
 Sample Period: Quarter 2, 1982 – Quarter 2, 1997

<i>Variable</i>	<i>Coefficient</i>	<i>t-Statistics</i>
ΔX_{sgjpn}_t	0.0461	2.4436
ΔX_{sgus}_t	0.0986	3.2558
ECM_{t-1}	-0.0307	-2.1038
Constant	0.0139	4.6695

Notes:

R -squared = 0.2240;

F -statistics = 5.4849;

Durbin-Watson statistics = 2.0546;

ARCH-LM = 1.0762 Probability (of no serial correlations) = 0.5838.

The definitions of the variables have all been fully described earlier. Du is the same dummy variable used in equations (1) and (2). The variable ECM_{t-1} represents a long run relationship ($Y_{sg(t-1)} - \hat{Y}_{sg(t-1)}$).²¹ As in the case of the export function tests, we begin with four quarters lag ($t - 4$) and drop all the insignificant variables. The OLS test results are posted in Table 10.

Consistent with the previous results reported for the two export demand functions, we find the dummy variable to be an insignificant explanatory variable in explaining the performance of the Singapore's GDP and was dropped in the final estimating equilibrium. We find that both X_{sgus} and X_{sgjpn} contribute positively and significantly to the changes in the aggregate demand variable (Y_{sg}) even in the short run. In addition, the significance of coefficient δ_{14} confirms the presence of a long-run relationship between the three variables (X_{sgus} , X_{sgjpn} and Y_{sg}). As in the case of export functions, we do not find more than four quarters lag variables to be significant.

c. Direct Trade Effects of a US and Japan Slowdown on the Singapore Economy

In the preceding analysis we have established the *statistical significance* of foreign demands on Singapore's exports to the US and Japan and the city-state's overall income. It would be useful to determine the *economic significance* of the findings. In other words, to what extent is Singapore affected by an economic slowdown in Japan and the US via the merchandise exports channel? To answer this question, we select two recent periods of economic slowdown in Japan and the US and compute the direct trade effect estimates *a la* Conway

²¹ \hat{Y}_{sg} is an estimated level of aggregate demand. It is derived using the coefficient estimates reported in Table 9.

TABLE 11
Direct Trade Effect of US and Japan Slowdowns

<i>Case A:</i>					
<i>Slowdown of the US Economy in 1990</i>	<i>Pre-Slowdown Period (1989)</i>		<i>Slowdown Period (1990)</i>		
<i>Share of Singapore's Merchandise Exports to US in the Overall Singapore GDP (Per cent)</i>	<i>Export^a Growth Rate (Per cent)</i>	<i>US GDP Growth Rate (Per cent)</i>	<i>Export^a Growth Rate (Per cent)</i>	<i>US GDP Growth Rate (Per cent)</i>	<i>Direct Impact to Singapore Economy^b (Per cent)</i>
35	8.8	3.3	2.7	1.2	2.1
<i>Case B:</i>					
<i>Slowdown of the Japanese Economy in 1991</i>	<i>Pre-Slowdown Period (1990)</i>		<i>Slowdown Period (1991)</i>		
<i>Share of Singapore's Merchandise Exports to Japan in the Overall Singapore GDP (Per cent)</i>	<i>Export^a Growth Rate (Per cent)</i>	<i>Japan GDP Growth Rate (Per cent)</i>	<i>Export^a Growth Rate (Per cent)</i>	<i>Japan GDP Growth Rate (Per cent)</i>	<i>Direct Impact to Singapore Economy^b (Per cent)</i>
12	10.8	5.1	-1.7	3.8	1.5

Notes:

^a This is the growth rate of the merchandise exports of Singapore to the US (Japan).

^b See Appendix A for the calculation. The number for US (Japan) indicates that when the US (Japan) growth rate slowed down by around two per cent (one per cent), the direct trade effect of the slowdown would reduce Singapore's GDP growth rate by about 2.1 per cent (1.5 per cent).

Source: Authors' own calculations.

(2001) (the index is detailed in Appendix B). Before proceeding, it is important to keep in mind that this index, while insightful, does not capture the possibility of third country or indirect trade effects. Direct trade effect only explains a relatively smaller portion of the global effects that may be captured in a more 'black box' structural VAR model approach that focuses on long-run relationships.

We consider two cases. First, we look at the US economic downturn in 1990. The US economy experienced a sharp slowdown in 1990, growing at less than two per cent compared to a year before. We weigh the decline in the growth of US/Japan-bound exports by the contribution it makes to the Singapore economy. Our estimates suggest that a two per cent slowdown in the US economy would have reduced Singapore's GDP by about two per cent as well (Table 11). More or less similar results are found in our second case which focuses on the impact of a slowdown in Japan during the early 1990s on the Singapore economy. Specifically, with the bursting of the bubble economy in the

late 1980s, Japan's GDP growth rate dropped substantially in the early 1990s and continued to be weak for the whole decade of the 1990s. Japan's GDP growth rate fell below four per cent in 1991 from more than five per cent a year earlier. Consequently, Singapore's merchandise exports to Japan contracted by almost two per cent. The poor performance of the exports to Japan transmitted the adverse consequences of the fall in the GDP growth rate in Japan (by about 1.3 per cent) into an equal percentage drop in the Singapore GDP growth rate in 1991 (Table 11). Certainly, the magnitudes of direct-trade effect index will depend on the periodical cases of economic slowdowns that we select. However, based on two events in 1990 (for the US) and in 1991 (for Japan), we might be able to conclude that the direct trade effects from economic slowdowns in the two economic powers would have adverse consequences on the economy of Singapore. A key driving factor here is the high trade dependence that Singapore has on the two markets, reflected by high export shares in the overall Singapore GDP.

4. SALIENT FEATURES OF THE JAPAN-SINGAPORE ECONOMIC PARTNERSHIP AGREEMENT (JSEPA)

Having examined available trade data on bilateral linkages, we go on to highlight actual elements of the Japan-Singapore trade agreement which has recently been agreed to and is in the process of being implemented. While Singapore has already implemented a wide-ranging trade pact with New Zealand, this is the first trade pact that Japan has agreed to with any country. The so-termed 'Japan-Singapore Economic Partnership Agreement' or JSEPA for short has been viewed in many circles as a possible template for other trade agreements in Asia, and therefore warrants closer examination.

The idea of the JSEPA was first mooted in December 1999 by the Singapore Prime Minister to his Japanese counterpart. A Joint Study Group was established to study the viability of the proposal. The group completed its work in September 2000 and the governments of Japan and Singapore entered into formal negotiations on a trade agreement in October of that year. Following a series of negotiating rounds, the Agreement was signed in January 2002 in Singapore and is to come into effect by the middle of this year once the legal and administrative procedures related to its implementation are completed by both countries.²³ The Agreement comprises a number of elements pertaining to the liberalisation and facilitation of trade in goods and services and investment flows as well as a number of other elements dealing with broader economic cooperation.

²³ 'Japan Singapore Free Trade Pact to Start Mid-2002', 11 May, *Reuters Ltd.* (Singapore).

a. Trade in Goods

Tariffs: The JSEPA eliminates tariffs on goods covering 98.5 per cent of current trade between the two countries, much higher than the WTO zero-tariff commitments, which currently covers about 65 per cent of current Japan-Singapore trade. Singapore has committed to grant zero-tariff treatment on all imports from Japan. In turn, Japan has more than doubled its zero-tariff commitments to Singapore from the current 34 per cent to 77 per cent of total tariff lines. While preferential tariff-free market access has been granted to an extensive range of products, agriculture is the one area where tariff concessions have lagged because of the extreme political sensitivity of this sector in Japan, on the one hand, and its relative unimportance to Singapore, on the other. Both countries are prohibited from maintaining any export duties that may distort bilateral trade.

Customs Procedures and Paperless Trading: Complex and non-uniform customs procedures are seen as significant non-tariff barriers to the movement of goods across borders. The JSEPA commits both countries to improve the speed and efficiency of customs clearance of goods on a mutual basis by streamlining and simplifying existing procedures and via the use of informational technologies. The two countries have thus agreed to replace the current paper-based supporting trade documents with more cost-effective electronic versions. Steps will be taken to ensure that the necessary infrastructure is put in place to support 'paperless trading'.

Mutual Recognition: Differences in testing and certification standards is another important barrier to the trade in goods across borders. In recognition of this, both countries have agreed to take steps to ensure the mutual recognition of test results and certification by accredited conformity assessment bodies in either country. Once this is in place, exporters can have their products tested and certified by assessment bodies locally and not have to duplicate the procedures in the importing country. Specific focus is on electrical and electronic and telecom products which is a major area of bilateral trade as well as pharmaceuticals. The latter is not only an area of growing importance in terms of bilateral trade but is also of strategic relevance in view of the rapidly ageing populations in both countries.

b. Trade in Services

Since the services sector is of particular significance to both economies, the JSEPA discusses a number of provisions for the liberalisation and facilitation of transactions in this sector. The agreement thus includes commitments by both countries that go well beyond those agreed under the WTO (in over 130 sectors).²⁴

²⁴ Specific services that Japan has committed for liberalised trade under the JSEPA are professional services, construction services, computer services, distribution services, telecommunication services, financial services, and transport services.

Since non-tariff and non-quantitative barriers hinder cross-border services trade much more than tariff barriers, steps have been taken to ensure that 'behind the border' impediments to trade and investment flows (i.e. trade facilitation measures) are eased. The committed sectors are subject to market access, national treatment and domestic regulation disciplines. Given the degree of internationalisation of the Singapore economy, the JSEPA has been extended to include permanent residents and multinational firms, which have 'substantive business operations in Singapore'. While a number of services sectors are expected to benefit from the agreement, it is noteworthy that four sectors have come in for special attention.

Tourism: In an effort to promote the tourism sectors in both countries, the JSEPA has proposed the establishment of a Joint Committee on Tourism. More concretely, the countries have agreed to a Memorandum of Understanding (MOU) on the twinning of Ginza and Orchard Road which are the premier shopping districts of Japan and Singapore, respectively. The aim of this is not only to promote the two areas to one another's citizens and those in third countries but also to undertake joint promotions and special events to showcase the arts and cultures of both Asian countries.

Information, Communication Technology (ICT): Both Japan and Singapore are among the leaders in ICT trade and its day-to-day utilisation.²⁵ Undoubtedly one of the reasons for the depiction of the JSEPA as being 'New Age' is its emphasis on cooperation and facilitation of this sector. The JSEPA has put in place steps to: (a) fortify the market access in Japan for Singapore-based businesses delivering ICT products and services and vice versa; (b) augment the knowledge of business environments in both countries and provide a more level playing field for businesses dealing in Telecommunication Services; (c) reduce technical and technological obstructions to ICT trade; (d) offer an additional and alternative route to orderly Dispute Settlement; and (e) catalyse and facilitate the ongoing expansion of e-Commerce transactions.

Broadband: Cooperation in the area of media and broadcasting has also been identified as a key area of cooperation in which Japan and Singapore can help one another in the development and provision of innovative media and broadcasting technologies.

Financial Services: Singapore, Tokyo and Hong Kong are the three important financial centres in Asia. In an effort to give one another's financial sectors a boost in terms of turnover and cost efficiency, the JSEPA has put in place a number of initiatives to enhance bilateral cooperation to promote financial sector and capital market development.

²⁵ Service exports comprising ICT related activities accounted for nearly half of total service exports for Singapore and more than that amount for Japan in 1998.

TABLE 12A
Singapore: Inward Stock of Foreign Direct Equity Investment by Country
(US \$ billion)

	1987	1992	1995	1997	1987	1992	1995	1997	1987-92	1992-95	1995-97
	<i>Amount</i>				<i>Shares in Total (Per cent)</i>				<i>C.A.G.R</i>		
US	3.8	5.9	10.0	14.0	26.6	17.0	16.9	18.4	9.4	19.2	18.0
EU	3.0	8.0	12.2	15.4	20.8	23.1	20.6	20.3	22.1	15.1	12.0
Japan	2.2	8.1	12.0	13.7	15.3	23.3	20.1	18.1	30.1	13.9	7.0
ASEAN	0.8	1.9	4.0	4.6	5.4	5.4	6.7	6.0	19.5	28.9	6.9
Total Direct Equity Investment	14.2	34.8	59.3	75.8					19.6	19.5	13.0

Notes:

C.A.G.R: Compound Annual Growth Rates.

Source: Calculated from *Yearbook of Statistics, Singapore*, various issues.

TABLE 12B
Singapore's Investment Commitments in Manufacturing by US and Japan
(US \$ billion)

Country	1992	1993	1994	1995	1996	1997	1998	1999
United States	0.7 (43.96)	0.9 (45.71)	1.6 (56.66)	1.5 (42.78)	1.7 (40.33)	1.6 (40.62)	1.4 (43.98)	2.1 (57.32)
Japan	0.5 (31.39)	0.5 (24.53)	0.6 (21.12)	0.8 (23.75)	1.4 (33.88)	1.4 (34.07)	1.1 (34.95)	0.7 (18.86)
Total Foreign Direct Investment	1.7 2.1	2.0 2.4	2.8 3.8	3.4 4.8	4.1 5.7	4.0 5.7	3.1 4.7	3.7 4.7
Total Direct Investment								

Note:

Figures in parentheses indicates shares in total Foreign Direct Investment (FDI).

Source: Calculated from Singapore International Chamber of Commerce, Annual Report 1999-2000.

c. Investment Facilitation and Movement of Natural Persons

Singapore is highly dependent on FDI, and Japan is the second largest investor in the city-state (Tables 12A and 12B). Thus, the JSEPA also contains a set of detailed provisions on investment promotion and protection aimed at fostering an open international environment for cross-border investment and providing access to each other's markets. Issues covered include national treatment, prohibition of performance requirements, expropriation and compensation, transfers of profits and other funds, and investor-to-state dispute settlement mechanism and procedures. As with trade in services, the agreement spans both citizens and permanent residents of Singapore and encompasses firms formed in either Japan or Singapore which are owned or controlled by non-Singaporeans/Japanese and 'engaged in substantive business operations'. Steps have also been put in place to encourage cooperation and business alliances between small and

medium sized enterprises (SMEs) between the two countries so as to gain greater market shares in one another's economies as well as penetrate in third country markets.

Trade in services and investments invariably require complementary movement of natural persons. The JSEPA will grant Singaporeans and permanent residents of Singapore guaranteed entry and stay in Japan to work and to administer their investments under fairly liberal conditions. Similarly, Japanese professionals will be able to practice in Singapore. Measures are also being taken towards the mutual recognition of professional qualifications.

Besides these measures and other specific ones to promote trade and investments (by enhancing facilities for export credit insurance and overseas investment reinsurance), the JSEPA has taken steps to: (a) promote mutual recognition of and cooperation with regard to competition policies; (b) put in place a set of procedures and regulations pertaining to government procurement; (c) undertake collaborative measures and cooperative activities on Intellectual Property (IP); (d) step up cooperation in Science and Technology and human resource development; and (e) establish provisions for orderly dispute settlement. In addition, the agreement has also established norms for the liberalisation and facilitation of trade and investment in the services sector. Given the relatively low penetration of FDI in this sector in Japan, Singapore, which has a growing comparative advantage here, can be expected to reap significant economic gains.

Significantly, this trade pact should also attract foreign companies to be based in Singapore, since under the JSEPA, foreign subsidiaries based in Singapore are to be treated in the same manner as indigenous Singapore companies with respect to all the provisions as discussed, and provides them with an opportunity to enter the Japanese market, especially in the services sector, where high entry barriers exist for foreign producers. This ought to further enhance Singapore's attractiveness as a destination for multinational companies (MNCs) to establish OHQs/RHQs. Conversely, trade and investment diversion remains a real concern particularly with regard to the services sector. This could potentially hurt third countries if not the two countries directly concerned. In response, apart from repeatedly asserting the primacy of the multilateral trading system, policy makers in both Japan and Singapore have often expressed the view that the JSEPA is open to other 'like-minded' countries in Southeast Asia and elsewhere. Nonetheless, the presence of these 'new' trade issues pertaining to harmonisation of investment and intellectual property rights regimes as well as the large-scale exclusion of agriculture products does make one doubt the extent to which these agreements can be extended to other countries. The relatively lax and vague WTO rules regarding regional trade agreements ensures that the JSEPA is not inconsistent with them, but then again, virtually none of the other 170 trade pacts that dot the global trading system are either.

5. SINGAPORE AND THE NEW REGIONALISM: SOME CONCLUDING,
CAUTIONARY NOTES

The preceding sections have highlighted the existence of pronounced trade and investment linkages between Singapore and the two largest economies in the world, Japan and the US. In some ways, the proposed bilateral trade pacts by Singapore with these two economies are a formalisation of the *de facto* extensive and deep linkages that already exist. In other words, it might be argued that such FTAs are essentially 'market-driven'. The reasons for Singapore's recent turn to the 'new regionalism' have been discussed in some detail. Among the most important are the continued weaknesses in the neighbouring Southeast Asian economies and Singapore's consequent need to diversify its economic linkages. As noted, despite the fact that Singapore already has low tariffs and other barriers (implying that a number of negative conventional welfare effects may be of limited relevance to the city state), it would certainly be a leap of faith to conclude that there are no ill effects whatsoever. What are some potential concerns of Singapore's recent eagerness to form FTAs?

While we have noted that trade diversion may be expected to be minimal from Singapore's standpoint given its low tariffs (and ignoring the issue of ROOs), conversely, the gains from discriminatory liberalisation vary inversely with the pre-union tariff levels (Panagariya, 1998).²⁶ The proliferation of a number of overlapping FTAs also raises many technical problems with respect to the implementation of ROOs (Krueger, 1997). Even with a single FTA, a concern is that ROOs with a particular country, say the US, may be sufficiently prohibitive so as to induce Singapore exporters to source their inputs from US than some other developing country in Asia. In other words, the US exports its external tariffs to Singapore. This appears to have been the case with NAFTA, where the US negotiated a ROO on Mexican assemblers of automobiles. ROOs also give rise to significant costs due to the need for administrative surveillance and implementation (see Krueger, 1995 and 1997; Lloyd, 1993; Schiff et al., 2000; and Wonnacott, 1996a and 1996b). In practice, ROOs are particularly complex as they have to take into account tariffs on imported intermediate goods used in products produced within the FTA. The bookkeeping and related costs rise sharply as production gets more integrated internationally.

Apart from the issue of ROOs, a large number of FTAs may leave investors confused as to which rules, obligations and incentives correspond to which partner. Worse still, there is the possibility that membership in multiple trade pacts may

²⁶ In addition, in the case of its FTA with Japan, some East Asian economies may actually be worse off. This is so as Japan has provided extensive trade preferences to a number of East Asian economies on a GSP (Generalised Preference System of Preferences) basis, and with an FTA, these benefits may be revoked along with a lowering of tariffs (Panagariya, 1998).

create 'obligations made in one that contradict those made by others' (Schiff et al., 2000). Bergsten (2000) highlights this point in the context of compatibility of subregional agreements with the APEC's goals of regionwide trade liberalisation (i.e. the Bogor declaration of free and open trade by 2010/2020).

Time and efforts spent on negotiating and implementing a series of bilateral and trilateral FTAs may divert scarce resources from the multilateral rounds. Potentially more important than the direct impact of this 'scarce negotiator resources argument' to Singapore is the fact that, by being involved in a number of FTAs, Singapore must accept at least partial responsibility for diverting attention of trade partners away from multilateral negotiations. For instance, the US Trade Representative (USTR) paying more attention to a number of bilateral FTAs will mean that much less attention at the margin being paid to the WTO or APEC.

Singapore appears to be willing and able to negotiate FTAs fairly quickly. However, this rapid pace apparently hinges on Singapore's readiness to accept a number of conditions in the context of the bilateral pacts set forth by the larger partners, such as labour and environmental standards, in the case of the FTA with the US (said to be modelled after the US-Jordan agreement), or exclusion of agriculture in the case of the FTA proposals with Japan (as noted above).^{27,28} While acceptance of these conditions may not be problematic in the case of Singapore (given its high environmental standards and negligible agricultural sector), if they are eventually included in the trade pacts, Singapore may be doing a disservice to developing economy interests in multilateral negotiations at large. Bhagwati's (1995) discussion of the US FTA strategy during NAFTA negotiations is prescient:

NAFTA's passage . . . was subject to Mexico's acceptance of supplemental agreements on environmental and labour standards . . . (W)hy should such agreements be a precondition for freer trade? . . . (The) US was a superpower bargaining one-on-one with a vastly inferior power. In turn, those supplemental agreements have encouraged the environmental and labour lobbies to argue that because NAFTA required them, so must the WTO . . . In short, NAFTA has made the WTO's business more complex, not less . . . (T)he United States can first force Mexico to buckle under to those demands and then tell Chile and others, 'This is how NAFTA is, so you must accept these "nontrade" terms and conditions if you wish to come on board.' . . . (T)hat 'Take-them-one-by-one' strategy works so much better than trying to impose extraneous, indeed harmful, conditions through multilateral trade negotiations where all countries facing such demands negotiate together and have more bargaining power (pp. 12–13).

²⁷ Indeed, the absence of many sensitive areas between two countries like agriculture and forestry and fisheries appears to have been the main reason for Japan's willingness to embark on a preferential trade agreement with Singapore. Other reasons might include similarity of income levels, geographic proximity as well as Singapore's experience with negotiating agreements with other countries.

²⁸ See Perroni and Whalley (1994) who formally show how large countries have dominated negotiations with FTAs with smaller countries (i.e. the former has the bargaining power in FTAs).

More narrowly, such supplemental agreements may not be as readily acceptable to other ASEAN members. Accordingly, Singapore-based FTAs may not be an appropriate model for future agreements by other Asian nations, and could make these FTAs *de facto* exclusionary to other ASEAN members despite ‘assurances’ by Singapore policy makers that the FTAs would be left open for others to join.²⁹

APPENDIX A

Data Constructions for the Export Demand Functions

Export volume: The most accessible data on exports are in *value* rather than in *volume* terms. However, the theory suggests that volume rather than value is the appropriate dependent variable (Learner and Stern, 1970). To derive the export volume, we divide the value series by a measure of price. For an example, the volume of Singapore’s exports to US is computed in the following way:

$$Xsgus_t = \frac{XVAL_t^{US}}{XP_t} \quad (A.1)$$

where $Xsgus$ is the quantity of export to the US, $XVAL^{US}$ is the value of export to the US, and XP is the country’s export price. The same step is used to calculate the quantity of Singapore’s exports to Japan.

Terms of Trade: The variable is constructed as the ratio of Singapore’s export price to the US export price (to capture the proxy for import price of Singapore from the US), where both prices are denominated in US dollar:

$$Psgus_t = \frac{XP_t}{XP_t^{US}} \quad (A.2)$$

where $Psgus$ is the terms of trade with US, XP_t is Singapore’s export price, and XP_t^{UP} is the US export price.

Real exchange rate volatility is constructed by the moving sample standard deviation of the growth rate of the real exchange rate:

²⁹ Paradoxically, as noted, while it may be in Singapore’s best interest to remain as a hub with a number of other spokes it may be in the best interests for other countries not to join an existing Singapore-based FTA. Wonnacott (1996a and 1996b) caution that while spokes are certainly worse off in a hub-and-spoke regime compared to a ‘full’ or complete FTA, it is unclear as to whether hubs are better or worse off. This is so, as the collective incomes of a hub-and-spoke arrangement tend to be smaller (given the inefficiencies caused by overlapping FTAs), the share of benefits accruing to the hub is larger than a full FTA.

$$V_t = \left[(1/m) \sum_{i=1}^m (\log Q_{t+i-1} - Q_{t+i-2})^2 \right]^{1/2} \quad (\text{A.3})$$

where Q is the real exchange rate and $m = 8$ quarters. This index has been used in previous studies including Kenen and Rodrik (1986), Koray and Lastrapes (1989) and Chowdhury (1993).

As for income variables, real GDP of the US and Japan are considered as proxies for Y_{us} and Y_{jpn} .

APPENDIX B

The Direct Trade Effect Index

The Direct effect of a US slowdown on the exports of Singapore to the US can be computed in the following manner (Conway, 2001):

$$\Delta X^{US} = X_0^{US} (\dot{X}_S^{US} - \dot{X}_{NS}^{US}). \quad (\text{B.1})$$

Δ denotes the first difference of the log forms of the variables. Equation (B.1) measures the change in Singapore's exports to the US, with X_0^{US} denoting exports from Singapore to the US in period 0 and $(\dot{X}_S^{US} - \dot{X}_{NS}^{US})$ denoting the difference in the growth rate of exports in the event of a slowdown (denoted by subscript 's') and a non-slowdown (denoted by subscript 'NS')

The effect of exports to the US on Singapore's GDP growth is given by:

$$\Delta \dot{Y} = \left(\frac{Y_1 - \Delta X^{US} - Y_0}{Y_0} \right) - \left(\frac{Y_1 - Y_0}{Y_0} \right) \quad (\text{B.2})$$

where Y_0 denotes Singapore's GDP in period 0 and Y_1 denotes the same in period 1. Substituting (A.1) in (A.2), one gets:

$$\Delta \dot{Y} = \frac{X_0^{US}}{Y_0} (\dot{X}_S^{US} - \dot{X}_{NS}^{US}) \quad (\text{B.3})$$

which implies that the impact of a slowdown of Singapore's exports to US depends on the differences in the growth rate of exports between a slowdown and a non-slowdown period, weighted by the shares of Singapore's exports to US in Singapore's GDP. The direct impact on Singapore due to a slowdown in Japan is calculated in the same manner.

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