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Sharing benefits of globalisation: A EU-Singapore Free Trade Agreement¹

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Executive summary

In the aftermath of the stalled launch of a new WTO round of global trade talks (December 1999), Singapore and Japan initiated a joint study into the feasibility and desirability of a possible bilateral Free Trade Agreement. The subsequent negotiations led to a 'New-Age Economic Partnership Agreement' signed in January 2002, reducing barriers in trade and investment in goods as well as services, technical standards and public procurement. New initiatives for economic cooperation in, inter alia, human resource development, science and technology and SMEs were agreed. During 2000 talks had also begun between Singapore and the United States and these are expected to result (by September 2002) in a proposal to the political level for a bilateral Free Trade Agreement (FTA). It is expected that the proposed US-Singapore FTA will include initiatives enabling other South East Asian countries, notably Indonesia, to also benefit from the agreement. A second round of talks towards a bilateral FTA between Singapore and Australia is to take place in July 2002. It is against this background of deepening of trade and investment links between the Republic of Singapore and all the other major OECD players that the question of a possible EU-Singapore FTA is investigated.

This 'final draft report' addresses the possible opportunities and risks to the European Union of entering into negotiations with Singapore with a view to realising a bilateral EU-Singapore FTA. This report seeks to inform the feasibility assessment of such a course of action, while noting a number of questions which deserve further policy discussion as well as economic and statistical analysis.

Singapore's trade policy regime is very open and the gains of further tariff elimination will be small, because Singapore already applies zero tariffs, while those of the EU on import from Singapore are merely 1.04 per cent (trade weighted). Nevertheless, a further reduction could benefit both EU and Singapore because the major share of imports is intra-firm trade, with EU firms operating from Singaporean and regional production platform for the EU markets. However, for a EU-Singapore FTA to be worthwhile, it must generate benefits on issues relating to non-tariff barriers to trade, e.g. technical standards, SPS and mutual recognition of testing. Further significant benefits to both the EU and Singapore may be realised by tackling the issue of further liberalisation of international trade in services (e.g. banking and insurance licences, air and sea transport). Finally, reducing restrictions on foreign direct investment in selected service sectors is bound to enhance investment flows.

A bilateral EU-Singapore FTA could elaborate fresh rules for 'new' issues of public procurement, competition policy, intellectual property and dispute settlement. In this respect the EU-Chile Free Trade agreement (10 June 2002) offers a very relevant template, with considerable scope for a EU-Singapore agreement venturing deeper into these issues of 'behind the border' non-trade barriers and restrictions.

It goes without saying that a possible EU-Singapore FTA will be "WTO-plus" – re-invigorating multi-lateral commitments made and anticipated. It is equally pertinent that any EU agreement with Singapore must offer the scope for replication and extension within the ASEAN region, if not beyond. Finally, the Doha Development Agenda will become the *leitmotiv* of multi-lateral trade talks for the com-

ing years. The EU support to this agenda would be underscored by a commitment, in principle, to extend benefits in areas of services liberalisation, offered to Singapore also to other countries in the region.

Some of the questions to be addressed with implications for EU external trade and relations policy more widely will relate to the precise nature of possible mechanisms to ensure that a bilateral agreement will extend benefits to other ASEAN countries. Hence, the application of the rules of origin for selected sectors should deserve careful consideration and suitable amendments to the rules of origin may need to be considered to ensure that the FTA will generate benefits to the region. At a global political level, the more active use of bilateral FTAs as instruments of external relations policy will place the EU at par with the US as executing a multi-track strategy encompassing multi-lateralism, regionalism as well as bi-lateralism. It is noteworthy that Japan has also chosen this direction in recent years.

Other pertinent questions to be answered will require further statistical and economic analysis. Statistical analysis should address the inadequate information on current flows of internationally traded services between the EU and Singapore. Further economic analysis should seek to quantify the dynamic effects of a FTA resulting from increased investment flows, greater technology and human resources transfers as well as increased commercial presence of the EU in Singapore and vice versa.

The structure of this report is to start by noting the considerable EU commercial presence in Singapore. This is so, in part, because Singapore's trade policy regime is very open – and irreversibly so – more than nearly any other country, including the EU (Chapter 1). It is shown that trade diversion effects of a possible EU-Singapore FTA will be negligible and that trade creation effects of tariff reductions on goods alone will be very limited too (Chapter 2). However significant mutual benefits of a FTA may accrue from reducing technical barriers to trade, in particular through harmonisation of technical standards, mutual recognition of testing and suitable SPS agreements for selected sectors (Chapter 3). Furthermore, accelerated removal of remaining non-tariff barriers on establishment and commercial presence in service sectors can lead to an increase of internationally traded services, for which the EU presently appears to be in deficit. This will need to be addressed in the wider context of public procurement, competition policy and effective dispute settlement (Chapter 4). The possible risks of a EU-Singapore FTA – mainly concerning EU's political relations with ASEAN and less developed Asia -- are assessed in Chapter 5 and Conclusions and Recommendations follow in Chapter 6.

1. Introduction

Mr Pascal Lamy, European Commissioner for Trade announced on 26 April, 2002 to have reached an agreement, in principle, for a very ambitious 'Association Agreement' between the EU and Chile. The Agreement will incorporate a Free Trade Area, a political dialogue and extensive co-operation. The agreement was initialled by the European Commission and a representative of the Chilean Government on June 10, 2002.⁶ Speaking in Brussels, the European Commissioner for Trade coined the agreement a 'fourth generation plus' agreement, which was 'a good deal for both sides'. It will cover all areas of trade and go well beyond the respective WTO commitments of the EU and Chile. It is to include:

- a Free Trade Area in goods covering all sector including industrial, fisheries and agricultural goods;
- a fully-fledged free trade agreement in services;
- an investment agreement to encourage FDI in both directions and opening-up of public procurement markets;
- rules on competition and intellectual property; as well as
- an effective dispute settlement system.

(A summary of the highlights of the draft EU-Chile agreement is annexed to this report).

This announcement about the forthcoming EU-Chile free trade area -- the first since Mr Lamy took office in 1999 -- followed his recent statements at the Asia-Europe Foundation in Singapore (15 February, 2002). He remarked that Mr George Yeo, Minister for Trade of Singapore had made an 'immensely compelling political and economic case' for strengthening the ties between the EU and Singapore through a Free Trade Agreement. He proposed several 'tests' for such an agreement:

- first, does EU business support such an agreement?
- second, will it enhance the EU's multilateral ambitions in the WTO (is it "WTO-plus")? ; and
- third, that such an initiative must not detract but reinforce the pursuit of the Doha Development Agenda ("Doha-plus").⁷

This report will assess which courses of action may be open to the European Union and the Republic of Singapore to achieve a collaboration which would potentially lead to an agreement with all – if not more – of the desirable features of the forthcoming EU-Chile agreement, while robustly surviving the tests outlined above. The present report may be seen as a 'pre-feasibility assessment' for a possible EU-Singapore Free Trade Agreement, analysing both opportunities and risks.

⁶ The Commissioner noted that the Agreement was 'at his political level'. Following the initialling of the agreement on June 10, 2002 it will need to be approved by College of Commissioners. The text will be submitted to the Council and the European Parliament and the formal signing of the Agreement is expected to take place during the Autumn of 2002. The trade and institutional provisions will enter in force only after completion of the adoption procedures by the European institutions and the Chilean Congress. Parliaments of EU Member States will also have to ratify the Agreement. A summary and discussion of the highlights of the services sections of the draft Agreement is presented below.

⁷ Although this was not formally stated, it may be assumed that the European Union would not consider any agreement with one member state of ASEAN that would not be welcomed by its other members – which we shall here coin as 'ASEAN-plus'.

2. Europe's presence in Singapore

2.1 EU commercial presence in Singapore

Europe's prominence in Singapore is not merely a consequence of five centuries of shared history – a great deal of new investment and activities have developed and blossomed during the last three decades. Today's trade and investment flows between the EU and Singapore are of critical economic importance for the EU – not merely because of their value, but also because of their strategic regional nature. Several indicators highlight this, in particular the extent of commercial presence of European firms in Singapore as well as the importance of intra-firm trade – firms in the EU importing from their own subsidiaries in Singapore.

Out of the top 1000 companies registered in Singapore no less than 104 have EU origins and ownership. Many of these firms tend to be amongst the largest ones, with their average sales some 40 per cent above that of the top 1000 group as a whole. The three major EU Member States are well represented with Germany with 29 companies followed by the United Kingdom (23) and France (17). Furthermore, of the top-1000 companies another 23 have their origin in the Netherlands and Sweden. The profitability levels of these EU companies, measured by the net-profit-to-assets ratio, are also well above average, comparable to those realised by US firms and much above those of the Japanese and Singaporean companies in the top 1000. In particular, the United Kingdom and the Netherlands' companies realised very attractive returns on their assets during 2000/01 at 13.0 and 13.5 per cent respectively (see Table 1).⁸

Table 1 : EU in Singapore's Top 1000 companies, 2000/2001

	Number	Sales (S\$m) (Euro 1 = S\$ 1.605)	Net Profits (S\$m)	Assets (S\$m)	Profit- Asset Ratio (%)
Singapore	459	200500	18752	780143	2.4
Europe	104	76048	4029	58887	6.8
<i>France</i>	17	6456	251	6640	3.8
<i>Germany</i>	29	7402	378	10760	3.5
<i>Netherlands</i>	16	35945	662	984	13.5
<i>Sweden</i>	7	1929	133	17306	3.8
<i>United Kingdom</i>	23	16656	2565	19696	13.0
United States	91	91593	4518	65461	6.9
Japan	205	91391	1241	38808	3.2
Others	51	17101	1223	43590	2.8
Joint Venture	3	1749	289	2140	13.5
TOTAL	1000	524879	30819	1027370	3.0

Source : ?

⁸ The comparison of net profitability across countries is to be made with caution because issues of national treatment of taxation and resulting transfer pricing will influence reporting on net profits.

In particular in the industrial goods sector one finds a great deal of presence and dominance of EU firms. For example, of Singapore's total chemical export to the EU nearly 80 per cent was supplied by three global firms – each of them a household name with their origins and majority ownership in the EU.

This raises the important question to what extent EU companies operating from a Singapore base rely on intra-firm trade with Europe. Table 2 provides a preliminary estimate of the importance of EU firms importing, exporting and re-exporting to the European markets through their own affiliates and subsidiaries, based on a sample of firms submitting invoices for statistical audit purposes. For this sample, which comprised approximately 12 per cent of all trade between Singapore and the rest of the world, intra-firm trade was as high as 61.3 per cent. Those EU firms included in the sample reported that as much as 89.8 per cent of their overall trade and 98.9 per cent of their 'made in Singapore' domestic exports were intra-firm trade. The same indicator for US-owned firms stood at 80.4 per cent. Although these estimates may be expected to be biased upward because of the likely over-representation of large TNCs in the sample, a conservative conclusion would be that the major share of Singaporean exports to the EU consists of intra-firm trade. This simple reality provides a strong and powerful business case in favour of a FTA because such an agreement will directly reduce the costs to EU-owned firms operating both in Singapore and the EU.

Table 2 : Intra-firm Trade by EU and US Owned Companies, 2001

Ownership	Total Trade	Domestic Exports	Re-Exports	Imports
% Share of Ownership Total				
Total	100.0	100.0	100.0	100.0
Intra-firm Trade	61.3	83.3	52.3	48.8
Others	38.7	16.7	47.7	51.2
US	100.0	100.0	100.0	100.0
Intra-firm Trade	86.7	80.4	93.8	94.6
Others	13.3	19.6	6.2	5.4
EU	100.0	100.0	100.0	100.0
<i>Intra-firm Trade</i>	<i>89.8</i>	<i>98.9</i>	<i>92.4</i>	<i>84.9</i>
<i>Others</i>	<i>10.2</i>	<i>1.1</i>	<i>7.6</i>	<i>15.1</i>

Note: Intra-firm trade is estimated based on information collected from invoices submitted by companies in 2001 for statistical auditing purpose. See Annex Table 1 for further detail.

Source: IE Singapore

The service sectors in Singapore also includes a large number of companies with European parentage. The following stylised facts were collated from a business survey recording commercial presence in Singapore during 2001.

Some 157 companies in the transport sector reported EU parentage or head offices. The four sub-sectors in which they operated were :

- sea and inland waterway transport including 57 EU companies of which those of the UK (16), Germany (13) the Netherlands (13) and Denmark (9) were most prominent. Of these companies 10 reported more than 50 employees, indicating that quite a number of small and medium size enterprises were also present;
- supplementary transport such as travel agents, shipping or forwarding agents etc. counting 65 EU companies of which nearly a quarter had more than 50 employees. Again the UK, Germany, the Netherlands and France were mentioned respectively 18, 14, 9 and 8 times as the parent or head office country;
- warehousing and storage for which some 21 companies indicated EU head offices or parentage with Germany, the Netherlands and the UK in the most prominent positions; and
- air transport with 14 companies reporting for passengers and/or freight including all the major EU carriers.

In the financial services and insurance sectors some 154 'EU' companies are operating with the United Kingdom (54), France (32), Germany (27) and the Netherlands (17) accounting for the lion share. Some 55 of these firms employed more than 50 employees – indicating the considerable employment impact of this sector. We shall provide an analysis of the type of operations of the licensed operators in Chapter 4 below.

This European presence is certainly a reflection of the business-friendly environment of Singapore. The Economist Intelligence Unit's survey of best places to do business in Asia elected Singapore at the top spot for 2002, overtaking its rival Hong Kong.⁹ However, the specific characteristics of Singapore's international trade and investment policy regimes, compared with other countries in the region, are the most important determinant. We seek to characterise these in the next section of this chapter.

2.2 EU and Singapore's international trade policy regimes

Firms export more to or from markets subjected to the "best" trade policies (even if these policies still do not fit the free trade ideal) than to other markets, and trade policies "compete" with each other for attracting trade and investment flows. A Free Trade Agreement is seen by firms from a country as "improving" the trade policy regime of the country's trading partner. To get a sense of what may be the main interests of the EU in a FTA with Singapore, it would be desirable to have a set of indices allowing broad comparisons between the trade policies of Singapore, the EU and other relevant countries. Giving Singapore a 'grade' for its trade policy regime, relative to competing countries, allows us to assess, though indirectly, the arguments in favour of a EU-Singapore FTA. Some novel research into trade policy regime indicators allow us to do precisely that (Messerlin and Laird, 2002).

⁹ The short to medium term outlook for Singapore is brightening, with private sector forecasters from EU and US predicting GDP growth at 3.9 and 5.9 per cent respectively for 2002 and 2003, exceeding the government's projections. (The Economist, 30 April 2002).

Characterising Trade Policy Regimes. When looking at foreign markets, firms ask a wider range of questions about trade policy than merely asking whether trade is 'free'. Key questions are as follows:

- first, is the examined trade policy simple to understand and to predict?
- second, will it guarantee secure access in the future?
- third—of course—is the openness in terms of market access (the free-trade component).

In order to answer these questions, three indices of “simplicity,” “irreversibility” and “openness” were constructed for a reference set of 39 countries.¹⁰

Singapore's Trade Policy Regime. As one could expect, the general conclusion is that Singapore's trade regime is one of the most “competitive” (open) in the world. (See Table 3). Singapore imposes zero tariffs on imports from all sources, with the exception of certain alcoholic drinks.¹¹ This approach is largely responsible for Singapore's growth and global economic achievement during the past decades. Furthermore, the table also reveals that Hong Kong and Switzerland match Singapore's score on openness in industry -- but on irreversibility Singapore outperforms all other countries, including Hong Kong, Canada and the United States. But Hong Kong and Japan still outperform Singapore for simplicity.

Paradoxically, the high scores of Singapore may be an “impediment” to the conclusion of a FTA with the EU. This paradox arises because it tends to reduce the financial and economic interest of a FTA for EU Member States and firms. Moreover, the indices show that the EU's own trade policy regime is not as competitive as that of Singapore; hence a FTA may mean that the EU will have to open its own markets.

In agriculture, the simplicity index puts Singapore in the highest decile, because of a relatively small number of tariff lines and a relatively low percentage of non-ad valorem tariffs. Although there is no information in the databases used for this exercise on other Singaporean trade policy features in agriculture, it should be expected that the two other indices will also be in the high range. When one compares these results with the EU indexes (suggesting a relatively complex, reversible and closed policy), it is easy to understand that the EU will be rather reluctant to open negotiations in agriculture in the context of this FTA.

In industry, Singapore also exhibits relatively few barriers. Its scores are somewhat lower for the simplicity and irreversibility indexes. Both are first due to the difference between applied and bound Singapore's tariffs which exists across a large range (65-70 percent) of industrial products, although the difference per se is relatively small (on average less than 10 percent) by the standard of the set of countries examined. In these conditions, an EU-Singapore FTA will thus essentially be seen by EU

¹⁰ Our analysis is based on data from WTO (2001), UNCTAD's TRAINS database and OECD. Appendix A provides the details of the method used and the table with full details for 39 countries.

¹¹ The WTO 2000 Trade Policy Review of Singapore indicates that these are Stout and Porter (S\$1.70 per liter), Other beer including ale (S\$ 0.80 per liter) and medicated as well as other Samsoo (S\$8.00 per liter). Excise taxes on imports and domestic production are levied on alcoholic products, tobacco, petroleum products and motor vehicles. These customs and excise taxes amounted to 6.9 per cent of Singapore's total tax revenue during 1999, equivalent to 0.97 per cent of GDP, down from 1.11 per cent the previous year.

authorities and firms as an agreement confirming Singapore's current applied tariffs of zero per cent (with minor exceptions).¹²

The second source explaining Singapore's high simplicity and maximum irreversibility and openness indices in manufacturing is the low frequency of all non-tariff measures. The concept used in Table 3 should not necessarily be interpreted as merely reflecting a protectionist intent. It may simply reveal the existence of a relatively complex regime of norms and standards – partly explaining the EU's lower score.

Table 3: Trade Policy Regime Indicators

	Agriculture			Industry		
	Simplicity	Irreversibility	Openness	Simplicity	Irreversibility	Openness
Countries:						
EU	4,8	6,8	7,0	6,6	6,3	9,6
Singapore	10,0			8,2	9,1	10,0
USA	6,7	7,0	9,1	7,4	7,5	9,4
Chile				7,2	7,2	8,4
Switzerland	5,7	5,5	7,4	5,8	6,1	10,0
Hong Kong				8,4	8,4	10,0
Japan	8,6	9,7	7,7	8,8	8,7	9,6
Averages by region (unweighted)						
North America	6,7	8,0	9,2	7,8	8,2	9,6
Latin America	7,7	8,8	6,9	6,5	7,4	7,4
Europe	5,1	6,2	6,7	6,7	6,2	8,7
Pacific Asia	8,2	8,9	7,4	7,5	8,1	9,0
South-East Asia	7,0	9,0	4,9	6,1	6,8	5,9
Africa	6,8	6,7	6,0	7,3	7,3	6,9
Note:						
Number of observations	30	30	28	39	39	39
Minimum index	3,5	3,5	3,0	4,6	5,0	4,0
Maximum index	10,0	10,0	10,0	8,8	9,1	10,0

Source: see Annex A and author's computations. See also Messerlin and Laird (2002).

In summary, in the manufacturing sector, a possible EU-Singapore FTA will essentially aim at confirming the existing level of zero tariffs. It will seek to tackle non-border regulatory issues – from norms to more subtle aspects, such as the remnants of an industrial policy through the Government Linked Corporations (GLCs).¹³ This aspect has not been taken into account in Table 3 above, but was repeatedly underlined in the recent 2000 Trade Policy Review on Singapore (WTO, 2000).

The above analysis deals only with trade in goods -- not including services. To construct similar indices for services is not yet possible because of the lack of data in services. However, it can be surmised from our observations that liberalisation of trade in services will need to be a major component of a possible EU-Singapore FTA for it to be of sufficient interest to the EU. Hence, we return to the

¹² However, it is to be questioned whether "bindingness" delivered in a FTA context will be seen as equivalent to WTO bindings. The latter could be perceived as more stringent because of the greater magnitude in terms of possible retaliations.

¹³ Government Linked Corporations, defined to include public equity of 20 per cent or more, are estimated to account for 12.9 per cent of GDP during 1998.

issue of international trade in services between EU and Singapore below; the next Chapter will deal with the likely trade creation and diversion resulting from a EU-Singapore FTA.

3. Trade creation and trade diversion

Preferential trade agreements (PTAs) often raise fears of costly trade diversion. In the case of goods, the EU-Singapore PTA is most unlikely to generate significant trade diversion between the EU and Singapore. This is entirely due to the zero MFN tariff rates applied by Singapore. Such rates will always allow Singaporean consumers to buy goods in the rest of the world if EU producers are less efficient than in the rest of the world. And Singapore's zero applied tariff rates will ensure European consumers that the products they import from Singapore have to be among those the most efficiently produced in the world (since Singaporean producers are not protected from the most efficient producers in the world).

This general remark needs two caveats. First, Singaporean zero tariffs are *applied* rates. The very valuable characteristic of these tariffs to eliminate risks of trade diversion for both partners would disappear if Singapore decides rather to use its *bound* tariff rates. A useful FTA provision could thus be a commitment by both parties not to seek changes in the current Singaporean tariff schedule. Second, the above assertion of no risk of trade diversion is based on the tariff level alone. Protection, in Singapore as in the rest of the world, can also be provided by non-tariff barriers (NTBs). Core NTBs (quantitative restrictions, minima prices, etc.) seem absent from Singapore's trade regime. The only source of significant NTBs could thus be Singapore's norms and standards. The 2000 WTO Trade Policy Review on Singapore, portrays Singapore's norms and standards as non-discriminatory in intent. If correct, this feature suggests that risks of trade diversion would be limited to situations where norms and standards may be de facto discriminatory, because of good regulatory reasons. In this chapter we shall examine the scope for trade creation and trade diversion, starting from the standard welfare theory of trade.

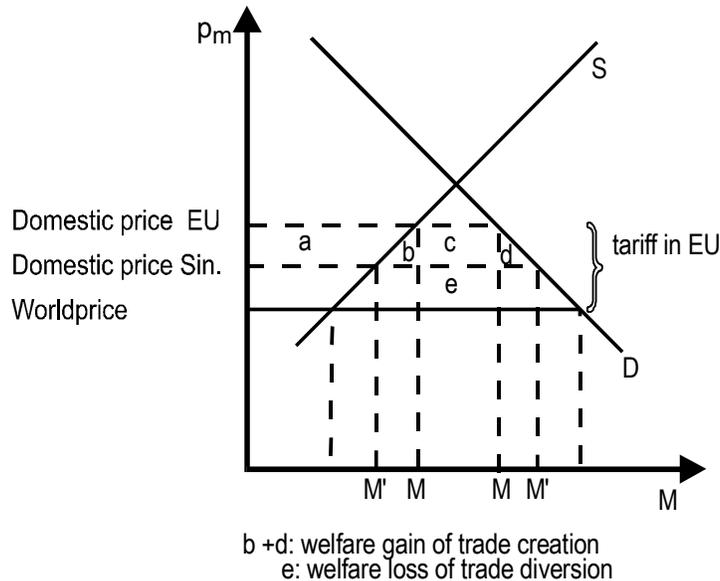
3.1 Welfare theory

The welfare implications of the creation of a FTA between two trading entities, such as the EU and Singapore, can be understood intuitively by looking at only one product group. Assume that the price level for that product in the EU is higher than in Singapore, which in turn is above that prevailing in the rest of the world. Prior to the FTA, the EU is levying a non-discriminatory import duty on the product, such that the price of the products coming from the rest of the world, after duty payment, will be equal to the EU price. The products coming from Singapore would be uncompetitive in the EU market after duty payment. Therefore, prior to the creation of the FTA, all imports of the product at issue in the EU will come from the most competitive suppliers from elsewhere across the globe.

Naturally, a EU-Singapore FTA implies that no further import duty will be levied by the EU on the product originating from Singapore. As Figure 1 below illustrates, the EU price of the product will drop to the Singapore price level. As a result, imports will increase, but now the product from other suppli-

ers in the rest of the world, after duty payment in the EU, will be uncompetitive, as their prices for the EU market are above those from Singapore. Therefore, the imports that prior to the-FTA came from the 'rest of the world', are now supplied by Singapore. This is *trade diversion*. Its welfare effect can be measured by the area c in Figure 1.

Figure 1: Trade creation and trade diversion



On the other hand, as the price of the product in the EU market is lower than before, part of the former EU supply (i.e. that produced in the EU at a higher marginal cost than the price level after the FTA) will now be replaced by Singapore imports – a substitution away from EU producers to sourcing from Singapore. This is *trade creation* and its welfare effect can be measured by the surface of area b in Figure 1. In addition, because of the lower price, consumption in the EU will rise, leading to additional imports from Singapore and thus further trade creation, the welfare effect of which can be measured by area d in Figure 1.

Standard economic theory on the *static* welfare effects of customs unions and free trade agreements concludes that:

- The welfare effect of *trade creation* will be larger the higher the price elasticities of supply and demand of the products at issue. In terms of the static, single product diagram it will make areas b and d larger for given domestic prices in EU and Singapore;
- The welfare effect of *trade diversion* will be smaller, the closer the price levels of Singapore compared to the rest of the world, or in other words, the larger the price differentials between Singapore and the EU. It will make area e in the diagram larger.

3.2 Likely trade creation and trade diversion -- Preliminary analysis

Some preliminary qualitative and quantitative indicators are reviewed to assess the likelihood of trade creation and trade diversion in the case of a EU-Singapore FTA. First needed are estimates of the

price-elasticities, describing the slope of the demand and supply curves, as well as indicators of world price levels, Singaporean price levels and tariff and non-tariff barriers applied. EUROSTAT statistics allow us to assess the importance of bilateral trade flows between the EU and Singapore, as well as between the EU and the rest of the world, at a sufficient level of product disaggregation. We will focus only on the most important product groups which Singapore exports to or imports from the EU. For an overview of the basic trade and investment flows between EU and Singapore are presented in Annex B.

Price elasticities. It is beyond the scope of this study to estimate EU-Singapore price elasticities, but we can draw on previous estimates of the price elasticities in the short and the long run. A number of studies enable a rough estimate of the importance of price elasticities in this respect. E.g. a study by Brown, Deardorff and Stern (1992) on NAFTA provides estimates of price elasticities of demand for some 23 ISIC sectors in the USA and Canada. The EU market is different, however, and we therefore will refer to the elasticities of EU demand and supply and the elasticity of excess supply from the rest of the world, used in the partial equilibrium calculations on the impact of internal market barriers in the EU, undertaken by Cawley and Davenport (1988). These estimates cover 27 industrial sectors and 10 service sectors.

Relative price levels. Regarding price levels, we can use the implicit price indices in the Eurostat external trade data or OECD Trade by Commodities data. By dividing, at a sufficiently disaggregated product level, the value of EU imports from Singapore or other countries/parts of the world by the corresponding volume, we can construct time series, which allow us to compare changes in the relative price levels of the EU with Singapore as well as the rest of the world. There are, however, serious calculation problems involved. Therefore we use the relative unit value (RUV) price indices calculated by the International Trade Centre.¹⁴

The RUV of each sector is calculated as the ratio of the average unit value of exports for a country to the world average unit value. The price level in the world is the reference point, and the average RUV is therefore equal to 1. If the RUV is below or above unity, then the country exports its product at a lower or higher price than the world average unit price. The comparison of unit values for homogeneous products gives an indication of exporters' relative prices. However, as the new theories of international trade emphasize rightly, products are differentiated by quality, which is usually reflected in differences in price (ITC, 2000).

The ITC relative unit value price indices show for some broad product groups the price level of exports of that product group of a particular country, as compared to the comparable price level of the same exports of the world (which is used as unit, and therefore equals one). The RUVs for Singapore and the range of the RUVs of thirteen EU countries are provided in Table 4 below.¹⁵

¹⁴ ITC 2000 see <http://www.intracen.org/menus/countries.htm>.

¹⁵ The ITC data base above provides further values for US and Japan.

Tariff duties. In fact, Singaporean prices still have to be increased with the tariff duties applied in the EU, but as will be seen from the data below these are relatively low (except for textiles and clothing). We also need a measure of the tariff equivalent for the EU's non-tariff barriers (NTBs), at a sufficiently level of product group disaggregation. Whereas the average tariff duties data can be constructed quite readily, there are huge problems to estimate tariff equivalents of NTBs. Hence, these are not included in Table 4, other than an indication of the main types which apply. Finally, an important caveat has to be noted: our preliminary exercise does not take into account the rules of origin that apply to EU imports. These can also quite dramatically change the picture.

3.3 Preliminary results

The likelihood of trade creation and trade diversion can tentatively be assessed as follows:

Unit value Singapore prices compared to EU
Diagram 1: Trade Creation and Trade Diversion

		Higher	Lower
<i>Unit value EU prices compared to the rest of the world:</i>	Higher	No Trade diversion; No Trade creation	Trade diversion+Trade creation in EU
	Lower	Trade diversion + Trade creation in Singapore	Trade creation

If prices in the EU compared to the rest of the world are high, and prices in Singapore compared to the rest of the world are low, a FTA will evidently lead to both trade creation in the EU and trade diversion in favour of Singapore. In the reverse case, there will be trade creation in Singapore and trade diversion in favour of the EU. If both prices in the EU and in Singapore as compared to world prices are low, this will rather lead to trade creation, without much scope for trade diversion, given the competitive position of both the EU and Singapore in the world market for that product group.

However, diagram 1 implicitly assumes looking at the EU as a fully integrated single market. This ignores some basic realities: the EU market place is still segmented in important ways based on national borders. To some extent this reflects remaining technical and other standards, labelling requirements, etc., but also differences in production methods and efficiency, market segmentation strategies of the producers, cultural differences, etc. Hence, EU data by member states indicate a range of relative unit values – not a single value. For our analysis this means we shall also have to look at cases where Singapore's relative prices lie *within* the range of relative prices characterising the EU – above those of some countries and below those of others.

A further indicator for assessing the likelihood of trade creation and diversion is the existing market share of Singapore in the EU. If the historical market share of Singapore in the EU for a given product group is already high, the likelihood that an EU-Singapore FTA will lead to much trade diversion will be rather low, contrary to the situation when Singapore's market share is small.

Using the ITC relative unit value export price indices the following preliminary conclusions can be drawn:

- Singapore's price level for the various product groups is in all cases higher than the corresponding price levels in the world. This is particularly true for electronic components, transport equipment and minerals. Based on relative prices alone, this implies *a-priori* that a EU-Singapore FTA will lead to trade creation and trade diversion.
- Singapore's unit value prices compared to that of the world are *above* the unit value price ratios in the EU member states in the cases of processed food, non-electric machinery, electronic components and transport equipment. The fact that non-electrical machinery represents 43 pct. of Singapore's exports to the EU is probably related to important elements of non-price competition (i.e. high quality), in spite of the demanding EU technical and other standards. Taking into account the importance of this product group, there does *not* seem much scope for trade diversion. With due regard of the level of Singapore's price ratio compared to the world, with that of the EU member states, there is not much scope for a positive welfare impact of trade creation either (in spite of the relatively high price elasticity of supply).
- Singapore price levels are, however, *below* those in the EU for textiles, clothing, consumer electronics and miscellaneous manufactures. This offers an indication that a EU-Singapore FTA might lead to a positive static welfare effect as the result of trade creation. For instance, Singapore's price level for consumer electronics is 1.3 times that of the world, but the price level for that product group in the EU ranges from 2 times that of the world (Austria and Italy) to 6.7-6.8 times (Finland and Ireland). In the case of textiles, Singapore's price level is 1.1 times that of the world, with price levels in the EU ranging from 1.2 (Belgium) to 2.9 (Ireland). Taking into account that the share of textiles in Singapore's exports to the EU is hardly 0.10 pct, which is probably due to the tariff and non-tariff barriers that textile imports are facing in the EU, this implies that an EU-Singapore FTA will lead to an important degree of trade creation (the more so because of the price elasticities of supply of and demand for textiles which is average to high). On the other hand it can be said, that as the difference between the level of world prices and that of Singapore for this product category is small, any a negative welfare effect of trade diversion, away from textiles supplies from the rest of the world, will also be small.
- For product groups such as fresh food, wood products, chemicals, basic manufactures and minerals, Singapore's price levels are *in between* the price levels in the respective EU member states. Here, a EU-Singapore FTA will probably lead to some limited trade creation and trade diversion. For example, consider the case of fresh food. Singapore's price ratio compared to the rest of the world is 1.6, which is higher than in the EU countries, except the UK. At this moment, the prices for Singaporean fresh food in the EU market are evidently higher due to import duties. As a result of a possible EU-Singapore FTA Singaporean fresh food will find some market potential in the UK and possibly Belgium, provided that phyto-sanitary requirements and standards, inspection, testing and certification are going to be harmonised

under the FTA. This will lead to some trade creation and trade diversion welfare effects. These welfare effect of trade diversion in the case of fresh food will be small: although the price differential between Singapore and world prices is far from negligible (Singapore's price being 60 pct higher than the world price), the volumes that will be diverted will be small, and restricted to the UK and Belgian markets only. The welfare effect of trade creation will be very small, as the price differential between Singapore's prices and UK-Belgian prices is small, and as both the elasticity of supply and demand for fresh food in the EU can be considered as low (Cawley & Davenport, 1988). As in the case of fresh food, a similar argument holds for wood products and minerals. There is somewhat more scope for trade creation and trade diversion for chemicals, basically because there are more EU countries where the price levels are above those of Singapore. Basic manufactures may also experience trade creation and diversion, especially because the price differences with the EU countries also seem to be larger.

From our analysis, we draw the preliminary conclusion that the scope for trade creation and trade diversion in response to a EU-Singapore FTA is quite limited for the goods sectors analysed. This is primarily because the size of the preferential reduction in tariffs will be very limited. Our in-depth analysis of present EU tariff barriers against imports from Singapore will demonstrate this in somewhat more detail.

Table 4: EU Imports: Tariffs, Non-Tariff Barriers and Relative Unit Values

Product group	Share of EU Imports from Singapore (per cent)	Average tariff in EU	Average Tariff on Imports from Singapore	Key Non-Tariff Barriers for Singapore	EU Excess Demand Elasticity	EU Excess Supply Elasticity	Price World	Price Singapore	Price Range EU
Fresh food	0.4	20*	0.5*	Sanitary and Phytosanitary	low	low	1	1.6	1.1 -- 1.9
Processed food	0.5	16*	5*	Technical Regulations:Old Approach	low	low	1	1.7	1.0 -- 1.7
Wood products	1.2	3	0.7		average	high	1	1.8	1.3 -- 3.2
Textiles	0.1	7.6	6.6	Rules of Origin	average	high	1	1.1	1.2 -- 2.9
Chemicals	8.6	5	5.7	Technical Regulations:Old Approach	low	high	1	1.5	1.2 -- 1.9
Leather products	0.05	2.7	2.4	Rules of Origin	average	high	1		
Basic manufacturing	0.8	3.2	3.4		average	high	1	1.8	1.1 -- 5.5
Non-electric machinery	43.17	1.7	0.1	Technical Regulations: New Approach/Government Procurement	average	high	1	2.4	1.1 -- 4.8
Cons. Electronics		2.6	0.6	Technical Regulations: New Approach/Government Procurement	average	high	1	1.2	1.9 --6.8
Electronic components		2.6	0.6	Technical Regulations: New Approach/Government Procurement	average	high	1	8.6	1.3 --5.2
Electrical Machinery	38.4	2.6	0.6	Technical Regulations: New Approach/Government Procurement	average	high	1		
Transport equipment	1.4	4	1.8	Technical Regulations:Old Approach/Government Procurement	average	high	1	5.1	1.0 -- 2.6
Clothing	0.75	12.6	12	Rules of Origin	average	high	1	1.3	2.4 --7.4
Misc. Manufacturing	0.18	2.4	1.1	Technical Regulations: New Approach	average	high	1	1.7	1.6 -- 3.2
Minerals	0.06	0.7	0.3		low	high	1	5.0	0.9 -- 6.0
Note: Derived with a lower degree of precision than those for the industrial sectors Source : ITC, EUROSTAT and calculations by the authors									

3.4 EU imports and tariffs from Singapore

Table 5 below on tariffs on imports from Singapore shows the sectoral structure of EU imports from Singapore (in 2000) together with calculated average weighted tariffs for each sector and for imports as a whole. It also indicates the share of trade which already enters the EU duty free. EU imports from Singapore are dominated by machinery products: non-electrical and electrical machinery together accounted for almost 82 per cent of total EU imports from Singapore.¹⁶ The only other significant sectors, whose share exceeds one per cent of the total, are chemicals and fertilisers, plastics and precision instruments.

The table also shows the trade weighted average tariff for each sector and in total in 2000 and 2005. Results are presented for the latter year since some tariff reductions agreed to by the EU in the Uruguay Round are being phased-in over a 10 year period which commenced in 1995. However, in the case of Singapore this is of very little importance. The overall trade weighted average tariff on EU imports from Singapore in 2000 was 1.04 per cent. Thus in aggregate, with such low tariffs, a free trade agreement which removes only tariff barriers will not have a substantial impact upon EU imports of industrial products from Singapore.

The key machinery sectors face relatively low tariffs in the EU. The average tariff on EU imports of non-electrical machinery from Singapore in 2000 was 0.13 per cent and that on imports of electrical machinery was 0.58 per cent. The average tariffs on chemicals and fertilisers and on plastics, on the other hand, are much higher, being greater than 5 per cent in 2000. For these sectors, more substantial trade impacts from a free trade agreement can be expected. Nevertheless, since Singapore supplies a small share of total EU imports of these products (4.2 per cent for chemicals and fertilisers and 0.8 per cent for plastics in 2000) the consequences for the EU market will be small. The average tariff on precision instruments was 1.1 per cent.

The next columns of the table show the unweighted average tariffs on EU imports in 2000. This information, when compared to that in the previous columns, shows that for the key engineering sectors the weighted average tariff is considerably less than the unweighted average. This suggests that the structure of EU imports from Singapore is dominated by low tariff products within these engineering categories. This feature is apparent for most sectors. The key sectors where the product structure is biased towards 'high' tariff products are chemicals and fertilisers and clothing.

The final columns of the table show the proportion of EU imports from Singapore in 2000 that were subject firstly to zero duties and, secondly, subject to 'high' tariffs defined as those in excess of 10 per cent. These figures show that over 80 per cent of imports from Singapore entered the EU market duty free in 2000 whilst less than 1.5 per cent of imports were subject to tariffs of more than 10 per cent. In the engineering sectors, 95 per cent of imports of non-electrical machinery and 87 per cent of electrical machinery entered the EU market duty free. On the other hand, only 11 per cent of imports of

¹⁶ Total agricultural products imported during 2000 amounted to Euro 138.2 million – 0.95 per cent of all imports from Singapore. Live ornamental fresh water fish and frozen swordfish accounted for respectively 21 and 16 per cent of the total.

chemicals and fertilisers and none of the imports of clothing entered duty free. Only clothing and footwear were subject to high tariffs and 96 per cent of imports of clothing from Singapore paid duties in excess of 10 per cent.

Thus, clothing products are still subject to relatively high tariffs in the EU market and this may be constraining EU imports of such products from Singapore. A free trade agreement could, therefore, have a substantial impact upon such trade, albeit from a relatively low base since in 2000 Singapore provided 0.2 per cent of total EU imports of clothing.¹⁷

In this context, the specification of the rules of origin in a free trade agreement would be important. In current agreements the EU typically stipulates a 'double processing rule' such that to qualify for duty free access to the EU clothing products must have been produced from yarn and hence not from imported fabrics (unless imported from the EU). Hence, clothing products made-up in Singapore from imported fabrics would not qualify for duty free access to the EU under the typical rules of origin that the EU applies in its free trade agreements (see below for a further discussion).¹⁸

In summary, we have demonstrated that the current structure of EU imports from Singapore is dominated by products in the engineering sectors that already have duty free access to the EU. Thus tariff removal under a free trade agreement is unlikely to have a substantial impact upon trade in goods in aggregate. The impact of tariff removal will be concentrated upon particular sectors, such as chemicals and fertilisers and possibly clothing, where EU tariffs remain significant impediments to trade but current trade flows are relatively small.¹⁹ Last but not least, we observed that the lion-share of trade in these particular sectors is intra-firm trade. Hence, the gains would directly accrue to European businesses realising greater cost advantages.

Given that tariff removal is unlikely to generate substantial economic benefits, then a free trade agreement between the EU and Singapore will have a significant impact upon trade in goods only if it goes deeper and addresses 'behind the border' issues. In the next chapter we turn to the issues relating to technical barriers to trade and sanitary and phyto-sanitary measures as these influence the patterns and levels of international trade.

¹⁷ Calculated tariff revenues for this sector amounted to Euro 13.7 million for a trade value of Euro 108.2 million.

¹⁸ For more details on the rules of origin in EU trade agreements see Brenton and Manchin (2002) 'Making EU Trade Agreements Work: The Role of Rules of Origin', Working Document 183, CEPS, Brussels.

¹⁹ In 2000 calculated tariff revenue on a trade value of Euro 1.17 billion amounted to Euro 68.3 million.

Table 5: EU Imports: Weighted and Unweighted Average Tariffs and Calculated Revenues

Sector		Imports 2000 Euro mln	Sector Share	Weighted Average Tariff	Weighted Average Tariff	Unweighted Average Tariff	Unweighted Average Tariff	Tariff Revenue Euro mln	Tariff Revenue Euro mln	Share of Sector Im- ports with t=0		Share of Sector Im- ports with t>10	
				2000	2005	2000	2005	2000	2005	2000	2005	1997	2005
Minerals	HS 25-27	9.1	0.06	0.32	0.32	0.66	0.66	0.0	0.0	91.38	91.38	0.00	0.00
Pharmaceuticals	HS 30	11.3	0.08	0.00	0.00	0.00	0.00	0.0	0.0	100.00	100.00	0.00	0.00
Inorganic, Organic Chemicals and Fertil- izers	HS 28, 29 and 31	1176.4	8.18	5.81	5.76	4.92	4.37	68.3	67.8	11.10	11.10	0.07	0.00
Other Chemicals	HS 32-38	53.1	0.37	3.82	3.75	5.06	4.82	2.0	2.0	36.99	36.99	0.00	0.00
Plastics	HS 39-40	212.8	1.48	5.11	4.56	6.04	5.10	11.6	9.7	22.42	22.82	0.00	0.00
Raw Hides and Skins	HS 41-43	7.2	0.05	2.42	2.42	2.68	2.68	0.2	0.2	17.28	17.28	0.00	0.00
Wood	HS 44-46	33.5	0.23	0.84	0.84	2.45	2.45	0.3	0.3	83.92	83.92	0.00	0.00
Wood Pulp	HS 47-49	132.6	0.92	0.66	0.00	3.53	0.00	0.9	0	88.06	88.06	0.00	0.00
Textiles	HS 50-60	14.8	0.10	6.59	4.32	7.55	6.18	1.0	0.7	0.32	1.12	0.85	0.00
Clothing	HS 61-63	108.2	0.75	12.63	11.79	12.02	11.29	13.7	12.8	0.00	0.00	96.11	96.11
Footwear etc	HS 64-67	4.8	0.03	8.70	8.70	8.05	8.05	0.4	0.4	0.00	0.00	26.07	26.07
Stone, Cement etc	HS 68-70	15.1	0.10	4.12	4.12	3.86	3.86	0.6	0.6	4.15	4.15	3.22	3.22
Jewels	HS 71	79.0	0.55	0.27	0.27	0.65	0.65	0.2	0.2	89.54	89.54	0.00	0.00
Iron and Steel	HS 72-73	36.9	0.26	3.16	2.78	3.06	0.78	1.6	1.0	0.60	15.18	0.00	0.00
Base Metals	HS 74-83	76.3	0.53	3.61	3.61	3.36	3.36	2.8	2.8	8.45	8.45	0.00	0.00
Non-electrical Ma- chinery	HS 84	6204.9	43.17	0.13	0.13	1.68	1.68	7.9	8.0	95.09	95.09	0.00	0.00
Electrical Machinery	HS 85	5515.7	38.38	0.58	0.58	2.62	2.62	32.2	32.2	87.41	87.41	1.65	1.65
Motor Vehicles	HS 87	72.2	0.50	4.96	4.96	6.24	6.24	3.6	3.6	0.16	0.16	0.58	0.58
Other Transport Equipment	HS 86,88,89	133.6	0.93	0.06	0.06	1.65	1.65	0.1	0.1	97.40	97.40	0.00	0.00
Precision Instru- ments	HS 90-92	450.0	3.13	1.10	1.10	2.24	2.24	4.9	4.9	68.68	68.68	0.00	0.00
Miscellaneous Manu- factures	HS 94-96	25.4	0.18	1.08	1.08	2.41	2.41	0.3	0.3	65.44	65.44	0.00	0.00
Total		14372.7		1.04	1.03			152.5	147.4	80.84	80.89	1.38	1.37

4. Technical barriers to trade

Technical barriers to trade (TBTs) can arise whenever a producer may have to alter his/her product in order to comply with differing partner country requirements such as for health, safety, environmental and consumer protection. Both governments (technical regulations) and non-governmental organisations (non-regulatory barriers, standards) can impose these requirements. The legal character of technical regulations distinguishes them from non-regulatory barriers or standards; namely, the latter are voluntary, not legally binding and arise from the self-interest of producers or consumers involved, for example, to improve the information in commercial transactions and ensure compatibility between products. The former mainly relates to either technical specifications or testing and certification requirements that ensure that the product complies with the relevant specifications (conformity assessments).

The need to adapt product design, re-organise production systems, and satisfy multiple testing and certification procedures can entail a significant cost (or technical trade barrier) for suppliers of exported goods to a particular country, the magnitude of which is likely to differ according to the nature of products, for example, the extent to which they pose a risk to users. The removal of TBTs is a central element of the Single Market of the EU, since it is crucial for the free movement of goods throughout the whole of the European Economic Space. The removal of such barriers will tend to promote trade and efficiency and serves to strengthen competition by undermining the fragmentation of markets.

4.1 Removing technical barriers to trade

EU policy related to standards, testing and certification requirements is currently based upon two approaches: enforcement of the principle of mutual recognition and if this fails, the harmonisation of technical standards in each member country. Application of mutual recognition requires a degree of trust between countries and regulatory authorities. It is based on the idea that products manufactured and tested in accordance with a partner country's regulations can offer equivalent levels of protection to those provided by corresponding domestic rules and procedures. However, this tends to require accreditation of testing and certification bodies under what is known as a mutual recognition arrangement (MRA) between bodies because member states often regulate for the same product risks in slightly different ways (or in the same way but requiring duplication of conformity assessment). Mutual recognition tends to work where products are new and specialised and, as such, it seems to be relatively effective for equipment goods and consumer durables, but it encounters difficulties where the product risk is high and consumers or users are directly exposed to that risk.

Where 'equivalence' between levels of regulatory protection embodied in national regulations can not be assumed, the EU approach to removing technical barriers to trade is for the member states to reach agreement on a common set of legally binding requirements. Subsequently, no further legal impediments can prevent market access of complying products anywhere in the EU market. EU legislation harmonising technical specifications has involved two distinct approaches, the 'old approach' and the 'new approach'. The old approach mainly applies to products (chemicals, motor vehicles,

pharmaceuticals and foodstuffs) by which the nature of the risk requires extensive product-by-product or even component-by-component legislation and is carried out by means of detailed directives.

In the main achieving this type of harmonisation has been slow for two reasons. First, the process of harmonisation became highly technical, with attention being given to very detailed product categories including components. This resulted in extensive and drawn-out consultations. Secondly, the adoption of 'old approach' directives was based on unanimity in the Council, which means that the issuing of directives is a slow process. The limitations of this approach as a broad tool for tackling technical barriers to trade become clearly apparent in the 1970s and early 1980s when new national regulations were proliferating at a much faster rate than the production of European directives harmonising regulations.

These weaknesses have been addressed through the adoption of the 'new approach' whereby EU directives only indicate the 'essential requirements' that must be satisfied which leaves greater freedom to manufacturers as to how to satisfy those requirements, dispensing with the 'old' type of exhaustively detailed directives. The new approach also provides for more flexibility than the detailed harmonisation directives of the old approach by using the support of the established standardisation bodies, CEN, CENELEC and the national standard bodies, such that the satisfaction of the relevant standards is presumed to entail consistency with the minimum requirements in the legislation. New approach directives are adopted by a qualified majority in the Council.

4.2 Technical barriers to external trade

In addition to pursuing the removal of technical barriers to trade on internal trade within the Union, the EU has also sought to sign bilateral agreements with third countries. The free trade agreements with the Central and Eastern European countries contain provisions by which these countries agree to progressively adopt EU standards and regulations and harmonise their testing and conformity systems with those of the EU. This process is taking place very much in the context of accession to the EU.

Elsewhere the EU has sought to sign bilateral mutual recognition agreements relating to conformity assessment procedures, consistent with the WTO agreement on Technical Barriers to Trade, such that products from the partner country can be assessed for conformity with EU regulations in the testing facilities of that country. Similarly EU exports can be tested for conformity with the partner countries regulations in EU accredited testing establishments.

In contrast, one may look at the example of the exportation of medicinal products from Singapore, in particular the bulk pharmaceuticals ("Active Pharmaceutical Ingredients") manufactured by several leading EU TNCs. Singapore's membership of the Pharmaceutical Industry Committee on Standards (PICS) – essentially a voluntary industrial cooperation that is not legally binding – facilitates exports of API to the EU. However, despite the certification and testing which takes place in Singapore, some EU Member States still require re-testing of all batches of API before the product can be allowed into the country.

To date the EU has signed agreements with the US, New Zealand, Australia and mostly recently in April 2002 with Japan. These agreements are confined to particular sectors and in the main the sectors covered by new approach directives (or a subset of those sectors).

Table 6 shows the importance of products covered by the new approach and the old approach in terms of their share of total EU imports from and exports to Singapore in 2000.²⁰ The table shows that over 22 per cent of EU imports from Singapore are products which are covered by new approach directives in the EU, whilst about 9 per cent are products of old approach sectors. Over one fifth of EU exports to Singapore are also covered by new approach directives in the EU. Thus a substantial proportion of EU trade with Singapore would be affected if a free trade agreement were to include mutual recognition of testing and conformity assessment for products covered by the new approach in the EU. Table 6 also shows the share of products covered by particular new approach directives in EU trade with Singapore in 2000 (only sectors with 0.5 per cent or more are reported). Interestingly, trade is dominated by the products of just four or five of the new approach sectors. The most important directive is that relating to electromagnetic compatibility which affects 13 per cent of EU imports from Singapore and nearly 10 per cent of EU exports to Singapore. The other key directives are those relating to telecommunications terminal equipment, machinery, low voltage equipment, active implantable devices, and perhaps medical devices. All other directives cover relatively small shares of trade. Hence, meaningful progress in reducing technical barriers to trade between the EU and Singapore through mutual recognition of testing and conformity assessment could be achieved through negotiation and agreement on a limited subset of the sectors covered by new approach directives in the EU.

Table 6: EU Singapore Trade Covered by Harmonised EU Regulations in 2000 (per cent)

Sector	EU Imports from Singapore (%)	EU Exports to Singapore (%)
Old Approach	9.19	12.28
New Approach (of which):	22.21	20.25
Machinery	1.50	4.03
Electromagnetic Compatibility	13.08	9.87
Low Voltage	1.06	2.26
Medical devices	0.57	0.71
Telecom Terminal Equipment	7.13	3.19
Active implantable medical devices	0.91	1.04

Source: Brenton et al. (2001).

Finally, in this section we also suggest that rules of origin could be an important element in a MRA between the EU and Singapore. If Singapore has a comparative advantage in the region in testing and

²⁰ This is based upon a detailed translation of relevant directives into the product codes of the 8-digit level of the Harmonised System, for more details see Brenton, P., Sheehy, J. and Vancauteran, M (2001) 'Technical Barriers to Trade in the European Union: Importance for Accession Countries', *Journal of Common Market Studies*, 39, 265-84.

laboratory facilities and is well endowed with professional staff in this activity then an MRA could help to establish or enhance the position of Singapore as a regional hub for testing and conformity assessment for products from the whole of the region being exported to the EU. Rules of origin which restrict the testing and conformity activities to products produced only in Singapore would tend to constrain such a development.²¹ Again the presence of EU service companies in Singapore is an issue to consider. Some 25 EU companies active in the fields of 'research and testing' are covering general research, soil exploration and analysis, oceanography, materials testing and quality control. An MRA would enable them to operate directly for the EU market from a Singapore base.

By way of comparison we note the importance of products covered by new approach directives, and hence those that could be covered by an MRA, in EU imports from other Asian countries (Annex Table 2). Such products account for one quarter of EU imports from the Philippines, 22 per cent of imports from Malaysia and around 15 to 16 per cent of imports from Japan and Korea. For Indonesia, new approach products account for a much smaller share of EU imports, just over 5 per cent in 2000. The table shows that again the key directives are those that relate to machinery and equipment; with electromagnetic compatibility being most important followed by machinery, low voltage and telecoms terminal equipment. This highlights firstly, the potential impact that the MRA with Japan could have on the exports of Singapore to the EU if it leads to significant reductions in the costs of selling in the EU. Secondly, it shows the potential importance of an MRA with Singapore with less restrictive rules of origin.

Along similar lines, a free trade agreement with Singapore would be particularly attractive to the EU if a mutual recognition agreement on testing and conformity assessment were to provide for more effective access for EU producers of new approach products to neighbouring Asian countries. The ability to test products on a regional rather than individual market basis is likely to offer substantial gains to EU producers.

4.3 Sanitary and Phyto-sanitary regulations

Similar to technical regulations the EU operates an elaborate system of sanitary and phyto-sanitary regulations (SPS) to ensure product quality and standards with respect to quality, hygiene, food safety, avoidance of environmental impact, pests and disease, etc. Most of these are not particularly relevant to EU-Singapore trade as the SPS regulations focus primarily on agricultural products. Nevertheless, a small number of product specific protocols could be part of a possible EU-Singapore FTA – for example regarding cut-flowers. For tropical cut-flowers, such as orchids, to be traded through the highly efficient EU-based flower auctions (e.g. in Aalsmeer, the Netherlands) for consumption within the EU or onward trade to, for example, the US markets, they need to meet very stringent SPS regulations. A protocol on this could define mutually agreed certifiable procedures to ensure that fumigation against pests can be carried out speedily, reducing time-in-transit and thus making the most of the

²¹ In general, less restrictive rules of origin for mutual recognition of testing could have advantages for Singapore (greater scope) as well as for the EU (reducing duplication). The disadvantage relates to lesser control over processes at the production stage increasing potential risks.

precious life span of such tropical flowers from Singapore. Such protocols might, in due course also be agreed with other suppliers of tropical cut-flowers such as Thailand.

5. EU-Singapore trade in services

Singapore is largely a service economy, and so is the European Community. The General Agreement on Trade in Services (GATS) is the first multi-lateral agreement covering international trade in services. GATS categorised international trade in services between WTO members according to four modes of supply of a service :

- Mode 1: cross border supply from one territory into another;
- Mode 2: consumption abroad where a consumer utilises a service in the territory of another WTO member;
- Mode 3: commercial presence where a service supplier operates in the territory of another WTO member; and
- Mode 4: movement of natural persons where a natural person supplies a service in the territory of another WTO member.²²

In short, the GATS definition is based on nationality, rather than on residence. In effect, the IMF standard definition does not cover trade resulting from commercial presence. Moreover, the IMF definition covers only part of the trade generated by the movement of natural persons – once a person working abroad has become a resident, he/she ceases to be considered as generating an internationally traded service. However, the GATS definitions and concepts would include those two examples.

Singapore has made considerable efforts to improve the description of its international trade in services by adopting, to the extent possible, the 'new' definitions of trade in services. The international standard for recording of trade in services remains the IMF's Balance of Payment Manual which records transactions between 'residents' and the rest of the world (non-residents). Some eleven categories of trade in services are classified, including transportation, financial services, etc.²³

Singapore undertook a new survey of international services since 1996 with the dual aims of capturing 'new' services such as e.g. computing and information services as well as to improve knowledge about the different modes of supply – e.g. services provided by European companies and personnel. The stylised facts of Singapore's trade in services vis-a-vis the EU are summarised below; it is emphasized that the present statistical database of internationally traded services is inadequate and further research would be highly desirable.

²² Some examples of each mode of supply may help to clarify the distinction: cross border supply covers the international transportation of goods, consumption abroad includes tourism, a branch of a foreign bank trades through commercial presence and on-site development of software and other forms of technical assistance by foreign consultants is trade through the movement of natural persons.

²³ The eleven major components are (i) Transportation, (ii) Travel, (iii) Communications, (iv) Construction, (v) Insurance, (vi) Financial, (vii) Computer and Information, (viii) Royalties, (ix) Social, (x) Government and (xi) Other Business Services which include trade-related, business management, legal, accounting, architectural, advertising, engineering, research and development.

5.1 Stylised facts of EU-Singapore Trade in Services.

Preliminary estimates for the 1999 flows in international trade in services revealed the following stylised facts (drawn from Annex table 3 on International Trade in Services):

- The EU was in deficit vis-à-vis Singapore to the tune of Euro 1.23 billion;
- The lion-share of both exports and imports were in the transportation sector, which covers freight, the carriage of passengers as well as auxiliary services, including port services. For 1999 nearly 60 per cent of the imports and exports were in this sector and the EU's trade deficit amounted to Euro 760 million;
- Business services were the second largest component of trade (approximately 15 per cent) with the EU running a deficit in excess of Euro 170 million; these services tends to take the form of EU MNCs supporting subsidiaries in their Singaporean and regional operations;
- Trade-related services were the third largest component, in particular merchanting, communications as well as chartering without crew.²⁴ EU trade deficits in these sectors at Euro 211 million exceeded those for business services, even though turnover in this sector was much smaller;
- Even in the financial and insurance services, the EU only realised a deficit of Euro 86 million;
- Finally, royalty payments were the only sector for which the EU realised a small trade surplus of Euro 82 million, though not enough to balance out the trade deficit incurred for technical services at Euro 83 million.

Furthermore, the role of the EU relative to the other major locomotive economies US and Japan leaves much to be desired. In 1997 the US realised a surplus of US \$ 0.7 billion on its trade-in-services account with Singapore, while all other main trading partners realised a trade-in-services deficit. US and Japanese deficits for transportation services were well below those of the EU, while the EU stood second after Japan for the purchase of trade-related services. However, in financial services the US had the largest deficits followed by the EU, whereas in technical services the EU purchases ranked fourth after those of respectively the US, Hong Kong and Indonesia.

In summary, trade-in-services would appear to be a sector where the EU could potentially benefit from a FTA, provided that the precise terms of such a FTA would address the question of reducing barriers to trade in services and therewith realise efficiency gains for EU businesses. But liberalising services is a very difficult exercise for several well known reasons:

- services are delivered through cross-border trade, but also—above all at this stage of the world economy—through establishment, hence through foreign direct investment (FDI);
- barriers to market access in services exist at the borders and behind the borders;
- the protectionist impact of barriers is often difficult to assess and difficult to be dealt within the traditional WTO negotiating framework of reciprocal concessions.

²⁴ Merchanting is the purchase and resale of goods by residents of the compiling economy without the good concerned entering or leaving Singapore.

In addition, regional liberalization in services is an exercise much more complex than its equivalent in goods. For all these reasons, this chapter aims 'just' at spelling out the main issues than at providing robust empirical evidence on the level of protection in Singapore.

5.2 EU and Singapore's gains from liberalization in services

The level of protection (in ad valorem tariff equivalent) in the primary sector, in manufacturing and in services (seen as one sector) has been estimated by Dee and Hanslow [2000]. Their estimates of trade barriers in primary and manufacturing sectors are relatively consistent with the view provided by our analysis above, with the exception of EU protection in the primary sector.²⁵ Barriers to trade in services can be divided in five major components:

- taxes on exports of services;
- those imposed on establishment of service providers, be these barriers imposed on a non-discriminatory basis (taxes on domestic capital restricting entry in the services sector, see column 7), or a discriminatory basis (taxes on foreign affiliates' capital reflecting the absence of national treatment, see column 8); and
- those imposed on the services output of the other "modes of delivering" services, be they non-discriminatory (column 5) or discriminatory (column 6).

The analysis of Dee and Hanslow, see Annex Table 4, relies on some important assumptions. The protection estimates it provides for services are based on estimates available for two services sectors only—banking and telecoms. This assumption may overstate the level of protection of Singapore since the level of protection of other key Singaporean services (air and maritime transports) are not taken into account.

That being said, the analysis provides two interesting lessons. First is that discriminatory protection in services is noticeable in Singapore as well as in the EU. Second, while protection in service exports is very close in Singapore and in the EU, discriminatory protection is much marked for the other modes of delivery.²⁶ These estimates of the level of protection given to Singaporean services suggest that Singapore will substantially benefit from liberalization in services. Based on these estimates, the study estimates the gains, in terms of GDP and welfare, of a multilateral liberalization in goods and services.

Since this report is on a regional liberalization, it is not useful to describe in detail the results obtained. But it is important to get a sense of the main message. According to the study, after liberalization, Singapore's economy will be smaller than otherwise (that is, compared to what would have prevailed in the absence of liberalization) and in this respect, Singapore differs from many countries covered by the study (including Hong Kong). But that does not mean that Singapore will be poorer. On the contrary, it will be wealthier. What does explain this difference between size and wealth? It flows from the

²⁵ This difference arises because of the use of a methodology which assesses the net outcome of subsidies and taxes (for reasons related to the internal consistency of the general equilibrium model used) in contrast with our analysis which combines these two sources of protection.

²⁶ In fact, there are interesting differences between Hong Kong's and Singapore's treatment of export (cross-border services) taxes, compared to their treatment of taxes on the other modes of delivery.

fact that Singaporeans will substitute FDI for investment at home (hence the smaller size of the Singaporean economy per se), but will earn a significantly higher income from FDI than from domestic investment (hence a wealthier Singapore). In sum, if one assumes that regional liberalization will follow the same pattern than multilateral liberalization (a key assumption), a RTA with the EU will represent for Singaporeans an opportunity to increase their welfare, but not necessarily an opportunity for accelerating growth of the Singaporean economy.

5.3 Negotiating with the EU in services

The main goal of the EC "Single Market Programme" (SMP) launched in 1985 was to liberalize the European markets in services. However, for reasons mentioned at the start of this section (complexity of the instruments used for protecting services, inoperability of the traditional concepts of negotiations, such as reciprocity, in services), the Single Market in services has still to come [Messerlin, 2001]. Barriers within the EU regarding services of foreign origin are still considerable too, as elsewhere in the world, and often differ between EU member states. Numerous examples may serve to illustrate this reality.²⁷

Recent research from the OECD Secretariat allows one to get a more quantitative assessment of how much the SMP has really worked so far. Based on an international database on the regulations enforced in OECD countries, it provides indicators (from least (0) to most (6) restrictive) of regulatory and market environment in 1998. The seven services examined by the OECD research, shown in Annex Table 5, allow to take into account the complexity of the SMP process: two services (air passenger and road freight) are included early in the SMP (late 1980s); two others (mobile and fixed telephony) have been incorporated late in the SMP (early 1990s); two others (electricity and railways) have been covered by SMP extensions (mid-late 1990s); lastly, retail distribution is not part of the SMP. Of course, such an exercise has strong limits: incomplete and imperfect information is a pervasive problem, assessing the effect of regulations on the degree of competition is a matter of delicate judgment, etc. However, statistical techniques allow to get interesting comparisons between countries from this (admittedly imperfect) large set of information.

Annex Table 5 provides two major lessons useful for negotiators launching liberalization in services. First is that the EU does not appear, on average, more open than the "rest of the OECD countries" (defined as the OECD countries not pertaining and not candidate to the EC) in all these sectors. Second, the indicators of the various EU Member states do not show the similarity which would reveal a strong impact of the SMP: certain Member states are still among the most open markets in the OECD

²⁷ Under legislation enacted in the early 1990s, the French government requires non-EU lawyers to qualify as "avocats," on the basis of full-fledged membership in the French bar. Legal consulting service providers in foreign and international law are required to be licensed in French law. Non-EU firms are not permitted to establish branch offices in France under their own names. Also, foreign lawyers and firms are not permitted to form partnerships with or hire French lawyers. The "legal consultant" category of lawyer no longer exists in France. It is important to note that other EU Member States have comparable regimes, creating significant barriers to trade within the EU as well as to non-EU resident firms.

region, whereas others are still among the most closed ones. These results are observed whether examined services have been subjected to the SMP or not, since a long time or not.

The OECD studies provide additional results in three services for which it has been possible to generate an “external liberalisation” element. In air and road transport, “barriers to entry” have been split into a component of public intervention in domestic markets and an element of “discrimination against foreign providers.” The EU exhibits a smaller indicator for foreign discrimination than the “rest of the OECD countries” in air transport only. However, this result (which mirrors SMP-related legal aspects such as the definition of what an EU carrier is) is more than compensated by a higher indicator for domestic entry barriers. In telecoms, estimated price deviations (from the OECD average) for each country have been decomposed into several components, including a foreign discrimination element. This exercise presents the EC member-states on average more homogeneous than suggested by Annex Table 5 and less expensive than the rest of the OECD countries. However, this result is not related to the liberalisation component, but to an element (the country economic structure) which captures, among other factors, the impact of technical progress.

Annex Table 5 is very useful for negotiating purposes. First, it shows that negotiating liberalization in services with the EU should fully take into account member-states specificities. Negotiations should be as intensive with key member-states (which depend from the service sectors considered) as with the European Commission. Second, the EU will also gain a lot from liberalization in services since its services are also relatively severely protected.

These observations deserve a caveat. Views strongly diverge about the costs and benefits of a PTA in services. It is often argued that trade diversion with a PTA in services may be more frequent and its costs larger than in the case of trade in goods. The reason would be the same than the above-mentioned possible role of NTBs in trade diversion since regulations in services may be interpreted as potential NTBs. There is thus a warning signal for negotiators. They should be careful not to create entrenched discriminatory situations for the EU and Singaporean service providers at the detriment of European and Singaporean consumers.

5.4 Restrictions on Foreign Investment

A further study by the Australian Productivity Commission examines the degree of restrictions on Foreign Direct Investment across Southeast and East Asia, looking at five types of restrictions:

- foreign equity limits on all firms;
- foreign equity limits on existing firms;
- screening and approval of foreign investment;
- control and management restrictions; and
- input and operational restrictions.

Comparative indicators are constructed for Singapore, the other ASEAN countries as well as the Hong Kong, the US and Australia, drawing on data from the APEC Action Plans as well as the countries’ commitments under the GATS. An index is constructed with a range from 1 (where no foreign equity is

permitted in the sector) to 0 – when there are no restrictions on FDI in any of the five areas mentioned above.

In general, it is found that communications, financial services and transport are 'subject to relatively stringent FDI controls' (APC, p 108). The results for Singapore are compared to those of regional major players Hong Kong, Philippines and Thailand. The United States is introduced for reference in the absence of a similar index for the European Union. In summary, the table indicates that FDI restrictions in Singapore are much less than those of other ASEAN countries such as the Philippines or Thailand. However, if Singapore is compared to Hong Kong, one finds that in all-but-two services sectors the restrictions are greater than those in Hong Kong. The two exceptions are postal services, where foreign equity is not allowed in any of the countries reviewed including the US, and insurances, where FDI restrictions are less. If one compares Singapore to the US regime, one finds that it is more restrictive in all services sectors. In summary, these results would appear to reinforce our observation, made in the context of trade in services, that a FTA in this services sector which includes further reductions on FDI restrictions could offer positive benefits to EU investors.

Table 7 : FDI Restrictiveness Indices – GATS Service Sectors

	United States	Singapore	Hong Kong	Philippines	Thailand
Business	0.005	0.261	0.015	0.479	0.775
Communications	0.345	0.518	0.350	0.758	0.838
<i>Postal</i>	1.000	1.000	1.000	1.000	1.000
<i>Courier</i>	0.000	0.250	0.000	0.475	0.775
<i>Telecommunications</i>	0.200	0.571	0.200	0.975	0.804
<i>Audiovisual</i>	0.180	0.250	0.200	0.580	0.775
Construction	0.000	0.250	0.000	0.475	0.775
Distribution	0.000	0.250	0.050	0.475	0.775
Education	0.000	0.250	0.000	0.475	0.775
Environmental	0.000	0.250	0.000	0.475	0.775
Financial	0.200	0.378	0.233	0.954	0.875
<i>Insurance and related</i>	0.000	0.250	0.400	0.975	0.775
<i>Banking and other</i>	0.400	0.506	0.067	0.933	0.975
Health	0.000	0.250	0.000	0.475	0.775
Tourism	0.000	0.317	0.000	0.808	0.775
Recreational	0.000	0.250	0.000	0.475	0.775
Transport	0.025	0.250	0.093	0.975	0.780

Source : Australian Productivity Commission, 2001.

In the next section we shall focus on two specific case studies: first, the EU presence in the financial services sectors and second Singapore's presence in the EU port services industry, focusing on Antwerp, Belgium. If we accept the definitions and indicators of the APC, banking would be amongst the most FDI restrictive sectors, together with telecom and postal services.

5.5 Case Study I: EU Presence in the Financial Services Sector

Today some 80 banks from 10 EU Member States, including 27 merchant banks, are active operators in Singapore. Of these some 17 hold a wholesale bank license, whereas 4 banks have achieved 'qualifying full bank' status. This was in part a response to the financial services liberalisation which abolished the 40 per cent foreign ownership limits on banks as well as the 49 per cent foreign shareholding limit on insurers. Moreover, at present direct and reinsurance firms from 7 EU Member States are licensed operators, including two life insurance firms from France and the UK. Firms from six EU countries are active in the securities and future markets, either as investment advisers, as dealers or as futures traders and brokers (see Table 8 below).

Table 8: EU Commercial Presence in Financial, Insurance and Securities Services 2001

Country of Origin	Nr of Banks	Type of Banking License					Insurers by Type		Security Traders		
		QFB/ FB	WB	MB	OB	RO	Direct	Re-insurer	IA	D	F
Austria	1				1						
Belgium	6		1	2	2	1					
Denmark								1			
Finland	4			1	1	2					
France	15	2*	3	5	3	2	1	6 **	3	9	3
Germany	17		6	6	4	1		6 +	2	4	2
Ireland								1	1		
Italy	8		3		3	2		1			
Luxembourg	2			1	1				1		
Netherlands	11	1	2	6		2			3	5	1
Sweden	3			1	2			2			
United Kingdom	13	2	2	5	3	1	7*	6	7	7	3
TOTAL	80	5	17	27	20	11	8	25	17	25	9

Note:

QFB=Qualifying Full Bank/Full Bank; WB=Wholesale Bank; MB=Merchant Bank; OB=Offshore Bank; RO=Representative Office;

IA=Only Investment Adviser; D=dealing license; F=Futures Broker/Trader/Adviser

*= Full Bank license only **=1 Life insurance license included; + 4 composite licenses;

Source: Monetary Authority Singapore

A EU-Singapore Free Trade Agreement could provision for further licenses in any of these sectors, within the parameters of market stability. In particular, the European Commission requests a number of highly specific commitments for financial services liberalisation from Singapore in the context of the GATS 2000 negotiations. These may be summarised by distinguishing six types of requests, within the framework of the 'Understanding of Commitments on Financial Services', regarding:

- (i) eliminating restrictions on foreign ownership;
- (ii) removing bans or restrictions on establishment of new companies, representative offices and branches;
- (iii) removing bans or restrictions on participation;
- (iv) removing restrictions on service delivery;

- (v) removing limitations and restrictions on operations and allowing more flexibility; and
- (vi) removing the requirement that certain insurance activities should be engaged with a Singaporean company only.

Naturally, these request apply to specific sectors and sub-sectors only, as indicated in the Table 9 below.

Table 9 : Liberalisation in Financial Services -- EC Requests

Request:	Sector/Activity:
1. Eliminate restriction on foreign ownership	<ul style="list-style-type: none"> ▪ Insurance companies ▪ Remittance shops ▪ Single foreign ownership of existing banks ▪ Banks' portfolio investment in domestic companies and media entities ▪ Acquisition of shares in local security firms
2. Remove ban/restrictions on establishment of new companies, representative offices and branches	<ul style="list-style-type: none"> ▪ Insurance companies and representative offices ▪ Commercial banks (including ATM branches) ▪ Finance companies ▪ Merchant banks
3. Remove ban/restrictions on participation	<ul style="list-style-type: none"> ▪ Membership in the Stock Exchange of Singapore ▪ Insurance brokers ▪ Trading of financial futures ▪ Registered dealers of government securities
4. Remove restrictions on service delivery	<ul style="list-style-type: none"> ▪ Electronic banking ▪ Savings accounts ▪ Local currency deposits for banks with restricted licenses ▪ Core banking activities of offshore banks in Singapore dollars ▪ Foreign currency and overseas holdings of admitted life assets
5. Remove limitations and restrictions on operations and allowing more flexibility	<ul style="list-style-type: none"> ▪ Requirement of approval for routine transactions in Singapore dollars and settlements through designated suppliers ▪ Use of parent's capital to be used to meet Basle prudential requirements ▪ Distribution of life dividends to holders ▪ Reinsurance terms and premiums
6. Remove requirement that certain insurance activities should be engaged with a Singaporean company only	<ul style="list-style-type: none"> ▪ Third party automobile liability ▪ Workers compensation insurance

Source : Website The Guardian

5.6 Case Study II : Singapore's investment in Antwerp's port services.²⁸

The Port of Singapore Authority (PSA) invested in Hesse-Noord Natie in Antwerp, Belgium by taking a participation of 80 per cent in the company. The company operates port management services and has resulted from a merger in February 2002.²⁹ It goes without saying that PSA's investment means that both PSA and the Port of Antwerp have strengthened their position.³⁰ The company, involved in

²⁸ We are indebted to Mr. Ong Kim Pong, Chief Operating Officer, Hesse-Noord Natie, Antwerp, for sharing his views. All responsibility for the opinions expressed remain those of the authors.

²⁹ A merger of Hesse Natie and Noord Natie companies.

³⁰ In terms of international maritime traffic in 2000, measured in metric tonnes, Antwerp is fourth on the global list of ports after Rotterdam (first), Singapore and Hong Kong. However, it ranks tenth on the list of ports in terms of container traffic, with Hong Kong and Singapore respectively first and second.

Antwerp, Zeebrugge and Rotterdam, handled 3.8 million TEU of containers in 2001 – compared with about 4.1 million TEU handled in Antwerp during 2000. In the roll on/roll off (ro/ro) sector, Hesse-Noord Natie (henceforth HNN) is also in a dominant position, handling 2.4 million units in 2001, which makes it the major European ro/ro operator. Furthermore, the company also handled some 8 million tons of break bulk. In 2001 the two partners generated a total of approximately 55 million tons, which we may compare with 130 million tons of traffic operated in the Port of Antwerp.³¹

Antwerp is an important gateway to Europe. Nearly half its cargo is loaded or unloaded using road transport, with the remaining using barge and rail. Of the containers unloaded in the Port of Antwerp, 17 per cent originates from the Middle and the Far East (20 pct. for loaded containers). What were the PSA's major strategic objectives for this investment and how could a possible EU-Singapore FTA affect this inward investment in the EU, if at all?

PSA strategic objectives. Among the strategic factor which influenced PSA's decision to participate in HNN, mention should be made of :

- PSA's need for a commercial presence in Northern Europe, considering that Hutchison and P&O, the two major players in port terminal operations, are already present in Rotterdam;
- The geographical location of Antwerp and its hinterland covering Germany, Switzerland, France, Austria and even Central and Eastern Europe;
- The quality of the workforce in Antwerp characterised by professionalism, high productivity and little social unrest, less than Rotterdam and Le Havre which continue to experience some social problems;
- A final consideration is "scalability", i.e. the ability to expand at some future date.

EU Investment related measures. PSA did not experience barriers to its investment in Antwerp. We will briefly review three aspects of investment related measures – regulatory barriers, taxation regime and competition policy.

Regulatory barriers. The speed of approval by the Belgian federal and regional authorities was slower than expected. This resulted from the complex division of responsibilities between the Belgian federal government and the regional (Flemish) authorities. In addition, the actions of some ecological and agricultural pressure groups have sometimes hindered the political decision making process.³²

Taxation regime. HNN is registered under Belgian law and operating in Belgium and taxed in Belgium too. Belgian corporate tax rates are much above those of Singapore, but there has never been any demand for a special taxation regime in Belgium, or for taxes to be paid in Singapore.

Competition Policy. A challenge for the future is that further expansion of PSA elsewhere in Northern Europe could be subject to European competition policies, which might lead to restrictions on such

³¹ These consist of 74.2 million tons unloaded and 55.8 million tons loaded.

³² The shipping line MSC e.g., has a 50 pct. stake in a new container terminal in Antwerp at the left bank of the river Schelde, which should be starting to run this year. Due to delays as a result of the actions of the mentioned pressure groups, MSC is seriously considering to pull out.

expansion.³³ Industry sources have expressed serious concern about the EU's "White Paper on Port Policies"³⁴ (February 2001). If it were to be adopted and implemented, it will have an impact on the future developments and moves of PSA. The "White Paper" wants to

- *reduce concession periods* in European ports from 50 years to a shorter time frame, yet to be specified. As port infrastructure is very capital intensive and thus has a long depreciation period, such a reduction will critically affect future investment decisions in the EU, in particular in the comparatively expensive Northern European ports;
- *encourage competition within the ports*. The issue is whether HNN should be considered a monopoly or quasi-monopoly?

The merger of the two firms (Hessenatie and Noordnatie) was accepted by the Belgian Competition Council on the grounds that the relevant geographical area for cargo handling services was not the port of Antwerp, but the Northern European area. In the case of Antwerp where some 60 per cent of traffic is in-transit, opening up cargo handling services for more competition, would mostly affect the remaining 40 pct. of the traffic with destinations in Belgium. The Belgian Competition Council considered that competition between the ports is likely to increase productivity and efficiency (where Antwerp is well placed), whereas competition within the single port is likely to reduce prices and service quality --negatively affecting future investment decisions as it reduces the return on investment/equity.

Implications for a possible EU-Singapore FTA. Based on PSA's investment experience, there appears to be no need for special mention of port services liberalisation in a EU-Singapore FTA. Regarding a EU-Singapore FTA, the Port of Antwerp and HNN expect to be secondary beneficiaries. Increased traffic from and to Singapore will mean that more cargo handling and port operation services will be required.

In this respect one should not forget the role of Singapore as a regional hub. The role of Singapore as a regional maritime centre will further increase as a result of the PSA controlled container terminals in China: two in Dalian in the north of China, two in Fuzhou in the middle of China and one in Guangzhou in the south. Singapore will bring Chinese products to the EU through its three major container centres in Europe: Zeebrugge-Antwerp, Genua and Sines. In this framework, Singapore acts as a centre where trans-shipment takes place. In the future also other services will increase, such as re-packaging, etc. Therefore, if EU trade with China increases, Singapore will benefit.

However, in order to benefit from an EU-Singapore FTA, this FTA should contain rules of origin which allow specific services provided in Singapore on goods of Chinese provenance to become of Singaporean origin, or should contain provisions for specific geographical zones outside Singapore (see also the US-Singapore FTA in negotiation). Similarly, if products with ASEAN origin (see the AFTA rules of origin) are allowed access in the EU under an EU-Singapore FTA this will be beneficial both to the ASEAN producers and traders as to the Port of Antwerp and HNN/PSA. This evidently also de-

³³ Hutchison which owned already container terminal in Felixtowe (UK) and wanted to invest in ECT in Rotterdam met with such restrictions from the European Commission.

³⁴ Commission for the European Communities (2001), *Proposal for a Directive of the European Parliament and of the Council on Market Access to Port Services*, Brussels : European Commission, 13 February 2001, 23 p.

depends on the possibility of harmonising the rules of origin applied in AFTA and in the EU (for GSP eligible imports from ASEAN).

In summary, the Port of Antwerp and its position in the Hamburg-Le Havre range will benefit from increased trade with Singapore through a EU-Singapore FTA. However, benefits from increased trade with ASEAN and China as a result of this FTA will crucially depend on EU rules of origin applied, and the scope for covering trade and traffic from ASEAN and China. The same holds for the impact on Singapore's position as a regional maritime hub. Finally, some of Singapore's expected benefits of an EU-Singapore FTA can erode due to policy changes in the EU's regulations on competition in the port sector.

5.7 Broad Agenda Issues: Intellectual Property, Public Procurement and Competition Policy

The case studies also serve to illustrate that a possible EU-Singapore FTA would need to tackle 'broad' issues of public procurement, intellectual property and competition policy. The EU-Chile FTA draft agreement demonstrates that a 'broad' agenda can be pursued successfully in the context of a FTA. In the opinion of the authors, the central issue is the adoption of a competition policy by Singapore that goes beyond the present disciplines of the WTO, which focus primarily on the avoidance of import and export cartels. We shall deal with the three broad issues in turn.

Intellectual Property Rights. IPR policy issues relate to the desirable time table for the adherence to existing and currently negotiated international conventions and legislative change to introduce these into force. For example, in the case of EU-Chile it is proposed that Chile will adhere, by the date of enforcement of the FTA, to the Paris Convention on Industrial Property, Berne Convention on artistic and literary works, Rome convention on performers, phonograph and broadcasting and the Convention on protection of new variety of plants.³⁵ However, Singapore already pursues a 'strong' IPR regime and it is hence a member of WIPO, a party to the Paris Convention, the Patent Cooperation Treaty, etc. Significantly, it amended its intellectual property legislation in line with TRIPS ahead of the deadline of January 1, 2000 in order to fulfil its APEC commitments (WTO 2000). It is therefore likely that there would be a great deal of agreement between the EU and Singapore on issues of IPR and possible adherence to future conventions.

Public Procurement. Public procurement in Singapore is carried out by individual ministries, department and statutory bodies. Singapore acceded to the WTO Agreement on Government Procurement in 1997 and has implemented its provisions through the Government Procurement Act of 1998. Hence, at the procedural level the EU and Singapore share a well-defined view with regard to the necessary transparency and the need for national treatment of foreign suppliers. However, some possible differences of perception may revolve around the issue of coverage. In particular, which components of procurement by the so-called Government Linked Corporations (GLCs), accounting for 12.9 per cent of GDP, should be included in the definition of government procurement.

³⁵ Further commitments regarding Chile's adherence to conventions at later dates are indicated in the Annex Table on EU-Chile FTA.

Competition Policy and Law. Singapore, like Hong Kong, does not at present have a competition law, although a proposal is under consideration by its Government. The possible introduction of a competition law raises a question – does openness to trade not provide a sufficiently effective mechanism?³⁶ At present competition is regulated at the decentralised level of the statutory boards, which have oversight and monitoring responsibilities and are knowledgeable and familiar with the specific sector market structure.

The EU viewpoint on competition policy is that the core competition principles on transparency, non-discrimination, procedural fairness and recognition of the costs of cartels are best realised through a legal framework implemented by an independent competition agency with an overview and responsibility of the economy as a whole. The objectives of the legal framework will include both economic efficiency as well as consumer welfare and hence a competition law is bound to interface with other regulatory processes, in particular regarding trade and investment policy, consumer protection and anti-corruption. Whether the appropriate legal approach is *ex ante* prescriptive (identifying unfair trade practices, bid rigging, etc) or *ex post* remedial (responding to complaints of business and demands of consumers) is a matter of judgment. The above case-studies of EU investment in financial services in Singapore as well as the latter's investment in port services in EU demonstrate clearly that issues of competition are at the heart of the investment decision. Hence, a possible EU-FTA would benefit from including a commitment to the introduction of a competition policy setting out mutually agreeable disciplines and practices.

Finally, a possible EU-Singapore FTA would also need to spell out the provisions for dispute settlement especially for those issues which are beyond the competence of the WTO dispute settlement system. The EU-Chile FTA agreement would appear to offer a useful template (see annex).

6. Risks of a EU-Singapore Free Trade Agreement

In short, the business case for a EU-Singapore FTA does indeed appear quite compelling, provided that the negotiations focus and successfully conclude in those areas where EU has significant interests already, in particular trade in services. But what are the risks for the European Union to engage into negotiations with the Republic of Singapore with the aim to achieve such an agreement?

In our assessment, the risks relates to a possible disturbance, which such a bi-lateral approach may cause to the already fragile EU-ASEAN relations and/or relations with other Asian developing countries. A 'fear' has been expressed by some in ASEAN countries that Singapore will benefit from a FTA with the EU to the detriment of other ASEAN countries. Above we have already rejected the argument that any significant trade diversion may result from a possible EU-Singapore FTA. Nevertheless, populist voices may suggest that a FTA will mean that EU products will enter regional markets 'freely'. This perception is wholly unjustified because EU products imported into Singapore will *not* have ASEAN origin under the AFTA rules of origin. Even more pertinently, Singapore does not charge tariffs at pre-

³⁶ For a summary discussion of this and related issues see 'Challenges in Implementing a Competition Policy and Law: An Agenda for Action', CUTS, New Delhi, 2002.

sent in any case, except on a few products.

Nevertheless, it will be pertinent that any EU agreement with Singapore must offer the scope for replication and extension within the ASEAN region, if not beyond. Hence, the opportunities for 'sourcing' from within the ASEAN countries as well as amendments to allow a flexible application of the rules of origin for selected sectors (e.g., electronic products and components) should deserve careful consideration.

To address this it will be important to devote attention to the rules of origin in the AFTA agreement as well as in the EU-ASEAN agreement. Products that have acquired ASEAN origin under AFTA and are traded by Singapore can enter the EU benefiting from preferential treatment provided the EU applies the same or lower standards regarding origin. However, if the relevant EU rules of origin are more restrictive, this will limit the trade benefits which Singapore and the other ASEAN countries could realise.³⁷ As a result of present rules of origin it is quite unlikely that products which have been processed in, for example, Indonesia or Cambodia will qualify for preferential duty access. Specific exceptions may have to be considered to extend the benefits of a possible EU-Singapore to other countries within the region – these could be limited to named countries and sectors.

In assessing the risks of bi-lateralism due cognisance will have to be given to the present policy shifts regarding this approach across East and South East Asia. In particular Japan has post-Seattle moved its external trade policy into a 'multi-layered approach'. For Japan, as for the European Union, the WTO remains the essential foundation for a free trading system with its 144 members. Japan, like the European Union, also remains active in the promotion of flexible cooperation schemes like the ASEM and, in the case of Japan, the APEC. Nevertheless, Japan has increasingly moved to assess the scope and implications of possible 'comprehensive economic partnerships' with other countries too. Present initiatives for such a bilateral cooperation, following the conclusion of the Japan Singapore Economic Partnership Agreement early 2002, focus on Japan-Mexico and Japan-ASEAN. This new-found enthusiasm for bilateral ties is partly in response to the drive towards an ASEAN-plus-Three and for a possible China-ASEAN free trade agreement.

Ongoing studies on FTAs commissioned by Japan's Ministry of Economy, Trade and Industry (METI) focus on bilateral economic relations with Mexico (since 1999); Republic of Korea (since 2000); Chile and Singapore (since 2001) and since Feb 2002 on Japan-ASEAN.³⁸ It is too early to say to what extent these studies will indeed provide intellectual and empirical support for the view that RTAs will be stepping stones for global trade liberalisation. Some recent studies argue that 'east asian regionalism' may be not necessarily be the most efficient (for a brief summary see Annex C). Undoubtedly, Japan and China may stand to gain more from global trade liberalisation with improved access to large markets such as the United States and EU. Even if regional trade is only a 'second best' -- a

³⁷ According to the EU GSP products shall be considered as originating in a beneficiary country if (i) the product is wholly obtained in that country, or (ii) products obtained in the country in the manufacture of which products are used which have undergone sufficient working or processing. The EU also provides for regional cumulation of preferences, across ASEAN countries, subject to specific rules on processing and a minimum percentage of the ex-fob price which has been generated in the regional grouping of countries.

³⁸ Presentation by staff economist of the Trade Policy Bureau, Ministry of Economy, Trade and Industry at the 5th Global Conference on Global Economic Analysis, June 5-7, Taipei, Republic of China.

position which is a matter of ongoing controversy -- the first best outcome of global trade liberalisation may simply not be on offer in the short to medium run. In the face of this reality, one could argue that an absence of the EU in the development of these new 'manifestations of regionalism' in Asia, while the US, Japan, China and others actively participate would not be in the best interest of EU business.

Finally, the Doha Development Agenda will become the *leitmotiv* of multi-lateral trade talks for the coming years. The EU's support to this agenda would be underscored by a commitment, in principle, to extend benefits negotiated with Chile also to Singapore and progressively to other Doha signatories. Pluri-lateralising the 'positive externalities' of a EU FTA towards other credible partners could be a stepping stone towards the inter-regional and multi-lateral levels. This would amply justify the EUs engagement at a bilateral level.

7. Conclusions and Recommendations

This section will conclude with a matrix table of the main areas to be included in a possible EU-Singapore FTA as well as an informed guess of the EU and Singaporean perspectives and interests in these areas. But first we recapitulate the main observations of this report in the following six points:

- EU business is prominent and profitable in Singapore and a possible FTA can enhance that prominence, whereas non-participation of the EU in Singapore's bilateral FTA strategy will put its business at a disadvantage vis-à-vis the US, Australia and Japan
- Singapore international trade policy regime for goods is irreversibly open, but significant restrictions remain on FDI and establishment, impacting in particular on trade in services
- EU imports from Singapore are dominated by products with duty free access and hence elimination of the already low average weighted EU tariffs (1.04 per cent) is most unlikely to cause significant trade diversion; tangible gains may accrue to the chemicals sectors with tariff of 3.8 to 5.8 per cent, a major share of these imports are intra-firm by EU-originating TNCs
- Significant gains can be realised through a EU-Singapore mutual recognition agreement on conformity assessment, avoiding wasteful re-testing and facilitating the acceptance of EU standards
- Further significant gains can also be realised through the liberalisation in the services sectors, enhancing further EU commercial presence and reducing the EU deficit in trade in services; realising these gains will also require commitments by Singapore in the areas of public procurement and competition policy
- The risk that a bi-lateral agreement would disturb the already fragile EU-ASEAN relations can best be addressed through (i) provisions and amendments to rules of origin to facilitate regionally integrated sourcing for selected sectors and countries; and (ii) an up front indication of willingness from the EU side to replicate similar agreements with other ASEAN Member States.

Table 10: EU-Singapore FTA: Issues for Negotiation

	EU Perspective and Interests	Singapore's Perspective and Interests	Remarks and Recommendations
Tariff Elimination - Agricultural Goods - Industrial Goods	<p>Ensure minimal impact on domestic producers</p> <p>Small loss of tariff revenue; welfare gains likely to accrue intra-firm</p>	<p>No particular interests</p> <p>Limited gains to foreign and national producers</p>	<p>Exclude agriculture from negotiations</p> <p>Limited scope for trade creation; no significant trade diversion to be expected</p>
Reduction of Non-Tariff Barriers to Trade in Goods - Technical Regulations - SPS	<p>Promote use of EU standards</p> <p>Ensure environmental and food safety</p>	<p>Promote research and testing capability</p> <p>Scope for limited trade creation</p>	<p>Japan-Singapore MRA could be starting point; narrowly focus on key regulations and products</p> <p>Selected products only</p>
Trade in Services	<p>Further reduce restrictions on establishment and FDI</p> <p>Obtain additional licenses in banking, insurance and other sectors</p> <p>Attract inward Singapore FDI</p>	<p>Attract SME inward investment</p> <p>Develop own stock of intellectual property</p> <p>Maintain financial market stability</p> <p>Support internationalisation strategy of selected GLCs</p>	<p>Harmonise EC's WTO-GATS requests and EU-Singapore FTA Agreement</p> <p>Ensure parity with US, Japan and Australia</p>
Broad Agenda Issues - public procurement - competition policy	<p>Define status of GLCs</p> <p>Promote EU practices</p>	<p>Maintain 1998 status quo</p> <p>Maintain informal ex-post remedial approach</p>	<p>Ensure WTO-plus character</p> <p>Ensure WTO-plus character</p>
Technical Working Groups covering:	<p>Statistical data base for Trade in Service flows</p>	<p>Global and regional economic impacts of Singapore's and East Asian bilateral strategies</p>	<p>Ensure independence of analysis</p>

REFERENCES

- Australian Productivity Commission (2002). *Services Trade and Foreign Direct Investment*, Canberra (pp 1-117).
- Brenton and Manchin (2002). *Making EU Trade Agreements Work: The Role of Rules of Origin*, Working Document 183, CEPS, Brussels.
- Brenton, P., Sheehy, J. and Vancauteran, M. (2001). *Technical Barriers to Trade in the European Union: Importance for Accession Countries*, Journal of Common Market Studies, 39, 265-84.
- Brown, D.K., Deardorff, A.V. and Stern, R.M. (1992). *A North American Free Trade Agreement : Analytical Issues and a Computational Assessment*, The World Economy, 15(1), January 1992.
- Cawley, R. and Davenport, M. (1988). *Partial Equilibrium Calculations of the Impact of Internal Market Barriers in the European Community*, in : Research on the "Cost of Non-Europ", Basic Findings, Volume 2, Studies on the Economics of Integration, Ch.8.
- Commission for the European Communities (2001). *Proposal for a Directive of the European Parliament and of the Council on Market Access to Port Services*, Brussels : European Commission, 13 February 2001, 23 p.
- CUTS Center for International Trade, Economics & Environment (2002), *Challenges in Implementing a Competition Policy and Law: An Agenda for Action*, (CUTS, New Delhi -- www.cuts.org).
- Hertel, Thomas, Walmsley *Dynamic Effects of the 'New Age' Free Trade Agreement between Japan and Singapore*, Center for Global Trade Analysis, Purdue University.
- ITC (2000), *The Trade Performance Index, Background paper*, Geneva : International Trade Centre.
- Lee, Hiro, Roland-Holst, D. and van der Mensbrugghe, D. (2002). 'Emergent Trilateralism in the Pacific -- How should China, Japan and the United States respond to regional trade initiatives ', presented at the 5th Conference on Global Economic Analysis, June 5-7, Taipei, 2002.
- Messerlin, P. and Laird, S. (2002) forthcoming WTO, Geneva.
- Ministry of Trade and Industry (March 2002). *Agreement between Japan and the Republic of Singapore for a New Age Economic Partnership*, Information kit, pp. 1-56 and Detailed text of the Japan Singapore Agreement (on CD-Rom).
- Ministry of Trade and Industry (September 2000). *Report of Joint Study Group on Japan-Singapore*, pp 1-57 plus annexes.
- Ministry of Trade and Industry (February 2002). *Economic Survey of Singapore 2001*, pp. 1-196 including tables.
- Monetary Authority of Singapore (2002). *Accounts for the Year Ended 31 March 2001*.
- Ma, Jun and Zhi Wang (2002). *Options and Implications of Free Trade Arrangements in East Asia*, presented at the 5th Conference on Global Economic Analysis, June 5-7, Taipei, 2002.
- Port of Singapore Authority (2001). *Annual Report 2000*.
- Roland-Holst, D. and van der Mensbrugghe, D. (2002). *China and the WTO: Beginning of the end for East Asian Regionalism*, presented at the 5th Conference on Global Economic Analysis, June 5-7, Taipei, 2002.
- Singapore Department of Statistics (2001 March). *Contribution of Government-Linked Companies to Gross Domestic Product*, pp 1-9 Occasional Paper on Economic Statistics.
- Singapore Department of Statistics (2000 March). *Singapore's International Trade in Services: New Statistical Estimates and Analysis*, pp 1-14 plus annexes Occasional Paper on Economic Statistics.
- US-ASEAN Business Council (February 2002). *ASEAN and its Importance to the USA*.
- Database: Trade and Development Board (2001). Singapore Trade Connection, Trade Data CD ROM – SITC and HS (9 digits) for the years 1998-2000, (values only for all countries of the world).
- Eurostat (2002). International Trade Databasis, CD ROM.

APPENDICES

ANNEX A. Building the indices of Trade Policy Regimes

For each country, each index for agriculture and for industry is calculated as a simple average of a series of basic indicators. Each basic indicator receives a score from 1 (worst) to 10 (best) that merely corresponds to the decile to which the country belongs for the indicator examined. It should be stressed that indexes are relative (an index of 10 means that this is the best performance observed in the sample, not the perfect performance possible) and that indexes of 10 do not necessarily exist (because they are the simple average of several different basic indicators).

Simplicity indices aim at capturing the information and other transaction costs which are imposed by a trade policy. They are intended to answer the question whether or not producers, traders, and investors need few efforts to understand the trade policy of a country. In agriculture, the index relies on six basic indicators. (1) Does the tariff schedule of the country examined include many tariff lines, meaning that more effort must be devoted to find the correct tariff line to be used, or that there are more risks of errors by or conflicts with the country's customs authorities than would be the case with a tariff schedule consisting of a more limited number of tariff lines? (2) What is the percentage of non-ad valorem bound tariffs, a low percentage implying more efforts to assess the real level of protection than a high percentage? This is because specific tariffs or combined specific-ad valorem tariffs entail a level of protection that varies with world prices. (3) What is the standard deviation of bound tariffs, a high deviation requiring more effort to find out the exact tariff rate? Risks in the face of very different rates are high, and the consequences potentially costly than a low standard deviation. A zero standard deviation signals an uniform tariff policy which has two advantages: it minimizes information and transaction costs of foreign exporters for finding out the nominal tariff rate (unique by definition) and it does not disturb the country's comparative advantage (the effective rate of protection of each industry is equal to the unique nominal tariff rate) so that foreign investors have no reason to make complex calculations in order to know the effective tariff rates that their production will face, if exported to or located in this country. (4) What is the percentage of non-duty free tariffs, a high percentage implying that risks of facing different tariffs (hence information costs) are higher than with a low percentage? (5) What is the number of product groups affected by the export subsidy reduction commitments signed by the country in question under the Uruguay Agriculture Agreement (UAA)—a small number suggesting a less complicated assessment of the support granted to the domestic producers of the examined country? Finally, (6) what is the number of tariff-quotas included in the country's UAA commitments, a high number requiring more efforts to investigate the exact impact of these tariff quotas than a low number? In industry, the simplicity index relies on five basic indicators. Indicators (1) to (4) are similar to the four first indicators in agriculture. Indicator (5) consists in the frequency of non-tariff measures (NTMs), a high frequency requiring more efforts to investigate the exact impact of these NTMs in the export market than a low frequency.

The irreversibility indices aim at capturing the risks that an existing trade policy could be reversed rapidly and substantially. Irreversibility is a major dimension of trade policy envisaged by producers, traders and investors—and by GATT-WTO with the concept of “bindings.” In agriculture, it relies on four indicators. The more irreversible a trade policy is, (1) the smaller the share of unbound tariffs in the tariff schedule—unbound tariffs exempt the country from the most stringent WTO discipline, that is, the need to renegotiate any increase of a tariff above the binding of ceiling rate; (2) the smaller the

standard deviation of fill rates of tariff-quotas is—a wide dispersion reflects the impact of quota management methods if one assumes that the tariff-quotas included in the UAA (3 to 5 percent of domestic consumption) are so small that they should be fulfilled at a similar (presumably high) rate; (3) the smaller the average use of export subsidy outlays is; and (4) the smaller the percentage of tariff lines potentially subjected to special agricultural safeguard (SAS) provisions (the rationale for such a relation is obvious). In industry, the irreversibility index relies on five indicators: (1) the smaller the share of unbound tariffs in the tariff schedule (as in agriculture); (2) the smaller the number of tariff lines with bound tariffs higher than 15 percent (because high unbound tariffs generate either higher risks of reversal, or risks of larger reversals); (3) the smaller the difference between the bound and applied tariffs; (4) the smaller the frequency of core NTBs; and (5) the smaller the number of antidumping cases (per hundred of millions of dollars of imports) initiated during the period 1995-99.

The openness index in agriculture relies on nine indicators. The more open a farm trade policy is, (1) the smaller the average bound tariff as estimated by the OECD, (2) the smaller the average bound tariff as estimated by the World Bank; (3) the smaller the average applied tariff; (4) the smaller the share of tariffs lower than 15 per cent; (5) the smaller the share of tariffs lower than 100 per cent; (6) the smaller the escalation index (the ratio of the average tariff on semi-processed goods with respect to the average tariff on unprocessed products, as calculated by the WTO, 2001, pp.68-69), in order to take into account the magnification of nominal protection introduced by the escalation process; (7) the lower the producer support estimate mirroring production subsidies (drawn from OECD); (8) lower the final post-Uruguay Round budgetary outlay commitment on export subsidies; and (9) the higher is the fill rate of the tariff quotas. The openness index in industry also relies on eight indicators. The more open the manufacturing trade policy for a given country—(1) the smaller the average bound tariff; (2) the smaller the average applied tariff; (3) the smaller the share of “peak” tariffs (higher than 15 per cent); (4) the smaller the escalation ratio (the ratio of the average tariff on finished products with respect to the average tariff on raw materials, as calculated by the WTO, 2001, pp.14-15); (5) the smaller the standard deviation of the applied tariffs (because a narrow range of tariff rates minimizes the risk and magnitude of effective protection); (6) the smaller the frequency of core NTBs; (7) the smaller the use of antidumping actions (per thousands of dollars); and (8) whether the country examined has signed or not the information technology agreement (ITA)—mirroring the fact that signing the ITA reflects the country’s will to be open to a technical progress key for liberalizing services.

Annex A: Trade Policy Regime Indicators for 39 selected countries.

Countries	Regions	Agriculture			Industry		
		Simplicity	Irreversibility	Openness	Simplicity	Irreversibility	Openness
Canada	NA	7.8	9.0	9.3	8.2	8.6	8
USA	NA	6.7	7.0	9.1	7.4	7.5	9.4
Argentina	LAC	7.0	10.0	6.8	5.0	7.2	6.4
Brazil	LAC	7.0	10.0	8.0	5.2	7.6	6.9
Chile	LAC				7.2	7.2	8.4
Colombia	LAC	6.8	8.3	5.6	6.4	6.8	7.5
Costa Rica	LAC	8.5	8.5		7.4	8.1	8.4
El Salvador	LAC	10.0	9.0		6.8	8.6	8.5
Jamaica	LAC				8.0	8.0	7.0
Mexico	LAC	7.8	8.0	7.9	5.2	7.2	6.9
Peru	LAC				6.8	6.8	6.9
Venezuela	LAC	7.0	7.5	6.3	6.6	6.8	7.1
EC	E	4.8	6.8	7.0	6.6	6.3	9.6
Iceland	E	6.5	8.0	6.7	8.8	7.5	9.1
Norway	E	3.5	5.8	5.0	8.8	5.8	8.4
Switzerland	E	5.7	5.5	7.4	5.8	6.1	10.0
Turkey	E	3.8	5.5	6.3	4.6	5.0	7.8
Czech Rep.	E	6.8	8.5	8.7	7.2	7.8	9.3
Hungary	E	5.2	3.5	8.6	6.0	5.8	7.6
Poland	E	4.8	5.0	7.1	6.4	5.8	8.9
Romania	E	4.8	7.5	3.5	6.2	5.5	7.5
Australia	PA	9.2	9.8	8.9	7.2	8.7	9.1
Hong Kong	PA				8.4	8.4	10.0
Indonesia	PA	7.8	10.0	7.4	6.6	8.0	8.3
Japan	PA	8.6	9.7	7.7	8.8	8.7	9.6
Korea	PA	6.2	8.0	6.0	8.0	7.1	9.1
Malaysia	PA	8.0	7.3	8.2	6.6	7.5	7.8
New Zealand	PA	9.8	8.8	8.1	7.6	8.6	9.3
Philippines	PA	7.8	8.3	6.7	7.6	7.6	8.7
Singapore	PA	10.0			8.2	9.1	10.0
Thailand	PA	6.8	9.0	6.5	6.4	7.2	7.8
India	SEA	7.0	8.0	3.0	5.8	6.0	4.0
Sri Lanka	SEA	7.0	10.0	6.8	6.4	7.6	7.9
Cameroon	A				7.8	7.8	7.3
Chad	A				7.8	7.8	7.3
Gabon	A				8.0	8.0	7.4
South Africa	A	6.3	6.3	8.5	7.0	7.0	7.0
Tunisia	A	7.3	7.0	3.4	6.2	6.0	5.9
Zimbabwe	A				7.0	7.0	6.7
Number of observations		31	30	28	39	39	39
Minimum index		3.5	3.5	3.0	4.6	5.0	4.0
Maximum index		10.0	10.0	10.0	8.8	9.1	10.0

Averages by region (unweighted)								
North America	NA	7.3	8.0	9.2		7.8	8.1	9.6
Latin America	LAC	7.7	8.8	6.9		6.5	7.4	7.4
Europe	E	5.1	6.2	6.7		6.7	6.2	8.7
Pacific Asia	PA	8.2	8.9	7.4		7.5	8.1	9.0
South-East Asia	SEA	7.0	9.0	4.9		6.1	6.8	5.9
Africa	A	6.8	6.7	6.0		7.3	7.3	6.9
Averages by region (unweighted)								
All countries		7.0	7.8	6.9		7.0	7.3	8.1
Industrial countries		7.2	7.8	7.5		7.8	7.7	9.4
Developing countries		6.9	7.9	6.6		6.6	7.1	7.4
<i>Source: see Annex A. Author's computations.</i>								
Enlarged EC1		5.4	5.9	7.9		6.6	6.4	8.8
Enlarged EC2		5.0	6.1	6.9		6.2	6.1	8.4
All except E-EC1		7.2	8.1	6.8		7.0	7.4	8.0
All except E-EC2		7.4	8.3	7.0		7.1	7.5	8.0

Annex C : Highlights of EU-Chile FTA Agreement (provisional)

Area	Key Features
1. Services (General)	<ul style="list-style-type: none"> ▪ The four modes of services supply in GATS are included. ▪ Coverage excludes financial services (see separate chapter), audio-visual services, internal maritime transportation and air transportation (aircraft maintenance, commercialisation of air services and reserve computing system not excluded) ▪ Parties will review agreement after 3 years of enforcement. Review of mode 4 of service supply will take place after 2 years. ▪ International maritime transportation and telecommunications services are subject to particular regulations.
2. Financial Services	<ul style="list-style-type: none"> ▪ Coverage includes banking services (administration and operation of current accounts, receipt of deposits and credit grants and issue of credit cards), insurance (general and life) and administration and intermediation of values (intermediation of stocks and bonds and portfolio and mutual funds management) ▪ Excludes financial services derived from the activities of the monetary authority and the social security institutions. ▪ The Parties keep the capacity to adopt, for prudential reasons, measures for the operators' protection that regulate the establishment of the other Party's providers.
3. Investments (Goods)	The Parties acknowledge their commitments in Bilateral Agreements of Promotion and Protection of Investments signed between Chile and the EU Member Countries. (Agreements signed to this date)
4. Intellectual Property	<p>The International Conventions to which the Parties will adhere to are:</p> <ul style="list-style-type: none"> ▪ Those signed at the date of enforcement: TRIPS, Paris Convention on Industrial Property, Bern Convention on artistic and literary works, Rome convention on performers, phonograph and broadcasting and the Convention on protection of new variety of plants ▪ Those to be signed on 1st January 2007: Nice Agreement on Registration of Trade-marks, Treaty on WIPO Copyright, Treaty on phonographs and performances WIPO, Washington Treaty on cooperation on patents, and the Strasbourg Agreement on International classification of patents. ▪ Those to be signed on 1st January 2009: Geneva convention on protection of phonograph producers, Locarno Agreement on patent procedures of micro-organisms and the Treaty on legislation to register trademarks. ▪ Those which the Parties intend to adhere to in the future: Madrid Protocol and Agreement on international register of trademarks and the Vienna Agreement on international classification of figurative elements of trademarks.
5. Government Procurement	<ul style="list-style-type: none"> ▪ Coverage includes all kinds of procurement of goods and services by State entities defined in the Agreement. Applies also to public work franchises. ▪ Excludes contracts subject to international norms, goods and services acquisitions for their marketing, leasing contracts, employment contracts and some qualified services (financial, audio-visual, etc.). ▪ Disciplines in national treatment, transparency, valuation (minimum thresholds of contract value), notification and the MFN clause (subject to negotiation) are recognised.
7. Rules of Origin	<ul style="list-style-type: none"> ▪ Non wholly obtained products must comply with specific norms, which include the change of custom classification number, regional content value, and other specific requisites for the product or item. ▪ Only captures of vessels in their own EEZ are to be considered originating. Captures in high sea are classified according to the vessel's flag.
9. Defence of Competition Disciplines	<ul style="list-style-type: none"> ▪ Global Safeguards: Parties reiterated their commitments and obligations in the WTO, with some modifications in their bilateral relation. ▪ Bilateral norms have effect only if Parties are principle providers. ▪ A consultation system is established prior to the application of measures, in order to reach mutually acceptable solutions or offsets, to maintain balance of concessions. ▪ The term for the application of a measure is reduced to 18 months in order to allow affected Party to retaliate. ▪ Anti-dumping: Parties have reiterated their rights and obligations in the WTO.
10. Dispute Settlement	<ul style="list-style-type: none"> ▪ Disputes related to the Parties obligations to the WTO and incorporated to the Agreement are settled by the WTO Dispute Settlement system. ▪ Disputes related to the obligations substantially equivalent to the ones of the WTO are referred to the WTO system, unless otherwise agreed by Parties. ▪ Disputes related to the obligations that go beyond the commitments of the WTO are referred to the Agreement's system.

Other areas of agreement:

1/ Market Access: Application of 99.7% of tax phase out to the originating trade. Also, an emergency agriculture clause is stipulated with respect to tariff measure, prior consultation, provisional measures and offsets.

2/ Wine and Spirits Agreement: Regulates issues in relation to production and marketing of wines and spirits such as enological practices, trademarks and geographic indications and complementary quality denominations.

ANNEX D: Summary of Global Economic Analyses of East Asian FTAs

<p>1. Options and Implications of Free Trade Arrangements in East Asia</p> <p>By Jun Ma and Zhi Wang</p>	<p>Using a dynamic CGE model the authors estimate the impact of various FTA arrangements in East Asia on member and non-member countries. Four scenarios were simulated: ASEAN plus China/HK, ASEAN plus Japan, ASEAN plus China/HK, Japan and Korea and all of the above plus the US. Singapore emerges as the biggest winner in the first three scenarios, whose growth may be enhanced by as much as 4.5 percentage points over the next 10 years (ASEAN+3). Japan and China emerge as the biggest winners in an FTA with the US.</p> <p>The general trade pattern observed under the ASEAN plus China/HK scenario is that China will increase its net imports of land- and natural resource (LNR) intensive inputs and increase its net exports of labour and capital-intensive products. In response, ASEAN will be able to supply more of LNR-intensive products to China, mainly via Singapore (due to its strong agricultural processing capacity). Moreover, almost all FTA member countries will benefit from the cheaper intermediate manufactured inputs available from China since this will allow them to enhance their exports, mainly to the US and the EU. Finally, the authors find that Singapore will increase its production of petroleum products by 4.8% and processed food products by 5% in the next ten years under this scenario.</p>
<p>2. Emergent Trilateralism in the Pacific Basin: How Should China, Japan and the United States Respond to Regional Trade Initiatives?</p> <p>By Hiro Lee, David Roland-Holst and Dominique van der Mensbrugge</p>	<p>Using a dynamic CGE model the authors estimate the benefits of participation in a global trade liberalization scenario (GTL), a Northeast Asian Free Trade Area, ASEAN+3 and a US-Japan-China free trade with and without accelerated FDI to China from the US and Japan. The results show that GTL is the most attractive scenario for all countries considered except for China and Japan. However, because the WTO process is fraught with complications, this has provided the impetus to pursue regional arrangements. A trilateral arrangement between US, Japan and China in particular will bring larger benefits to Japan and China than a GTL, and about 80% of GTL's aggregate benefits to the US. The findings suggest that Japan and China may have the incentive to pursue Trilateralism as a desirable intermediate step to globalisation.</p> <p>In addition, China may have little incentive to joining an East Asian FTA. An East Asian FTA would divert China's large export capacity into a smaller market, leading to adverse terms of trade effects. In this way it is not clear why China would agree to such arrangements. China appears to be better off with a GTL strategy, or pursuing regional arrangements with large markets as the United States and Japan.</p>
<p>3. China and the WTO: Beginning of the End for East Asian Regionalism?</p> <p>By David Roland-Holst and Dominique van der Mensbrugge</p>	<p>Using a dynamic CGE model the authors assess various East Asia trade regimes at the global, regional and national levels as they may evolve over the next fifteen years. They find that GTL generates greater gains for the world and for a majority of countries, and dominates every East Asian regional grouping considered. Regional FTAs would benefit most FTA member countries but to a lesser extent than globalisation, since the former would induce significant trade diversion both within East Asia and with respect to the rest of the world. As in the previous paper, they find that China may be worse off in an East Asian FTA because of adverse terms of trade effects, even as most of the other members will be better off.</p> <p>The authors also look at the issue of structural congruence between the three levels of trade liberalization: unilateral (UTL),</p>

	<p>regional (RTL) and global (GTL). They investigate to what extent a transition from UTL to RTL to GTL induces harmonious shifts in output structure or otherwise. The findings show that for most countries the three different trade regimes induce resource pulls and shifts in output composition in significantly different directions. This implies that in a hypothetical transition from UTL to RTL to GTL, output in many sectors would reverse themselves. Therefore, countries using regional agreements as a stepping-stone to globalisation may experience more costly structural adjustments en route to globalisation.</p>
<p>4. Dynamic Effects of the ‘New Age’ Free Trade Agreement between Japan and Singapore</p> <p>By Thomas Hertel, Terrie Walmsley and Ken Itakura</p>	<p>Using a dynamic GTAP model the authors estimate the benefits of a Japan-Singapore Free Trade Agreement, in particular with respect to the application of certain ‘new-age’ features – implementation of uniform standards for e-commerce, liberalising rules governing direct trade in services and automating customs procedures in Japan. The findings show that if the FTA comprised of bilateral tariff cuts and some liberalisation in trade in services alone, global welfare gains would be uncertain. It is only when e-commerce and customs automization are included that the benefits become significant.</p>

Annex Table 1: Products Subject to Harmonised EU Regulations in EU Imports from Other Asian Countries

	Japan	Korea	Philippines	Malaysia	Indonesia
Old Approach	29.52	20.13	2.18	2.74	3.97
New Approach	15.86	16.49	25.26	22.20	5.27
Of which:					
Machinery	4.2721	0.7798	0.8051	1.2574	0.6761
Electromagnetic	8.6028	9.4566	20.3563	14.6544	1.9657
Low Voltage	1.3326	0.4865	1.0699	1.0638	0.4142
Gas appliances	0.0058	0.0177	0.0000	0.0170	0.0015
New hot water boilers	0.0802	0.0922	0.0000	0.0003	0.0000
Medical devices	1.1191	0.4030	0.0188	0.6104	0.1940
Packaging	0.0208	0.0223	0.0088	0.0268	0.0262
Pressure equipment	0.0994	0.0275	0.0000	0.0202	0.0014
Telecoms terminal equipment	1.2539	5.9381	3.5405	5.8655	0.1652
Active implantable medical devices	0.4092	0.0232	0.0048	0.1666	0.0119
Construction products	0.0210	0.0091	0.0098	0.1004	1.0969
Toys	1.1702	0.0967	0.1172	0.3211	1.3970
Simple Pressure equipment	0.1203	0.0587	0.0006	0.0254	0.0133

Annex Table 2: Intra-firm Trade, 2001

Ownership	Total Trade	Domestic Exports	Re-Exports	Imports
	S\$Million			
Total	53,616	18,298	10,818	24,500
Intra-firm Trade	32,864	15,243	5,653	11,968
Others	20,752	3,055	5,165	12,532
US	16,987	9,109	4,525	3,353
Intra-firm Trade	14,735	7,320	4,243	3,172
Others	2,252	1,788	283	181
EU	14,760	4,478	1,215	9,067
Intra-firm Trade	13,248	4,430	1,123	7,695
Others	1,513	49	93	1,371
Singapore	14,741	2,497	3,463	8,781
Intra-firm Trade	2,696	2,238	168	290
Others	12,045	259	3,295	8,491
Japan	2,960	1,248	1,158	554
Intra-firm Trade	1,097	860	99	138
Others	1,863	388	1,058	417
Switzerland	1,615	728	138	748
Intra-firm Trade	825	253	5	568
Others	789	475	133	181
Others	2,553	238	319	1,996
Intra-firm Trade	263	143	15	105
Others	2,289	95	303	1,891
% Share of Ownership Total				
Ownership	Total Trade	Domestic Exports	Re-Exports	Imports
Total	100.0	100.0	100.0	100.0
Intra-firm Trade	61.3	83.3	52.3	48.8
Others	38.7	16.7	47.7	51.2
US	100.0	100.0	100.0	100.0
Intra-firm Trade	86.7	80.4	93.8	94.6
Others	13.3	19.6	6.2	5.4
EU	100.0	100.0	100.0	100.0
<i>Intra-firm Trade</i>	<i>89.8</i>	<i>98.9</i>	<i>92.4</i>	<i>84.9</i>
<i>Others</i>	<i>10.2</i>	<i>1.1</i>	<i>7.6</i>	<i>15.1</i>
Singapore	100.0	100.0	100.0	100.0
Intra-firm Trade	18.3	89.6	4.8	3.3
Others	81.7	10.4	95.2	96.7
Japan	100.0	100.0	100.0	100.0
Intra-firm Trade	37.1	68.9	8.6	24.8
Others	62.9	31.1	91.4	75.2
Switzerland	100.0	100.0	100.0	100.0
Intra-firm Trade	51.1	34.7	3.8	75.8
Others	48.9	65.3	96.2	24.2
Others	100.0	100.0	100.0	100.0
Intra-firm Trade	10.3	60.0	4.8	5.3
Others	89.7	40.0	95.2	94.7

Note: Intra-firm trade is estimated based on information collected from invoices submitted by companies in 2001 for statistical auditing purpose. The sample covers 12 per cent of all trade.

Source: IE Singapore

Annex Table 3: Singapore-EU International Trade in Services (S\$ Million)					
	Export		Import		
	1998	1999p	1998	1999p	
Services Category					
Transportation	2598.3	2853.3	1419.1	1478.0	
Financial and insurance	348.8	320.1	184.7	163.1	
Business Services	634.2	709.6	333.7	403.8	
Trade-related & Others	515.2	485.2	96	103	
Technical	243.6	397.1	163.8	246.3	
Royalties	9.8	1.3	102.3	149.2	
Total	4349.9	4766.6	2299.6	2543.4	
Euro		2634.5		1405.7	
<i>Source: International Trade in Services, DOS March 2000.</i>					
Total Singapore International Trade in Services (S\$ Million)					
	Export		Import		
	1998	1999p	1998	1999p	
Services Category					
Transportation	15187.5	18403.3	9236.6	11234.7	
Freight on Import			6427.1	7215.7	
Travel	7973.4	8615.5	7428	8160	
Financial and insurance	3012.1	3031.9	964	1085.9	
Insurance on import			1219.9	1354	
Business Services	3236.2	3353.7	2114.4	2213	
Trade-related & Others	5879.1	9066.3	2119.6	2144.4	
Technical	1944.4	2100.6	1885.7	1915.4	
Royalties	86.1	94.1	3119.9	4028.8	
Government	162.4	137.9	194	192.3	
Total	37481.2	44803.3	34709.2	39544.2	
Euro		24762.8		21856.1	
<i>Source: International Trade in Services, DOS March 2000</i>					
EU-Share in Singapore's International Trade in Services (per cent)					
	Export		Import		
	1998	1999p	1998	1999p	
Services Category					
Transportation (incl. freight)	17.1%	15.5%	9.1%	8.0%	
Financial and insurance	11.6%	10.6%	19.2%	15.0%	
Business Services	19.6%	21.2%	15.8%	18.2%	
Trade-related & Others	8.8%	5.4%	4.5%	4.8%	
Technical	12.5%	18.9%	8.7%	12.9%	
Royalties	11.4%	1.4%	3.3%	3.7%	
Government	n.a.	n.a.	n.a.	n.a.	
Total	11.6%	10.6%	6.6%	6.4%	
<i>Source: International Trade in Services, DOS March 2000</i>					

ANNEX Table 4 : Tariff equivalents of post-Uruguay barriers to trade and investment (per cent)

	imports		exports		domestic output	foreign affiliates' output	domestic capital	foreign affiliates' capital
	primary sector	manufac-turing	primary sector	services	services	services	services	
	1	2	3	4	5	6	7	8
ASEAN countries								
Singapore	3,2	0,6	0,0	4,7	3,4	8,3	2,4	24,5
Indonesia	4,4	6,7	0,0	4,7	13,2	28,1	22,7	68,1
Malaysia	21,2	6,0	6,7	4,5	0,6	10,2	15,4	37,6
Philippines	16,2	18,5	-0,1	4,8	8,4	22,7	7,4	54,3
Thailand	12,1	14,8	-17,0	4,1	4,7	13,4	12,2	36,5
OECD countries								
Europ. Community	3,2	1,1	-2,3	4,7	0,1	1,3	1,3	6,5
Australia	1,7	7,3	0,7	4,8	0,0	0,7	0,6	14,8
Canada	3,6	1,4	-0,4	3,5	0,3	1,7	0,5	6,1
Japan	16,2	1,8	-8,1	4,4	3,6	4,8	0,3	3,0
Korea	13,0	6,6	-1,2	4,6	5,1	6,8	1,9	22,0
Mexico	-1,5	3,0	1,9	5,2	2,2	5,6	0,7	13,0
New Zealand	1,2	4,5	-3,3	3,8	0,0	0,7	0,4	4,2
USA	1,3	2,2	-0,0	4,3	0,1	1,1	0,0	3,8
Other countries								
Hong Kong	0,0	0,0	0,0	9,9	1,4	2,4	1,4	5,4
Chile	6,8	10,3	0,0	4,4	3,0	4,1	14,2	20,4
China, PRC	8,9	28,5	5,1	4,1	18,8	36,4	123,5	250,7
Taiwan	27,3	5,6	-1,8	4,4	2,9	4,9	1,9	19,2
Rest of World	15,9	13,7	0,6	5,0	4,9	13,9	39,1	87,0

Source: Dee and Hanslow, 2000. Table 4.

ANNEX TABLE 5: OECD Regulatory and Market Environment 1998

	Air passenger transport			Road freight			Mobile telephony			Fixed phone			Electricity			Railways			Retail distribution			Average		
	[a]	[b]	[c]				[a]	[b]	[c]				[a]	[b]	[c]				[a]	[b]	[c]			
				[a]	[b]	[c]				[a]	[b]	[c]				[a]	[b]	[c]				[a]	[b]	[c]
Austria	3,2	3,4	3,1	2,8	2,7	2,8	3,5	4,0	3,0	3,0	6,0	0,0							4,1	3,0	5,5	3,3		
Belgium	4,4	5,5	3,3	3,2	3,0	3,3	3,8	4,5	3,0	3,0	6,0	0,0	5,5	6,0	5,0	6,0	6,0	6,0	3,1	3,6	2,3	4,1		
Britain	2,2	1,1	3,3	1,3	2,4	0,6	0,0	0,0	0,0	1,0	2,0	0,0	0,0	0,0	0,0	3,0	3,0	3,0	2,5	2,8	2,1	1,4		
Denmark	4,7	5,8	3,6				3,4	3,9	3,0	2,2	4,4	0,0	5,0	6,0	4,0				2,9			3,6		
Finland	3,6	3,4	3,8	1,7	3,6	0,6	2,3	4,6	0,0	0,4	0,9	0,0	0,0	0,0	0,0	6,0	6,0	6,0	3,0	2,9	3,0	2,4		
France	3,2	2,3	4,1	2,5	2,2	2,6	0,8	1,7	0,0	3,0	6,0	0,0	6,0	6,0	6,0	6,0	6,0	6,0	4,7	4,5	5,0	3,7		
Germany	3,0	2,6	3,4	3,0	2,7	3,2	3,2	3,5	3,0	3,0	6,0	0,0	2,1	1,5	2,7	3,0	6,0	0,0	1,2	1,3	1,2	2,6		
Greece	5,5	5,8	5,1	3,6	4,0	3,4	2,4	1,7	3,0	6,0	6,0	6,0	6,0	6,0	6,0				3,8			4,5		
Ireland	4,4	5,6	3,1				3,7	4,4	3,0	2,8	5,5	0,0	4,5	3,0	6,0	6,0	6,0	6,0	1,4	1,6	1,0	3,8		
Italy	3,3	2,8	3,8	4,6	4,1	4,9	2,2	4,5	0,0	3,0	6,0	0,0	6,0	6,0	6,0	6,0	6,0	6,0	3,1	3,3	2,8	4,0		
Netherlands	2,7	2,8	2,6	2,4			2,2	4,4	0,0	2,9	5,7	0,0	5,3	4,5	6,0				1,4	1,8	0,8	2,8		
Portugal	5,1	5,1	5,1	2,3	2,1	2,4	3,4	3,7	3,0	6,0	6,0	6,0	4,2	3,0	5,3				2,6	2,5	2,8	3,9		
Spain	2,9	1,9	3,9	3,0	2,3	3,4	4,6	4,6	4,5	3,0	6,0	0,0	3,8	3,0	4,7	4,5	3,0	6,0	2,5	2,8	2,0	3,5		
Sweden	3,3	3,2	3,4	2,2	2,6	2,0	1,8	3,7	0,0	1,7	3,4	0,0	0,8	1,5	0,0	3,0	3,0	3,0	1,7	1,7	1,6	2,1		
Rest of OECD																								
Australia	3,3	3,1	3,5	0,8			0,9	1,8	0,0	1,3	2,6	0,0	0,9	1,5	0,3				1,1	1,4	0,7	1,4		
Canada	3,6	3,1	4,1	2,0	2,6	1,6				0,8	1,6	0,0	6,0	6,0	6,0	3,0	3,0	3,0	1,3	1,7	0,6	2,8		
Japan	3,1	1,5	4,7	2,1			0,4	0,8	0,0	1,1	2,2	0,0	5,0	6,0	4,0	3,0	3,0	3,0	4,1			2,7		
Korea	3,8	3,2	4,4	1,1	0,5	1,4	1,6	3,1	0,0	1,9	3,8	0,0				6,0	6,0	6,0	1,3	0,9	1,9	2,6		
Mexico	3,5	2,3	4,7	2,2	1,6	2,6	2,5	2,0	3,0	1,7	3,3	0,0				4,5	3,0	6,0	1,9	2,0	1,7	2,7		
New Zealand	3,7	5,2	2,2	1,3	2,4	0,6	2,6	5,2	0,0	1,4	2,8	0,0	0,0	0,0	0,0							1,8		
Norway	2,9	2,6	3,1	2,2	2,9	1,8	3,9	4,9	3,0	3,0	6,0	0,0	0,0	0,0	0,0	4,5	3,0	6,0	2,2	3,0	1,1	2,7		
Switzerland	4,6	4,1	5,1	3,8			4,5	6,0	3,0	3,0	6,0	0,0				6,0	6,0	6,0	1,1	1,2	1,0	3,8		
United States	1,2	0,4	2,0	1,5	1,5	1,5				0,3	0,5	0,0	4,3	4,5	4,0	1,5	3,0	0,0				1,7		
EC	3,7	3,6	3,7	2,7	2,9	2,7	2,7	3,5	1,8	2,9	5,0	0,9	3,8	3,6	4,0	4,8	5,0	4,7	2,7	2,7	2,5	3,3		