United States International Trade Commission

U.S.-Singapore Free Trade Agreement:

Potential Economywide and Selected Sectoral Effects

Investigation No. TA-2104-6
USITC Publication 3603
June 2003

U.S. International Trade Commission

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U.S. International Trade Commission

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Publication 3603 **June 2003**

This report was principally prepared by

Country and Regional Analysis Division
Arona M. Butcher, *Chief*

Arona M. Butcher, *Project Leader*

Soamiely Andriamananjara, Michael Barry, Nannette Christ, Kyle Johnson,
Diane Manifold, and Marinos Tsigas

Office of the General Counsel
William W. Gearhart

Office of Industries
Heidi Colby-Oizumi, *Industries Coordinator*
Laura Bloodgood, Queena Fan, Lisa Ferens, Eric Forden, Christopher Johnson, Dennis Luther,
Christopher Melly, Michael Nunes, and Cynthia Trainor

Office of Tariff Affairs and Trade Agreements
Janis Summers

Supporting assistance was provided by:
Patricia M. Thomas

PREFACE

On February 28, 2003, the United States International Trade Commission (the Commission) instituted investigation No. TA-2104-6, *U.S.-Singapore Free Trade Agreement: Potential Economywide and Selected Sectoral Effects.* The investigation, conducted under section 2104(f) of the Trade Act of 2002, was in response to a request from the United States Trade Representative (see Appendix A).

The purpose of this investigation is to advise the President and the Congress as to the potential effects of the U.S.-Singapore free trade agreement (FTA). In particular, section 2104(f)(2) of the Trade Act provides that the Commission is to submit to the President and the Congress (not later than 90 calendar days after the President enters into the agreement) a report providing an assessment of the likely impact of the agreement on the United States economy as a whole and on specific U.S. industry sectors and the interests of U.S. consumers. Section 2104(f)(3) also provides that the Commission, in preparing its assessment, review available economic assessments regarding any substantially equivalent proposed agreement and discuss areas of consensus and divergence between the various analyses and conclusions, including those of the Commission regarding the agreement.

The Commission solicited public comment for this investigation by publishing a notice in the *Federal Register* of March 21, 2003 (see Appendix B) and holding a public hearing on April 24, 2003 (see Appendix C for the hearing Calender). Interested party views are summarized in Chapter 9 of this study.

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U.S.-Singapore Free Trade Agreement: Potential
Economywide and Selected Sectoral Effects

EXECUTIVE SUMMARY

On January 21, 2003, the U.S. International Trade Commission (Commission) received a letter from the Office of the United States Trade Representative (USTR) requesting that the Commission prepare a report in accordance with section 2104(f) of the Trade Act of 2002, to assess the likely impact of the U.S.-Singapore Free Trade Agreement (FTA) on the United States economy as a whole, on specific industry sectors, and on the interests of U.S. consumers.[1] Section 2104(f)(3) also provides that the Commission, in preparing its assessment, review available economic assessments regarding any substantially equivalent proposed agreement and discuss areas of consensus and divergence between the various analyses and conclusions, including those of the Commission regarding the agreement.

Principal Findings

The United States and Singapore both have open trade regimes. The United States has relatively low tariffs while Singapore already has virtually no tariffs (i.e., six tariff lines, which cover only certain products containing alcohol). Both countries also have open investment regimes and good protections in place for intellectual property rights. The FTA's most important benefits are not related to the reciprocal tariff elimination as much as the agreement's non-tariff provisions, and thus the effects are not easily quantified or observed. Among the hardest-to-quantify results of the FTA are those that might be described as effects on the general business climate between the United States and Singapore. The FTA provides specific obligations in important areas such as intellectual property, services, investment, temporary entry of businesspersons, and telecommunications. Because the agreement will secure these obligations, U.S. companies may be more likely to use Singapore as their base for expanded Asian operations. In addition, this agreement may serve as a positive model for negotiations with other trading partners because it includes bilateral commitments in a wide range of non-tariff areas not covered in earlier trade agreements.

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[1] On Jan. 15, 2003, USTR announced that the United States and Singapore had successfully concluded negotiations for the FTA (negotiations began in November 2000). On Jan. 29, 2003, President Bush signed a letter notifying Congress of the intent to enter into the FTA; the letter was received by Congress on Jan. 30, 2003, starting the countdown for when the FTA could be signed. On Feb. 28, 2003, USTR received reports from 31 trade advisory groups commenting on the proposed U.S.-Singapore FTA. On Mar. 7, 2003, the text of the FTA was made available to the general public. President Bush and Singapore Prime Minister Chok Tong Goh signed the FTA on May 6, 2003. Office of the U.S. Trade Representative, "USTR Resources: Singapore Free Trade Agreement," found at *http://www.ustr.gov/new/fta/singapore.htm*, retrieved May 12, 2003.

The economywide effects on U.S. trade, production, and economic welfare of the FTA tariff reductions alone are likely to be negligible to very small. This is not an unexpected finding given the open trade relationship, small trade and bilateral investment flows relative to U.S. trade and investment worldwide, and Singapore's small economy relative to that of the United States. This finding was based on a quantitative analysis that focused only on the impact of tariff removal, and did not account for the elimination or reduction of the non-tariff barriers (NTBs) related to such areas as services and investment, and better enforcement of intellectual property rights (IPR). While the economic impact of the reduction of NTBs may be significant, economic data generally are not available for NTBs and quantitative analysis for the most part is unable to reflect the full impact of their reduction. The economic literature reviewed for this report also generally estimates that U.S. economic welfare is not likely to be significantly changed by the elimination of tariffs in a U.S.-Singapore FTA.

At the sectoral level, some sectors of the U.S. economy likely will experience increased import competition from Singapore, while other sectors likely will experience increased export opportunities in Singapore. However, any such increases would be from a very small base, given Singapore's small economy and small market size, and thus have a minimal impact on production, prices, or employment in corresponding U.S. sectors. Based on a quantitative analysis of the staged tariff removal, impacts following implementation of the tariff removals under the FTA in 2016 most likely would be greater for U.S. exports of vegetables, fruits, and nuts; meats; and other processed foods. For U.S. imports, impacts most likely would be greater for electronic equipment and other machinery and equipment. U.S. imports of textiles, apparel, and leather products are not likely to increase significantly due to rules of origin requirements.

The Commission analysis also suggests that the effects of removing NTBs related to services, IPR, and investment under the U.S.-Singapore FTA will have little impact on related U.S. sectors due to the relatively few trade barriers between the United States and Singapore. Nonetheless, certain provisions in the FTA may foster trade facilitation in service industries. For example, removal of certain restrictive regulatory barriers may lead to increased U.S. exports in certain specific segments of the insurance industry, as well as greater sales by U.S. bank affiliates and affiliates of U.S. asset management firms in Singapore. The FTA sets out high standards for protection and enforcement for copyrights and other intellectual property and may lead to increased revenues for certain U.S. industries dependent on IPR. The United States and Singapore already have a strong investment relationship with high standards for the treatment of foreign investors.

United States-Singapore Free Trade Agreement

The FTA will, after the transitional period for staged duty reductions for goods otherwise subject to duty, provide for duty-free trade in originating goods between the

two countries.[2] While most U.S.-origin goods already enter Singapore free under column 1 general duty rates, often referred to as NTR or MFN duties, Singapore's exports to the United States are subject to an average ad valorem equivalent duty rate of 1.17 percent. Immediately upon implementation of the agreement, Singapore will eliminate all remaining duties, while the United States will remove duties on 80 percent of goods, with remaining tariffs phased out over the next 12 years. Moreover, originating agricultural products of Singapore that are now subject to U.S. tariff-rate quotas eventually would be eligible to enter free of duty in unlimited quantities. However, because the FTA's rules of origin on goods containing non-party inputs are based on specified changes in tariff classification, it is difficult to predict what percentage of present or future trade would be considered eligible for the FTA's tariff benefits.

In addition to providing the schedules of tariff elimination and rules of origin for trade in goods, the agreement contains bilateral commitments in a wide range of non-tariff areas. It provides specific obligations in such areas as intellectual property, services, investment, temporary entry of businesspersons, and telecommunications, among others. For instance, the intellectual property provisions require Singapore to adopt stronger protections for copyrights, trademarks, patents, and trade secrets, and strengthen its IPR enforcement. The commitments pertaining to service industries lift many of Singapore's remaining restrictive regulatory barriers in place against U.S. service providers, particularly in the area of financial services, while investment provisions largely address and solidify the disciplines considered essential for stable business exchange, increased investment, and economic growth.

In certain areas the agreement also establishes its dispute settlement provisions as the primary basis for dealing with issues arising under the FTA. These include issues relating to trade in goods and the application of concessions under the FTA; rules of origin matters under the FTA; customs adminstrative issues; e-commerce provisions of FTA; and investment issues related to FTA. In other areas such as safeguards, labor, environment, services, and technical barriers to trade, it provides that dispute settlement be conducted under the provisions of WTO agreements. In a few areas, such as express delivery services, the FTA breaks new ground by distinguishing these services and providing certain changes intended to expedite customs procedures. In other areas, such as standards, the FTA promotes greater transparency. Two key areas dealt with in side agreements in the North American Free Trade Agreement were included as specific chapters–namely, labor standards and the environment.

For covered investments, each party must extend national and most-favored-nation treatment to investors of the other party and observe customary international law in all respects. Expropriation can occur only for a public purpose, must be

[2] References in this section to chapters and articles are made to the cited provisions found at United States Trade Representative, "USTR Resources: Singapore Free Trade Agreement, Final Text of Free Trade Agreement" found at *http://www.ustr.gov/new/fta/Singapore/final.htm,* retrieved May 12, 2003.

nondiscriminatory, and must result in payment of prompt, adequate compensation in accordance with due process of law. Further, the parties must allow all capital transfers relating to covered investments to be made freely and without delay; no performance requirements or preferences for goods produced or sold in a party's territory can be imposed. Nor can the parties link the volume or value of imports to the volume or value of exports or to the amount of foreign exchange associated with such investment. Dispute settlement and specific rules on capital transfers are included.

U.S.- Singapore Trade Flows and Investment Relationship

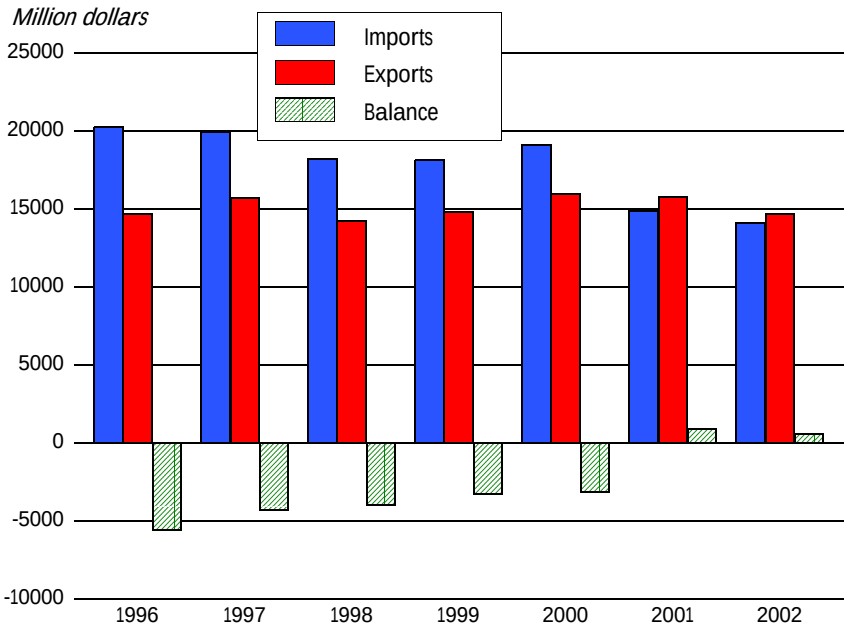
Singapore is less than 1 percent the size of the U.S. economy. Singapore has an open economy, with very few applied tariffs and an investment regime that actively promotes foreign inflow of both human and financial capital. In 2002, Singapore was the 12th largest U.S. trading partner in terms of total trade. Following years of U.S. trade deficits with Singapore, the United States registered a bilateral merchandise trade surplus of $0.9 billion in 2001 and $0.6 billion in 2002. In 2002, U.S. domestic merchandise exports to Singapore measured $14.7 billion, while U.S. imports for consumption from Singapore measured $14.1 billion (figure ES-1).

By 2-digit SITC classification, the largest categories of U.S. merchandise exports to Singapore in 2002 included transport equipment, electrical machinery, office equipment, power generators, specialized industrial machinery, and professional instruments (figure ES-2). U.S. cross-border exports of services to Singapore measured $4.1 billion in 2002, resulting in a $2.1 billion surplus in services trade. Approximately 30 percent of U.S. cross-border service exports are transactions between U.S. parent corporations and their Singapore affiliates, while 28 percent of U.S. exports comprise receipts of royalties and license fees. Sectors that account for significant portions of cross-border exports to Singapore include travel and transportation; business, technical and professional services; and financial services.

U.S. merchandise imports from Singapore in 2002 included office machines and data processing machines, electrical machinery and parts, organic chemicals, telecommunications equipment, and professional instruments (figure ES-3). U.S. cross-border imports of services from Singapore are heavily composed of travel and transportation services, financial services, and business, technical and professional services.

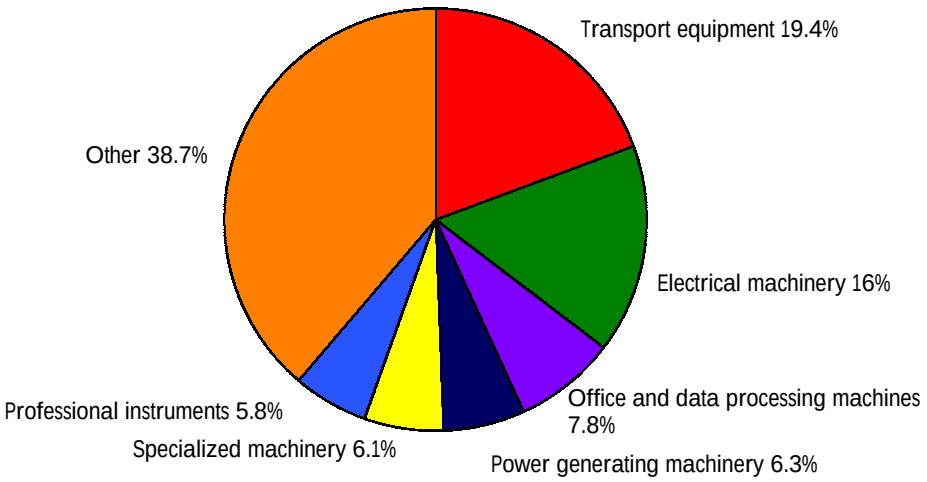
U.S. direct foreign investment (flows) in Singapore measured $3.0 billion in 2001, the last year for which data are available. The U.S. investment position in Singapore (stock) measured $27.3 billion in 2001, and generated $2.1 billion in income. The United States is the leading foreign investor in Singapore, and only Japan, Australia, and Hong Kong host higher levels of U.S. investment within the Asia-Pacific region. U.S. investment in Singapore is broadly based, with 32.8 percent in industrial machinery and equipment manufacturing; 29.0 percent in finance, insurance and real estate; and 19.9 percent in electronic equipment manufacturing (figure ES-4).

Figure ES-1
U.S. merchandise trade with Singapore: Imports, exports, and trade balance



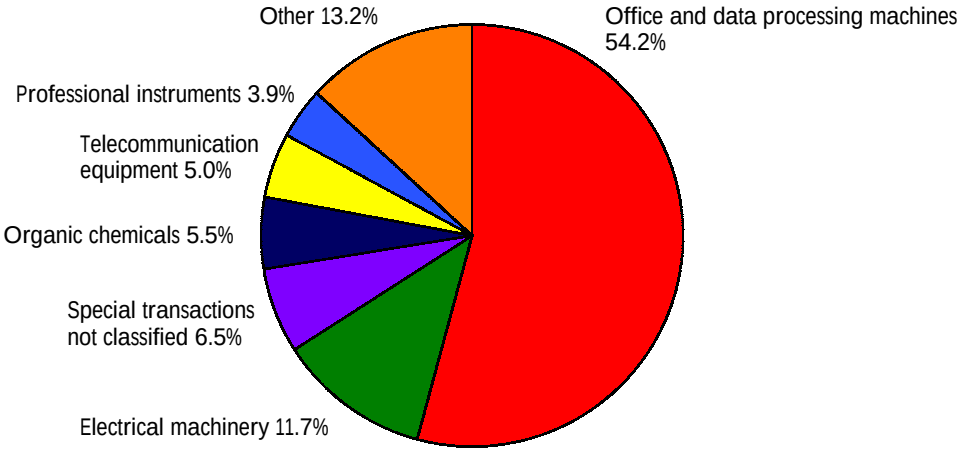
Source: U.S. Department of Commerce.

Figure ES-2
U.S. exports to Singapore, 2002



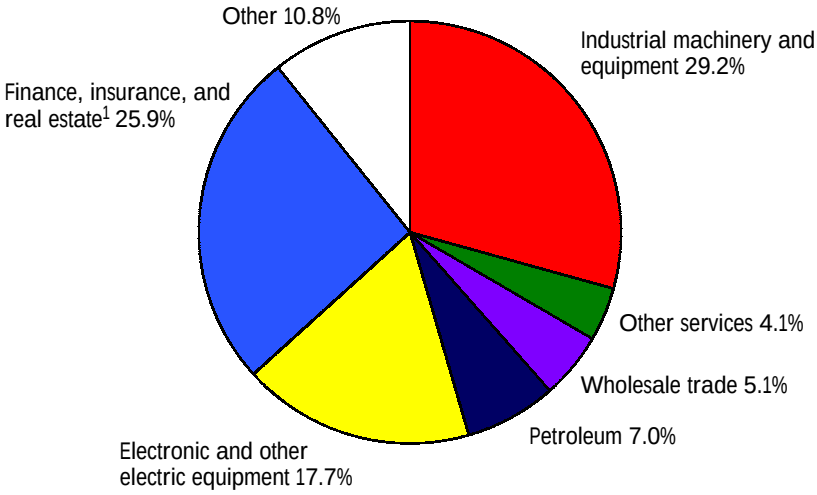
Source: U.S. Department of Commerce.

Figure ES-3
U.S. imports from Singapore, 2002



Source: U.S. Department of Commerce.

Figure ES-4
U.S. direct investment in Singapore, by industry sector, 2001



[1] Excludes depository institutions.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business,* Sept. 2002, p. 77.

Review of Literature

Studying the economic impact of FTAs entails investigating static effects, such as trade creation and trade diversion, as well as terms of trade. In addition, issues related to scale effects and nonquantifiable effects have to be considered. The FTA effects that are attributable to removal of NTBs, such as the liberalization of the supply of services, or to FTA provisions regarding intellectual property rights, or investment usually remain unmeasured. As the review of the literature shows, these FTA effects could be more significant than the effects of removing tariffs.

The Commission reviewed three studies providing quantitative assessments of FTAs that are of relevance to the current Commission report. Two studies (Scollay and Gilbert, and Brown et al.) have estimated the impact on the United States of a U.S.-Singapore FTA;[3] a third study (Hertel et al.) has assessed the implications of a Japan-Singapore FTA.[4] The objective of the Scollay and Gilbert work and the Brown et al. work is not to study any particular FTA, but rather to examine the broad implications of different trade negotiating strategies. The objective of the Hertel et al. work is to bring attention to the potential significance of non-tariff provisions in an FTA.

Table ES-1 summarizes the salient characteristics of the modeling frameworks used in the three studies along with the current Commission report.[5] All four studies relied on computable general equilibrium (CGE) models, but they use different methodologies, key assumptions and types of policy experiments. The current Commission study, Scollay and Gilbert, and Hertel et al. employ similar theoretical models based on the assumptions of constant returns to scale, perfect competition, and commodity differentiation by country of origin (i.e., the Armington assumption). Brown et al. use the Michigan model which assumes increasing returns to scale, monopolistic competition (except in agriculture), and product variety.[6]

In terms of policy experiments, the current Commission study and Scollay and Gilbert reflect the removal of tariffs only under a U.S.-Singapore FTA and estimate the welfare impact to be negligible to very small. Hertel et al., when including liberalization of services, e-commerce and customs procedures, in addition to tariff liberalization,

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[3] The two studies are (1) Robert Scollay, and John P. Gilbert, "New Regional Trading Arrangements in the Asia Pacific*?*," Policy Analyses in International Economics No. 63, Institute For International Economics, Washington, DC, May 2001; and (2) Drusilla Brown, Alan V. Deardorff, and Robert M. Stern, "Multilateral, Regional, and Bilateral Trade-Policy Options for the United States and Japan," Research Seminar in International Economics, Discussion Paper No. 490, Dec. 2002.

[4] Thomas Hertel, Terry Walmsley, and Ken Itakura, "Dynamic Effects of the 'New Age' Free Trade Agreement between Japan and Singapore," Center for Global Trade Analysis, Purdue University, Sept. 2001.

[5] For a detailed description of the models, data, and FTA specification, see the studies cited here.

[6] The product variety approach assumes that the well-being of any consumer is greater the larger the number of varieties of goods available and consequently a policy change that induces increased variety is welfare enhancing.

Table ES-1
Selected economic literature, methodology and model assumptions

Author	Publication Date	Model	Database, Base year	Returns to Scale/ Competition	Product Differentiation	Type (dynamic, static, other)	Type of Experiment	Welfare Effect (percent of U.S. GNP or GDP)
USITC	2003	GTAP	GTAP-5, 1997	Constant/ Perfect	Armington	Sequential solutions	Tariffs	[1]0.00
Scollay & Gilbert	2001	Rutherford Model	GTAP-4, 1995	Constant/ Perfect	Armington	Static	Tariffs	[2]0.00
Hertel et al.	2001	GTAP	GTAP-4, 1995	Constant/ Perfect	Armington	Dynamic	Tariffs, Services, E-commerce, & Customs automization	0.008
Brown et al.	2002	Michigan Model	GTAP-4, 1995	Increasing/ Monopolistic (except Agriculture)	Product Variety	Static	Tariffs & Services	0.19

[1] Welfare impact ranges between a negative 0.002 percent of U.S. GDP to less than a negative 0.001 percent of U.S. GDP.
[2] Welfare impact is less than one hundredth of a percentage point of GDP.

Source: USITC; Robert Scollay and John P. Gilbert, *New Regional Trading Arrangements in the Asia Pacific?*, Washington, DC: Institute For International Economics, Policy Analyses in International Economics No. 63, May 2001; Thomas Hertel, Terrie Walmsley, and Ken Itakura, "Dynamic Effects of the 'New Age' Free Trade Agreement between Japan and Singapore," Center for Global Trade Analysis, Purdue University, Sept. 2001; Drusilla Brown, Alan V. Deardorff, and Robert M. Stern, "Multilateral, Regional, and Bilateral Trade-Policy Options for the United States and Japan," Research Seminar in International Economics, Discussion Paper No. 490, Dec. 16, 2002.

estimate the welfare impact to be small. Brown et al. derive larger welfare results measuring tariff and service liberalization with differing assumptions regarding returns to scale, competition, and product differentiation.

In summary, the current Commission study reaches similar conclusions regarding the welfare impact of tariff removal under a U.S.-Singapore FTA as Scollay and Gilbert do; and the Hertel et al. and Brown et al. studies illustrate that the magnitude of the potential economic impact of an FTA depends on the degree to which non-tariff aspects of an FTA can be quantified.[7]

Impact of U.S.-Singapore FTA Tariff Cuts on the U.S. Economy and Selected Sectors in 2016

The Commission used a CGE model and its corresponding data to estimate the possible effects of a U.S.-Singapore FTA on a number of economic measures. The model used in this study allowed the Commission to assess the likely effects of a multiple stage phase-in of tariff cuts, and to include an explicit time dimension in the assessment. As mentioned above, the estimated impacts reflect only the tariff cuts and removal of the tariff-rate quotas for food and agricultural products as lack of necessary data precluded the estimation of removal of investment restrictions, stronger enforcement of intellectual property rights, or the easing of customs procedures. In addition, in the case of the services sector, the agreement does not contain any substantial liberalization that could be captured analytically in this general equilibrium analysis.

In order to estimate the impact of the full phase-in of tariff cuts by 2016, the Commission conducted a series of simulations using different assumptions regarding (i) the relative growth of the U.S. economy[8] and, (ii) the economies' responsiveness to changes in trade policies.[9] Figure ES-5 summarizes trade impacts in ranges, due to those diferent assumptions, for selected sectors. Figure ES-5 shows not only that the FTA will have a small impact on U.S. exports to Singapore, but that the range of this impact is also very small, with the exception of other processed foods exports. The latter exports are likely to increase by $40 million to $120 million. Figure ES-5 shows that FTA impacts on imports from Singapore are somewhat larger than those for exports for some sectors. Imports of electrical equipment are likely to increase by $320 million to $870 million. In the case of textiles, apparel and leather products imports, when the FTA simulation

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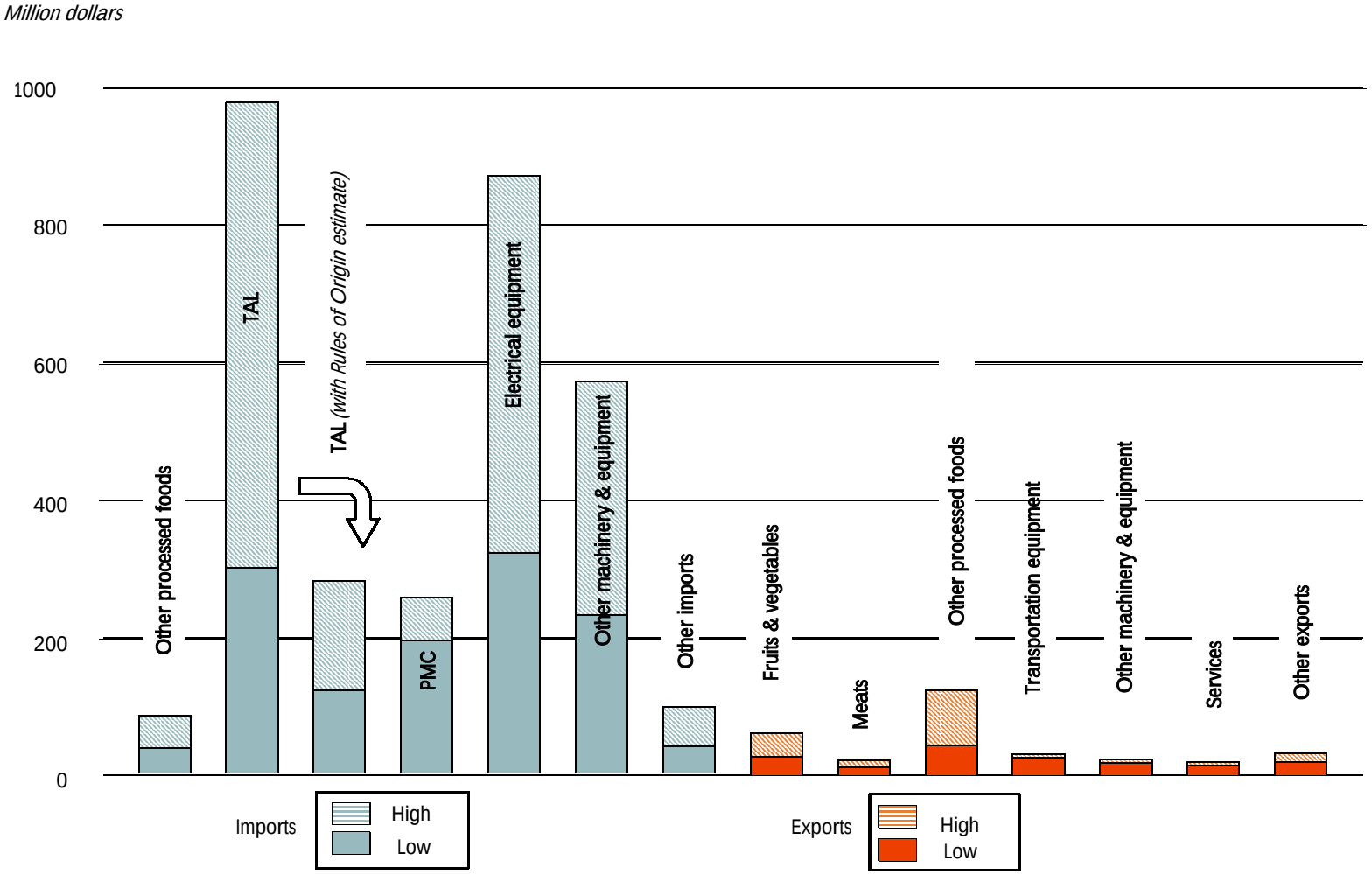
[7] For a further discussion of the Commission analysis see ch. 5, "Impact of Eliminating Tariffs." Further discussion of the three studies reviewed by the Commission is presented in ch. 4, "Review of Literature."

[8] The Commission varied annual U.S. growth rates for the period 2004-16 from 20 percent lower than the standard World Bank projection to 20 percent higher.

[9] In the GTAP model, the responsiveness to trade policy changes is captured by the Armington elasticities of substitution. The default values for these elasticities are based on reviews of the econometric literature. In this study, the Commission considered a range of the elasticities. For a discussion of the Armington assumption and parameters in the CGE model used in this report, see Chapters 2 and 4 in Hertel, T. W., editor, *Global Trade Analysis: Modeling and Applications*, Cambridge University Press, 1997.

Figure ES-5
Range of estimated impacts of tariff reductions on U.S. imports and exports from the U.S.-Singapore FTA, 2016



TAL: Textile, apparel, and leather products.

PMC: Petroleum, coal, chemical, rubber, plastic products, and other mineral products.

Source: USITC estimates.

does not explicitly account for rules of origin requirements, these sector imports are estimated to increase by $300 million to $970 million. As shown in figure ES-5, when the FTA's rules of origin requirements are explicitly considered, U.S. imports of textiles, apparel, and leather products are estimated to increase by $120 million to $280 million, limiting the effects of the FTA for this sector.

Preferential trade liberalization due to tariff elimination has a minimal impact on U.S. production. The textiles, apparel, and leather products sector–the most affected sector–is estimated to shrink by about 0.05 percent in the United States. U.S. output of vegetables and fruits is projected to increase by about 0.05 percent.

The small estimated sectoral impacts suggest that the effects of tariff removals under the U.S.-Singapore FTA on U.S. economic welfare and gross domestic product (GDP) would be negligible to very small.[10] Welfare analysis confirms that following implementation of the tariff removals under the FTA in 2016, when bilateral trade would be fully liberalized, the welfare impact for the United States would range between a negative 0.002 percent of U.S. GDP to less than a negative 0.001 percent of U.S. GDP.

This is not an unexpected finding given the open trade relationship, small trade and bilateral investment flows relative to U.S. trade and investment worldwide, and Singapore's small economy relative to that of the United States. The United States secured improved rules in a wide range of areas such as intellectual property, services, investment, temporary entry of businesspersons, and telecommunications. With regard to tariff elimination, however, because Singapore has so few tariffs, U.S. exports to Singapore will not change materially as a result of tariff elimination. U.S. imports from Singapore, on the other hand, are expected to rise very slightly in those limited areas where the United States is eliminating significant tariffs.[11]

Impact of U.S.-Singapore FTA on Selected NTBs: A Qualitative Assessment

Qualitative analysis of the effects of the FTA suggests that the agreement will have little impact in the short to medium term because of liberalization with respect to trade in services, enhanced investment, and IPR protection. Nonetheless, certain provisions in the FTA may foster trade facilitation in service industries. The provisions in the FTA with

[10] In this particular analysis, the term negligible refers to an absolute change of less than 0.001 percent of U.S. GDP.

[11] Singapore's imports into the United States are subject to an average ad valorem equivalent duty rate of 1.17 percent, while most U.S.-origin goods already enter Singapore free (subject to an average ad valorem equivalent duty rate of 0.07 percent. Immediately upon implementation of the agreement, Singapore will eliminate all remaining duties, while the United States will remove duties on 80 percent of goods, with remaining tariffs phased out over the next 12 years.

respect to financial services and professional services remove certain restrictive regulatory barriers and may lead to increased U.S. exports in certain specific segments of the insurance industry, as well as greater sales by U.S. bank affiliates and affiliates of U.S. asset management firms in Singapore. In contrast, the removal of limitations on the operation of certain professional services, such as the relaxation of local ownership restrictions for U.S. architectural and engineering firms and the recognition of law degrees granted by certain U.S. law schools for the purposes of qualifying for the Singapore bar, are not likely to result in a measurable increase in U.S. exports of professional services. While the FTA is not likely to affect trade in express delivery services, the FTA is ground-breaking in its inclusion of express delivery services in a free trade agreement. Similarly, the telecommunications sector is prominent in terms of bilateral trade and is notably distinct in the FTA. However, given the current openness of the telecommunications industries in both countries, the FTA is not likely to result in significantly increased bilateral trade in this sector.

Singapore generally is viewed as having comparatively strong IPR protection. The FTA sets out high standards for protection and enforcement for copyrights and other intellectual property and may lead to increased revenues for certain U.S. industries dependent on IPR. The intellectual property provisions of the FTA address many of the most significant concerns the U.S. industry has expressed regarding the IPR regime in Singapore. In general, the IPR provisions of the FTA go further than the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs). National treatment provisions are broad, permit no exceptions, and extend to "any benefits derived" from the "protection and enjoyment" of intellectual property of any kind.

The United States and Singapore already have relatively open investment regimes and are key investors in each other's economies. The investment provisions of the FTA go well beyond those of any other agreement to which both parties are signatories and therefore represent a major expansion of bilateral investment obligations. These provisions largely encompass those long identified by the U.S. business community as being fundamental protections necessary to create a stable business environment and thereby encourage investment and promote economic growth.

Interested Party Views

In general, interested party views in this investigation of the FTA are positive. The majority of interested parties that testified before the Commission or submitted statements for the record praised the text and provisions of the FTA, particularly those groups or companies involved in the services sector. Most parties also see the FTA as setting an important precedent for future bilateral, regional, or multiregional trade negotiations and potential FTAs with other nations. Specifically, interested parties indicated that the commitments in the FTA provide for enhanced market access, promote a stable business environment for service providers, facilitate bilateral trade in services, and offer a high degree of IPR protection for firms. With some exceptions, representatives of the manufacturing and commodity goods sectors praised the FTA

and felt that implementation of the agreement will improve commercial trade and provide for strong IPR protection for U.S. manufacturers. Dissenting views include concerns about rules of origin, import sensitive industries, and possible U.S. employment losses.[12]

[12] A summary of written submissions is included in chapter 9.

CHAPTER 1
Introduction

Purpose of the Report

This report assesses the likely impact of the U.S.-Singapore Free Trade Agreement (FTA) on the United States economy as a whole as well as on specific industry sectors and the interests of U.S. consumers. The United States International Trade Commission (the Commission) initiated work on this investigation under Section 2104(f) of the Trade Act of 2002, following receipt of a letter on January 21, 2003 from the United States Trade Representative (USTR).[1]

As specified in section 2104(f)(2)-(3) of the Trade Act, the Commission shall submit to the President and the Congress (not later than 90 calendar days after the President enters into the agreement[2]) a report including:

- an assessment of the likely impact of the agreement on the United States economy as a whole and on specific industry sectors, including the impact the agreement will have on the gross domestic product, exports and imports, aggregate employment and employment opportunities, the production, employment, and competitive position of industries likely to be significantly affected by the agreement, and the interests of the United States consumers; and
- a review of available economic assessments regarding the agreement, including literature regarding any substantially equivalent proposed agreement, and shall provide in its assessment a description of the analyses used and conclusions drawn in such literature and a discussion of areas of consensus and divergence between the various analyses and conclusions, including those of the Commission regarding the agreement.

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[1] A copy of the request letter appears in appendix A of this report and a copy of the *Federal Register* notice appears in appendix B.

[2] On Jan. 15, 2003, USTR announced that the United States and Singapore had successfully concluded negotiations for the U.S.-Singapore FTA (negotiations began in November 2000). On Jan. 29, 2003, President Bush signed a letter notifying Congress of the intent to enter into the U.S.-Singapore FTA; the letter was received by Congress on Jan. 30, 2003, starting the countdown for when the agreement could be signed. On Feb. 28, 2003, USTR received reports from 31 trade advisory groups commenting on the proposed U.S.-Singapore FTA. On March 7, 2003, the text of the U.S.-Singapore FTA was made available to the general public. President Bush and Singapore Prime Minister Chok Tong Goh signed the U.S.-Singapore FTA on May 6, 2003. United States Trade Representative (USTR), "USTR Resources: Singapore Free Trade Agreement," found at *http://www.ustr.gov/new/fta/singapore.htm*, retrieved May 12, 2003.

Scope of the Report

This report provides background information on Singapore's economy. The discussion includes a macroeconomic and sectoral overview of Singapore's economy, an analysis of Singapore's merchandise trade flows with the United States and other countries, a discussion of trade in services with the United States, and Singapore's investment relationship with the United States and other countries. A summary of the U.S.-Singapore FTA also is provided.

The quantitative analysis focuses on the impact of tariff removal and does not account for the elimination or reduction of nontariff barriers related to such areas as services and investment, and better enforcement of intellectual property rights. The report also provides additional qualitative analysis of the potential impact of the U.S.-Singapore FTA on certain product and service sectors including textiles and apparel, express delivery services, financial services, professional services, and telecommunications services. Sectors were chosen for review based on 1) a comprehensive examination of the provisions of the U.S.-Singapore FTA, and the apparent liberalization of sectoral trade in terms of tariff and other nontariff measures, 2) bilateral sectoral trade flows between the United States and Singapore and global trade patterns between these countries and the rest of the world, and 3) input from Commission industry analysts and industry sources. The qualitative analysis includes a description of certain key provisions of the FTA applicable to each sector and an assessment of the potential impact on U.S. imports, U.S. exports, and U.S. industry as a whole. Qualitative analysis is also provided regarding the potential trade and economic effects of changes in the investment and intellectual property regimes under the U.S.-Singapore FTA. The specific provisions related to these disciplines are briefly summarized and the degree to which they improve current conditions in each country and the specific effect they may have on investment, trade, and the U.S. economy is discussed.

Approach of the Report

The literature review for this investigation includes a survey of analyses of the economic effects of a U.S.-Singapore FTA as well as the effects on the United States of actual or potential FTAs of which Singapore is a member. The economic literature reviewed was drawn from relevant academic, public sector, and private sector institutions. Information for this investigation also was obtained from the public hearing held on April 24, 2003 and from public submissions in response to the *Federal Register* notice.

A multicountry model with economywide coverage of merchandise and service sectors (a global computable general equilibrium (CGE) model) is employed in this study. This model is the Global Trade Analysis Project (GTAP) model, which is described more fully in appendix D. It was used to estimate the likely trade and economic impact of the removal of tariff barriers as a result of a U.S.-Singapore FTA for 22 aggregated

sectors. The commodity aggregation adopted here identifies sectors that have relatively high domestic-world price gaps due to tariffs and tariff-rate quotas (TRQs) (9 food and agriculture sectors) and relatively large trade flows (9 manufacturing sectors).[3] In terms of regional coverage, the analysis includes the United States and Singapore along with 11 other countries or regions.

The GTAP database, which represents the global economy in 1997, was adjusted to reflect expected economic conditions in 2004, the year the Commission estimates the U.S.-Singapore FTA to enter into force. The adjusted database reflects the Uruguay Round Agreement implementation as well as Singapore's bilateral and multilateral FTAs (e.g., Australia, New Zealand, Japan, and the Association of South East Asian Nations Free Trade Area (AFTA)) with other countries. A baseline was then established by simulating changes that are likely to occur from 2004 to 2016 independent of the FTA. The impacts of the U.S.-Singapore FTA were then simulated by phasing in the FTA over the 2004-2016 period at intervals of four years. In particular, the CGE model was simulated sequentially to approximate a dynamic process in which the world's economies change over time. To build the projected baseline, data for population growth, capital growth, and gross domestic product (GDP) growth from the World Bank[4] were applied to the model to describe economic conditions in 2004, 2008, 2012, and 2016. The impacts of the FTA were then simulated with respect to the baseline by gradually removing relevant tariffs and price gaps due to TRQs. Due to the lack of necessary data, the estimation of the potential trade and economic impact of a U.S.-Singapore FTA on services, as well as the impact on the United States of changes in Singapore's IPR regime and changes in the rules concerning foreign direct investment, was not possible. In addition, a series of simulations were conducted to determine the sensitivity of impacts to selected model assumptions and parameters (for example, the parameters that determine the flexibility of bilateral trade patterns). The analysis and discussion of FTA impacts were based on the ranges obtained from the sensitivity analysis.

Data for the study, obtained from a public hearing, written submissions in response to *Federal Register* notice,[5] government publications and treaties, and interviews with government and industry contacts, were used to analyze the trade and economic effects of the elimination of barriers to trade in services, the changes in IPR regime, and

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[3] Specifically, the sectoral specification is the following: fishing; forestry; coal, oil, gas, and minerals; grains; sugar crops; fruits, vegetables, and nuts; other crops; livestock farming; dairy products; meat products; sugar manufacturing; other processed food and tobacco products; textiles, apparel, and leather products; petroleum, mineral, and chemical products; ferrous metals and products; nonferrous metals; wood products; transportation equipment; electronic equipment; machinery; other manufactures; and services.

[4] World Bank forecasts communication from GTAP staff, July 2002.

[5] See Appendix B containing *Federal Register* notice.

changes in the rules governing foreign direct investment. Other data sources used in this report include the U.S. Department of State's Bureau of Economic and Business Affairs, U.S. Department of Commerce, International Monetary Fund (IMF), and World Trade Organization (WTO).

Organization of the Report

Chapter 2 provides an overview of the U.S.-Singapore FTA. Chapter 3 provides an overview of the Singapore economy for the most recent five years with respect to the structure of the economy as well as economic variables such as GDP. It also provides information on Singapore's merchandise trade flows, the current composition of its merchandise trade by sector and markets, trade in services, regional and economic cooperation, and the investment relationship with the United States and the world. Chapter 4 provides a literature review related to the U.S.-Singapore FTA. Chapter 5 provides a quantitative analysis of the potential trade and economywide and sectoral impacts on the United States of a fully implemented tariff elimination in the U.S.-Singapore FTA. Chapter 6 provides a qualitative assessment of the potential impact of the U.S.-Singapore FTA on selected sectors. Chapter 7 provides a survey of the intellectual property provisions of the U.S.-Singapore FTA and provides a qualitative assessment of the potential impact on the United States. Chapter 8 provides a survey of the investment provisions of the U.S.-Singapore FTA as well as a qualitative assessment of the potential impact of the U.S.-Singapore FTA on selected sectors. Chapter 9 summarizes hearing testimony and written submissions.

CHAPTER 2
Overview of the U.S.-Singapore FTA

Scope of Chapter

This chapter provides a chapter-by-chapter summary of the agreement text,[1] as signed by the parties on May 6, 2003.[2] Its particular focus is on market access, primarily the tariff commitments and rules of origin and their implications for this analysis. The nontariff provisions of the agreement are discussed in greater detail in subsequent chapters of the report. It should be noted that this summation of commitments is not an official interpretation by the U.S. Government of any part of the text of the agreement, and that the language of the FTA itself conveys the commitments of the parties.

Brief Summary of Treaty Provisions

Introduction

The text of the agreement with Singapore is largely modeled upon the North American Free Trade Agreement (NAFTA) and uses some of the NAFTA language verbatim, such as some of the framework establishing agricultural tariff-rate quotas.[3] The FTA also includes commitments to observe certain WTO agreement obligations

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[1] References in this section to chapters and articles are made to the cited provisions found at USTR, *http://www.ustr.gov/new/fta/Singapore/final.htm,* as signed May 6, 2003.

[2] To date, the United States has implemented free trade agreements with Israel, Canada, Mexico, and Jordan. Such agreements establish preferential regimes to accord a precise range of tariff and trade benefits to particular goods or services of mutual benefit or interest to the parties, and thus are not intended to cover every possible product or commercial situation (as is the case with a multilateral agreement). Each free trade agreement contains schedules of concessions, rules of origin, and other legal provisions tailored in scope to apply to qualifying trade between the parties. Commitments on services, investment, intellectual property, free movement of business persons, and similar matters are also included, insofar as they apply to trade between the parties.

[3] In a tariff-rate quota (TRQ), two rate lines are minimally required, with one according a lower duty rate to imports up to a specified trigger quantity, and a second one according higher duty rates to all other shipments. It should be noted that an importer may choose to enter a shipment under either rate line until the trigger quantity mandating higher duty rates is filled, depending on unit values and quality of the good in question and whether they vary by country or date of entry. In the Uruguay Round, as of Jan. 1, 1995, TRQs replaced prior absolute quotas imposed under section 22 of the Agricultural Adjustment Act (7 U.S.C. 624) or other measures. The over-TRQ duty rate is intended to be economically prohibitive, thus restricting imports to the in-quota or trigger quantity.

between the parties; these bilateral obligations would exist separately even if the WTO agreement provision on the corresponding matter was eliminated or somehow ceased to apply. Other FTA provisions relate solely to U.S. trade relations with Singapore or to provisions of Singapore law that the United States wishes to change, and chiefly comprise obligations being assumed by Singapore rather than by the United States. Some portions of the agreement–such as those dealing with intellectual property rights–are significant and will be described in greater detail below. Other issues in trade relations between the parties are discussed outside the scope of this chapter.

Summary of Tariff Commitments

Under article 2.2 of the agreement and the related annexed schedules of concessions, Singapore would immediately eliminate its own duties on eligible U.S. exports, while the United States would implement a more complex schedule of concessions involving several categories of staged duty elimination on goods originating in Singapore. Many goods produced in Singapore would be guaranteed existing duty-free access or gain immediate duty-free access; sensitive agricultural products would be subject to tariff-rate quotas; important apparel categories (mainly those goods of cotton or of man-made fibers) would receive reduced rates up to stated tariff preference levels; a few named rate lines have stated commitments separate from the staging categories; and other products would receive staged duty reductions over 4, 8, or 10 years. Acceleration of scheduled reductions could be considered upon a request by either party. Thus, at the end of the 10-year maximum duty staging period, all U.S. duties and tariff-rate quotas on originating goods entered with appropriate documentation would be eliminated.

These tariff benefits will be given only to "originating goods" under the terms and rules of the agreement–namely, those comprising inputs *only* from the two parties or containing only de minimis third-country content, and those complying with rules of origin based largely on stated changes in tariff classification from foreign inputs to finished goods. Thus, not every "product of" a party or good shipped from one party to the other would receive preferential tariff treatment, even at the end of the transition period. Because of the complexity of the rules, and the need to know input sourcing and processing patterns for every product, FTA rules of origin are difficult to analyze, as discussed below.

Chapter-by-chapter review[4]

Chapter 1: Establishment and Definitions

The parties agree by means of this pact to set up a free trade area that is consistent with the GATT, reaffirm that existing bilateral rights and obligations

[4] References to chapters and articles in this section are to the corresponding provisions of the agreement text.

continue to apply, and restate that nothing in the free trade agreement is to be read as altering any legal obligation under another international pact. Various definitions are also set forth, among them an important definition with respect to the United States that deals with the territory of each party to which the free trade agreement will apply. For the United States, it includes the customs territory of the United States, U.S. and Puerto Rican foreign trade zones, and its undersea international economic zone,[5] but not the insular possessions subject to HTS general note 3(a)(iv) and not any area of outer space. For Singapore, the definition is a more standard one under international law and includes all territory under its sovereign control, whether land or sea or air.

Chapter 2: National Treatment and Market Access

Chapter 2 sets forth rules and obligations relating to trade in goods. Most of the provisions on national treatment and market access are similar in legal form to the corresponding provisions of other, broader agreements but apply only bilaterally, so that the obligations do not extend to other countries and so that the benefits apply only to originating goods of the parties. The prohibition on export taxes does not change U.S. domestic law as such taxes are prohibited by the Constitution. Other provisions are similar to those of the NAFTA and deal with temporary importations, speedy release of goods, transshipment of goods, repaired/altered goods, and related issues. For example, no duties are allowed on the reentry of a good that has been repaired or altered in the other party, regardless of the good's origin. However, article 2.7, barring the imposition of prohibitions or restrictions on importing and exporting of goods, is not found in NAFTA, given that multilateral discipline on this subject matter was first dealt with specifically in the GATT 1994 and the Agreement on Textiles and Clothing (ATC); prohibitions or restrictions that would be allowed under these agreements concerning trade with nonparties are to be allowed under this FTA. The so-called customs user fee is barred for originating goods, and Singapore agrees to make changes in its excise taxes and to allow the importation of "chewing gum with therapeutic value." Under article 2.14(b), antidumping or countervailing duties are to be allowed if "applied pursuant to a Party's domestic law."

As set forth in annex 2A, the United States' controls on the export of logs are allowed to continue, as are certain provisions of the Merchant Marine Act, the Passenger Vessel Act, and section 12108 of title 46 of the U.S. Code, and any actions authorized by the WTO Dispute Settlement Body.

For the United States, the base duty rates are the 2002 column 1-general rates of duty, and rates are to be rounded down to the nearest 0.1 percent or to the nearest 0.1 cent. The text will also contain U.S. general notes and textile tariff preference levels. For Singapore, base rates are the 2002 column 6 full rates of duty (the rates extended to WTO members).

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[5] The coastal waters under U.S. legal control presumably fall within "customs territory" for free trade agreement purposes.

The following U.S. duty staging categories are established for different classes of goods, by HTS rate line: (1) immediate duty-free entry, (2) four equal annual stages of tariff reduction, (3) eight equal annual reduction stages, (4) ten equal annual reduction stages, (5) continuation of previous duty-free entry, (6) textile goods with tariff-preference levels (TPLs) under article 2.12 (apparel of cotton or man-made fibers),[6] (7) duty-free entry without bond, and (8) goods of named headings of HTS chapter 98 subject to particular duty rates until January 1 in year 10 and after that free of duty. Certain agricultural TPLs are also established, as shown in the general notes to the U.S. schedule of concessions (annex 2B).

Chapter 3: Rules of Origin

The duty benefits of the FTA will apply to goods originating in Singapore or the United States, unless otherwise provided. Such goods are those wholly obtained or produced entirely in one or both parties, or those meeting the requirements of the origin rules in the related annex 3A, or those expressly described in the chapter. Thus, as with the NAFTA, goods that contain only inputs attributable to the parties would be considered eligible without regard to tariff shifts or other criteria, and the complex rules of the annex apply to those that contain nonparty-sourced inputs. Certain goods listed in annex 3B (labeled as the "integrated sourcing initiative") are considered to be originating materials for purposes of meeting annex 3A requirements; also, under article 3.3, goods containing de minimis foreign content that does not undergo the requisite tariff shifts (limited in the aggregate for all such materials to 10 percent of the adjusted value of most goods) can also qualify as originating, though their value is still counted as "non-originating" when a regional value content test applies under annex 3A. A limited number of exceptions–all in the agricultural sector and relating primarily to sensitive commodities covered by U. S. tariff-rate quotas (such as dairy or sugar products)–are not allowed access to the de minimis exemption. A 7 percent de minimis limit applies to fibers or yarns incorporated in textile or apparel goods of section XI of the tariff schedule, and elastomeric yarns must be wholly formed in the territory of a party for a good containing them to be deemed to meet the rules of origin. Under annex 3C, certain recovered or remanufactured goods can be treated as originating in the country where they were recovered or remanufactured.

Various other articles set forth additional origin standards. Under article 3.4, an originating material of one party that is used in the other to make a good shall be considered to meet the rules of origin in the latter party. Also, a good involving production in both parties will be considered to originate unless it fails to meet specific tests of this chapter. Article 3.5 sets forth the rules and formulas for computing regional value content, with two types of computations: the build-down method and the build-up method. Article 3.6 provides the rules for valuing materials and the adjustments that can be made to producer costs. Under article 3.7, a good that originates will not be

[6] Annex 2D sets forth the agreed conversion factors for covered apparel articles, to charge imports of goods of different types and size ranges.

disqualified because its accessories, spare parts, or tools delivered with it do not originate, if the latter are in customary quantities, invoiced with the good, and the good still meets any regional value test (treating the accessories, parts, or tools as non-originating). The treatment of fungible materials is covered in a flexible manner in article 3.8, so that either physical segregation or inventory management (averaging, LIFO or FIFO) can be used to track them. Articles 3.9 and 3.10 deal with packaging materials and containers, which are generally to be disregarded in terms of their origin. Under article 3.11, indirect materials are treated as originating and valued under a producer's accounting records. A more restrictive provision is contained in article 3.12–namely, that a good that undergoes subsequent production or other operations outside the parties will not be considered originating, other than minor loading or preservation operations. Thus, goods in general must be shipped directly and without change from one party to the other in order to qualify for benefits.

Section B of the chapter deals with the verification and documentation of origin needed under the agreement. In essence, an importer can claim FTA benefits if he knows the good qualifies or if information in his possession so indicates, and he can be required to submit statements to establish qualification if asked by customs authorities. With such claims, the parties agree to give benefits to goods covered by such claims unless they learn the goods do not qualify, and agree not to punish importers who act in good faith or who correct the entry documents and pay necessary duties in one year or a longer period set by a party. Records must be kept for five years after entry to establish the origin of goods, under article 3.15. Verification (based on requests for information, visits, and other methods) is governed by article 3.16. Special provisions in article 3.17 treat as originating apparel of HTS chapter 61 or 62 that is both cut (or knit to shape) and sewn or otherwise assembled in one or both parties from a fabric or yarn of any origin that was designated as of November 15, 2002 by a U.S. authority as being unavailable in commercial quantities for purposes of HTS subheadings 9819.11.24 or 9820.11.27 (relevant to two other tariff preference programs, pursuant to the African Growth and Opportunity Act and the Caribbean Basin Trade Partnership Act).

Section C deals with consultation and modifications to ensure a uniform and consistent application of the origin rules and also to keep them current and make agreed adjustments in the future. This procedure is likewise undertaken under the NAFTA, and results in occasional changes in rules (sometimes as a result of Harmonized System classification or tariff changes).

Section D contains definitions, which again are relatively standard and comparable to the NAFTA. Last, section E deals with the application and interpretation of the rules, stating that they are based on the Harmonized System and that costs and values are to be recorded based upon generally accepted accounting principles in the territory of the party concerned.

Annex 3A contains product-specific rules written on the basis of pertinent HS headings, subheadings, split headings, or split subheadings (based largely on the draft harmonized rules of origin being developed under the WTO Agreement on Rules of Origin [ROO]). The notes provide that the most specific rule prevails over more

general ones, so that if a split subheading rule exists and the good meets it that good will be deemed originating. The annex then contains the heading-by-heading tariff shift and subsidiary rules, which determine the extent to which any shipment under each provision can qualify for the FTA duty rate. It is not possible to identify the scope of benefits delineated by individual rules without specific knowledge of the industries in each party and their sources of inputs, and without regard to tariff nomenclature and classification.

Chapter 4: Customs Administration

This chapter deals with customs administration, including such subjects as publication and notification (article 4.1), administration in a uniform/impartial/reasonable manner (article 4.2), advance rulings available to importers in either party (article 4.3), review and appeal (article 4.4), customs cooperation (article 4.5), confidentiality (article 4.6), penalties (4.7), release and security (4.8), risk analysis/targeting (4.9), and new commitments on efficient customs clearance procedures for express shipments (4.10). These provisions are similar in general to those in the NAFTA and the WTO agreement cited above. Of interest is article 4.9.1, which requires each party to employ risk management systems (including profiling and other methods of detecting high-risk goods, including those where transshipment or fraud is more common or those with inherent security issues such as weapons).

Chapter 5: Textiles and Apparel

This chapter involves provisions on "cooperation in the prevention of circumvention"–and it imposes obligations on the "Government of Singapore to monitor trade and ensure compliance. Of note are the provisions of article 5.2 dealing with the prevention of textile/apparel transshipment, which involve prescribed record-keeping criteria on goods made under outward processing arrangements. Specific provisions deal with monitoring, including record-keeping rules and procedures related to free trade zones (article 5.3), and cooperation and enforcement matters such as site visits (article 5.4). The parties are obliged to share information (article 5.6) and Singapore must take steps to deal with all violations. Under article 5.5, if either party thinks that the other is not complying with the terms of the agreement with respect to textiles and apparel, it can request consultations, and the United States can apply quotas to Singapore-made goods or revoke preferential benefits for particular firms or products. None of these textile-related provisions can enter into force until domestic laws required to apply them are in place. Specific provisions on confidentiality (article 5.7) and consultations (article 5.8) are included for these goods.

There are also provisions in article 5.9 for "bilateral textile and apparel safeguard actions," under which duty reductions can be suspended or the most-favored-nation duty rate can be applied, or other action can be taken, to deal with injury or actual threat of injury. Such actions can continue for not more than two years, though a two-year extension can be implemented if the injurious situation continues. These provisions will continue over the ten-year transition period relating to this product

sector; only one such safeguard can be applied to a product during that period. Definitions applicable to this sector only are set forth in article 5.11.

Two textile-related matters should be noted: Singapore apparel meeting a "yarn forward" test will receive immediate duty-free entry, under provisions of chapter 2 and 3; and an initial tariff preference level for apparel containing non-FTA cotton and man-made fibers of 25 million square meter equivalents shall apply. The TPL ceiling would be phased out over eight years and most other tariffs on textile and apparel imports over five years.

Chapter 6: Technical Barriers to Trade

This chapter covers technical barriers to trade, including sanitary and phytosanitary measures, and is intended to conform to the WTO agreement on the same subject. It rests on enhanced cooperation and consultations and a phasing out of certain current barriers in the area of conformity assessments. A working group on medical products and their regulation is established under annex 6A.

Chapter 7: Safeguards

Under article 7.1, a party can impose a bilateral safeguard measure (by suspending staging or increasing a duty rate, not to exceed the MFN level) when imports of an originating good of the other party at a reduced duty rate or without duty constitute a substantial cause of serious injury or threat thereof to a domestic industry producing a like or directly competitive product. Notification of the other party and of the WTO is required, and parties must cooperate in investigating such situations. A safeguard can be imposed for up to two years, with one two-year extension, and only one safeguard can ever be imposed on a particular originating good, under article 7.2. The parties must progressively liberalize such measures and then, at the end of relief, return the rate of duty to the level that would have applied without the safeguard. Provisional measures (article 7.3) and compensation (article 7.4) are allowed. Article 7.5 authorizes the exclusion of originating goods of a party when the other party imposes global safeguard measures, and each party retains all rights and obligations of the WTO Agreement on Safeguards.

Chapter 8: Cross-Border Trade in Services

This chapter deals with cross-border trade in services and investment. Significantly, the measures covered by the agreement include those by national and subnational governments and also by nongovernment service suppliers of a party, but not measures dealing with financial services, air services in most cases, government procurement, subsidies, and grants. No obligation of employment is created, and the provisions do not apply to "services supplied in the exercise of governmental authority" (noncommercial and noncompetitive services). National and most-favored-nation treatment on covered services are guaranteed, with other provisions likewise similar to those of the WTO General Agreement on Trade in Services (GATS) and the NAFTA;

regulation of services must proceed under the agreed rules of articles 8.3 and 8.5 (the latter on market access). Article 8.8 covers domestic regulation of covered services.

Among the rules in this chapter is the prohibition on any limit on the number of service suppliers, value, operations, or output. The parties cannot require a local presence, under article 8.6; certain nonconforming measures are allowed under article 8.7; and reservations are contained in annexes 8A and 8B. Article 8.9 on recognition is permissive rather than mandatory, and provides for MFN treatment where a nonparty is accorded recognition relating to a covered service. Article 8.10 allows transfers and payments of funds resulting from covered services. Under articles 8.10 and 8.11, a party can deny benefits of the agreement where a service supplier meets certain conditions (such as bankruptcy or criminal conduct) or has non-party ownership or control or does not conduct substantial business activities in the other party. Article 8.12 provides that regulations shall be developed and applied in a transparent manner. Article 8.13 requires regular meetings on the obligations of this chapter and matters of mutual interest. Annex 8C covers professional services and temporary licensing in a manner aimed at encouraging additional opportunities for covered persons in each party.

Chapter 9: Telecommunications

The two parties agree to ensure that enterprises of the other party will have access to and use of any public telecommunications transport network and service offered in its territory or across its borders. Such enterprises shall be permitted to provide services to individual or multiple users; connect leased or owned circuits with public communication networks; purchase or lease equipment; use public communication transport networks; and have access to network elements on a unbundled basis. Each party's telecommunications regulatory body shall determine which network elements to make available in accordance with national law. The parties must ensure that major suppliers in its territory provide interconnection for suppliers of the other party under nondiscriminatory terms, at any technically feasible point, in a timely fashion and of no less favorable quality than that provided by such major supplier for its own services. The agreement applies to submarine cable systems and landing stations where covered by national laws and regulations. Each party is to make licensing criteria, procedures, terms and conditions, and normal time frames publicly available. Each party must also ensure that its national telecommunications regulatory body maintains appropriate procedures and authority to enforce domestic measures relating to the obligations set out in this chapter and provide for dispute resolution.

Chapter 10: Financial Services

Under this chapter, each party will accord national treatment and most-favored-nation treatment to investors of the other party and provide market access for financial institutions without limitations on the number of financial institutions, value of transactions, number of service operations or number of persons employed. Cross-border trade in financial services must be allowed, and financial

institutions of one party must be able to provide new financial services in the other party that would be permitted to the latter's own institutions without additional legislative action. Neither party is required to furnish or allow access to information related to individual customers or confidential information the disclosure of which would impede law enforcement, be contrary to the public interest or prejudice legitimate commercial concerns. A party may not require financial institutions of the other party to hire individuals of a particular nationality or require more than a simple majority of the board of directors to be nationals or residents of the party. Provisions are made for nonconforming measures and exceptions. The parties agree that transparent regulations and policies are important and shall publish in advance regulations of general application and maintain or establish mechanisms to respond to inquiries from interested persons. Consultations and dispute resolution are to be dealt with under chapter 20 of the agreement, with individual investor disputes covered by chapter 15 (on investment). There are also provisions on limitations and conditions and a list of nonconforming measures. Annex 10A sets the scope of coverage of the chapter to insurance, banking, and other financial services, including U.S. limitations related to state banking requirements. Annex 10B enumerates the parties' reservations and other matters, while annex 10C lists specific commitments including more detailed statements on most-favored-nation treatment for banks in specific areas. Annex 10D sets up a financial services committee to administer the chapter. Under section B of annex 10B, Singapore states that "qualifying full bank privileges" are limited to six foreign banks and that no new full bank licenses will be granted to foreign banks; other provisions set forth limited commitments with respect to wholesale banks (which do not deal with ordinary persons), offshore banks, merchant banks, finance companies, money-changing and remittance networks, fund managers, and automated teller machines.

Chapter 11: Temporary Entry of Business Persons

Each party would be obliged to grant temporary entry for up to 90 days and under expedited and transparent procedures to business persons of the other party who are otherwise qualified for entry under applicable domestic measures relating to public health and safety and national security. They must maintain or establish points of contact or other mechanisms to respond to interested persons regarding regulations. Dispute settlement provisions related to this process are provided. Annexes to the chapter deal with various categories of business visitors and professionals.

Chapter 12: Anticompetitive Business Conduct, Designated Monopolies, and Government Enterprises

Each party would be required to adopt or maintain measures to proscribe anticompetitive business conduct and take appropriate action with respect to such conduct. Each party must establish or maintain an authority responsible for the enforcement of such measures. The enforcement policy may not discriminate on the basis of the nationality of the subjects of the proceedings and must provide due process and procedures for review. A party may designate a monopoly or establish or

maintain a government enterprise. The Government of Singapore will be obliged to continue reducing, with a goal of substantially eliminating, its aggregate ownership and other interests in entities organized under the laws of Singapore. The agreement provides for transparency, information requests, and consultations.

Chapter 13: Government Procurement

The parties reaffirm their commitments under the WTO Agreement on Government Procurement (GPA) and confirm their desire to apply the APEC Non-Binding Principles on Government Procurement to all government procurement that is outside the scope of the GPA. Except as provided for in the annexes, the Agreement does not cover noncontractual agreements or any form of governmental assistance not specifically covered under the schedules attached to this chapter. These scheduled procurement commitments extend coverage beyond previously agreed levels applicable under prior trade agreements in that they include some government owned or controlled entities. Annexes list covered entities, goods, and services to which the FTA will apply and deal with procurement threshold rules.

Chapter 14: Electronic Commerce

Under this chapter, a party cannot apply customs duties or other duties, fees, or charges on or in connection with the importation or exportation of digital products by electronic transmission. Thus, these products are effectively to be accorded protections that likewise apply to goods in trade. The imported value of imported carrier media will be determined by the cost of the medium alone without regard to the value of the digital products stored on the carrier medium. A party likewise cannot accord less favorable treatment to some digital products than it accords to other like digital products on the basis of the nationality of the author, performer, producer, developer, or distributor of the products or the grounds that the digital products were created, stored, transmitted, or published outside its territory.

Chapter 15: Investment

Each party would be required to accord to investors of the other party and covered investments treatment no less favorable than that it accords to its own investors and investments; i.e., national and most favored nation treatment. Treatment must be in accordance with customary international law, including fair and equitable treatment and full protection and security. Expropriation shall be only for a public purpose, and must be nondiscriminatory and occur upon payment of prompt, adequate compensation in accordance with due process of law. Each party must permit all transfers relating to a covered investment to be made freely and without delay. Neither party may impose or enforce performance requirements to export a given level or percentage of goods; achieve a given level or percentage of domestic content; purchase, use, or accord preference to goods produced or sold in its territory; relate the volume or value of imports to the volume or value of exports or to the amount of

foreign exchange associated with such investment; transfer a technology or proprietary knowledge to someone within its territory; or control distribution from its territory. Neither party may require that the senior management of an enterprise of that party nor a majority of the board of directors be of a particular nationality. In the event of an investment dispute the claimant and respondent should initially seek to resolve the dispute by consultation and negotiation, which may include the use of nonbinding third party procedures. Investment disputes may be submitted to arbitration if other efforts to resolve them fail, under rules of this chapter (with a three-year "statute of limitations" on initiating action). Annexes provide rules on transfers, performance requirements, and service of documents.

Chapter 16: Intellectual Property Rights

The parties agree to give effect to articles 1 through 6 of the Joint Recommendation Concerning Provisions on the Protection of Well-Known Marks (1999) adopted by the Assembly of the Paris Union for the Protection of Industrial Property and the General Assembly of the World Intellectual Property Organization (WIPO) and the Trademark Law Treaty. [7] Each party will ratify or accede to the Brussels Convention Relating to the Distribution of Programme-Carrying Signals Transmitted by Satellite, the International Convention for the Protection of New Varieties of Plants (1991), the WIPO Copyright Treaty (1996), the WIPO Performances and Phonograms Treaty (1996), and the Patent Cooperation Treaty (1984). Each party will make best efforts to ratify or accede to the Hague Agreement Concerning the International Deposit of Industrial Designs (1999) and the Protocol relating to the Madrid Agreement Concerning the International Registration of Marks (1989).

Trademarks shall include service marks, collective marks, and certification marks and may include geographical marks. The owner of a registered mark shall have the exclusive right to prevent third parties not having the owner's consent from using identical or similar signs where such use would result in a likelihood of confusion, with limited exceptions such as fair use of descriptive terms. Domain names on the internet are covered by the Government Advisory Process of the Internet Corporation for Assigned Names and Numbers (ICANN) and ICANN's dispute resolution process.

Specific provisions of the Berne Convention are cited for the protection of copyrights and related rights. Authors, performers, and producers have exclusive rights to authorize or prohibit all reproductions and all communications to the public of their works. The term of protection of a work shall be not less than the life of the author and 70 years after the author's death or not less than 70 years from the end of the calendar year of the first authorized publication of the work, if the term in not based on the life of a natural person. The knowing circumvention of effective technological measures to protect works, and trafficking in devices intended to circumvent such measures shall result in criminal and civil liability. Certain noninfringing good faith activities are

[7] Singapore shall not be obligated to give effect to articles 6 and 7 of the Trademark Law Treaty.

exempt from sanctions. Removing or altering rights management information or trafficking in works from which the rights management information has been removed or altered shall result in criminal and civil liability.

Encrypted program-carrying satellite signals are protected by criminal and civil sanctions. Each party shall make patents available and exclude inventions from patentability only as defined in articles 27.2 and 27.3 of the TRIPS Agreement. Patent owners shall have the right to assign, license, and transfer the patent by succession. Limited exceptions granted by the parties may not unreasonably conflict or prejudice the legitimate rights of the owner.

Laws and regulations pertaining to the enforcement of intellectual property rights shall be published and made publicly available. Each party shall publicize information on its efforts to provide effective enforcement. In civil, administrative, and criminal proceedings each party shall provide for a presumption that the natural person or entity indicated as the author is the designated rights holder. In civil judicial proceedings, the rights holder may request destruction of goods that have been found to be pirated or bear counterfeit marks, except in exceptional cases. Judicial authorities shall have the authority to order the infringer to identify third parties involved in the production or distribution of the infringing goods or services and may fine or imprison persons who fail to abide by valid court orders.

Each party is obliged to provide appropriate criminal procedures and penalties at least to cases of willful trademark counterfeiting or copyright or related rights piracy on a commercial scale. Parties must provide legal incentives for service providers to cooperate with rights holders and limitations on liability.

Chapter 17: Labor

The parties reaffirm their obligations as members of the International Labor Organization and shall strive to ensure that their respective domestic laws are consistent with international standards and will strive to enforce these laws and to improve those standards. While the apparent scope of the chapter is general in nature, article 17.2 states that the obligation of a party under the agreement relates to the effective enforcement of those standards, "through a sustained or recurring course of action or inaction," insofar as they deal with trade with the other party. Collective bargaining, organization of workers, and minimum wages are among the matters covered. Annex 17A sets up a joint labor cooperation mechanism.

Chapter 18: Environment

Each party will ensure that its environmental protection laws provide for high levels of protection and strive to improve those laws, provide appropriate and effective remedies and sanctions for violations of environmental protection laws insofar as they affect bilateral trade, and provide opportunities for public participation. The parties agree to pursue cooperative environmental activities and provide for environmental

consultations. The parties are obliged under article 18.3 to ensure that persons have "appropriate and effective rights of access to remedies, in accordance with its laws," and that these may include judicial action for damages or mandatory relief. The parties likewise commit to monitoring sources of pollution and to acting to deal with it; however, it is recognized in article 18.2 that the parties retain discretion in investigation and enforcement and that "it is inappropriate to encourage trade or investment by weakening or reducing the protections afforded in domestic environmental laws."

Chapter 19: Transparency

The subject of this chapter is the hard-to-define concept of "transparency" and generally provides the structural rules that will govern the application of the agreement, starting with the official contact points in each government and continuing through the administrative rulings process and appeals therefrom. Interested persons are to be given the right to know about actual or future measures in the two member countries and to comment on them. In most other cases, nongovernmental entities given rights to obtain access or relief under the text are intended to be those directly affected by actions, rulings, measures, or proceedings under the agreement. Such entities are to have access to administrative tribunals and to review and appeal therefrom. On the U.S. side, such rights already exist, as importers can protest adverse rulings by U.S. Government entities and pursue review and appeal under generally applicable domestic laws; the inclusion of specific provisions in this chapter ensures comparable access in Singapore.

Chapter 20: Administrative and Dispute Settlement

The chapter first sets up a Joint Committee to "supervise the proper implementation" of the FTA and review its "general functioning"; it also authorizes the Joint Committee "to review the trade relationship between the Parties." The USTR and Singapore's Minister of Trade and Industry, or their respective designees, are to chair the committee, comprising government officials of the parties. The chapter includes provisions governing the meetings and powers of the committee, and it provides for the establishment of panels to consider disputes. Consultations concerning any matter that might affect the operation of the FTA are also authorized. In terms of benefits of the FTA and whether they may be nullified or impaired, the chapter applies to any measure deemed inconsistent with FTA obligations, any failure of a party to carry out such an obligation, or benefits a party "could reasonably have expected to accrue to it" (not to persons or firms per se) under the tariff concessions, rules of origin, services, and IPR chapters. Following consultations, the Joint Committee can attempt to resolve covered disputes; matters can also be referred to the WTO or other fora available to both parties. Panels may be established under the FTA to deal with disputes not resolved by the Joint Committee within sixty days. Once a panel constituted under the chapter has supplied its final report, the parties are obliged to agree on the resolution of the dispute in question in a manner "which normally shall conform with the determinations and recommendations, if any, of the panel." Upon an appropriate panel finding, a party may suspend a level of benefits having an equivalent effect to the disputed measure or

enter into negotiations to obtain monetary compensation; article 20.6 contains procedures for such talks. Certain matters concerning failure to enforce domestic labor laws and failure to enforce domestic environmental laws would be governed by article 20.7. In such situations "an annual monetary assessment" set in U.S. dollars can be imposed on the violating party; the upward limit on such assessments remains to be established. The chapter also contains provisions directing compliance reviews (article 20.8) and five-year reviews under the agreement (article 20.9). Last, article 20.11 states that "neither Party may provide for a right of action under its domestic law against the other Party on the ground that a measure of the other Party is inconsistent with this Agreement." Thus, mechanisms available under the FTA at the governmental level are intended to serve as the means of obtaining redress, instead of private actions at law.

Chapter 21: General and Final Provisions

General provisions on balance of payments, general exceptions, essential security, taxation, disclosure of information, and corruption are set forth in this chapter, along with the mechanisms for acceding to the agreement and putting it into force and an article on the legal significance of annexes. Under article 21.6, if both parties agree, any country or group of countries may accede to the agreement. Under article 21.9, the FTA would enter into force 60 days after the exchange of written notifications that all respective internal arrangements have been fulfilled, unless otherwise agreed.

Side letters on five subject areas are being made available on such subjects as legal services, telecommunications divestment, and intellectual property enforcement; the signers have exchanged letters on nine other matters as of May 6, 2003, on subjects such as expropriation, customary international law, and the possibility of a bilateral appellate mechanism.

CHAPTER 3
Overview of Singapore's Economy, Trade, and Investment Patterns

Introduction[1]

In 2002, Singapore was the 12th largest U.S. trading partner in terms of total trade. Singapore is an open economy, with very few applied tariffs and an investment regime that actively promotes foreign inflow of both human and financial capital. Singapore is an active member of the WTO, a leading force in the Association of Southeast Asian Nations (ASEAN), and has recently signed separate bilateral free trade agreements with the United States, Japan, and Australia. Following years of U.S. trade deficits with Singapore, the United States registered a bilateral merchandise trade surplus of $0.9 billion in 2001 and $0.6 billion in 2002. In 2002, U.S. domestic exports to Singapore measured $14.7 billion, while U.S. imports for consumption from Singapore measured $14.1 billion. U.S. direct foreign investment (flows) in Singapore measured $3.0 billion in 2001, the last year for which data are available. The U.S. investment position in Singapore (stock) measured $27.3 billion in 2001, and generated $2.1 billion in income.[2] U.S. investment is concentrated largely in manufacturing—notably electronics, industrial chemicals and petroleum, and the financial sectors.

The four main sections of this chapter will discuss: (1) an overview of the Singapore economy, (2) Singapore's patterns of trade, (3) a discussion of regional and international economic cooperation in Singapore, and (4) Singapore's investment relationship with the United States and other countries. Most of the data discussed in this chapter cover the period 1998-2002.

Singapore's Economy

Singapore is a city-state with a population of 3.9 million (of which 700,000 or 18 percent are foreigners, mainly migrant workers and professionals), and is located next to one of the world's major shipping lanes. With long-standing policies designed to promote open trade and investment, Singapore has overcome its land, labor, and resource constraints, and has become one of the world's most successful open trading

[1] Unless otherwise specified, exports in this chapter refer to domestic exports, and imports refer to imports for consumption.

[2] U.S. Department of Commerce, Bureau of Economic Analysis (BEA), "U.S. Direct Investment Abroad: Detail for Historical-Cost Position and Related Capital and Income Flows," 2001.

and investment regimes. Although the gross domestic product (GDP) growth rate decelerated to 0.3 percent in 1998 due to the Asian economic crisis, average growth over the past decade has been about 7 percent. The World Bank reports that Singapore has the fifth highest per capita gross national product (GNP)[3] in purchasing power parity terms. Singapore actively promotes trade liberalization in the region through the 10-member-country ASEAN[4] and the 21-member-country Asian Pacific Economic Cooperation (APEC).[5] The APEC Secretariat is located in Singapore. Singapore is a founding member of the WTO, and hosted the first WTO Ministerial in December 1996.[6]

Singapore has a very industrialized economy. Manufacturing is the most important sector, followed by wholesale and retail trade, financial services, and business services. Agriculture constitutes a very small part of gross output. The economy is also very dependent on the manufacture and sale of electronics. Singapore is the world's leading producer of disk drives, and continues to invest heavily in wafer-fabrication facilities. Singapore has benefitted from enormous foreign exchange earnings in the electronics sector. Global demand for electronics products decreased substantially in 2001, and Singapore's GDP followed–from 9.4 percent growth in 2000 to more than a 2.4 percent contraction in 2001.

The Singapore economy depends on international trade and an open investment regime. Because of Singapore's size, openness, geographic location, and port

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[3] GNP measures the total value of goods and services produced using factors of production owned by citizens of Singapore, regardless of the location of production. GDP measures the total value of goods and services produced within the borders of Singapore, regardless of the ownership of the factors of production. Purchasing power parity allows comparison of consumer incomes quoted in two different currencies. Instead of using an official exchange rate to convert foreign currencies to dollars, purchasing power parity conversions use a computed exchange rate which assumes one U.S. dollar will buy the same amount of goods and services in the United States as it could in the foreign country.

[4] The founders of the ASEAN envisioned it as eventually bringing together all the countries of Southeast Asia and getting them to cooperate in securing the region's peace, stability and development. At the time the region was in tumult as several countries were struggling for national survival or independence. Thus, only five countries: Indonesia, Malaysia, the Philippines, Singapore and Thailand-signed the ASEAN Declaration of Aug. 8, 1967. Thirty-two years later—on April 30, 1999-ASEAN encompassed all 10 countries of Southeast Asia by admitting Cambodia. Members of ASEAN include Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, Philippines, Singapore, Thailand, and Vietnam . Besides the ten ASEAN countries, the ASEAN Regional Forum (ARF) membership includes the 10 dialogue partners of ASEAN (Australia, Canada, China, the European Union, India, Japan, Republic of Korea, New Zealand, Russia and the United States), Papua New Guinea, Mongolia, and the Democratic People's Republic of Korea, which participated in ARF for the first time on July 27, 2000. Found at Internet address *http://www.asean.or.id/*, retrieved Dec. 26, 2000.

[5] The Asia-Pacific Economic Cooperation (APEC) was established in 1989 in response to the growing interdependence among Asia-Pacific economies. Begun as an informal dialogue group, APEC has since become the primary regional vehicle for promoting open trade and practical economic cooperation. Its goal is to advance Asia-Pacific economic dynamism and sense of community. Today, APEC's 21 member economies have a combined gross domestic product of over US$18 trillion in 1999 and account for 43.85 percent of global trade. Members of APEC include Australia, Brunei Darussalam, Canada, Chile, China (PRC), Hong Kong, Indonesia, Japan, Korea, Malaysia, Mexico, New Zealand, Papua New Guinea, Peru, Philippines, Russia, Singapore, Chinese Taipei, Thailand, United States, and Vietnam. Found at Internet address *http://apecsec.org*, retrieved Dec. 18, 2000.

[6] U.S. Department of State, Bureau of Economic and Business Affairs, *1999 Country Reports on Economic Policy and Trade Practices*, March 2000.

facilities, it serves as a regional trading center through which goods are traded among its Asian neighbors and the West. With such significant trade volumes passing through Singapore, re-exports account for almost half of total exports for the island state, and the total value of trade in goods (exports plus imports) totals almost three times the value of domestic output. Singapore's industrial base is dominated by foreign multinationals and a few large domestic firms with government connections. Small and medium-sized enterprises (SMEs) play only a minor role, though the government maintains efforts to develop them.

The economy suffered a recession following the 1997-1998 Asian financial crisis. The subsequent recovery was the result, in part, of government attempts to reduce business costs. However, the sudden downturn in world trade since 2001 has given Singapore a new economic challenge and an even deeper recession. The government has increased its spending and is formulating ways to restructure the economy. One of the methods discussed is to encourage more innovation and diversify the economy towards modern service and consumer-focused industries. The government emphasizes the development of higher value-added activities and a more "knowledge-based" economy. Protected sectors, such as financial services, are being liberalized in an effort to increase overall efficiency, and the government has signed several trade and investment agreements with its trading partners in an effort to improve market access and increase investment in Singapore.

Following the sharp downturn in 2001, the Singapore economy has experienced a substantial recovery. Several sectors continued to experience contraction (including construction, agriculture, and financial services), but overall the economy grew by 2.2 percent in 2002 (table 3-1).

Major Industries

As shown in figure 3-1, almost two-thirds of Singapore's 2002 GDP is in the service sector. Goods producing industries constituted another 31.8 percent of GDP, while

Table 3-1
Singapore: GDP growth by industry, 1998-2002

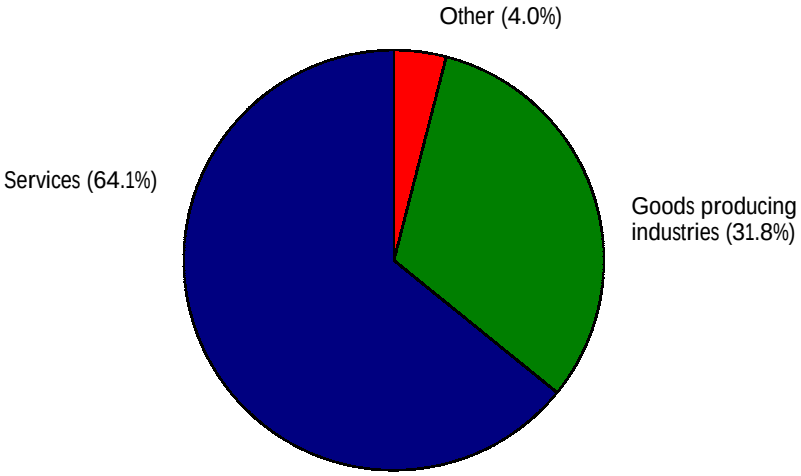
(Annual percent change)

	1998	1999	2000	2001	2002
Manufacturing	-0.6	13.0	15.1	-11.5	8.3
Construction	4.4	-9.0	-1.8	-3.2	-10.8
Utilities	4.9	3.3	7.4	1.7	4.3
Agriculture, Fishing, and Quarrying	-6.9	-1.8	-4.9	-5.9	-6.0
Wholesale and Retail Trade	-4.1	6.5	14.8	-3.3	2.7
Hotels and Restaurants	-3.5	3.6	8.2	-2.2	-2.9
Transport and Communications	5.5	7.0	7.6	2.6	5.0
Financial Services	-8.1	5.2	2.1	3.7	-4.8
Business Services	5.1	2.9	6.3	3.1	0.4
Other Services	4.1	7.2	7.3	6.0	4.5
Total Gross Domestic Product	0.4	6.4	9.4	-2.4	2.2

Source: Singapore Department of Statistics, *www.singstat.gov.sg*.

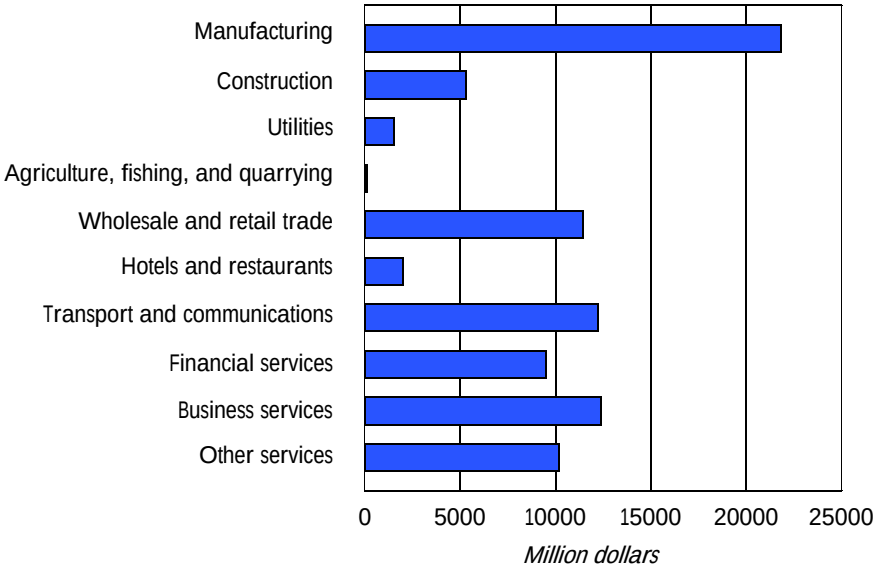
agriculture and other outputs made up 0.1 percent and 4.0 percent, respectively. The largest service industries are business services, wholesale and retail trade, transport and communications, and financial services (figure 3-2). Major manufacturing industries include electronics, oil drilling equipment, petroleum refining, rubber processing and rubber products, processed food and beverages, ship repair, entrepôt trade, and biotechnology.

Figure 3-1
Singapore: GDP by sector, 2002



Source: Singapore Department of Statistics, *www.singstat.gov.sg*.

Figure 3-2
Singapore: GDP by industry, 2002



Source: Singapore Department of Statistics, *www.singstat.gov.sg*.

Singapore's Trade Pattern

Singapore is a regional hub for Asian trade, with over 45 percent of its total exports comprised of re-exports. In 2002, Singapore's total exports to the world measured $125.0 billion, while domestic exports totaled $66.7 billion. Singapore's total imports from the world measured $116.3 billion in 2002 (table 3-2).

By sector, Singapore's largest exports to the world in 2002 included machinery and equipment, electronic components, chemicals, and miscellaneous manufactures (table 3-3). Singapore's largest import categories from the world in 2002 included machinery and equipment such as electronics, crude petroleum, chemicals, and manufactured goods (table 3-4).

Trade Flows with the United States

Singapore is the 12th largest U.S. trading partner. Singapore is the United States' 11th largest export market, and 15th largest import supplier.

The United States had a long-standing bilateral merchandise trade deficit with Singapore until 2001 (figure 3-3). U.S. imports from Singapore were $4.3 billion in 1985, and grew steadily to $20.3 billion in 1996 before declining to $18.2 billion in 1999 and $14.1 billion in 2002. U.S. exports have followed a similar trend. In 1985, exports to Singapore totaled $3.5 billion, and increased to $16.0 billion in 2000 before decreasing to $14.7 billion in 2002. In 1996, the U.S. bilateral merchandise trade deficit with Singapore totaled $5.6 billion. In 2002, the U.S. merchandise trade surplus with Singapore measured $0.6 billion.

Tables 3-5 and 3-6 present U.S. imports from Singapore on a 1-digit and 2-digit SITC classification. By 2-digit classification, the largest U.S. imports from Singapore in 2002 included office machines and data processing machines, electrical machinery and parts, organic chemicals, and telecommunications equipment.

Table 3-2
Singapore: Trade with the world, 1998-2002

(Millions dollars)

	1998	1999	2000	2001	2002
Total exports	110,037.9	114,631.9	137,958.3	121,686.8	125,042.7
Domestic exports	63,423.7	68,632.4	78,854.9	66,107.2	66,702.6
Total imports	101,714.7	111,004.5	134,680.1	115,919.0	116,336.4
Re-exports	46,614.2	45,999.6	59,103.4	55,579.6	58,340.1
Domestic imports	65,216.0	73,276.0	([1])	([1])	([1])
Balance of total exports and imports	8,323.2	3,627.4	3,278.2	5,767.8	8,706.3
Balance of domestic exports and imports	(1,792.3)	(4,643.6)	([1])	([1])	([1])

[1] Data not available.

Sources: IMF and Singapore Department of Statistics, *www.singstat.gov.sg.*

Table 3-3
Singapore: Domestic exports, re-exports, and total exports, 2002

(Million dollars)

Commodity	Domestic Exports	Re-Exports	Total Exports
Total	66,702.6	58,340.1	125,042.7
Mineral Fuels	11,649.1	1,335.8	12,984.9
Non-oil	55,053.6	57,004.2	112,057.8
Food	865.4	757.1	1,622.5
Beverages and Tobacco	130.2	865.4	995.5
Crude Materials	319.2	514.0	833.2
Animal and Vegetable Oils	181.2	42.2	223.4
Chemicals	8,535.2	3,090.2	11,625.4
Manufactured Goods	1,914.2	2,987.1	4,901.3
Veneer and Plywood	4.7	36.4	41.1
Textile, Yarn, and Fabrics	269.3	329.4	598.7
Iron and Steel	167.4	400.3	567.7
Other Manufactures	1,472.7	2,221.0	3,693.8
Machinery and Equipment	37,165.0	42,315.8	79,480.8
Electronic Machinery, Office Machines, and Other Components	35,389.4	38,082.3	73,471.7
Industrial Machines	643.0	1,469.7	2,112.7
Radio and Televison Receivers	952.0	1,711.7	2,663.7
Electronic Components	9,513.9	20,971.6	30,485.4
Motor Vehicles	0.0	910.3	910.3
Ships and Oil Rigs	180.7	141.7	322.5
Miscellaneous Manufactures	5,441.1	5,206.8	10,647.9
Other	502.0	1,225.8	1,727.9

Sources: Singapore Department of Statistics, *www.singstat.gov.sg*.

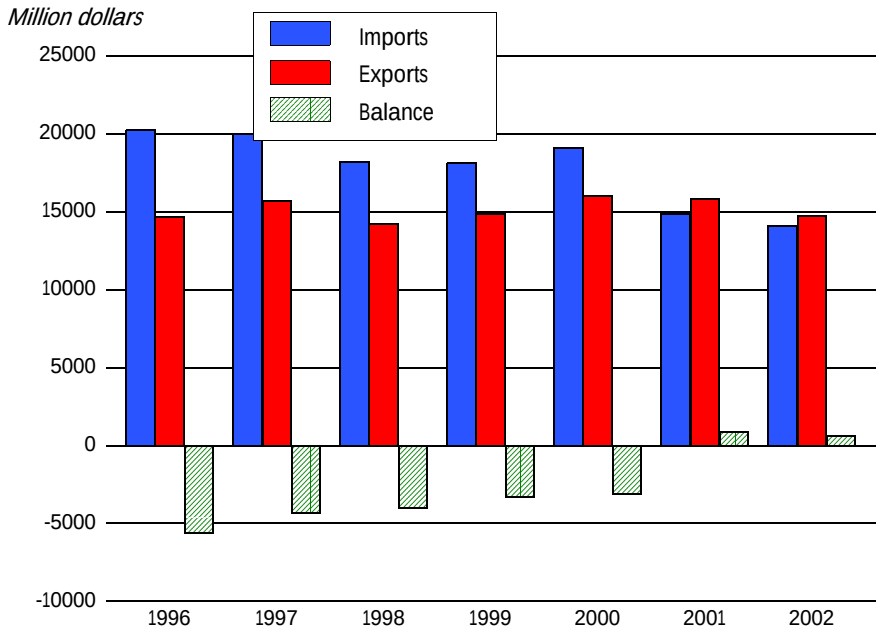
Table 3-4
Singapore: Imports by commodity, 2002

(Million dollars)

Commodity	Imports
Mineral Fuels	15,663.2
Crude Petroleum	7,603.8
Non-oil	104,297.6
Food	3,055.7
Beverages and Tobacco	999.0
Crude Materials	765.6
Animal and Vegetable Oils	241.1
Chemicals	7,480.6
Manufactured Goods	8,840.1
Paper and Paperboard	460.9
Textile, Yarn, and Fabrics	706.8
Iron and Steel	1,641.6
Machinery and Equipment	70,620.2
Power Generators	1,485.2
Industrial Machines	2,995.9
Radio and Televison Receivers	2,092.8
Electronic Generators	4,919.1
Electronic Components	25,864.6
Motor Vehicles	2,171.5
Aircraft and vessels	3,494.8
Miscellaneous Manufactures	10,579.3
Miscellaneous	1,715.8
Total	119,960.8

Sources: Singapore Department of Statistics, *www.singstat.gov.sg*.

Figure 3-3
U.S. merchandise trade with Singapore: Imports, exports, and trade balance, 1996-2002



Source: U.S. Department of Commerce.

Tables 3-7 and 3-8 present U.S. domestic exports to Singapore classified by 1-digit and 2-digit SITC codes. By 2-digit code, the largest U.S. exports to Singapore in 2002 included transport equipment, electrical machinery, office equipment, power generators, and specialized industrial machinery. In the period 2001-2002, overall exports to Singapore decreased by 6.8 percent, but several sectors experienced growth, including professional instruments, general industrial machinery, petroleum products, and plastic products.

Services Trade

In 2002, U.S. cross- border exports of services to Singapore measured $4.1 billion, while U.S. service imports measured $2.0 billion (table 3-9). The resulting $2.1 billion surplus in services trade contributed significantly to the $0.6 billion overall U.S. trade surplus with Singapore. Approximately 30 percent of cross-border exports are transactions between U.S. parent corporations and their Singapore affiliates, while 23 percent of U.S. exports comprise receipts of royalties and license fees. Sectors that account for significant portions of cross-border exports to Singapore include travel and transportation; business, technical and professional services; and financial services. U.S. cross-border imports of services from Singapore are heavily comprised of travel and transportation services, financial services, and business, technical, and professional services.

Table 3-5
U.S. imports for consumption from Singapore, by 1-digit SITC classification, 1998-2002

(Million dollars)

SITC Number	Descritpion	1998	1999	2000	2001	2002	Percent Change 2001- 02
7	Machinery and transport equipment	15,556	14,826	15,229	11,220	10,482	-6.6
8	Miscellaneous manufactured articles	1,101	1,191	1,319	1,268	1,220	-3.8
5	Chemicals and related products, n.e.s.	373	628	701	891	1,058	18.7
9	Commodities and transactions n.e.s. in the SITC	796	1,077	1,290	1,118	1,017	-9.1
3	Mineral fuels, lubricants and related materials	107	140	319	188	158	-16.2
0	Food and live animals	120	91	101	88	95	7.9
6	Manufactured goods classified chiefly by material	132	98	117	107	69	-35.5
2	Crude materials, inedible, except fuels	23	62	25	13	12	-1.1
4	Animal and vegetable oils, fats and waxes	7	4	4	4	4	4.0
1	Beverages and tobacco	2	2	3	1	2	46.3
	Total	18,216	18,120	19,108	14,899	14,116	-5.3

Source: U.S. Department of Commerce.

Table 3-6
U.S. imports for consumption from Singapore, top 25 import categories by 2-digit SITC classification, 1998-2002

(Million dollars)

SITC Number	Description	1998	1999	2000	2001	2002	Percent Change 2001-02
75	Office machines and automatic data processing machines	12,014	11,301	10,111	7,944	7,652	-3.7
77	Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including nonelectrical counterparts of household type, n.e.s.)	2,477	2,471	3,864	2,184	1,656	-24.2
93	Special transactions and commodities not classified according to kind	680	953	1,161	1,016	921	-9.3
51	Organic chemicals	299	531	604	789	774	-1.9
76	Telecommunications and sound recording and reproducing apparatus and equipment	448	596	759	684	710	3.8
87	Professional, scientific and controlling instruments and apparatus, n.e.s.	470	485	518	534	545	2.0
89	Miscellaneous manufactured articles, n.e.s.	262	319	376	367	332	-9.6
84	Articles of apparel and clothing accessories	307	327	355	299	287	-4.0
54	Medicinal and pharmaceutical products	41	59	37	38	186	383.8
74	General industrial machinery and equipment, n.e.s., and machine parts, n.e.s.	145	126	152	138	182	31.7
33	Petroleum, petroleum products and related materials	106	136	307	187	158	-15.7
71	Power generating machinery and equipment	253	65	60	89	109	22.3
98	Estimate of import items valued under $251 and of other low valued items nonexempt from formal entry	94	11	116	94	88	-6.5
78	Transport equipment, n.e.s.	92	92	115	95	84	-11.8
03	Fish (not marine mammals), crustaceans, molluscs and aquatic invertebrates, and preparation thereof	64	55	62	56	53	-4.4
88	Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks	46	53	55	59	51	-12.6
57	Plastics in primary forms	5	10	18	18	44	152.2
72	Machinery specialized for particular industries	53	37	46	33	36	8.4
78	Road vehicles (including air-cushion vehicles)	46	69	52	33	34	0.9
59	Chemical materials and products, n.e.s.	7	7	14	24	31	27.3
07	Coffee, tea, cocoa, spices and manufactures thereof	41	22	25	15	22	46.8
69	Manufactures of metals, n.e.s.	55	28	39	34	21	-39.3
73	Metalworking machinery	28	69	69	19	20	2.3
62	Rubber manufactures, n.e.s.	17	18	17	19	18	-2.7
66	Nonmetallic mineral manufactures, n.e.s.	22	12	21	12	13	9.0
	Subtotal	18,074	17,949	18,954	14,780	14,025	-5.1
	All Other	142	170	154	119	91	-23.4
	Total	18,216	18,120	19,108	14,899	14,116	-5.3

Source: US Department of Commerce.

Table 3-7
U.S. domestic exports to Singapore, by 1-digit SITC classification, 1998-2002

(Million dollars)

SITC Number	Description	1998	1999	2000	2001	2002	Percent Change 2001-02
7	Machinery and transport equipment	9,406	9,509	10,246	10,896	9,460	-13.2
8	Miscellaneous manufactured articles	2,024	2,167	2,245	1,632	1,625	-0.4
5	Chemicals and related products, n.e.s.	1,206	1,395	1,607	1,396	1,557	11.6
6	Manufactured goods classified chiefly by material	601	606	655	523	621	18.8
3	Mineral fuels, lubricants and related materials	109	280	310	475	615	29.5
9	Commodities and transactions not classified elsewhere in the SITC	511	532	573	556	513	-7.8
0	Food and live animals	171	173	199	199	201	0.9
2	Crude materials, inedible, except fuels	69	97	75	64	74	17.0
1	Beverages and tobacco	105	72	79	54	41	-25.2
4	Animal and vegetable oils, fats and waxes	17	12	10	4	11	157.5
	Total	14,218	14,842	15,999	15,799	14,718	-.6.8

Source: U.S. Department of Commerce.

Table 3-8
U.S. domestic exports to Singapore, top 25 export categories by 2-digit SITC classification, 1998-2002

(Million dollars)

SITC Number	Description	1998	1999	2000	2001	2002	Percent Change 2001-02
79	Transport equipment, n.e.s.	1,894	1,551	838	3,584	2,854	-20.4
77	Electrical machinery, apparatus and appliances, n.e.s., and electrical parts thereof (including nonelectrical counterparts of household type, n.e.s.)	3,274	3,422	4,014	2,556	2,351	-8.0
75	Office machines and automatic data processing machines	1,564	1,655	1,898	1,416	1,146	-19.1
71	Power generating machinery and equipment	635	713	794	925	927	0.2
72	Machinery specialized for particular industries	929	969	1,278	1,096	892	-18.7
87	Professional, scientific and controlling instruments and apparatus, n.e.s.	720	816	1,107	780	859	10.1
74	General industrial machinery and equipment, n.e.s., and machine parts n.e.s.	568	594	696	663	721	8.8
33	Petroleum, petroleum products and related materials	109	279	309	474	611	28.9
89	Miscellaneous manufactured articles, n.e.s.	1,071	1,087	841	618	520	-16.0
99	Estimate of non-Canadian low value shipments; compiled low value shipments to Canada; and various export shipments not identified by kind	397	415	464	381	357	-6.3
59	Chemical materials and products, n.e.s.	271	318	390	304	354	16.5
57	Plastics in primary forms	281	314	421	318	348	9.4
51	Organic chemicals	321	357	365	318	326	2.6
76	Telecommunications and sound recording and reproducing apparatus and equipment	306	330	326	368	300	-18.4
69	Manufactures of metals, n.e.s.	303	283	223	190	292	53.5
88	Photographic apparatus, equipment and supplies and optical goods, n.e.s.; watches and clocks	172	201	223	181	199	10.2
73	Metalworking machinery	117	197	331	192	195	11.0
58	Plastics in nonprimary forms	114	115	124	136	172	26.0
93	Special transactions and commodities not classified according to kind	104	95	89	169	142	-16.2
53	Dyeing, tanning and coloring materials	76	106	91	78	105	34.6
52	Inorganic chemicals	40	52	63	68	89	31.1
66	Nonmetallic mineral manufactures, n.e.s.	50	62	89	69	88	26.5
55	Essential oils and resinoids and perfume materials; toilet, polishing and cleansing preparations	57	68	82	86	85	-1.6
05	Vegetables and fruit	71	68	77	72	77	8.1
54	Medicinal and pharmaceutical products	41	63	69	86	77	-10.2
	Subtotal	13,484	14,130	15,200	15,130	14,086	-6.9
	All Other	734	712	799	670	632	-5.6
	Total	14,218	14,842	15,999	15,799	14,718	-6.0

Source: U.S. Department of Commerce.

Table 3-9
U.S. cross-border services trade with Singapore, 2001

(Millions of dollars)

	Exports	Imports
Total private services	4,081	2,010
Travel	314	423
Passenger fares	68	171
Other transportation	601	792
Freight	293	652
Ocean freight services	72	486
Air freight services	221	166
Port services	308	140
Ocean port services	126	24
Airport services	182	116
Royalties and licence fees	923	52
Transactions between affiliated parties	839	[D]
U.S. parents' receipts from their foreign affiliates	838	5
U.S. affiliates' receipts from their foreign parents	1	[D]
Transactions between unaffilliated parties	84	[D]
Industrial processes	16	[*]
Books, records, and tapes	1	0
Broadcasting and recording of live events	6	0
Franchise fees	4	[*]
Trademarks	6	[D]
Other (includes software distribution and related rights)	51	[D]
Other private services	2,175	752
Transactions between affiliated parties	1,377	406
U.S. parents' receipts from their foreign affiliates	1,163	356
U.S. affiliates' receipts from their foreign parents	214	50
Transactions between unaffilliated parties	798	166
Education	74	1
Financial services	293	64
Insurance, net	16	1
Premiums	36	2
Losses	21	1
Telecommunications services	99	23
Business, professional, and technical services	287	77
Advertising	5	4
Computer and data processing services	32	1
Database and other information services	14	2
Research, development, and testing services	6	14
Management, consulting, and public relations services	9	2
Legal services	36	6
Construction, engineering, architectural, and mining services	(37)	1
Industrial engineering	7	(*)
Installation, maintenance, and repair of equipment	185	3
Other	30	45
Other unaffilliated transactions		
Addendum: Motion picture and TV film and tape rentals	28	0

[D]: Supressed to avoid disclosing data for individual companies.

[*]: Less than $500,000.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2002, pp. 130-157.

Investment Relationship with the United States

Singapore maintains a liberal investment policy regime that is consistent with its longstanding policy of encouraging foreign investment to support economic and technological development. Foreign exchange and capital transfers are unrestricted. Through various incentive programs, Singapore actively encourages foreign direct investment in the electronics, chemicals, life sciences, engineering, communications, education, and healthcare industries.

Foreign firms face few establishment limitations as, for most industries, Singapore does not maintain any joint venture, management control, or performance requirements. Equity limitations that had constrained foreign participation in the telecommunications, banking, insurance, and power generation industries were eliminated in 2000. However, foreign ownership restrictions remain in place with respect to armament manufacturing, domestic news media services, domestic broadcasting services, and private property ownership. All foreign investments in Singapore are subject to screening by the Economic Development Board (EDB) to determine eligibility for incentive programs, but the EDB does not have authority to prohibit investments. Financial service industries are further subject to oversight and licensing by the Monetary Authority of Singapore (MAS), which also administers various investment incentive programs. MAS is in the process of implementing reforms to permit greater foreign participation in the domestic financial service sectors.

Singapore is a signatory to bilateral investment promotion and protection agreements with many countries, including the United States. In addition, Singapore is a party to the International Convention on the Settlement of Investment Disputes and created its own International Arbitration Center in 1991. No major disputes between foreign investors and the Government of Singapore have been reported.

A robust intellectual property rights (IPR) regime helps to create a business climate that is attractive to foreign investors. Singapore's IPR regime is generally considered to be strong. Singapore is a signatory to several multilateral IPR agreements and has enacted laws governing copyrights, patents, trademarks, and other areas of IPR.

Investment Patterns

Singapore is one of the world's most successful countries in attracting foreign direct investment (FDI). Singapore's stock of inward FDI measured $95.1 billion in 2001, which is more than $23,200 per person, the highest in the world. Inflows as a share of GDP averaged about 10 percent per year in the 1980s and 1990s, and have accounted for over 20 percent of nominal gross fixed investment expenditure every year since 1993. A worsening in the demand for electronics in 2001, however, resulted in a sharp decline in FDI inflows during 2001.

Singapore itself is a large direct investor in other countries, particularly in China, Hong Kong and Malaysia. Outflows peaked at $9.4 billion in 1997. Outward investment substantially decreased during the 1998 financial crisis, but recovered again the following year.

The U.S. investment position in Singapore (stock) measured $27.3 billion in 2001, and generated $2.1 billion in income.[7] In 2001, the United States directly invested $3.0 billion in Singapore (flows), while Singapore's foreign direct investment in the United States measured $1.2 billion. Those sectors comprising the largest amount of U.S. net FDI in Singapore in 2001 included industrial machinery and equipment and services (table 3-10).

Table 3-10
Foreign direct investment flows between the United States and Singapore, 2001

(Million dollars)

	US FDI in Singapore	Singapore FDI in United States
All industries	2,970	-1,173
Petroleum	58	37
Total manufacturing	2,782	(1)
Food and kindred products	1	(1)
Chemicals and allied products	-106	-14
Primary and fabricated metals	36	(1)
Industrial machinery and equipment	3,662	59
Electronic and other equipment	-957	(2)
Transportation equipment	128	(2)
Other manufacturing	18	-25
Wholesale trade	-145	-7
Retail trade		72
Depository institutions	30	19
Finance (except depository institutions, insurance, and real estate)	48	(2)
Insurance		-2
Services	203	8
Other industries	-6	(1)

[1] Supressed to avoid disclosing data for individual companies.
[2] Less than $500,000.
Source: U.S. Department of Commerce, Bureau of Economic Analysis.

Regional and Economic Cooperation

Multilateral Cooperation

Singapore is a WTO member and has been active in promoting regional economic integration and liberalization among the 10 members of the Association of Southeast Asian Nations (ASEAN).[8] Singapore is a member of the Asia Pacific Economic Cooperation (APEC). Although Singapore offers a tariff preference to its ASEAN partners, in practice, as Singapore's applied tariff is largely zero, such a preference

[7] U.S. Department of Commerce, Bureau of Economic Analysis (BEA), "U.S. Direct Investment Abroad: Detail for Historical-Cost Position and Related Capital and Income Flows, 2001.
[8] U.S. Department of State, "FY 2001 Country Commercial Guide: Singapore," July 2000.

does not exist. In the APEC forum, Singapore plans to meet the deadline agreed for developed country members to liberalize trade and investment by 2010. Singapore was also a participant in APEC's Early Voluntary Sectoral Liberalization (EVSL) and Accelerated Tariff Liberalization (ATL) initiatives, covering 15 and 9 sectors, respectively.[9]

At the ASEAN meeting in Singapore in October 1999, the ASEAN economic ministers reached agreement on a number of key trade and investment liberalization measures, including a schedule to eliminate import duties on all products by 2015 (for the six original members) and by 2018 (for the remaining four new members) within the ASEAN Free Trade Area (AFTA). This will be completed before the APEC goal of 2020 for developing countries. They also signed a protocol including, for the first time, unprocessed agricultural products in tariff reduction talks; and they endorsed a set of parameters to guide further liberalization of trade in services.

To further attract foreign investment, ASEAN ministers have indicated a preparation of temporary exclusion lists (TEL) in various sectors, which will be gradually phased out and opened to foreign investment over the next few years. They expanded the scope of the ASEAN Investment Area (AIA) Agreement to cover services incidental to these sectors (including manufacturing, agriculture, forestry, fishing, and mining). Acting on a Singapore initiative, ASEAN also embarked on a series of joint investment promotion missions to Japan (February-March 2000), the United States (March-April 2000), and Europe (June 2000).[10]

During meetings in November 2000, ASEAN leaders signed a framework agreement to connect ASEAN to the global networked economy. In a statement following the meetings, leaders announced that "the e-ASEAN agreement commits ASEAN members to an implementation schedule to achieve digital-readiness for the region in order to develop the basis for ASEAN's competitiveness into the future, better the lives of citizens through the application of information and communications technologies, and foster the spirit of the ASEAN community."[11]

With regard to its WTO commitments, Singapore amended its legislation in light of the TRIPs and custom valuation agreements ahead of the transition period available to developing countries. In services, Singapore has signed both the Agreement on Telecommunication Services and the Agreement on Financial Services. Under the Agreement on Telecommunications Services, Singapore committed to grant licenses for up to two additional operators for public switched services and leased circuit facilities from April 2000. Under the Agreement on Financial Services, Singapore's commitments include an offer to increase offshore bank lending limits to residents of

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[9] World Trade Organization, Trade Policy Reviews: Singapore, March 2000. Found at Internet address *http://www.wto.org/english/tratop_e/tpr_e/tp130_e.htm*, retrieved Nov. 17, 2000.

[10] U.S. Department of State, FY 2001 Country Commercial Guide: Singapore, July 2000.

[11] BNA Inc., "ASEAN Leaders Pledge to Study Possibility of Northeast Asian Trade Zone," Nov. 28, 2000.

Singapore from S$100 million per bank to S$200 million, and to allow up to 49 percent aggregate foreign equity ownership in locally owned insurance companies.[12]

Bilateral Cooperation

Singapore has undertaken a series of bilateral trade agreements as a part of its ambitious development strategy. In addition, to the free trade agreement with the United States, Singapore recently has signed or discussed free trade agreements with New Zealand, Australia, Japan, Iceland, Liechtenstein, Norway, Switzerland, Mexico, and Taiwan.[13]

Singapore signed a bilateral FTA with Japan in 2000. In its first such FTA, Japan agreed to eliminate tariffs on 94 percent of Singaporean imports, with the exception of certain agricultural, fishery and petroleum products. In return, Singapore agreed to remove all remaining duties imports from Japan.

On February 17, 2003, Australia and Singapore signed a bilateral FTA, confirming a deal reached in early November 2002 after two years of negotiations. Given the already low trade barriers in both countries and modest levels of bilateral merchandise trade—neither country ranks among its counterpart's top five export markets—the elimination of tariffs on goods, as stipulated in the FTA, is more an incremental improvement than a major breakthrough. However, commitments in the FTA to opening up each country's service sectors are more significant.[14]

Singapore began formal negotiations with New Zealand in late 1999, and an agreement was signed on November 14, 2000. Singapore has another trade agreement with the four-country European Free Trade Association (which consists of Iceland, Liechtenstein, Norway, and Switzerland). It is also in talks with Mexico and Taiwan, and is thought to be exploring possible FTA agreements with South Korea and India. Mexico and Singapore signed a Joint Declaration for the Creation of a Free Trade Agreement on November 13, 2000.[15] Singapore and the Republic of Korea signed two Memoranda of Understanding on November 27, 2000, as a part of efforts to strengthen economic ties between the two countries. The first MOU is for cooperation between the state managed enterprises (SMEs) of Singapore and Korea. The second is for cooperation in Standardization and Conformity Assessment. SMEs in the two countries account for a large proportion of business establishments and much of the national workforce. Cooperation will help facilitate partnerships between SMEs in the two countries, and will increase bilateral trade through a reduction of technical barriers to trade.[16]

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[12] World Trade Organization, Trade Policy Reviews: Singapore, March 2000. Found at *http://www.wto.org/english/tratop_e/tpr_e/tp130_e.htm*, retrieved Nov. 17, 2000.

[13] Economic Intelligence Unit, "Singapore Country Briegings: Economic Agreements," found at *http://eiu.com*, retrieved May 15, 2003.

[14] Ibid.

[15] World Trade Online: Around the World. "Mexico, Singapore Start FTA Negotiations," Nov. 13, 2000. Found at *http://www.insidetrade.com,* retrieved Dec. 19, 2000.

[16] World Trade Online: Around the World. "Singapore, Korea Sign Economic Agreements," November 27, 2000. Found at *http://www.insidetrade.com*. Retrieved December 19, 2000.

Finally, in the November 2000 ASEAN meetings, Singapore and the nine other members pledged to study the possibility of a Northeast Asian Trade Zone. Leaders agreed to push for expanded free trade with Northeast Asia to achieve greater economic integration of the region, but conceded that the process would be lengthy. In a closing statement, Singapore Prime Minister Goh Chok Tong acknowledged that some ASEAN members were reluctant to move too quickly to formally allow the economic powerhouses of China, Japan, and South Korea to join the group because the smaller nations could be left behind. As it now stands, the leaders from China, Japan, and South Korea meet on the sidelines of official ASEAN summits, in what is known as the ASEAN+3 meetings.[17]

[17] BNA Inc. "ASEAN Leaders Pledge to Study Possibility of Northeast Asian Trade Zone," November 28, 2000.

CHAPTER 4
Review of Literature

Introduction

This chapter reviews the academic and policy literature pertaining to a U.S.-Singapore FTA. Prior to reviewing the studies assessing the estimated impact on the United States of the U.S.-Singapore FTA, a discussion is presented on the conceptual issues regarding free trade agreements. The third section discusses the estimated impact on the United States of actual or potential FTAs in which Singapore is a member. The last section compares the economic welfare impacts of three studies reviewed in this chapter along with the findings of the current Commission study.

General Effects of Trade Agreements

Studying the economic impact of an FTA entails investigating static effects such as trade creation and trade diversion as well as terms of trade. In addition, issues related to scale effects and non-quantifiable effects have to be considered. A discussion of these issues is presented below.

Static Effects: Trade Creation and Trade Diversion

Trade liberalization can in general be undertaken in two different manners. First, it can be based on the "most favored nation" (MFN) principle where better market access is granted to all trading partners equally. The classical "gains from trade" argument asserts that such trade liberalization would help consumers to have access to more goods at lower prices, and producers to have more sources for their inputs and more markets for their products (for which they may receive higher prices). Second, it can be done in a *preferential* way, with better market access granted to one partner but not to others. An FTA, such as the one between the United States and Singapore, is an agreement in which preferential liberalization is undertaken reciprocally between participating countries.

To the extent that FTAs are designed to liberalize trade, they are likely to engender economic gains similar to those of an MFN liberalization. However, given their discriminatory nature, studying the economic impact of FTAs involves additional issues that are not present in an MFN liberalization. The traditional way to study an FTA is to categorize the FTA-induced trade expansion into trade creation or trade diversion.[1]

[1] The seminal works on this issue are J. Viner, *The Customs Union Issue*, New York: Carnegie Endowment for International Peace, 1950 and J. Meade, *The Theory of Customs Union*, Amsterdam: North Holland, 1955.

Trade creation improves welfare and occurs when partner country production displaces higher cost domestic production. Trade diversion reduces welfare and occurs when partner country production displaces lower cost imports from the rest of the world.[2] The combined effect of an FTA on intra-bloc trade will then reflect trade creation as well as trade diversion. Whether the trade-creation (welfare enhancing) or the trade-diversion (welfare reducing) effects dominate depends on a variety of factors, including external trade barriers, cost differences, and relative supply and demand responses and other domestic policies. From that point of view, the overall welfare impact of an FTA is not unambiguous, making its determination an empirical issue.

Static Effects: Terms of Trade

The impact of an FTA also can be studied from a "terms of trade" (i.e., the price of exports relative to the price of imports) viewpoint. If the participating countries are large enough to be able to affect import and export prices by their actions, the establishment of an FTA is likely to affect the terms of trade of a given FTA member in three different manners. First, by increasing the demand for its partner's products, the country's own preferential trade liberalization may increase the (pre-tariff) price of its imports from the partner country leading to a deterioration in its terms of trade. Second, tariff reduction by the partner country could increase the demand (and the price) for the FTA member's exports and improve its terms of trade. Finally, the decreased demand for imports originating from nonmember countries tends to decrease their price and improve the FTA members' terms of trade. Therefore, the impact on economic welfare will depend on whether the terms of trade have improved or deteriorated for a given partner country.

Scale Effects

To the extent that FTAs integrate (and, hence, enlarge) markets, some would argue that they offer firms an opportunity to exploit economies of scale (or increasing returns to scale) and to lower costs by expanding production. Moreover, by increasing the intensity of competition, an FTA can potentially induce firms to make efficiency improvements in order to raise productivity levels.[3] It has, for instance, been pointed out that firms in Canada have long argued that U.S. market access would enable them to exploit economies of scale, and that this access would allow them to increase their exports not only to the countries in North America, but also to the rest of the world.[4]

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[2] Losses from trade diversion occur when lost tariff revenue associated with changes in the pattern of trade exceeds efficiency gains from the decline of the prices paid by consumers. These losses will be larger the higher the FTA's margin of preferences (i.e., the trade barriers facing nonmembers relative to intra-FTA barriers).

[3] A closely related gain comes from increased competition as firms are induced to cut prices and to expand sales, benefitting consumers as the monopolistic distortion is reduced.

[4] H.J. Wall, "NAFTA and the Geography of North American Trade," *Federal Reserve Bank of St. Louis Review*, vol. 85, No. 2, Mar./Apr. 2003.

Increasing returns to scale also affect the volume of trade in inputs and intermediate goods used by increasing-return industries because as firms expand production and exploit economies of scale, they need to purchase more inputs and intermediate goods. These goods may be imported from inside or outside the FTA.

The enlarged FTA market also may attract investment, including foreign direct investment (FDI), especially investment for which market size is important. It should be noted that the higher the FTA's margin of preference, the more attractive it will be as an FDI destination. In the long run, changes in trade flows can lead to substantial changes in the location of production between member countries of an FTA. These relocations may be determined by comparative advantage (i.e., the removal of barriers might lead each country to produce the goods at which it is best). Alternatively, sectors with strong backward or forward linkages may all relocate to one country and take advantage of the preferential access to cater to the whole FTA market from there. These agglomeration effects are stronger in the presence of economies of scale. The impact of an FTA will depend on the increased level of economic activity within the FTA and on the distribution of the effects among members.

Political Effects

In addition to the generally quantifiable effects discussed so far, regional integration can provide other potential benefits that are more difficult to evaluate. A World Bank publication discusses a variety of additional effects (or classes of effects) that may result from regional integration agreements.[5] One such effect is enhanced security (either against nonmembers or between members).[6] Another potential benefit is that by forming a unit and pooling their bargaining power, FTA members can negotiate more efficiently in international forums. Regional integration can also be useful in "locking in" domestic (trade or other policy) reforms by raising the cost of policy reversal. Another possible gain is the increased possibilities for cooperation in environmental or technological assistance projects.

The effects of a free trade agreement on which economists tend to focus their analytical efforts are illustrated in table 4-1. It shows how limited the area is where effects of trade policy are discernible. A "yes" indicates that the given effect is generally measurable (or can be modeled in a simulation) and/or has been measured. Note that these occur mainly in the static economic effects. The fact that relatively few effects are measurable does not mean that other effects are not important. By focusing attention on a selected number of FTA effects, analysts provide important insights into specific aspects of trade agreements, but it is possible that other non-quantifiable effects dominate.

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[5] The World Bank, *Trade Blocs,* New York: Oxford University Press, 2000, p. 66.

[6] For more on this, see Maurice Schiff and L. Alan Winters, "Regional Integration as Diplomacy," *World Bank Economic Review,* 1998, 12(2): 271–96.

Table 4-1
Quantifiable FTA effects

Effects	Quantifiable
Static economic effects:	
Trade creation and diversion	Yes
Terms of trade	Yes
Scale effects:	
Pro-competitive effects	Some
Efficiency	Some
Investment (including FDI)	Yes
Industrial location	Some
Political Effects:	
Enhanced security	No
Increased bargaining power	No
Locking in reforms	No
Cooperation	No

Source: Compiled by the Commission.

Impact on the United States of U.S.-Singapore FTA[7]

As shown in chapter 2, the Singapore economy is small relative to the U.S. economy. In addition, although empirical analysis has made significant strides, as noted above, limitations continue to preclude comprehensive quantitative assessments of nontariff-specific aspects of FTAs, which represent a substantial portion of the U.S.-Singapore FTA.[8] Consequently, only a few studies estimate the impact on the United States of the U.S.-Singapore FTA.[9]

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[7] For a comprehensive discussion of U.S.-Singapore pre-FTA trade patterns, see Ramkishen S. Rajan et al., *Singapore and Free Trade Agreements: Economic Relations with Japan and the United States*, Singapore: Institute of Southeast Asian Studies, 2001.

[8] See theoretical section above for a discussion of the nontariff and not easily quantifiable aspects of free trade agreements. Examples of nontariff aspects of the agreement cited by parties in their testimony before the Commission include the removal of nontariff barriers; financial, professional, telecommunications, and e-commerce services liberalization; information exchange facilitation; investment facilitation and relaxation of capital control measures; intellectual property protection and harmonization; product standardization; and an international "seal-of-approval" of secured trade relations. See chapter 9 for summaries of testimony and written submissions.

[9] Section 2104(f)(3) requires the Commission to review available economic assessments regarding the agreement, to provide a description of the analyses used and conclusions drawn in such literature, and to discuss areas of consensus and divergence among reviewed literature, including those of the Commission. The Commission notes that it conducted three classified studies at the request of the USTR concerning a potential U.S.-Singapore FTA during the last three years. USITC, *U.S.-Singapore FTA: Probable Economic Effects on the Economy as a Whole of Eliminating Tariffs on Certain Agricultural Products*, Investigation No. 332-443, Sept. 2002; USITC, *U.S.-Singapore Free Trade Agreement: Advice Concerning the Probable Economic Effect*, Investigation No. 332-439, June 2002; USITC, *U.S.-Singapore Free Trade Agreement: Potential Trade and Economic Effects*, Investigation No. 332-422, Jan. 2001. Consequently, for the purpose of this report, the Commission discussion consists only of external economic assessments and the Commission's present study.

Robert Scollay and John P. Gilbert analyze the economic impact of a number of potential free trade agreements and various alternative scenarios.[10] Scollay and Gilbert's analyses are based on the GTAP computable general equilibrium model and database, aggregated to include 22 countries/regions and 21 sectors. The model assumes perfect competition, constant returns to scale, and product differentiation by country of origin (i.e., the Armington assumption). Data are adjusted to incorporate full Uruguay Round and AFTA implementation.[11] However, data limitations do not allow substantive treatment of the services sector liberalization. The authors report the welfare impact on the United States of the U.S.-Singapore FTA to be less than one hundredth of a percentage point of GDP.[12] They also report that, as a result of the agreement, U.S. exports are expected to increase by 0.17 percent, and U.S. imports by 0.16 percent.[13] They also assess the change in factor incomes for land, skilled labor, unskilled labor, capital, and natural resources. The only factor which experiences more than one-half of one hundredth of one percent change from the base year is land, whose relative returns are expected to increase by 0.01 percent.[14]

Drusilla K. Brown, Alan V. Deardorff, and Robert M. Stern assess a variety of potential multilateral, regional, and bilateral trade agreements.[15] The authors use the Michigan Model, a computable general equilibrium model with 20 countries/regions and 18 sectors. In contrast to the GTAP model, the Michigan Model incorporates features of "New Trade Theory," including monopolistic competition, increasing returns to scale, and product variety.[16] The authors incorporate full Uruguay Round implementation and run four simulations: agricultural products liberalization, industrial products liberalization, services liberalization, and all of the above; however, only the fourth simulation is reported.[17] Brown et al. also note that their computational analysis does not take into account potentially beneficial, but not easily quantifiable features of the various FTAs, such as the negotiation of specific rules for the use of capital control

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[10] Robert Scollay and John P. Gilbert, *New Regional Trading Arrangements in the Asia Pacific?*, Washington, DC: Institute For International Economics, Policy Analyses in International Economics No. 63, May 2001, p. 62.

[11] AFTA is the ASEAN Free Trade Area, and includes Brunei Darussalam, Cambodia, Indonesia, Laos, Malaysia, Myanmar, the Philippines, Singapore, Thailand, and Vietnam; found at *http://www.aseansec.org*, retrieved Apr. 22, 2003. Uruguay Round implementation includes uniform reductions of 36 and 20 percent in agricultural export subsidies and output subsidies, respectively; as well as elimination of tariff equivalents of textile export quotas. The authors do not assume WTO accession by China or Taiwan, but do assume that reductions in protection by other economies are made available to these two economies on an MFN basis. AFTA implementation involves adjustments to tariffs of ASEAN economies. Ibid., p. 157.

[12] Ibid., table 3.2a.

[13] Ibid., tables 3.3a and 3.4a; percent change from base.

[14] Ibid., table 3.5a.

[15] Drusilla Brown, Alan V. Deardorff, and Robert M. Stern, "Multilateral, Regional, and Bilateral Trade-Policy Options for the United States and Japan," Research Seminar in International Economics, Discussion Paper No. 490, available at *http://www.spp.umich.edu/rsie/workingpapers/wp.html,* Dec. 16, 2002.

[16] Ibid., p. 2.

[17] Uruguay Round implementation includes reductions in tariff and nontariff barriers. Ibid., p. 5 and 10.

measures, or potentially protectionist components of FTAs, such as rules of origin.[18] They estimate that the welfare impact on the United States of the U.S.-Singapore FTA is 0.19 percent of GNP ($18 billion).[19] Although the authors do not report the disaggregated effects of the various liberalization scenarios, key factors in their larger reported economywide welfare results, as compared to Scollay and Gilbert, include the estimates of services liberalization and the assumption of increasing returns to scale. Brown et al. also assess the sectoral employment effects of the agreement. Of the 18 sectors, only wearing apparel, trade and transport, and other private services are expected to experience employment contraction (table 4-2).[20]

Several factors lead to findings of relatively small impacts. Singapore's economy is small in comparison to the U.S. economy.[21] In addition, U.S. trade with Singapore is relatively small, trade accounts for a smaller share of U.S. output than most countries, and U.S. tariffs are already low.[22] Consequently, in terms of percent of GDP, a priori economywide effects of trade liberalization on the United States are expected to be small relative to most countries. As seen in the studies discussed above, regardless of the model employed, the GTAP model (whose key assumptions include constant returns to scale and perfect competition) or the Michigan Model (whose key assumptions include increasing returns to scale and monopolistic competition), the estimated economywide impact on the United States ranges from Scollay and Gilbert's GTAP estimate of 0.00 percent of GDP to Brown et al.'s Michigan Model estimate of 0.19 percent of GNP. Estimated welfare impact, however, is a function of the model specifications employed and the modeler's ability to quantify less

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[18] Ibid., p. 14-15.

[19] Ibid., table 7. "The difference between GDP and GNP is net receipts of factor income from the rest of the world. These net receipts represent income from the goods and services produced abroad using the labor and property supplied by U.S. residents less payments to the rest of the world for the goods and services produced in the United States using the labor and property supplied by foreign residents. Factor incomes are measured as compensation of employees, corporate profits (dividends, earnings of unincorporated affiliates, and reinvested earnings of incorporated affiliates), and interest." Bureau of Economic Analysis, "A Guide to the NIPA's," found at *http://www.bea.doc.gov/bea/an/0398niw/maintext.htm*, retrieved June 2, 2003.

[20] Although certain sectors are estimated to experience employment contraction or expansion, the model is a static employment level model, and, consequently, there is no change to economywide employment levels.

[21] See chapter 3 for a discussion of the Singapore economy and U.S.-Singapore trade. Singapore's GDP represents approximately 0.85 percent of U.S. GDP (2001); U.S. GDP from Bureau of Economic Analysis, found at *http://www.bea.gov*, and Singapore GDP from Singapore Department of Statistics, *Economic Survey of Singapore*, 2002.

[22] The trade-to-output ratio is 23.8 percent for the United States and 280 percent for Singapore (2001); U.S. data from Bureau of Economic Analysis, found at *http://www.bea.gov*, and Singapore data from Singapore Department of Statistics, *Economic Survey of Singapore*, 2002; most imports either enter the United States duty free or are subject to low tariffs, all except two of which are bound. In 2000, the average MFN rate stood at 5.4 percent for all goods, 10.6 percent for agri-food products and 4.5 percent for non-agricultural products. World Trade Organization, Trade Policy Review Body, "Summary Observations," *Trade Policy Review — United States — Report by the Secretariat*, WT/TPR/S/88, Aug. 15, 2001, p. xii, par. 12.

Table 4-2
Sectoral employment effects for the United States of the U.S.-Singapore FTA, estimates by Brown et al.

Sector	Percent of employment	Number of workers
Agriculture	0.10	4,216
Mining	0.09	616
Food, beverages, and tobacco	0.04	1,146
Textiles	0.05	581
Wearing apparel	-0.03	-300
Leather products and footwear	0.19	275
Wood and wood products	0.03	1,231
Chemicals	0.06	1,769
Non-metallic mineral products	0.04	338
Metal products	0.07	2,045
Transportation equipment	0.06	1,231
Machinery and equipment	0.15	4,222
Other manufactures	0.19	3,511
Elec., gas, and water	0.01	409
Construction	0.00	38
Trade and transport	-0.07	-22,013
Other private services	0.00	-569
Government services	0.00	1,254

Source: Drusilla Brown, Alan V. Deardorff, and Robert M. Stern, "Multilateral, Regional, and Bilateral Trade-Policy Options for the United States and Japan," Research Seminar in International Economics, Discussion Paper No. 490, available at *http://www.spp.umich.edu/rsie/workingpapers/wp.html,* Dec. 16, 2002, table 8.

tangible aspects of trade agreements; these distinctions can lead to considerably different findings.[23]

Impact on the United States of Other Actual or Potential Singapore FTAs

Singapore is a small open economy with a high ratio of trade to GDP, and has recently engaged in a number of free trade agreements. In addition to the United States, Singapore has ongoing or concluded free trade agreements with ASEAN and the People's Republic of China, Australia, Canada, the European Free Trade Association (EFTA),[24] India, Japan, Mexico, New Zealand, and the Republic of Korea.[25] Rajan and Sen classify Singapore's trade agreements into two main groups.[26] The first

[23] For example, both Scollay and Gilbert, and Brown et al. assess the potential impact on the United States of an APEC FTA. While Scollay and Gilbert estimate, at most, a potential 0.07 percent change in U.S. GDP, Brown et al., who were able to incorporate estimates for services sector liberalization, estimate a potential 2.69 percent change in GNP (table 4-6 and 4-7).

[24] EFTA members include Iceland, Liechtenstein, Norway, and Switzerland; found at *http://www.efta.int*, retrieved Apr. 22, 2003.

[25] Singapore Ministry of Trade and Industry, Free Trade Agreements, found at *http://www.mti.gov.sg/FTA*, retrieved Apr. 21, 2003.

[26] Ramkishen Rajan and Rahul Sen, "The Japan-Singapore 'New Age' Economic Partnership Agreement: Background, Motivation and Implications," Canberra: Centre for International Economic Studies, Discussion Paper No. 0208, Mar. 2002, p.5-6.

group includes countries such as Australia, New Zealand, and EFTA countries which, generally, do not account for a relatively large amount of Singapore's trade, but allow Singapore to seek new markets and diversify external linkages. The second group includes the United States and Japan which are established trading partners, with whom free trade agreements can be seen as formalization of de facto linkages.[27] Although Rajan and Sen do not directly assess the economic welfare impact on the United States of the Singapore-Japan agreement, they note that "trade and investment diversion remains a real concern, particularly with regard to the services sector," and could potentially negatively affect third-party countries, such as the United States.[28]

The Centre for International Economics in Canberra, Australia, conducted a study of the impact of an AFTA-CER[29] free trade area, which would include Australia, Indonesia, New Zealand, Malaysia, Philippines, Singapore, and Thailand.[30] The scenario modeled is for free trade in goods and services between member economies by 2005. Using a general equilibrium global model, the authors estimate three scenarios: AFTA-CER liberalization, APEC liberalization,[31] and both AFTA-CER and APEC combined. With respect to the United States, the authors only report the estimated impact on net international capital flows (table 4-3). Because the FTA increases productivity and income in the member countries, and the improved efficiency increases returns on investment, the AFTA-CER members experience an increase in investment inflows funded partially by the United States (which experiences net capital outflows). In addition, the increased capital inflows contribute to appreciations of the real exchange rate vis-a-vis the U.S. dollar, around 0.4 to 1.2 percent above baseline.[32] These results represent only two of numerous ways in which the proposed FTA could impact the United States, and in and of themselves, do not imply either a positive or negative impact on U.S. welfare.

Thomas Hertel, Terrie Walmsley, and Ken Itakura provide a broad spectrum of potential effects on the United States of the Japan-Singapore FTA.[33] In addition to the facilitation of trade through reduction of tariffs and nontariff measures, the

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[27] Ibid., p. 6.

[28] Ibid., p. 22.

[29] AFTA is the ASEAN Free Trade Area and CER is the Australia-New Zealand Closer Economic Relations Trade Agreement.

[30] Centre for International Economics, Canberra, "Economic benefits from an AFTA-CER free trade area: Year 2000 study," June 2000.

[31] APEC is the Asia Pacific Economic Cooperation, and member economies are Australia, Brunei Darussalam, Canada, Chile, People's Republic of China, Hong Kong (China), Indonesia, Japan, Republic of Korea, Malaysia, Mexico, New Zealand, Peru, The Republic of the Philippines, the Russian Federation, Singapore, Chinese Taipei, Thailand, United States of America, and Vietnam; found at *http://www.apecsec.org.sg*, retrieved Apr. 22, 2003. APEC liberalization is assumed to be the adoption of the APEC Bogor Declaration by all APEC countries whereby current MFN tariff rates are reduced to zero by 2010 for developed APEC countries and by 2020 for developing APEC countries; Ibid., p. 21.

[32] Ibid., p. 29.

[33] Thomas Hertel, Terrie Walmsley, and Ken Itakura, "Dynamic Effects of the 'New Age' Free Trade Agreement between Japan and Singapore," Center for Global Trade Analysis, Purdue University, Sept. 2001, p. 3.

Japan-Singapore FTA includes mutual recognition of national standards, streamlining customs procedures, facilitation of increased services trade, and a framework for foreign investment. The impact of removal of traditional, bilateral tariffs alone creates costly trade diversion, resulting in a negative welfare impact on Japan; tariff elimination alone results in a welfare loss of $85 million for Japan by 2020, and a $55 million welfare gain for Singapore (table 4-4).[34] Consequently, due to the relatively low level of industrial tariffs on most of the trade between Japan and Singapore, Hertel et al. devote considerable effort to quantifying the nontariff elements of the agreement.[35] One of the biggest impacts stems from the authors' quantitative estimates of the effects of customs "automization" (electronic modernization to allow for web-based transactions). In order to estimate the impact of customs automization, the authors use estimates of savings in time and direct costs resulting from reduced paperwork, storage, and transit expenses based on research conducted in conjunction with the Ministry of Economy, Trade and Industry, and the Mitsubishi

Table 4-3
Impact on U.S. net capital outflows, estimates by Centre for International Economics

(US$ billions above baseline estimates)

Scenario	2000	2004	2008	2012	2016	2020
AFTA-CER only	0.66	1.03	1.19	1.21	1.19	1.14
APEC only	24.64	27.83	27.61	28.57	32.46	34.18
AFTA-CER and APEC	25.00	28.34	28.21	29.23	33.11	34.83

Source: Estimates by Centre for International Economics, Canberra, "Economic benefits from an AFTA-CER free trade area: Year 2000 study," June 2000, table 4-5, p. 28.

Table 4-4
Welfare effects of Japan-Singapore FTA: Equivalent variation[1] in 2020, estimates by Hertel et al.

(*US$ millions*)

Country	Tariff Removal (1)	Services liberalization (2)	E-commerce harmonization (3)	Customs automization (4)	Full FTA	Full FTA (percent change in welfare)
United States	-20.2	-33.8	-11.0	588.2	523.1	0.008
Japan	-85.0	236.7	170.6	6,597.5	6,919.7	0.157
Singapore	55.0	115.3	55.5	171.0	396.8	0.668

[1] The equivalent variation measures the welfare impact of a policy change in monetary terms and it is defined as the amount of income that would have to be given to (or taken away from) the economy *before* the policy change to leave the economy as well off as the economy would be *after* the policy change. A positive figure for equivalent variation implies that the policy change would improve economic welfare (see H.R. Varian, *Intermediate Microeconomics: A Modern Approach*, Fifth Edition, W. W. Norton & Company, New York, 1999, pp. 252-253).

Source: Thomas W. Hertel, Terrie Walmsley, and Ken Itakura, "Dynamic Effects of the 'New Age' Free Trade Agreement between Japan and Singapore," Center for Global Trade Analysis, Purdue University, Sept. 2001, table 10.

[34] Ibid., p. 21 and table 10. Although this result is consistent with optimal tariff theory, it does not take into account the numerous other factors involved in the FTA.

[35] Due to Singapore's low tariff rate, implementation of the FTA is not expected to have a significant direct impact on Singapore's commodity imports from Japan; Ibid., p. 5.

Research Institute (MRI) in Japan. They estimate that "[f]or the case of the Japan-Singapore FTA, the effect of linking the two systems is expected to generate additional reductions in effective prices amounting to 0.065 percent in Japanese imports from Singapore and 0.013 percent in Singaporean imports from Japan."[36] They also integrate Hummels' estimates of the value of time savings in international trade on reduced "spoilage" and inventory holding costs, which affect Japan and Singapore bilateral trade as well as the countries' international trade, particularly the planned revamping of the Japanese system. Hertel et al. note that "the average value of firms' willingness to pay for one day saved in trade is estimated to be 0.5 percent ad valorem (i.e., one-half percent of the value of the good itself)."[37] As bulk commodity items generally have lower values and intermediate goods generally have higher values, sector-specific ad valorem estimates are used in the model.[38]

Another important aspect is the harmonization of e-commerce. The authors combine B-to-B e-commerce penetration rates in the domestic Japanese market with MRI estimated reductions in wholesale-retail margins to compute the potential reduction in average effective prices for sectors.[39] Finally, the authors use Francois' estimates for services trade liberalization based on business and construction services trade between Singapore and the United States. As Francois uses Singapore as a "free trade" benchmark in his model, Singapore's estimated tariff equivalent is, by definition, zero.[40] The estimated tariff equivalents for the business/financial and construction sectors for Japan are relatively high at 20.6 percent and 29.9 percent, respectively.[41] Hertel et al. employ an applied general equilibrium model, the Dynamic GTAP model, to estimate the impact of the Japan-Singapore FTA. The GTAP model's standard features include assumptions of constant returns to scale, perfect competition, Armington trade flows, and minimum subsistence levels for consumer demand, as well as incorporation of international capital mobility and ownership.[42] The authors undertake four simulations: (1) removal of tariffs; (2) services trade liberalization; (3) e-commerce harmonization; and (4) modern, web-based customs clearance procedures. As more of the policy instruments of the agreement are quantified and included, in general, the larger are the gains not only for Japan and Singapore, but also for the rest of the world, including the United States. Table 4-4 shows the overall estimated welfare effects on the United States, Japan, and Singapore of the different simulations. Although the United States is expected to suffer negative welfare effects resulting from trade diversion in goods,

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[36] Ibid., p. 7.
[37] Ibid., p. 8.
[38] Ibid., table 2.
[39] Ibid., table 4.
[40] Joseph Francois, "A Gravity Approach to Measuring Services Protection," unpublished manuscript, Rotterdam: Eramus University, 1999.
[41] The estimates for North America for the business/financial and construction sectors are 9.0 percent and 9.9 percent, respectively. Thomas Hertel, Terrie Walmsley, and Ken Itakura, "Dynamic Effects of the 'New Age' Free Trade Agreement between Japan and Singapore," Center for Global Trade Analysis, Purdue University, Sept. 2001, p. 10 and table 5.
[42] Ibid., p. 11.

services, and e-commerce, the customs automization, which is nondiscriminatory, facilitates Japan-Singapore bilateral trade as well as multilateral trade, driving positive welfare gains for all countries including the United States. Table 4-5 shows the estimated impact on various U.S. macroeconomic indicators of the Japan-Singapore FTA. Except for equity held by foreigners, the percent impact is less than one-tenth of one percent difference from the baseline simulation (i.e., projected economy without the FTA).

As mentioned above, in addition to assessing the potential impact on the United States of the U.S.-Singapore FTA, Scollay and Gilbert also assess the impact on the United States of a number of potential agreements involving Asia Pacific countries.[43] Table 4-6 summarizes the economywide impact on the United States. Certain agreements which include a large number of trading partners, such as APEC, APEC and FTAA, or Pacific 5, are expected to affect U.S. exports and imports, by at most 10 percent. Brown et al. also assess the potential impact on the United States of other FTAs. Similar to Scollay and Gilbert, the estimated impact on the United States is generally expected to be small (table 4-7). The largest estimated impact is 2.69 percent of U.S. GNP for an APEC FTA, which would include a number of large countries such as the United States, Japan, China, Australia, and the Russian Federation.

Table 4-5
Effect of Japan-Singapore FTA on U.S. macroeconomic indicators in 2020, estimates by Hertel et al.

(Cumulative percent difference from baseline simulation)

Capital stocks	Real GDP	Real exports	Real imports	Wealth	Overseas holdings	Equity held by foreigners
-0.03	0.01	-0.03	-0.01	-0.07	0.08	-0.25

Source: Thomas W. Hertel, Terrie Walmsley, and Ken Itakura, "Dynamic Effects of the 'New Age' Free Trade Agreement between Japan and Singapore," Center for Global Trade Analysis, Purdue University, Sept. 2001, table 7.

[43] For a discussion of the model type and specifications, see "Impact on the United States of U.S.-Singapore FTA" above.

Table 4-6
Impact on the United States of actual or potential agreements involving Singapore, estimates by Scollay and Gilbert

Agreement	Change in Welfare (percent of initial GDP)	Change in Exports (export values FOB; percent change from base)	Change in Imports (import values CIF; percent change from base)
Singapore-Mexico	0.00	-0.02	-0.02
Pacific 5[1]	0.02	1.42	1.32
Singapore-Chile	0.00	0.00	0.00
New Zealand-Singapore-Australia-Chile	0.00	-0.03	-0.02
Japan-Singapore	0.00	-0.10	-0.10
Singapore-Australia	0.00	-0.02	-0.02
Singapore-New Zealand	0.00	0.00	0.00
New Zealand-Singapore-Australia	0.00	-0.02	-0.02
AFTA-Japan-South Korea	-0.02	-0.67	-0.64
AFTA-Japan-South Korea-China	-0.03	-0.80	-0.78
AFTA-CER-Japan-South Korea-China	-0.06	-1.33	-1.26
AFTA-CER-Japan-South Korea	-0.05	-1.16	-1.08
AFTA-CER	-0.01	-0.21	-0.20
APEC MFN basis	0.01	7.16	6.56
APEC preferential basis	-0.01	7.26	6.69
APEC (excl. United States)	0.06	1.58	1.43
APEC (excl. United States and Japan)	0.05	1.34	1.20
APEC MFN and FTAA[2]	0.07	9.59	8.82
APEC preferential and FTAA	0.06	10.02	9.26
Western Pacific Bloc[3]	-0.06	([4])	([4])
Western Pacific Bloc and FTAA	0.01	2.29	2.10

[1] Pacific 5 is Australia, Chile, New Zealand, Singapore, and the United States.

[2] FTAA is Free Trade Area of the Americas.

[3] Western Pacific Bloc is ASEAN, Australia, New Zealand, Japan, South Korea, China, Hong Kong, and Taiwan

[4] Not provided.

Source: Robert Scollay and John P. Gilbert, *New Regional Trading Arrangements in the Asia Pacific?*, Washington, DC: Institute For International Economics, Policy Analyses in International Economics No. 63, May 2001, tables 3.2 a-e; 3.3 a-e; and 3.4 a-e.

Table 4-7
Welfare impact on the United States of actual or potential agreements involving Singapore, estimates by Brown et al.

Region	Percent of GNP	Billion dollars
Japan-Singapore	0.03	2.36
APEC FTA	2.69	244.25
ASEAN +3 FTA[1]	0.14	12.98

[1] ASEAN +3 is ASEAN plus Japan, China/Hong Kong, and South Korea.

Source: Drusilla Brown, Alan V. Deardorff, and Robert M. Stern, "Multilateral, Regional, and Bilateral Trade-Policy Options for the United States and Japan," Research Seminar in International Economics, Discussion Paper No. 490, available at *http://www.spp.umich.edu/rsie/workingpapers/wp.html,* Dec. 16, 2002.

Comparison of economic welfare impacts

This section summarizes the salient characteristics of the modeling frameworks used in Scollay and Gilbert, Hertel et al., Brown et al., and the current Commission report and compares their welfare implications. All studies relied on computable general equilibrium models which are different in several aspects. The current Commission analysis (see Chapter 5) and Hertel et al. are based on the GTAP model, as documented in Hertel.[44] As mentioned above, the GTAP model is based on the assumptions of constant returns to scale, perfect competition, and commodity differentiation by country of origin (i.e., the Armington assumption). The current Commission work relied on sequential solutions of the comparative static GTAP model to approximate a dynamic process in which the world's economies change over time; Hertel et al., however, used the dynamic variant of the GTAP model. Scollay and Gilbert used the model documented in Rutherford (1998), which has the same theoretical foundations as the GTAP model.[45] Brown et al. used the Michigan model, which is different from the aforementioned models in two important aspects.[46] First, the Michigan model views agriculture as a perfectly competitive sector and all other sectors as monopolistically competitive sectors (due to increasing returns to scale) with free entry and exit of firms. Second, the Michigan model introduces product differentiation employing the love of variety approach, which assumes that each consumer has a demand for multiple varieties of a product. One of the differences between the love of variety approach and the Armington approach in modeling product differentiation is that under the love of variety approach a policy change that induces increased variety is welfare enhancing.[47]

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[44] T.W. Hertel (ed.), Global Trade Analysis: Modeling and Applications (Cambridge: Cambridge University Press), 1997.

[45] Thomas F. Rutherford, "GTAP in GAMS: The Database and Static Model," University of Colorado at Boulder, photocopy, Oct. 23, 1998.

[46] A complete description of the formal structure and equations of the Michigan model can be found online at *http://www.Fordschool.umich.edu/rsie/model/*.

[47] An example of this would be restaurant meals. Most consumers who eat out frequently also will switch between restaurants, one day eating at a Chinese restaurant, another day at a Mexican restaurant, etc. If all consumers share the same love of variety then the aggregate market will sustain demand for many varieties of goods simultaneously. If a utility function is specified that incorporates a love of variety, then the well-being of any consumer is greater the larger the number of varieties of goods available. Thus, in this case, the consumers would prefer to have twenty varieties to choose between rather than ten.

In terms of economic data, all four studies relied on information provided by GTAP; the data versions and base years, however, are different and each study made an effort to incorporate more recent information regarding either economic linkages or policies. Figure 4-1 summarizes the welfare impacts for FTA partners from Scollay and Gilbert, Brown et al., Hertel et al. and the current Commission study. As shown in Figure 4-1, the current Commission study estimated the welfare impact on the United States of tariff liberalization under a U.S.-Singapore FTA to range between a negative 0.002 percent of U.S. GDP to less than a negative 0.001 percent of U.S. GDP (see chapter 5); Scollay and Gilbert estimated the welfare impact on the United States to be less than one hundredth of a percentage point of GDP. The estimated impact in both studies reflects the removal of tariffs only, as data limitations did not allow substantive treatment of other nontariff barriers. When Hertel et al. simulate a Japan-Singapore FTA considering only the removal of tariffs, they find a negative 0.002 percent welfare impact for Japan; the welfare impact for Singapore is 0.09 percent. These are expected outcomes for both the United States and Japan because, besides being large economies, their trade with Singapore is small and with Singapore being relatively an open economy, its imports are not expected to increase significantly due to tariff removal under an FTA.

Hertel et al. extend their computational analysis of a Japan-Singapore FTA to first include services liberalization and then to e-commerce liberalization. As shown in figure 4-1, Hertel et al. find that the welfare impact of the FTA for Japan increases to 0.003 percent and then to 0.01 percent of GDP. However, when modernization of customs clearance procedures for Japan is included in the specification of the FTA, Hertel et al. find that the welfare impact for Japan increases to 0.16 percent of GDP.

Brown et al. assess a variety of potential multilateral, regional, and bilateral trade agreements, including services liberalization in their analysis.[48] As shown in figure 4-1, Brown et al. estimated the welfare impact on the United States of a U.S.-Singapore FTA to be 0.19 percent of GDP, which is larger than the estimates found in Scollay and Gilbert and in this Commission study. Due to Brown et al.'s different assumptions regarding imperfect competition, and product differentiation as well as its specification of services liberalization, it is difficult to identify the factors that are responsible for generating larger welfare impacts for the United States.

In summary, the current Commission study reaches similar conclusions regarding the welfare impact of tariff removal under a U.S.-Singapore FTA as Scollay and Gilbert do; and the Hertel et al. study illustrates that the magnitude of the potential economic impact of an FTA depends on the degree to which nontariff aspects of an FTA can be quantified.

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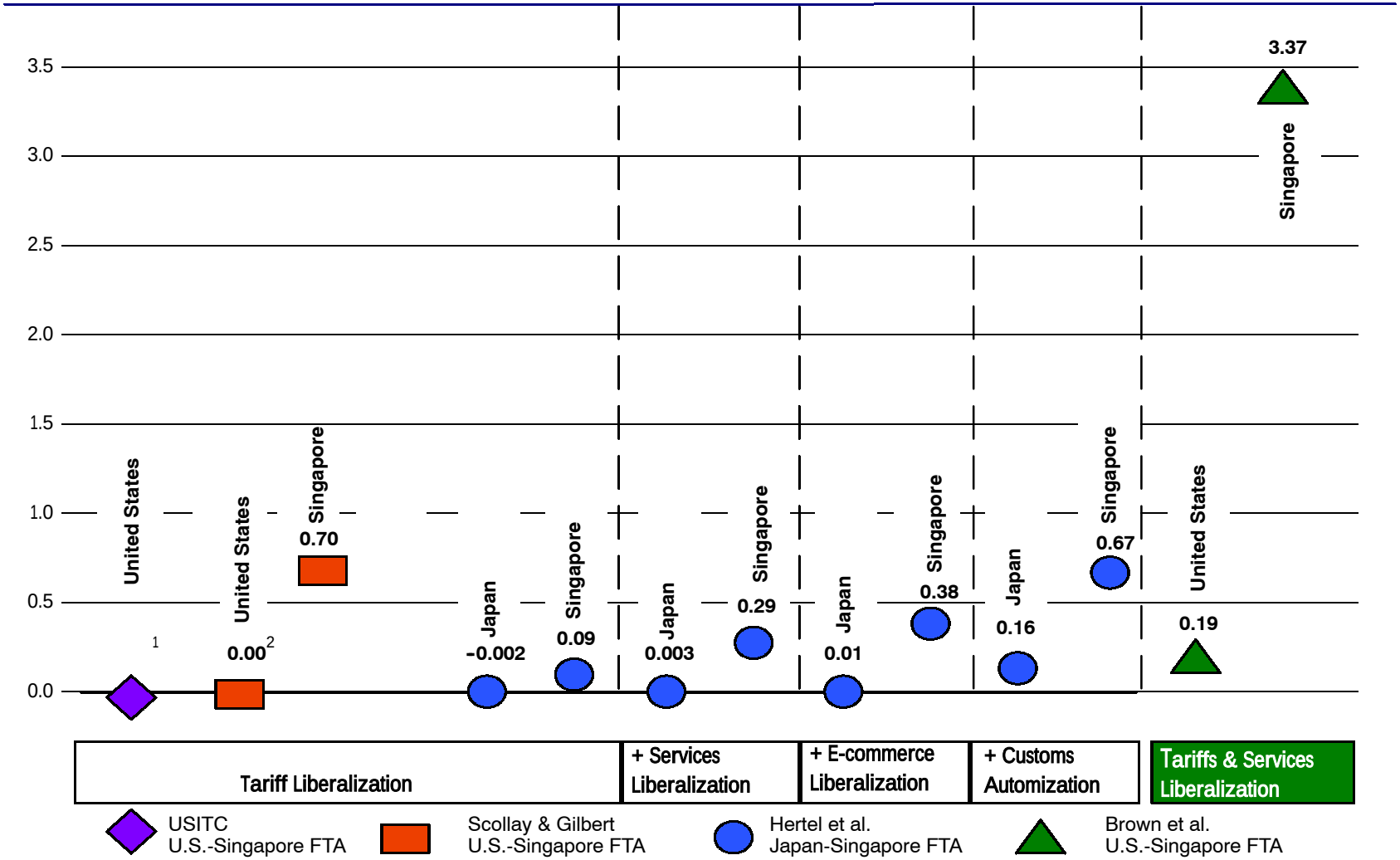
[48] Brown et al. rely on Hoekman's work for specifying services liberalization (see B. Hoekman, "The Next Round of Services Negotiations: Identifying Priorities and Options," *Federal Reserve Bank of St. Louis Review*, July / August 2000, pp. 31-47). Hoekman's work suggests that U.S. barriers on services are significant and larger than those for Singapore. The assessment reached in Chapter 6 of this report, however, suggests that the U.S.-Singapore FTA will have little impact on U.S. trade in services with Singapore, primarily because the U.S. and Singapore markets have relatively few barriers.

Figure 4-1
Estimated economic welfare impact of USITC and selected studies, *(% GDP or GNP)*



[1] Impact ranges between a negative 0.0002 percent to less than a negative 0.001 percent of U.S. GDP

[2] Impact is less than one hundredth of a percentage point of U.S. GDP

Source: USITC

CHAPTER 5
Impact of Eliminating Tariffs

Introduction

This chapter investigates the likely economic effects of a preferential elimination of tariffs between the United States and Singapore. To do so, a computable general equilibrium (CGE) model and its corresponding data are used to illustrate the possible effects on a number of economic measures, including the volume of trade in goods and services between the two countries and, for the United States, economic welfare and GDP, sectoral output, wages, and employment across industry sectors, and the final prices paid by consumers.[1]

The U.S.-Singapore FTA provides broader trade liberalization than captured in this chapter which focuses only on the effect of the removal of tariffs. The implications of other important provisions of the FTA are discussed in Chapter 6 (services), Chapter 7 (intellectual property rights), and in Chapter 8 (investment). The total impact of all the provisions found in the FTA is the whole of the conclusions reached in this chapter as well as in chapters 6, 7, and 8.

As was stated in chapter 2, the proposed tariff cuts will be phased into effect over a transitional period of 12 years for the United States.[2] In order to take this time dimension into account, the Commission's modeling efforts included a number of specific adjustments to the standard modeling procedures. The model used in this study allows the Commission to assess the likely effects of a multiple stage phase-in of tariff cuts, and to include an explicit time dimension in the assessment.

Summary of Findings

The Commission found that after full implementation of the tariff cuts scheduled in the U.S.-Singapore FTA, U.S. exports to Singapore would be 0.5 to 1.1 percent higher, while U.S. imports from Singapore would be about 3.8 to 10.5 percent higher. Relative

[1] Economic simulation models, such as the one used here, are useful tools in addressing questions such as the economic effects of trade agreements. Such models reflect key economic and trade relationships in the U.S. and world economy and they help to organize analysis. Model results should be interpreted as illustrative as to what might occur given the assumptions of the model and the focus on trade-related changes. Economic, political, and natural events unrelated to the trade agreement should also be expected to affect the economic variables of interest to this study.

[2] Singapore will eliminate all customs duties upon entry-into-force of the Agreement.

to total U.S. trade, these changes are small with total U.S. imports and exports potentially increasing by 0.02 to 0.05 percent. At the sectoral level, the estimated impacts are relatively large for those sectors with high initial tariffs. Given that Singapore has very few tariffs, the impact of the tariff cuts on U.S. exports to Singapore is expected to be small with the largest increases in vegetables and fruits (27.4 to 58.4 percent), meats (27.5 to 59.7 percent), dairy products (21.6 to 45.8 percent), and other processed foods (13.7 to 30.6 percent). U.S. imports from Singapore would increase by more than 100 percent (albeit from small bases) for dairy products, textiles, apparel, and leather products, sugar manufacturing, and other crops. The estimated impacts on U.S. imports are largely driven by the removal of relative large tariffs and tariff equivalents: dairy products (34.8 percent), textiles and apparel (15.0 percent), sugar manufacturing (43.8 percent), and other crops (17.5 percent).[3] In the case of textiles, apparel, and leather products, rules of origin provisions in the FTA would limit the impact of tariff elimination.

Preferential tariff liberalization has a minimal impact on U.S. production. The textiles, apparel, and leather products sector–the most affected sector–is estimated to shrink by 0.03 to 0.12 percent in the United States. U.S. output of vegetables and fruits is projected to increase by 0.04 to 0.07 percent.

As it is suggested by the small sectoral impacts discussed above, welfare analysis shows that following the reciprocal tariff elimination in the U.S.-Singapore FTA, the economic welfare and GDP impacts for the United States range between a negative 0.002 percent of U.S. GDP to less than a negative 0.001 percent of U.S. GDP.[4]

General Equilibrium Analysis

Database and Aggregation

The GTAP modeling framework, which serves as a basis for the present analysis, consists of a comparative static computable general equilibrium (CGE) model and a global database on domestic markets and international trade.[5] In addition to the data

[3] In the case of the services sector, the agreement does not contain liberalization that could be analytically captured in this general equilibrium analysis. Furthermore, the impacts estimated in this report reflect only the removal of tariffs (and to a lesser extent some TRQs for food and agricultural products); other effects, such as those of the removal of nontariff trade measures, investment restrictions, or the easing of customs procedures, are not quantified.

[4] The magnitudes of the estimated FTA impacts in this report are similar to those in a report by Scollay and Gilbert (2001) which is reviewed in chapter 4 (Robert Scollay and John P. Gilbert, New Regional Trading Arrangements in the Asia Pacific?, Policy Analyses in International Economics No. 63, Washington, D.C., Institute For International Economics, May 2001).

[5] For additional information, see T.W. Hertel, ed., Global Trade Analysis: Modeling and Applications, Cambridge: Cambridge University Press, 1997, and Betina V. Dimaranan and Robert A. McDougall, Global Trade, Assistance, and Production: The GTAP 5 Data Base, Center for Global Trade Analysis, Purdue University, 2002.

on trade in each of the commodities between each pair of economies or regions in the model, there are data on the domestic production and use of each commodity, including use in the production of other commodities; the supply and use of land, labor, and capital; and GDP. The database also contains information on tariffs, some nontariff measures, and other taxes. An additional component of the data is the set of behavioral parameters which, in the context of the model's equations, determines behavioral responses to changes in price, among other things.[6]

The GTAP database (release 5.3) divides the world into 78 economies (or regions) and has 57 commodity aggregates (or sectors) and five primary factors of production.[7] For the purpose of the present analysis, the GTAP data have been aggregated into 22 commodity groups (table 5-1). In terms of regional coverage, the analysis includes the United States and Singapore along with eleven other economies (appendix table D-1). The commodity aggregation adopted here focuses either on GTAP sectors with substantial trade between the United States and Singapore or on GTAP sectors with substantial tariffs or tariff equivalents.

Simulation Design

The analysis conducted by the Commission employs a static framework with a dynamic element where macro-variables change over time.[8] The effects of the tariff liberalization in the FTA are examined by means of a series of comparative static analyses extending out to 2016.[9] The comparative static GTAP model is solved sequentially so as to approximate a dynamic process in which the world's economies change over time. This is done in two steps. First, the baseline is constructed using the projected changes in the relevant variables (e.g., growth in GDP, labor, and capital) in the absence of the FTA. Second, the policy changes (i.e. tariff reduction or elimination) are simulated against the projected baseline. The impact of the FTA is estimated by examining the difference between these two steps. In essence, the analysis presented here is of a comparative dynamic nature. That is, it addresses the following question: if an FTA were established between the United States and Singapore, how would the time-paths of the relevant variables differ compared to the projected baseline?

Figures 5-1 and 5-2 show the estimated evolution of a variable of interest (bilateral trade between the United States and Singapore, in this case) over a given time period (1997 to 2016).[10] The "projected baseline" illustrates how the variable is

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[6] The Commission simulated the U.S.-Singapore FTA under alternative assumptions about the response of trade to policy changes.

[7] Betina V. Dimaranan and Robert A. McDougall, Global Trade, Assistance, and Production: The GTAP 5 Data Base, 2002.

[8] A similar methodology was applied by the Commission in its study on the U.S.-Korea FTA: The Economic Impact of Establishing a Free Trade Agreement (FTA) Between the United States and the Republic of Korea, Inv. No. 332-425, USITC Publication 3452, September 2001.

[9] In the simulations that follow, beginning of period dates are used to characterize time. Thus, the appearance of the date, 2016, signifies the beginning of 2016, not the end.

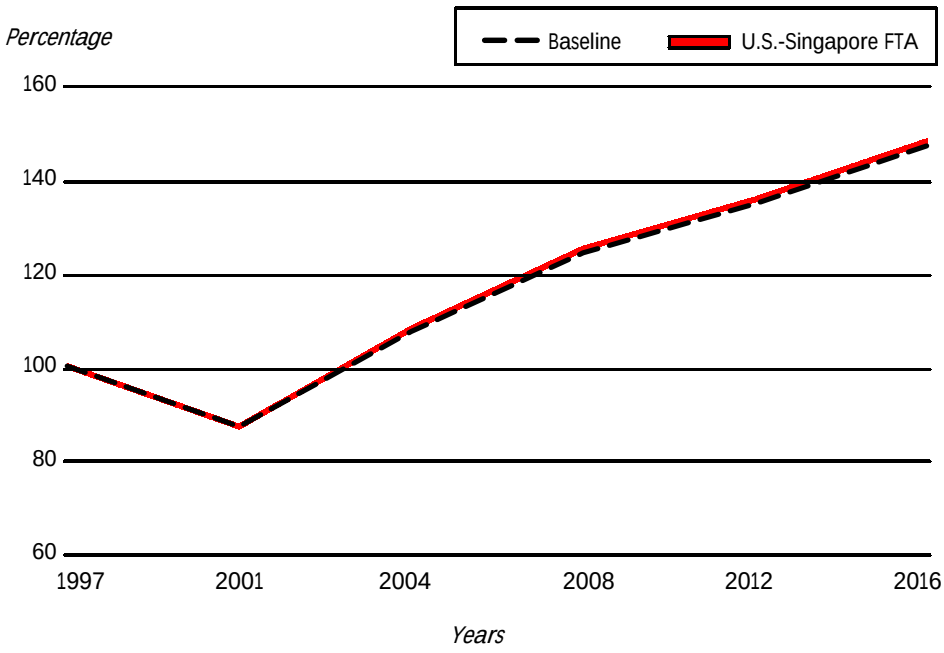
[10] The data presented in Figures 5-1 and 5-2 are results from the simulation below.

Table 5-1
GTAP database: Commodity aggregation

Commodity
Fishing
Forestry
Grains
Sugar crops
Vegetables, fruits, and nuts
Other crops
Livestock
Coal, oil, gas, and other minerals
Meat products
Dairy products
Sugar manufacturing
Other processed food and tobacco products
Textiles, wearing apparel, and leather products
Wood products
Petroleum, coal, chemical, rubber, plastic products, and other mineral products
Ferrous metals
Metals n.e.c. and metal products
Motor vehicles and parts and other transportation equipment
Electronic equipment
Other machinery and equipment
Other manufactures
Services

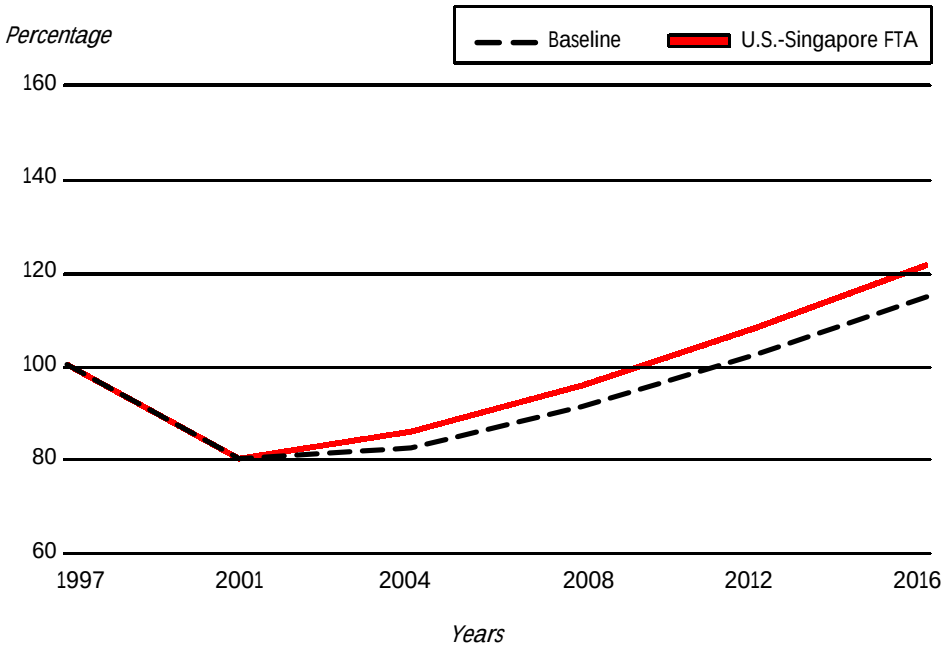
Sources: Compiled from the GTAP database.

Figure 5-1
U.S. exports to Singapore (1997 = 100)



Source: GTAP simulation and USITC calculations.

Figure 5-2
U.S. imports from Singapore (1997 = 100)



Source: GTAP simulation and USITC calculations.

estimated to evolve if the studied FTA were not implemented.[11] The "FTA" line shows the evolution of the variable under implementation of the FTA. Figure 5-1 shows that the agreement would likely increase U.S. exports to Singapore by less than 1 percent (almost indistinguishable). Figure 5-2 shows that the agreement would likely increase U.S. imports from Singapore by 6.0 percent. In this chapter, the vertical distance between the two lines is reported for a number of variables, and is interpreted as the estimated impact of the tariff cuts in the U.S.-Singapore FTA for each variable.[12]

Projected Baseline

The standard GTAP database (version 5.3) is based on 1997 data, including trade flows, tariffs, and other data for that year and they are expressed in 1997 U.S. dollars. To build the projected baseline, data and forecasts of population growth, capital growth, and GDP growth from the World Bank are applied to all economies in the model to describe economic conditions in 2001 and expected economic conditions at 2004, 2008, 2012, and 2016.[13]

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[11] The methodology used to build the projected baseline is discussed in the next section.

[12] The technique used here has a number of limitations which are discussed in appendix D. Despite these limitations, the simulations conducted here can be quite useful in providing insights on the effects of an FTA on a number of economic measures, such as changes in bilateral and total U.S. trade, by commodity; commodity prices and returns to productive factors; and economic welfare and gross domestic product.

[13] For the year 2001, recent data are used to match bilateral trade flows between the United States and Singapore, (as measured by official statistics of the U.S. Department of Commerce).

In addition to the growth data, for each of the four time intervals comprising the projected baseline, the protection database is adjusted to reflect the phasing-in of the trade policy measures ratified under the Agreements on Agriculture and on Textiles and Clothing (ATC) of the Uruguay Round. Thus, economic conditions in 2001 reflect reductions in export subsidies and import tariffs for food and agricultural products and expansion of quotas for textiles and clothing agreed to in the Uruguay Round;[14] the data for the year 2004 reflect further reductions in trade policies for food and agricultural products on the part of developing countries and removal of the remaining quotas for textiles and clothing. Table 5-2 shows the tariff rates and tariff equivalents for the two countries for the year 2004 along with the relevant trade flows after the above adjustments have been implemented. It is noted that both countries already have relatively open trade regimes prior to the implementation of the agreement. In Singapore, U.S. exports enter duty free except for fruits and vegetables, meats, dairy, and other processed foods. In the United States, Singapore's exports face substantial tariffs in a number of sectors, including sugar, dairy products, other crops; and textiles and apparel products.[15]

Policy Experiment

The next step is to determine the policy experiments–or the shocks–that would reflect the staged tariff liberalization during the transitional period. The length of this phase-in period is 12 years for the United States, while it is immediate for Singapore. The Commission examined the impact of the provisions that would be in effect in the first year of the agreement (2004), fourth year (2008), eighth year (2012) and full implementation (2016). For the 22 commodity sectors and for each of the four stages, table 5-3 reports the weighted average share of the initial tariff that will remain after each stage of the analysis. For example, the initial U.S. tariff cuts will include an average tariff cut of 12 percent on vegetables, fruits and nuts, leaving U.S. tariffs at 88 percent of their initial MFN level, and an average tariff cut of 17 percent on textiles and apparel, leaving U.S. tariffs at 83 percent of their initial MFN level. It should be pointed out that, for textiles and apparel, the analysis in this chapter does not fully capture the restrictiveness of the yarn forward rules of origin under the FTA. Hence, the results reported here should be considered as upper-bound. A more detailed analysis of the FTA effects on the textile and apparel sector, taking into account the rules of origin, is presented in Chapter 6.

In the case of the services sector, the agreement does not contain liberalization which could be accounted for in this general equilibrium analysis.[16] Other studies cited in

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[14] Regarding textiles and clothing, the textiles and clothing quotas are modeled in the GTAP database as an export tax; to model the expansion and then the removal of those quotas, the relevant export taxes are reduced by about 16 percent in 2001 and 2004; the remaining (about 70 percent) export taxes are removed completely in 2005 (captured by 2008 in the present framework).

[15] The estimate of the U.S. import tariff on textiles, apparel, and leather products does not include the direct price impact of quotas for textiles and apparel. In the GTAP data the impact of those quotas is modeled as an export tax on U.S. imports of textiles and apparel from Singapore.

[16] This distinguishes the current report from other studies of "hypothetical" FTAs that include the effects of services liberalization. See, for example, Drusilla Brown, Alan V. Deardorff, and Robert M. Stern, "Multilateral, Regional, and Bilateral Trade-Policy Options for the United States and Japan,"

Table 5-2
Tariffs and tariff equivalents for the United States and Singapore, 2004[1]

Sector	Singapore tariff and tariff equivalent	U.S. exports to Singapore	U.S. tariff and tariff equivalent	U.S. imports from Singapore
	Percent	*Million dollars*	*Percent*	*Million dollars*
Fishing	0	1	0.05	15
Forestry	0	2	0.87	1
Grains	0	14	0.62	0
Sugar crops	0	0	0.53	0
Vegetables, fruits, and nuts	8.28	60	3.84	0
Other crops	0	5	17.57	4
Livestock	0	11	0.49	0
Coal, oil, gas, and other minerals	0	22	0	0
Meat products	8.07	33	4.08	3
Dairy products	6.09	7	34.84	0
Sugar manufacturing	0	0	43.83	0
Other processed foods	3.77	215	8.95	81
Textiles, apparel, and leather products	0	97	15.02	314
Wood products	0	35	1.63	13
Petroleum, coal and chemical products	0	2,936	4.65	1,139
Ferrous metals	0	352	3.51	52
Metals n.e.c. and metal products	0	96	2.16	28
Transportation equipment	0	4,877	1.01	171
Electronic equipment	0	4,590	0.59	11,186
Other machinery and equipment	0	4,958	3.00	1,309
Other manufactures	0	363	0.61	175
Services	0	3,300	0	4,213
Weighted average tariff	1.17	NA	0.07	NA

[1] Nontariff measures are captured to the extent they are reflected in the difference between the domestic price and the world price. The GTAP database contains only a limited and highly aggregated representation of the services sector. Unlike the other sectors in the database, services are not fully tradable and the border measures captured in the GTAP protection data do not represent the actual restrictions to trade in services.

Note: NA means not applicable.

Sources: Dimaranan, Betina V. and Robert A. McDougall (2002). *Global Trade, Assistance, and Production: The GTAP 5 Data Base*, Center for Global Trade Analysis, Purdue University; and USITC calculations.

chapter 4 rely on quantitative assessments of services provisions found in FTAs. The Commission, however, relies on qualitative analyses of the services provisions of the U.S.-Singapore FTA for several reasons. First, there is limited trade data for the services sectors.[17] Second, relatively little information is available on the measures that restrict international trade in services.[18] Thus, a full-fledged quantitative analysis is impossible given the absence of data at a detailed sectoral level. Third, as the analyses in chapter 6 suggest, the impact of the services provisions of the U.S.-Singapore FTA would be very small for the United States given the limited

[16]-*Continued*
Research Seminar in International Economics, Discussion Paper No. 490, Dec. 2002; and Thomas W. Hertel, Terrie Walmsley, and Ken Itakura, "Dynamic Effects of the 'New Age' Free Trade Agreement between Japan and Singapore," Center for Global Trade Analysis, Purdue University, Sept. 2001. These two studies quantify the impact of liberalizing the services sector in the context of FTAs and they are discussed in the review of the literature in Chapter 4.

[17] For example, trade data on express delivery services are not available, see chapter 6 of this report.

[18] See Bernard Hoekman, "The Next Round of Services Negotiations: Identifying Priorities and Options," Federal Reserve Bank of St. Louis Review, July/August 2000, pp. 31-47.

Table 5-3
U.S. schedule for tariff liberalization

	Percent remaining of initial average MFN tariff			
Sector	**2004**	**2008**	**2012**	**2016**
Fishing	0.00	0.00	0.00	0.00
Forestry	0.00	0.00	0.00	0.00
Grains	0.00	0.00	0.00	0.00
Sugar crops	0.00	0.00	0.00	0.00
Vegetables, fruits, and nuts	88.77	59.18	19.73	0.00
Other crops	56.15	0.00	0.00	0.00
Livestock	0.00	0.00	0.00	0.00
Coal, oil, gas, and other minerals	0.00	0.00	0.00	0.00
Meat products	0.00	0.00	0.00	0.00
Dairy products	0.00	0.00	0.00	0.00
Sugar manufacturing	0.00	0.00	0.00	0.00
Other foods	71.85	21.14	6.68	0.00
Textiles, apparel and leather products[1]	82.93	55.26	18.42	0.00
Wood products	66.52	0.00	0.00	0.00
Petroleum, coal and chemical products	4.30	0.46	0.06	0.00
Ferrous metals	45.95	0.00	0.00	0.00
Metals n.e.c. and metal products	0.42	0.07	0.00	0.00
Transportation equipment	0.56	0.20	0.00	0.00
Electronic equipment	5.38	0.49	0.00	0.00
Other machinery and equipment	17.58	0.12	0.00	0.00
Other manufactures	32.61	2.83	0.00	0.00
Services[2]	NA	NA	NA	NA

[1] The analysis in this chapter does not fully capture the restrictiveness of the yarn forward rules of origin under the FTA. Hence, the results reported here should be considered as upper-bound. A more detailed analysis of the FTA effects, taking into account the rules of origin, is presented in Chapter 6.

[2] Unlike the other sectors in the GTAP database, services are not fully tradable and the border measures captured in the GTAP protection data do not fully represent the actual restrictions to trade in services. Additionally, the agreement does not contain substantial service liberalization that could be captured in this type of analysis.

NOTE: NA means not applicable.

Source: USTR and USITC calculations.

restrictions in place. It is likely that the U.S.-Singapore FTA provides broader trade liberalization than captured in the Commission's analysis. Chapters 6, 7, and 8 provide qualitative analyses of the likely impact of the measures with respect to selected sectors, intellectual property rights, and investment that are included in the agreement but not captured here.

Simulation Results

Generally, the results of the type of analytical exercise conducted in this chapter depend on many parameters that are included in the model (e.g., response parameters or projected baseline). Given the ex-ante or forward-looking nature of the analysis, there is no presumption as to the exact levels of those parameters. Hence, in an effort to capture the different possibilities regarding the state of the world when the FTA is fully implemented, the Commission has conducted a series of simulations using

different assumptions regarding (1) the relative growth of the U.S. economy and,[19] (2) the economies' responsiveness to changes in trade policies.[20]

Given the different dimensions of the analysis and the varying assumptions, this section presents the ranges of the likely impact of the tariff cuts in the U.S.-Singapore FTA on selected economic aggregates: trade flows, sectoral output, wages and employment across industry sectors, final prices paid by consumers, GDP, and welfare. The reported results correspond to the full implementation (year 12) of the agreement. Appendix D (tables D-2 to D-4) presents the likely impact of the tariff cut provisions that would be in effect in the first year of the agreement, mid-implementation (year 4 and year 8) as well as full implementation.

Trade Volumes

Trade agreements are generally designed to increase trade flows between the participating economies. Indeed, the results of the general equilibrium analysis suggest that U.S.-Singapore bilateral trade would increase, albeit slightly, as a result of the FTA. The general equilibrium analysis indicates that following the full implementation of a U.S.-Singapore FTA, U.S. exports to Singapore would increase slightly by as much as 1.1 percent (table 5-4), while U.S. imports from Singapore could increase by 10.5 percent (table 5-5). The U.S. trade balance with Singapore would be around $1.3 billion smaller than if the bilateral tariffs have not been removed.[21] Given Singapore's size relative to the United States and the low level of tariffs between the two countries, the impact of the tariff cuts on total U.S. trade is minuscule. In fact, U.S. exports and imports are estimated to increase by less that one tenth of a one percentage point.

The bulk of the trade response to FTAs are generally concentrated in sectors facing relatively large tariffs, because the FTA-led market access improvement tends to be more important in those sectors. Given that Singapore has very few tariffs, the impact of the tariff cuts on U.S. exports to Singapore is estimated to be very small (table 5-4). The only notable potential increases are in vegetables and fruits (58 percent), meats (60 percent), dairy products (46 percent), and other processed foods (31 percent).

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[19] The Commission varied annual U.S. growth rates for the period 2004-16 from 20 percent lower than the standard World Bank projection to 20 percent higher.

[20] In the GTAP model, the responsiveness to trade policy changes is captured by the Armington elasticities of substitution. The default values for these elasticities are based on reviews of the econometric literature. In this study, the Commission considered a range of the elasticities between a power of two-thirds and three-halves of their default GTAP values. For a discussion of the Armington assumption and parameters in the CGE model used in this report, see chapters 2 and 4 in T. W. Hertel, ed., Global Trade Analysis: Modeling and Applications, Cambridge: Cambridge University Press, 1997.

[21] In the general equilibrium model, and absent net interest payments from abroad, changes in the trade balance (i.e., exports less imports) are equal to changes in national savings less investment (i.e., the capital balance). Furthermore, global savings (which are not expected to change much due to the FTA) determine the global availability of investment funds. The regional distribution of those investment funds, however, is expected to change because capital productivity would change across economies due to the FTA (for additional discussion of the macroeconomic closure, see chapter 2, pp. 52-54 in T. W. Hertel, ed., Global Trade Analysis: Modeling and Applications, Cambridge: Cambridge University Press, 1997). In this case, the FTA causes an increase in investment in the United States and Singapore, which causes a deterioration in the trade balance in the United States and Singapore.

Table 5-4
Effects on U.S. exports, 2016 (relative to baseline)

	U.S. exports to Singapore			U.S. total exports		
	2004 base	Low	High	2004 base	Low	High
	Million dollars	*Percent change*		*Million dollars*	*Percent change*	
Fishing	1	0.05	0.05	743	-0.01	0.00
Forestry	2	0.16	0.45	1,842	0.00	0.00
Grains	14	0.20	0.57	11,564	-0.05	-0.02
Sugar crops	0	0.17	0.51	3	-0.07	-0.02
Vegetables, fruits, and nuts	60	27.35	58.36	6,363	0.23	0.44
Other crops	5	0.38	1.13	12,669	-0.04	-0.02
Livestock	11	-0.19	-0.06	4,571	-0.08	-0.02
Coal, oil, gas, and other minerals	22	0.47	0.77	7,004	0.02	0.04
Meat products	33	27.47	59.65	9,651	0.09	0.18
Dairy products	7	21.64	45.77	798	0.22	0.45
Sugar manufacturing	0	0.05	0.07	88	-0.06	-0.02
Other foods	215	13.73	30.64	29,284	0.11	0.25
Textiles, apparel, and leather products	97	1.43	4.93	23,362	0.02	0.09
Wood products	35	-0.32	-0.09	10,141	-0.01	0.00
Petroleum, coal and chemical products	2,936	0.13	0.21	133,361	0.01	0.01
Ferrous metals	352	0.11	0.18	26,630	0.00	0.01
Metals n.e.c. and metal products	96	-0.25	-0.05	18,372	0.01	0.03
Transportation equipment	4,877	0.40	0.56	174,483	0.02	0.06
Electronic equipment	4,590	0.13	0.17	126,476	0.05	0.13
Other machinery and equipment	4,958	0.25	0.32	197,235	0.01	0.03
Other manufactures	363	0.25	0.50	37,523	0.00	0.01
Services	3,300	0.29	0.54	354,557	0.01	0.02
All sectors	21,974	0.54	1.08	1,186,720	0.02	0.04

Sources: GTAP database and USITC calculations.

U.S. sectoral imports from Singapore would increase following the tariff removal, with the exception of the services sector (table 5-5). Given that the textiles and apparel sector has the highest incidence of tariffs imposed on imports from Singapore (see table 5-2), it exhibits one of the most notable import responses in percentage terms. It is estimated that following the FTA, U.S. imports from Singapore of textiles and apparel would be higher than the projected baseline by between 84 percent and 427 percent. It has to be noted that these percent changes are relative to a very small base (about $314 million or 0.30 percent of U.S. imports) and do not capture rules of origin in the FTA.

The scope of the actual expansion of Singapore's textiles and apparel exports to the United States would be determined by the availability of intermediate inputs and primary factors, and the production substitution possibilities. In the longer run, resources in Singapore would re-allocate until returns are equalized across sectors, and the proportion of primary to intermediate inputs used in production would

Table 5-5
Effects on U.S. imports, 2016 (relative to baseline)

	U.S. imports from Singapore			U.S. total imports		
	2004 base	Low	High	2004 base	Low	High
	Million dollars	*Percent change*		*Million dollars*	*Percent change*	
Fishing	15	0.14	0.37	1,817	0.01	0.01
Forestry	1	3.38	8.27	415	-0.01	0.00
Grains	0	1.88	3.65	900	0.02	0.03
Sugar crops	0	1.68	3.22	1	0.01	0.04
Vegetables, fruits, and nuts	0	13.87	28.87	8,043	0.02	0.07
Other crops	4	72.03	184.39	5,584	0.03	0.06
Livestock	0	1.71	3.97	3,248	0.02	0.04
Coal, oil, gas, and other minerals	0	-0.06	0.01	99,310	-0.02	-0.01
Meat products	3	14.32	29.32	4,637	0.02	0.03
Dairy products	0	173.70	598.21	1,401	0.01	0.04
Sugar manufacturing	0	240.25	963.52	805	0.01	0.03
Other foods	81	36.68	94.16	30,064	0.05	0.14
Textiles, apparel, and leather products	314	84.86	427.37	106,316	0.05	0.14
Wood products	13	6.20	15.01	35,117	0.01	0.01
Petroleum, coal and chemical products	1,139	15.60	30.07	181,443	0.02	0.03
Ferrous metals	52	14.06	36.04	38,764	0.01	0.03
Metals n.e.c. and metal products	28	8.40	20.67	25,170	0.00	0.01
Transportation equipment	171	5.25	21.56	197,560	0.00	0.01
Electronic equipment	11,186	1.89	4.34	176,789	0.04	0.10
Other machinery and equipment	1,309	11.83	29.87	161,163	0.05	0.12
Other manufactures	175	1.53	2.72	73,844	0.00	0.00
Services	4,213	-1.27	-0.63	172,392	-0.01	-0.01
All sectors	18,706	3.84	10.46	1,324,783	0.02	0.05

Sources: GTAP database and USITC calculations.

change.[22] More imported intermediate inputs might be needed to facilitate the expansion of Singapore's textile and apparel sector, which could potentially violate FTA rules of origin. The analysis conducted here does not specifically address the impact of the rules of origin negotiated under the FTA. As discussed in Chapter 6, they can be restrictive and would likely translate into a smaller potential impact of the agreement on bilateral trade. To address this issue, the Commission also simulated the FTA with a more restrictive form of the "yarn forward" rules of origin similar to that used in NAFTA. This is approximated by assuming only a partial U.S. liberalization of textiles and apparel imports from Singapore. In particular, the Commission simulated the FTA (1) with only 50 percent of the scheduled cut in the textile and apparel tariff, and (2) without removing the textiles and apparel tariff at all. Simulation results showed that (1) an FTA with a 50 percent smaller tariff cut would lead to a 57 percent

[22] Simulation results show that while Singapore increased imports (of textiles) from third-party countries, the determining factor for the increased export of textiles and apparel from Singapore to the United States appears to be the long-term reallocation of resources within Singapore from other sectors to the apparel and textile sector.

increase in U.S. imports of textiles and apparel from Singapore, and (2) an FTA without any reduction in the U.S. tariff on textiles and apparel would in fact reduce U.S. imports from Singapore by 0.5 percent. The simulated impact on other relevant variables did not change significantly.

Other sectors projecting significant percent increases in U.S. imports from Singapore include dairy, sugar manufacturing, other crops, other processed foods, other machinery and equipment, vegetables and fruits, and ferrous metals.[23] However, these bilateral changes translate into very small impacts on total U.S. sectoral imports. For all the sectors considered, the potential changes to total imports are less than one tenth of one percent except for textiles (increase of 0.14 percent) and other foods (increase of 0.14 percent).

Domestic Production

The changes in trade flows affect output at the sectoral and the aggregate levels. Generally, an increased incentive to export would lead to an increase in the output of a sector. Conversely, increased competition taking the form of a higher volume of imports may shrink domestic production in a sector, at least in the short term. As the incentives to produce in a particular sector change, productive resources are reallocated across sectors, and cross-sectoral demands for different factors of production are altered. Because the supply of factors of production is constrained at any given time, expansion of one sector usually means contraction of another. Generally then, membership in an FTA has implications for almost all parts of the economy, with some sectors expanding while others contract.

The results of the simulations indicate that changes in U.S. domestic sectoral production, following the FTA implementation, are generally very small in percentage terms (table 5-6). Few of the sectoral impacts estimated exceed one tenth of a percent. These results are not unexpected given that the tariffs to be removed are small and that U.S. trade with Singapore is small relative to total U.S. trade and total U.S. production. The FTA-led increase in vegetables and fruit exports to Singapore could expand production in that sector by as much as 0.07 percent. On the other hand, the textiles and apparel sector could experience a decline of 0.12 percent. This small decline is driven by the increase in imports from Singapore, which slightly decreases incentives for (or profitability of) domestic production. The effects of the tariff liberalization on sectoral output would induce changes in the demand for labor in the United States (table 5-7). General equilibrium results indicate that for each sector the impact of the tariff cuts is identical for skilled and unskilled labor. In the absence of technological development, changes in demand for the different factors of production should be closely related to changes in the incentives to produce. It is, therefore, not surprising that the effects on sectoral demand for labor tend to be almost equal to the impact on sectoral output reported earlier.

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[23] The aggregated data and model used in this analysis show the United States and Singapore exporting to and importing from each other in all sectors. Thus, it is not inconsistent to conclude for example that the United States would export to and import from Singapore more dairy products due to the FTA. Such a result should be interpreted that U.S. exports consist of different dairy products than those found in U.S. imports of dairy products.

Table 5-6
Effects on sectoral output in the United States, 2016 (relative to baseline)

	Low	High
	Percent change	
Fishing	0.00	0.00
Forestry	0.00	0.00
Grains	0.00	0.00
Sugar crops	0.00	0.00
Vegetables, fruits, and nuts	0.04	0.07
Other crops	-0.02	-0.01
Livestock	0.00	0.00
Coal, oil, gas, and other minerals	0.00	0.00
Meat products	0.01	0.01
Dairy products	0.00	0.01
Sugar manufacturing	0.00	0.00
Other processed foods	0.01	0.02
Textiles,apparel, and leather products	-0.12	-0.03
Wood products	0.00	0.00
Petroleum, coal and chemical products	-0.01	-0.01
Ferrous metals	0.00	0.00
Metals n.e.c. and metal products	0.00	0.01
Transportation equipment	0.01	0.02
Electronic equipment	0.00	0.01
Other machinery and equipment	-0.01	0.00
Other manufactures	0.00	0.00
Services	0.00	0.00

Sources: GTAP database and USITC calculations.

Table 5-7
Effects on demand for labor, by commodity, 2016 (relative to baseline)

Commodity	Low	High
	Percent change	
Fishing	0.00	0.00
Forestry	0.00	0.00
Grains	0.00	0.00
Sugar crops	0.00	0.01
Vegetables, fruits, and nuts	0.04	0.08
Other crops	-0.01	0.00
Livestock	0.00	0.01
Coal, oil, gas, and other minerals	0.00	0.00
Meat products	0.01	0.01
Dairy products	0.00	0.01
Sugar manufacturing	0.00	0.00
Other processed foods	0.01	0.02
Textiles, apparel, and leather products	-0.12	-0.03
Wood products	0.00	0.00
Petroleum, coal and chemical products	-0.01	-0.01
Ferrous metals	0.00	0.00
Metals n.e.c. and metal products	0.00	0.01
Transportation equipment	0.01	0.02
Electronic equipment	0.00	0.01
Other machinery and equipment	-0.01	0.00
Other manufactures	0.00	0.00
Services	0.00	0.00

Sources: GTAP database and USITC calculations.

Changes in demand for the different primary factors of production would affect their real rate of return (i.e., the payment made to the factor's owner). In general, an output expansion in a particular sector is accompanied by an increase in the returns to the factors that are intensively used in that sector, and a decrease in returns to factors less intensively used. Given that agriculture (e.g., fruits and vegetables) uses land intensively, the return to land slightly increases by 0.02 percent in the United States (table 5-8).

Prices Paid by Consumers

The bilateral tariff eliminations associated with the FTA affect the domestic market prices in each economy through various channels. Given that the price paid by consumers for imported goods is equal to a good's international price plus any trade taxes, the removal of a trade barrier on that good should decrease its domestic price. At the same time, a policy change that leads to an increase in the demand for (or, a decrease in the supply of) a particular imported good tends to increase its price. Furthermore, consumers in each economy consume a mix of imported and domestic products, with the prices of domestic products changing in the same direction as the prices of imported goods but not by the same magnitude. The effects of the reciprocal tariff liberalization on the domestic prices depend on the relative strength and interaction between those offsetting forces. Simulation results indicate that the consumer price changes triggered by the FTA in the United States are extremely small–an average decrease of 0.01 percent (table 5-9). Textiles and apparel, as well as electronic equipment would experience small price decreases following the FTA. At the same time, the bilateral tariff cuts could have a small positive impact on the price of vegetables and fruits, as well as other agricultural products.

Table 5-8
Effects on real rate of return on primary factors in the United States, 2016 (relative to baseline)

Factor	Low	High
	Percent change	
Land	0.02	0.02
Unskilled labor	0.00	0.00
Skilled labor	0.00	0.00
Capital	0.00	0.00
Natural resources	0.00	0.01

[1] In CGE analyses, a price remains constant because only relative prices are relevant. In the CGE simulations performed in this report, the price that remains constant is the income-weighted average of U.S. primary factor returns. Thus, on average, primary factor returns do not change in the United States.

Sources: GTAP database and USITC calculations.

Table 5-9
Effects on prices paid by U.S. consumers, by commodity, 2016 (relative to baseline)

Commodity	Low	High
	Percent change	
Fishing	-0.01	0.00
Forestry	0.00	0.00
Grains	0.00	0.01
Sugar crops	0.01	0.01
Vegetables, fruits, and nuts	0.01	0.02
Other crops	0.00	0.00
Livestock	0.00	0.00
Coal, oil, gas, and other minerals	0.00	0.01
Meat products	0.00	0.00
Dairy products	0.00	0.00
Sugar manufacturing	0.00	0.00
Other foods	0.00	0.00
Textiles, apparel, and leather products	-0.03	-0.03
Wood products	0.00	0.00
Petroleum, coal and chemical products	0.00	0.00
Ferrous metals	0.00	0.00
Metals n.e.c. and metal products	0.00	0.00
Transportation equipment	0.00	0.00
Electronic equipment	-0.02	-0.02
Other machinery and equipment	-0.01	-0.01
Other manufactures	0.00	0.00
Services	0.00	0.00

Sources: GTAP database and USITC calculations.

Economic Welfare and Gross Domestic Product

The magnitudes of the sectoral impacts reported above suggest that the effects of the FTA on U.S. economic welfare (as measured by equivalent variation) would be negligible to very small.[24] The U.S.-Singapore FTA can be thought of as consisting of two policy changes: a removal of tariffs by the United States and a removal of tariffs by Singapore. The sum of the welfare impacts of these two policy changes would approximate the welfare impacts of the FTA itself. Model simulation results show that, following the implementation of tariff removal under the FTA in 2016, the change in the economic welfare and GDP in the United States would range between a negative 0.002 percent of U.S. GDP to less than a negative 0.001 percent of U.S. GDP.

[24] In this particular analysis, the term negligible refer to an absolute change of less than 0.001 percent of U.S. GDP. The magnitudes of the estimated FTA welfare and GDP impacts in this report are consistent with those in Scollay and Gilbert (Robert Scollay and John P. Gilbert, New Regional Trading Arrangements in the Asia Pacific? Policy Analyses in International Economics No. 63, Washington, D.C., Institute For International Economics, May 2001).

CHAPTER 6
Impact of a U.S.-Singapore FTA on Selected Sectors

Information in this chapter supplements the quantitative results presented earlier in the report with qualitative analysis of the U.S.-Singapore FTA and the potential impact on distinct industry segments.[1] Industry sectors addressed are textiles and apparel, express delivery services, financial services, professional services, and telecommunications services. Industries were chosen based on a collective consideration of apparent sectoral liberalization in terms of tariff and other nontariff barriers and the extent to which business facilitation is promoted by provisions of the FTA, the importance of the sector in terms of bilateral trade or prominence in the agreement, and the level of industry interest in the FTA commitments or U.S.-Singapore trade relationship with respect to a particular area.

The qualitative examination looks at relevant commitments in the U.S.-Singapore FTA that could potentially affect trade in goods and services, including sector specific tariff elimination, general and industry-specific nontariff measures, rules of origin and customs provisions, and commitments with respect to market access and the movement of personnel. The analysis also considers global industry developments and implementation of the U.S.-Singapore FTA in the context of sectoral, bilateral, and/or regional trade liberalization. Finally, input from industry sources concerning the actual anticipated benefits and effects of the agreement is incorporated, including information taken from hearing testimony, submissions to the Commission, and interviews with government and industry representatives. Unlike the quantitative analysis, which reflects long term effects of the U.S.-Singapore FTA, the qualitative assessment on selected sectors reflects short- to mid-term effects.

Textiles and Apparel

Overview

U.S. bilateral trade in textiles and apparel with Singapore has declined significantly since 1990, reflecting that country's decreasing competitiveness vis-a-vis lower-cost

[1] Modeling results from the quantitative analysis may differ from the qualitative results presented in this chapter. This is generally because the CGE model used in Chapter 5 is unable to quantify certain nontariff measures affecting trade in commodity sectors and cannot accommodate actual operating conditions in the examined industries. In addition, service sectors are aggregated as opposed to examined separately, and the model is unable to quantify regulatory measures and nontariff barriers affecting services trade; therefore, U.S. and Singapore tariff equivalents for services are listed as zero.

Asian suppliers such as China. Imports of textiles and apparel from Singapore fell from more than $600 million a year during the early 1990s to $289 million in 2002, while exports of such goods to Singapore peaked at $138 million in 1997, and then fell to $69 million in 2002.[2] The relative decline of Singapore, which accounts for less than 0.5 percent of total U.S. textile and apparel trade, likely will continue as competition further intensifies following elimination of U.S. quotas on imports of textiles and apparel in 2005.[3]

Total U.S. imports of textiles and apparel have grown significantly since 1990, to $82 billion in 2002, while U.S. exports of such goods, after expanding during much of the 1990s, have fallen in the past 2 years to $16 billion. Much of the import growth in the past 5 years came from Asian countries whose currencies had depreciated substantially during the Asian financial crisis of 1997-98, effectively reducing dollar prices of their goods in the U.S. market. The recent decline in U.S. textile and apparel exports was attributable not only to slowing economic activity in major foreign markets, but also to the continued strength of the U.S. dollar, which has effectively reduced the price competitiveness of U.S. goods in foreign markets, and weak foreign demand in Mexico and the Caribbean Basin countries for U.S. inputs used in the production of apparel for export to the United States. These competitive pressures have limited the ability of U.S. producers to pass higher costs on to customers.

U.S. Industry

The U.S. textile industry faces shrinking domestic markets for its yarn and fabric output not only because of growing imports of these goods but also because of even greater import competition in the form of finished end-use goods, such as apparel. The growth in such indirect import competition and decline in domestic production of end-use goods limit the domestic market for U.S. producers of yarns and fabrics, particularly because imports of end-use goods often contain foreign inputs. Weak domestic demand for U.S. textile inputs, however, had been partially offset by demand for U.S. exports of yarns and fabrics to Caribbean Basin countries and Mexico, where U.S. and other firms assemble garments and re-import the finished goods for sale mainly in the U.S. market.

Faced with difficult market conditions and the prospect of increased import competition following quota elimination in 2005, the U.S. textile industry continues to consolidate operations, close plants, shed non-core and underperforming assets, and shift production from commodity goods to value- added or specialty products. The industry has long invested in high-speed, automated technology to achieve high levels of productivity in the manufacture of high-volume commodity goods and in dyeing and

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[2] Data on U.S. imports and exports are in terms of the Commission's trade-monitoring product groups.

[3] The Uruguay Round Agreement on Textiles and Clothing, which entered into force as part of the WTO agreements in 1995, calls for the phaseout of quotas on textiles and apparel, established by the United States and other importing countries under the Multifiber Arrangement (MFA), over a 10-year transition period ending on January 1, 2005.

finishing operations. More recently, the industry has invested in new production, information, and service technologies to increase not only productivity, but also operating flexibility and customer and market responsiveness. A few U.S. textile firms have also invested in production in Mexico in an effort to benefit from NAFTA preferences, along with lower operating costs and closer proximity to their apparel-manufacturing customers. In addition, some U.S. producers of apparel fabrics now offer U.S. apparel companies and retailers "full package" goods in which they use their own fabrics in producing garments made to customer specifications. The U.S. textile industry likely will continue to benefit from U.S. trade legislation that authorizes preferential access to the U.S. market for apparel made offshore from U.S.-made yarns and fabrics.[4]

The competitive pressures facing the U.S. apparel industry primarily reflect the large number of apparel suppliers in the domestic market, changing consumer preferences, rising import penetration, and growing buying power of large retailers.[5] Many U.S. apparel producers have restructured operations to reduce costs and focus on marketing. Producers have also expanded global sourcing, including the use of assembly operations in Caribbean Basin countries and Mexico, further reducing employment levels in the domestic industry. For many of the thousands of small domestic apparel producers, implementation of new strategies to respond to even greater import competition likely will be limited, largely because of the lack of sufficient production volume and financial resources. The ongoing phaseout of U.S. import quotas on apparel likely will prompt many of these small firms either to reduce operations and focus on niche markets or to cease production altogether.

Industry in Singapore

Singapore's textile and apparel industries have declined in size since at least the early 1980s, from about 1.5 percent of total manufacturing output in 1980 to about 0.5 percent in 2001.[6] Net domestic investment commitments in the sector declined from S$32.6 million in 1980 (US $15.2 million) to S$10.2 million in 1998 (US $ 5.1 million), and to zero in 2001. Employment in the sector has also fallen since the early 1980s, when the government instituted a "wage-correction policy" to boost manufacturing wages. While Singapore's textile and apparel sector accounted for 14 percent of total

[4] The United States grants duty-free and quota-free treatment to imports of qualifying apparel articles, including those made with U.S. yarns and fabrics, from Mexico under the North American Free Trade Agreement (NAFTA), from eligible Caribbean Basin countries under the United States-Caribbean Basin Trade Partnership Act, and from eligible sub-Saharan African countries under the African Growth and Opportunity Act. According to certain U.S. retailers, the U.S. textile industry does not supply many of the fabrics or yarns used in apparel production today. Fabrics used in the apparel industry that U.S. textile producers do supply are often not produced in quantities sufficient to meet market demands placed on U.S. textile production by yarn-forward requirements of preference program agreements granted by Congress.

[5] A growing concentration of retail sales among a few large retailers has enhanced the bargaining power of these retailers in negotiating prices and other contract terms with suppliers.

[6] Information in the paragraph is mainly from U.S. Department of State telegram 1372, "Textile Trade Without Quotas — Singapore," prepared by U.S. Embassy, Singapore, Apr. 29, 2002.

employment in 1980, it accounted for only 2.4 percent of total employment in 2000. However, the number of textile and apparel manufacturing firms in Singapore has increased during the past 20 years, from 99 in 1980 to 187 in 2000, reflecting the fact that apparel firms in Singapore now sub-contract most production to overseas operations that benefit from lower labor costs and unfilled export quotas.

As wage rates in Singapore rose to levels higher than in any other developing countries in Asia, the competitiveness of its labor-intensive textile and apparel industries declined vis-a-vis its counterparts in neighboring Asian countries, spurring many Singapore textile and apparel firms to discontinue or relocate production to lower cost countries such as China, Indonesia, Malaysia, and Sri Lanka.[7] As such, Singapore's domestic production of apparel accounts for less than 1 percent of total manufacturing in Singapore, with about two-thirds of apparel made by Singapore companies produced outside of Singapore.[8] Singapore's apparel industry has evolved as more of a center for design, warehousing, and distribution for apparel products than a manufacturing base.

The United States is Singapore's leading export market for apparel, accounting for 74 percent of its apparel exports in 2001, but few of its textile exports. Slightly more than one-half of Singapore's apparel exports to the United States that year consisted of re-exports (i.e., Singapore garments partially assembled offshore). Although Singapore exports of textiles and apparel grew in 1999 and 2000, they declined in 2001, largely because of weak U.S. economic activity.[9]

According to United Nations data, Singapore posted a trade deficit for textiles and apparel of approximately $350 million in 2001. Its exports of such goods totaled $2.4 billion, of which $1.6 billion was apparel and the remainder textiles. Its imports amounted to $2.7 billion, with apparel accounting for $1.7 billion and textiles the remainder.

Potential Impact on U.S. Imports

The Commission's CGE model results of Chapter 5 found that, after the removal of tariffs in the U.S.-Singapore FTA, U.S. textile and apparel imports from Singapore would increase by more than 100 percent (albeit from small bases) in the long run. This would result in a minimum impact on U.S. sectoral output which would decline by 0.05

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[7] "Textile Industry," found at *http://www.timesone.com*, retrieved Jan. 30, 2003. Because of the significant relocation of apparel production from Singapore to Indonesia, the two countries requested that the United States shift part of Singapore's apparel quotas to Indonesia. The United States rejected the request, partly because there is no precedent for a quota swap under the U.S. textile program and thus it would require a major policy change; the quotas are fixed and part of a 10-year automatic phaseout plan; and Singapore's lack of cooperation with U.S. customs in preventing illegal textile transshipments. See U.S. Department of State telegram No. 114425, "Textiles: Quota Swap Proposal," Washington, DC, June 15, 2000.

[8] U.S. Department of State telegram No. 1372, "Textile Trade Without Quotas – Singapore," prepared by U.S. Embassy, Singapore, Apr. 29, 2002.

[9] U.S. Department of State telegram No. 1372, "Textile Trade Without Quotas – Singapore," prepared by U.S. Embassy, Singapore, Apr. 29, 2002.

percent. However, when rules of origin are considered, U.S. imports of textiles and apparel would increase by 57 percent, limiting the effects of the tariff removal in the FTA for this sector.

In the short run, according to industry analysis, the U.S.-Singapore FTA likely will result in no measurable increase in total U.S. imports of textiles and apparel from Singapore resulting most likely in no measurable effect on production or employment in the U.S. textile and apparel industries. Although U.S. textile and apparel imports from Singapore are subject to quotas and relatively high tariffs (trade weighted average duty rate of 18 percent ad valorem in 2002), the FTA will limit duty-free and quota-free treatment to textile and apparel articles made in Singapore from yarns and fabrics produced in either Singapore or the United States.[10] Singapore reportedly has limited production capacity for yarns and fabrics, and it is unlikely that Singapore firms will import U.S. yarns and fabrics because of the time and cost associated with shipping these products. Under such conditions, the FTA provides negligible benefit to either Singapore yarn or fabric producers, but the agreement may benefit U.S. yarn and fabric producers. However, costs associated with shipping goods across the ocean twice may negate any potential duty benefits from the FTA, put apparel producers at a disadvantage for providing goods to the U.S. market, and may make Singapore a less attractive location for apparel manufacture.[11] All but a small part of U.S. textile and apparel imports from Singapore during 1997-2002 were apparel articles, particularly knit tops such as sweaters, shirts, and blouses. Most of these knitwear articles are believed to have been made from third-country yarns.

The FTA duty-free and quota-free treatment likely will result in a measurable increase in total U.S. imports of certain high-duty items from Singapore, such as women's or girls' knit manmade-fiber trousers and shorts (HTS subheading 6104.63.20) and certain women's or girls' shirts and blouses (6106.20.20). The 2003 U.S. duty rates are 28.4 percent ad valorem for the trousers and shorts and 32.3 percent ad valorem for the shirts and blouses. In 2002, Singapore's shipments of such trousers and slacks totaled $10 million, or 2.5 percent of total U.S. imports of such goods, while its shipments of the the shirts and blouses totaled $2 million, or 0.6 percent of total U.S. imports. Although these apparel articles are subject to U.S. import quotas, Singapore filled less than 20 percent of its quotas for these products in 2002.

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[10] The FTA rules of origin for textiles and apparel were modeled after those in NAFTA, and would require that imports of apparel from Singapore, for example, would have to be assembled from inputs made either there or in the United States, generally from the yarn stage forward. Under this "yarn forward" rule, only the fibers may be from third countries. In a letter to the USTR, the National Retail Federation stated that, while it supports the proposed FTA, it recommends that the FTA rules of origin for textiles and apparel be based on those now provided under section 334 of the Uruguay Round Agreements Act rather than the NAFTA origin rules. It claims that the NAFTA rules work only when U.S. yarn and fabric mills are located near apparel firms, such as is the case with Mexico, or if the FTA country has significant yarn or fabric production, which is not the case with Singapore. An official of the American Apparel and Footwear Association also opposed the use of the NAFTA textile and apparel rules of origin in the FTA (telephone interview by Commission staff, Dec. 11, 2000).

[11] U.S. apparel retailers, e-mail to Commission staff, Apr. 30, 2003, and telephone interviews by Commission staff, May 8 and 12, 2003.

Under the U.S.-Singapore FTA, the United States would grant immediate unlimited duty-free treatment to products meeting the FTA rules of origin (i.e., "originating goods").[12] For most garments, the rules of origin require the use of yarns or fabrics made in the United States or Singapore.[13] Under the de minimis rule of the FTA, up to 7 percent of the total weight of the originating good can consist of fibers or yarns that are not made in the United States or Singapore, except for elastomeric yarns, which must be wholly made in the United States.

The FTA also provides for a tariff preference level that will exempt specified levels of Singapore's apparel exports from the yarn forward rule for 8 years, permitting the use of third-country yarns and fabrics (i.e., inputs from countries other than Singapore and the United States). The agreement provides for a TPL total of 25 million square meters equivalent (SMEs) for cotton and manmade-fiber apparel in the first year of the FTA, which will be reduced by 3.125 million SMEs each year thereafter, reaching zero in the ninth year. In 2002, Singapore exported a total of 66.4 million SMEs of cotton and manmade-fiber apparel to the United States, comprised of 52.9 million SMEs of cotton apparel and 13.5 million SMEs of manmade fiber apparel. U.S. duty rates under the TPL remain in place while being reduced to zero in equal increments over a 5-year period, thus limiting the time apparel producers have to use the TPLs.

The FTA Textiles Chapter (5) sets forth provisions for "cooperation in the prevention of circumvention" with considerable obligations on the Government of Singapore to monitor trade and ensure compliance. Further FTA provisions pertinent to the prevention of textile and apparel transshipments involve elaborate record keeping criteria, even for goods made under outward processing arrangements. The FTA includes provisions for cooperation and enforcement with procedures for monitoring free trade zones, obligation to share information, and steps to deal with violations. If either FTA party believes that the other is not in compliance with the terms of the agreement with respect to textiles and apparel, it can request consultations (e.g., the United States can apply quotas to Singapore-made goods or revoke preferential benefits for particular firms or products).[14]

Potential Impact on U.S. Exports

The U.S.-Singapore FTA likely will have no measurable effect on total U.S. exports of textiles and apparel to Singapore, absent growth in demand over time, because, while

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[12] In February 2003, Singapore signed a free trade agreement with Australia; implementation of the agreement is expected to occur in mid-2003.

[13] In hearing testimony, Wal-Mart Stores, Inc., cited overly restrictive rules of origin for textile and apparel products as an agreement imperfection. The company stated that such rules, combined with the logistical problem of using the U.S. yarn forward, serve to eliminate Singapore as an option for apparel sourcing. Wal-Mart further expressed concern with respect to the precedent-setting nature of the yarn forward rule, and hopes that it, and the U.S.-Singapore FTA rules of origin, will not be carried over to other FTAs currently under negotiation. Hearing transcript at pp. 48 and 68.

[14] The American Textile Manufacturers Institute expressed concern that an FTA with Singapore will lead to an increase in illegal textile and apparel transshipments from Asia. Charles Bremer, Vice President, International Trade, American Textiles Manufacturers Institute, telephone interview by Commission staff, Apr. 22, 2003.

Singapore's bound duty rate on these goods is 10 percent ad valorem, its applied normal tariff relations (NTR) rate is free.[15] The FTA would ensure that Singapore will not apply the bound rate to U.S. exports of qualifying textile and apparel articles. Singapore does not impose any restrictions or duties on imports or exports of textiles and apparel.

Express Delivery Services

Overview

U.S. Industry

The express delivery services industry comprises companies involved in the expedited movement of documents, parcels, and other goods. Express delivery operators offer an integrated service, maintaining control of the goods throughout the delivery process and often using tracking and tracing technology to monitor the location of each item. Value-added services include, for example, collection from a point designated by the sender, release upon signature, specific delivery time guarantee, and the ability of the sender to confirm delivery. Express delivery providers primarily compete with transportation companies involved in the movement of goods, including freight forwarders, local courier providers, logistic service providers,[16] and postal service operators; and they distinguish themselves from their competitors by the extent of the integrated service that they provide.

In 2001, the U.S. market for express delivery-related services totaled $106.7 billion.[17] In that year, the four largest U.S. express delivery providers–United Parcel Service (UPS), FedEx Corporation (FedEx), Menlo Worldwide,[18] and Airborne Express[19]–generated total revenues of $59 billion, representing over 55 percent of the U.S. market for express delivery-related services. These four U.S. express delivery providers employed over 604,000 people in 2001. U.S. express delivery service companies generate annual international revenues of approximately $10 billion, representing 23 percent of worldwide express delivery revenues.[20]

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[15] U.S. Department of Commerce (USDOC), Office of Textiles and Apparel (OTEXA), "Otexa Export Advantage: Singapore," found at *http://otexa.ita.doc.gov*, retrieved Dec. 7, 2000.

[16] Logistic services involve the movement of semifinished or finished goods from manufacturers to endusers.

[17] Demand for the service has increased largely as a result of the growing trend for companies to use "just-in-time" manufacturing that enables companies to produce to order, thereby reducing costs associated with maintaining large physical inventories. Logistic services include, for example, freight transportation, storage and warehousing, inventory control, order processing, and management services.

[18] Estimated by USITC staff.

[19] Menlo Worldwide is a division of CNF, Inc.

[20] On Mar. 25, 2003, Germany's DHL International announced its intention to purchase the ground transportation assets of Airborne Express. Regulatory approval is pending.

Industry in Singapore

Revenue information on Singapore's express delivery industry is not available. However, the U.S. Department of Commerce (USDOC) estimates that Singapore's logistic services industry generates revenues of approximately $7.2 billion annually and employs 93,000 people.[21] Currently, over 3,000 domestic and foreign transportation and logistic services firms operate in Singapore, the largest of which are U.S.- and Europe-based and Europe-based express delivery firms. These firms include Menlo Worldwide, FedEx, UPS, Airborne Express, DHL Worldwide Express (Germany), and TNT Post Group (the Netherlands).[22]

Potential Impact on U.S. Imports

The U.S.-Singapore free trade agreement is groundbreaking in its inclusion of express delivery services in a free trade agreement, and the sectoral provisions in this particular FTA will ensure the efficient provision of these services in each country. However, the agreement will have little impact on U.S. imports of express delivery services from Singapore, principally because Singapore has a relatively small industry with little capability to project itself into the U.S. market and because only a portion of the projected increase in total imports from Singapore will require expedited delivery. Although trade data on express delivery services are not available, air-freight transport trade data are reasonable proxies.[23] These data indicate that U.S. imports of such services from Singapore totaled $166 million in 2001, which represents approximately 4 percent of total U.S. air-freight transportation imports.[24] U.S. imports of air freight services from Singapore predominantly reflect payments to Singapore's air freight carriers for transporting imported goods to the United States. Imports of such goods decreased significantly, by 22 percent, during 2001, largely owing to unfavorable economic conditions in the United States.[25]

Although the increase in U.S. imports of express delivery services is expected to be small, customs administration provisions in the agreement may facilitate the movement of Singapore express shipments to the United States. For such shipments, the agreement requires the United States to provide prearrival processing; to permit the use of minimal declaration documentation, preferably a single document submitted through electronic means; to provide for the release of certain goods with minimal documentation and deferred payment, where possible; and to ensure the rapid release of express shipments. Although these provisions may increase delivery speeds

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[21] Estimated by USITC staff.

[22] USDOC, United States and Foreign Commercial Service (US&FCS), "Logistic Services - Singapore," *Industry Sector Analysis*, Mar. 2003, p. 2.

[23] Ibid., pp. 21-23; and Triangle Management Services, Ltd., "Industry Links," found at *http://www.triangleconsultancy.co.uk/internet/search/internet_search_results_web.asp*, retrieved Mar. 17, 2003.

[24] Cross-border air-freight transport data comprise U.S. international transactions arising from the transport of goods by air, including time-definite, or express carriage.

[25] USDOC, Bureau of Economic Analysis (BEA), *Survey of Current Business*, Oct. 2002, pp. 88-91.

for Singapore firms' express shipments, the provisions will not have a significant impact on cross-border imports, owing to Singapore firms' limited capacity and presence in the U.S. market.

Potential Impact on U.S. Exports

The U.S.-Singapore free trade agreement will have little impact on U.S. exports of express delivery services owing to the existing openness of the Singapore market and the causal relationship between demand for U.S. products and export shifts. As noted above, trade data on express delivery services are not available, but air-freight transport trade data are reasonable proxies. These data show that U.S. exports to Singapore in 2001 totaled $221 million, representing approximately 4 percent of total U.S. air-freight transportation services exports.[26] Increased exports of such services depend largely on demand for U.S. semifinished and finished goods in Singapore. In 2001, U.S. exports of such goods declined by 1.5 percent to $17.4 billion. This decline is largely attributable to unfavorable economic conditions in Singapore during 2001.

Singapore's express delivery services market is relatively open, and major U.S.-based express delivery firms already have a significant presence in Singapore. In 1999, UPS established its first company-owned and constructed headquarters in Singapore. The new facility houses UPS Corporate's country office and operations facility as well as its finished goods logistic services warehouse.[27] Similarly, FedEx operates a distribution center in Singapore.[28] Both companies report strong demand for their services in Singapore as a result of their increased presence in the country.[29]

As described above, customs administration provisions, which apply to both parties of the agreement, may facilitate U.S. express shipments to Singapore. Although Singapore has a reservation for postal services, the reservation does not apply to express delivery services, including express letter services, thereby ensuring that such services are covered by the provisions of the agreement. Singapore's reservation on postal services limits the potential for monopoly abuse by prohibiting cross-subsidization of express letter services with profits from postal delivery of letters.

Although the U.S.-Singapore FTA will not likely lead to increased U.S. exports of express delivery services, industry representatives are encouraged by the agreement's trade facilitating provisions and its investment provisions, which create greater regulatory certainty for service provision in Singapore.[30] Industry representatives also note that for the first time in any trade agreement, the definition used to describe the industry accurately reflects the activities involved in the provision of express delivery services, thereby setting an important precedent for future trade agreements.[31]

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[26] USDOC, BEA, *U.S. International Transactions, Fourth Quarter and Year 2001*, Apr. 2001, p. 57.

[27] USDOC, BEA, *Survey of Current Business*, Oct. 2002, pp. 88-91.

[28] UPS, "UPS Invests S$38 Million in Asia Pacific Headquarters," press release, Oct. 21, 1999.

[29] FedEx, "FedEx Signs Strategic Retail Agreement with Singapore Post Greater Convenience and Access for SMEs and Consumers," press release, Sept. 24, 2002.

[30] UPS, "UPS Posts Solid 1st Quarter Earnings," press release, Apr. 19, 2002; and FedEx, "FedEx Signs Strategic Retail Agreement with Singapore Post," Sept. 24, 2002.

[31] Industry representative, telephone interview with USITC staff, Washington, DC, Mar. 19, 2003; and Selina Jackson, International Public Affairs Manager, United Parcel Service, written submission, Apr. 24, 2003.

Overview

U.S. Industry

The financial services industry comprises companies involved in the provision of insurance, banking, securities, and asset management services.[32] The domestic industry is large and well established, with U.S. firms globally active and highly competitive in the world financial services market. In the United States, at the end of 2000 there were 4,764 insurance companies, which wrote premiums valued at $865.3 billion, representing 35 percent of the global market.[33] Ranking by 2001 revenues, 5 U.S. firms were among the top 10 property/casualty firms globally. One U.S. firm, MetLife, ranked among the top 10 life insurers worldwide.[34] U.S. insurance carriers, agents, brokers, and services firms employed 2.2 million workers in 2001.[35]

In the U.S. banking industry, approximately 1.9 million workers were employed by 9,354 commercial banks and savings institutions in 2002, which reported total assets of $8.4 trillion, total loans of $5.1 trillion, and total domestic deposits of $4.9 trillion.[36] In December 2002, U.S. commercial banks reported total assets of $752.6 billion held in foreign offices, representing 11 percent of their total assets.[37] Citigroup and JPMorgan Chase are the only 2 U.S.-based firms among the world's 10 largest commercial banks, ranked by assets.[38] Foreign-owned banks represent an important segment of the U.S. banking system, accounting for $1.3 trillion in U.S. domestic assets, representing nearly 16 percent of total U.S. domestic bank assets.[39] Three Singapore banks have five branch offices in the United States, with total assets of $3.2 billion, representing a small percentage of the U.S. market.[40]

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[32] Ibid; and Susan Presti, Executive Director, Air Courier Conference of America, written submission, Apr. 10, 2003.

[33] Excludes deposit-taking and lending services.

[34] In 2000, 67 percent of U.S. insurance companies were property/casualty companies and 33 percent were life/health companies. Insurance Information Institute, *The III Fact Book 2003*, New York: Insurance Information Institute, 2003, pp. 12 and 15.

[35] Ibid., pp. 2-3.

[36] USDOC, BEA, *Survey of Current Business,* Aug. 2002, p. 80.

[37] Includes all institutions insured by the Federal Deposit Insurance Corporation (FDIC). FDIC, "QBP-Stats At A Glance," found at *http://www.fdic.gov/,* retrieved Mar. 17, 2003. Employment figures are for 2001 and includes employees of U.S.-owned and foreign-owned depository institutions. USDOC, BEA, *Survey of Current Business,* Aug. 2002, p. 80.

[38] Savings institutions are included in the statistics for total assets of the U.S. banking system, but savings institutions do not hold foreign assets. FDIC, "Statistics on Depository Institutions Report," Dec. 2002, found at *http://www3.fdic.gov/sdi/rpt_Financial.asp,* retrieved Mar. 17, 2003.

[39] "World's Top Banking Companies by Assets," *American Banker*, found at Internet address *http://www.americanbanker.com*, retrieved Oct. 31, 2002.

[40] U.S. Federal Reserve, "Structure Data for U.S. Offices of Foreign Banks," Dec. 31, 2002, found at *http://www.federalreserve.gov/releases/,* retrieved Mar. 13, 2003.

In 2001, the three U.S. stock exchanges[41] listed 7,598 companies, with a combined market capitalization of $14.7 trillion.[42] The United States has the world's largest securities market. Six U.S. firms were among the world's 10 largest investment banks as ranked by 2002 sales.[43] All of these leading firms have operations in Singapore.[44] At the end of 2001, the U.S. mutual fund industry comprised 8,307 mutual funds, with $7.0 trillion in assets under management.[45] The entire U.S. securities industry employed 767,000 workers in 2001.[46]

Industry in Singapore

In contrast to the size and scope of the U.S. financial services sector, the industry in Singapore is small. Insurance companies in Singapore generated premiums of $4.0 billion in 2001, representing just 0.2 percent of the global total.[47] There were 121 commercial banks in Singapore as of March 2003, with total assets of $208.1 billion and total deposits of $101.8 billion. Foreign-owned firms, including a number of prominent U.S. banks, hold approximately 40 percent of total deposits in Singapore's banking market.[48] In Singapore's securities market, the Singapore Exchange (SGX), listed 525 companies at year-end 2002, with a combined market capitalization of $296.6 billion. During 2002, the SGX recorded share turnover volume of 92.6 billion shares, valued at $66.3 billion.[49] At the end of 2001, Singapore-based mutual fund firms held total assets of $173.4 billion under management, and employed 1,114 investment professionals.[50]

Potential Impact on U.S. Imports

The U.S.-Singapore FTA is unlikely to have a measurable impact on U.S. imports of insurance services from Singapore, which totaled $1 million in 2001, representing a

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[41] The three banks are Overseas Chinese Banking Corp., with U.S. assets of $534 million, Development Bank of Singapore, with assets of $765 million, and United Overseas Bank, with U.S. assets of $1.9 billion. All of the offices are located in either New York or Los Angeles. Ibid.,

[42] There are three major stock markets in the United States: the New York Stock Exchange (NYSE), the American Stock Exchange (AMEX), and the Nasdaq.

[43] Securities Industry Association (SIA), *Securities Industry Fact Book 2002,* New York: SIA, 2002, p. 48.

[44] Morgan Stanley, Merrill Lynch, Goldman Sachs, Salomon Smith Barney (a Citigroup subsidiary), Lehman Brothers, and Bear Stearns. Hoover's Online, Financial Services Industry Snapshot, found at *http://www.hoovers.com/industry/snapshot/0,2204,18,00.html*, retrieved Jan. 28, 2003.

[45] Monetary Authority of Singapore (MAS), "Directory," found at *http://www.mas.gov.sg/directory/,* retrieved Mar. 20, 2003.

[46] Investment Company Institute (ICI), *2002 Mutual Fund Fact Book*, Washington, D.C.: ICI, 2002, pp. 25 and 34.

[47] USDOC, BEA, *Survey of Current Business,* Aug. 2002, p. 80.

[48] Swiss Re, Sigma insurance database.

[49] Bank of America, Citibank, and JPMorgan Chase all hold Qualifying Full Bank licenses, American Express holds a wholesale bank license, and Bank of New York, Fleet Bank, and State Street Bank all hold offshore bank licenses. MAS, "Directory," found at *http://www.mas.gov.sg/directory/,* retrieved Mar. 20, 2003.

[50] The SGX was launched in December 1999, as a result of a merger between the former Stock Exchange of Singapore and the Singapore International Monetary Exchange. Singapore Exchange (SGX) website, "Market Statistics, 2002 December," found at *http://info.sgx.com,* retrieved Mar. 17, 2003.

small percentage of total U.S. insurance imports of $4.9 billion.[51] Although the U.S. insurance market has few existing barriers, few Singapore firms have chosen to enter the U.S. market.

The U.S.-Singapore FTA is also unlikely to have a significant impact on U.S. imports of banking and securities services. In 2001, U.S. imports of banking, securities, and asset management services from Singapore totaled $64 million, compared to total U.S. imports of such services of $4.0 billion.[52] As is the case for insurance, although the U.S. banking and securities markets have few existing market access barriers, few Singapore firms have chosen to enter the U.S. market. Although many foreign banks find it advantageous to maintain a presence in the United States, many smaller foreign-owned banks, such as those from Singapore, focus on providing services such as trade financing to clients from their home countries, and do not compete directly with U.S.-based banks in the U.S. financial services market. Further investment by Singapore banks in the United States largely depends on increased demand from nonfinancial Singapore firms, and is not directly related to financial sector liberalization.

Potential Impact on U.S. Exports

The U.S.-Singapore FTA provisions with respect to the aggregate financial services sector are trade liberalizing in terms of remaining nontariff barriers and are considered to be extremely advantageous by U.S. companies.[53] However, implementation of the FTA is unlikely to have a measurable impact on total U.S. exports of insurance services, primarily because Singapore accounts for a relatively small share of total U.S. insurance exports.[54] Yet, the FTA may result in increased U.S. exports to Singapore in certain specific segments of the insurance industry. For example, the FTA may lead to increased U.S. exports of insurance services to Singapore in the marine, aviation, and transport (MAT) insurance segment, since cross-border supply of MAT insurance to Singapore is permitted for the first time.[55] Additionally, the agreement includes provisions that permit U.S. insurers who meet certain prescribed conditions to offer services to Singapore residents through the Central Provident Fund Investment Scheme (CPFIS), Singapore's privatized social security system. The FTA also contains provisions that waive mandatory filing of approval for new products, except for life insurance, CPFIS-related products, and investment-related products. Where such approval is required, Singapore will allow

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[51] Does not include support staff. MAS, "2001 Survey of the Singapore Asset Management Industry," found at *http://www.mas.gov/sg/,* retrieved Mar. 13, 2003.

[52] USDOC, BEA, *Survey of Current Business,* Oct. 2002, p. 111.

[53] Ibid., p. 107.

[54] Jeffrey R. Shafer, Managing Director, Global Markets, Citigroup, written submission, Apr. 21, 2003.

[55] In 2001, the United States recorded net exports of insurance services of $16 million to Singapore, reflecting premiums of $36 million and claims payments of $21 million. This compares to premiums of $8.7 billion written by U.S. insurers globally. USDOC, BEA, *Survey of Current Business,* Oct. 2002, p. 111.

the product to be offered unless it is disapproved within a reasonable amount of time.[56]

Two restrictions that were considered significant market access barriers by the U.S. insurance industry, namely a ban on new licenses and a 49-percent foreign equity ownership limit on insurance companies, were unilaterally removed by Singapore in 2000,[57] limiting the impact of the new FTA on total U.S. exports of insurance services to Singapore. However, industry representatives indicate that the agreement is important in establishing regulatory certainty by binding these liberalization measures in a treaty, since they are not bound in the GATS agreement. U.S. industry representatives also indicate that the U.S.-Singapore FTA serves an important purpose as a benchmark for future bilateral FTAs between the United States and other countries.[58]

In the banking and securities sector, the U.S.- Singapore FTA is unlikely to have a significant impact on overall U.S. cross-border exports of banking and securities services. However, sales by U.S. bank affiliates in Singapore are likely to show a measurable increase, owing to provisions of the treaty that allow U.S. banks greater access to Singapore's retail banking market.[59] Several provisions of the agreement also remove market access restrictions to asset management firms, but the extent of any resulting increase in exports or affiliate sales will depend on market conditions in Singapore.[60]

The agreement removes Singapore's existing ban on new bank licenses, both at the retail and the wholesale levels. The ban on new licenses for full-service, retail banks will be abolished 18 months after the agreement's implementation, and the ban on new wholesale licenses will be abolished 3 years after the agreement's entry into force. In another important change, U.S. banks with Qualifying Full Bank (QFB) licenses[61] will be permitted to increase the number of their branches (including ATMs), to 30 from 15 immediately upon entry into force of the agreement, followed by the removal of all numerical limits two years later. U.S. banks with QFB licenses will also be permitted to negotiate on commercial terms with Singapore-based banks to achieve access to the local ATM network. Currently, no foreign bank access to the ATM network is permitted. Restrictions remain on the activities of wholesale and offshore banks. However, the restrictions largely serve to separate wholesale from retail business, and once the ban on new retail licenses is removed, banks can avoid the restrictions entirely by obtaining retail bank licenses.[62]

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[56] Statistics that reflect trade specifically in the MAT subsector are not available. Office of the U.S. Trade Representative, "Free Trade with Singapore," found at *http://www.ustr.gov/,* retrieved Mar. 19, 2003.

[57] The Monetary Authority of Singapore (MAS) will endeavor to disapprove products within 30 days.

[58] The MAS also implemented an open admission policy for new insurance brokers, opened the financial guarantee insurance business to multiline insurers and reinsurers, and reduced the paid-up capital requirement for captive insurers to S$400,000. (US $232,000) U.S. & Foreign Commercial Service, Market Research Reports, "Direct Insurance Market Opens," Apr. 12, 2000, found at *http://www.stat-usa.gov/,* retrieved Mar. 12, 2003.

[59] Industry representatives, telephone interviews with USITC staff, Mar. 20 and 24, 2003.

[60] Ibid.

[61] Ibid., Mar. 20, 2003.

[62] Foreign-owned banks operating in the retail market receive QFB licenses, rather than the Full Bank licenses that Singapore-owned banks receive.

The U.S.-Singapore FTA will likely result in increased sales by foreign affiliates of U.S. asset management firms, as a result of two provisions of the agreement that represent important market liberalization. First, Singapore will permit U.S. asset management firms to provide investment advice and portfolio management services from outside Singapore, provided that the services are not custodial or trustee services, and that the firm has a manager located in the territory of Singapore. The U.S. asset management industry has cited this as an important way for their members to reduce costs, thus enhancing their competitiveness with local firms in foreign markets.[63] Second, Singapore will permit U.S. asset managers who meet certain prescribed conditions to offer services to Singapore residents through the CPFIS.

Professional Services

Overview

U.S. Industry

The professional services industry comprises individuals and firms involved in the provision of accounting, architectural and engineering, and legal services. In 2000, the U.S. accounting services industry employed nearly 1.2 million workers in 100,363 establishments; similarly, the architectural, engineering, and related services industry employed 1.2 million in 102,292 establishments; and the legal services industry employed 1.1 million in 176,720 establishments.[64] In 2001, accounting services firms generated revenues of $85.1 billion, architectural and engineering services firms generated $174.9 billion, and legal services firms generated $175.4 billion.[65] The United States is the world's largest market for these services, and the largest U.S.

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[63] Wholesale banks may not accept fixed deposits of less than S$250,000 (US $145,000) per deposit from nonbank customers, and they may not pay interest on Singapore dollar current accounts operated by resident individuals. Offshore banks operate primarily in Asian Currency Units (ACUs) rather than in Singapore dollars. The Asian Currency Unit is a separate accounting unit of banks and finanical institutions given approval to trade in the Asian dollar market. As long as they do business in this offshore currency, they are not restricted as to their activities. However, when doing business in local currency, they face the same restrictions as wholesale banks, with additional restrictions as follows: they may not accept interest bearing deposits from resident nonbank customers other than approved financial institutions, and they may not extend total credit facilities in Singapore dollars exceeding S$500 million (US $290 million) to nonbank customers who are residents of Singapore. The MAS is in the process of converting all offshore bank licenses to wholesale bank licenses.

[64] Industry representatives, submissions to the Commission, Dec. 4, 2000; and telephone interviews with USITC staff, Mar. 21, 2003.

[65] USDOC, BEA, *2000 County Business Patterns*, found at *http://censtats.census.gov/cgi-bin/cbpnaic/cbpdetl.pl*, retrieved Mar. 19, 2003. Estimates are reported for industries as classified in the 1997 North American Industry Classification System (NAICS) and reflect total employees, in order to examine detailed data on individual professional service industries. Data for accounting services also include tax preparation, bookkeeping, and payroll services, and data for architectural and engineering

professional services firms are among the most prominent in providing such services across borders as well as domestically.

Industry in Singapore

By comparison, Singapore's professional services industry is small and in the initial stages of expanding such services to neighboring countries. In June 2002, the Government of Singapore estimated that employment of professionals totaled 231,600, representing 12 percent of Singapore's total work-force.[66] Professionals licensed to practice in Singapore totaled 7,348, consisting of 759 certified public accountants, 1,074 architects, 2,396 engineers, and 3,120 attorneys.[67] The Institute of Certified Public Accountants of Singapore reportedly anticipates increased industry unemployment resulting from a recent regulatory change that now exempts from annual audits those private companies with annual sales less than US$2.8 million.[68] In legal services, more than 725 law firms generated revenues of approximately US$478 million in 2000.[69] Reportedly, an increasing number of Singapore legal services firms are consolidating their operations in an effort to shore up revenues and focus practices on new niches such as intellectual property law and information/communications technology law.[70]

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[65]-*Continued*
services also include landscape architectural, drafting, building inspection, surveying and mapping, and testing laboratory services. In contrast to data on total employment, data on the number of professionals in the industry reveal that as of 2001-03, U.S. State regulatory bodies granted the right to practice in these professions to 580,297 accountants, 105,149 architects, approximately 360,000 engineers, and 1,048,903 attorneys. American Institute of Certified Public Accountants, from data supplied by the National Association of State Boards of Accountancy, "Tabulation of CPAs as of August 1, 2002," found at *http://www.aicpa.org/*, retrieved Apr. 9, 2003; official of the National Council of Architectural Registration Boards, telephone interview with Commission staff, May 5, 2003; official of the National Society of Professional Engineers, e-mail to Commission staff, May 7, 2003; and industry official representing the American Bar Association, e-mail to Commission staff, May 7, 2003.

[66] Bureau of the Census, *2001 Service Annual Survey: Professional, Scientific, and Technical Services*, table 6.1, found at *http://www.census.gov/svsd/www/sas54.html*, retrieved Mar. 19, 2003. Data for revenues at architectural and engineering services firms exclude revenues of landscape architectural services firms.

[67] Government of Singapore, Ministry of Manpower, *Report on Labour Force in Singapore, 2002*, pp. 14-15, found at *http://www.mom.gov.sg/*, retrieved Mar. 28, 2003.

[68] Officials of the Public Accountants Board of Singapore, the Institute of Certified Public Accountants of Singapore, the Board of Architects of Singapore, and the Professional Engineers Board of Singapore, e-mails to Commission staff, Apr. 20-24, 2003; and Ministry of Law, Singapore, "Findings of Legal Census," found at *http://app.internet.gov.sg/scripts/ minlaw/hq/newswatch/*, retrieved Mar. 14, 2003.

[69] PricewaterhouseCoopers, "International Briefings — Singapore: Audit Exemption for Private Exempt Companies," December 2002.

[70] Government of Singapore, Ministry of Law, "Findings of Legal Census," found at *http://app.internet.gov.sg/scripts/minlaw/*, retrieved Mar. 14, 2003. According to responses from professional licensing bodies in Singapore to inquiries by Commission staff, no information is available as to revenues generated by other professional service industries in Singapore.

Potential Impact on U.S. Imports

The U.S.-Singapore FTA is not likely to result in a measurable increase in U.S. imports of professional services, given the current low level of imports from Singapore and the likely continuation of mostly regional operations by Singapore professional service firms. In 2001, U.S. imports of architectural and engineering services from Singapore totaled $1 million,[71] while U.S. imports of legal services from Singapore totaled $6 million. Such imports represented just 0.2 percent and 0.8 percent of total U.S. imports of architectural and engineering services and legal services, respectively, in 2001. Accounting services trade data are not separately reported;[72] however, it is likely that U.S. imports of accounting services from Singapore represent a similarly marginal share of total U.S. imports of such services.

The U.S. professional services market has few barriers. Market access conditions for Singapore professionals may be further improved by provisions in the U.S.-Singapore FTA that expedite short-term multiple entry of professionals. The FTA's provisions for special visas for professionals, which require a change in U.S. immigration law, would be based on proof of nationality, the purpose of entry, and evidence of professional credentials. The U.S.-Singapore FTA establishes an initial annual limit of 5,400 Singapore professionals approved for admission into the United States. Despite these benefits, U.S. industry sources expressed disappointment that the agreement will not allow temporary entry into the United States of very highly skilled or talented persons who do not have the requisite level of education to meet the U.S. definition of professional but who operate at such a level by exceptional experience and training.[73]

Potential Impact on U.S. Exports

The U.S.-Singapore FTA reduces certain restrictive regulatory barriers affecting U.S. professional service firms.[74] However, the agreement is not likely to result in a measurable increase in U.S. exports of professional services. Singapore represents a relatively small market for U.S. exports of professional services.[75] In 2001, U.S.

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[71] Ibid. and PricewaterhouseCoopers, "International Briefings — Singapore: Recommendations of the Economic Review Committee," Oct. 2002.

[72] These data report U.S. imports of construction, engineering, architectural, and mining services, combined. Import data for these services, unlike export data, are not published net of merchandise imports and outlays for wages and other expenses. USDOC, BEA, *Survey of Current Business*, Oct. 2002, p. 119.

[73] Ibid. U.S. import data on accounting services are combined with those on medical services, miscellaneous disbursements, operational leasing, sports and performing arts, training services, and other business, professional, and technical services, unaffiliated, which totaled $45 million from Singapore in 2001.

[74] "The U.S.-Singapore Free Trade Agreement (FTA)," report of the Industry Sector Advisory Committee on Services for Trade Policy Matters (ISAC 13), available at *http://www.ustr.gov,* retreived Feb. 28, 2003.

[75] For example, local ownership restrictions will be relaxed for U.S. architectural and engineering firms. Singapore will also relax the requirement that U.S. law firms must participate in joint law ventures with local firms, and the country will recognize law degrees granted to Singapore citizens and permanent residents by a limited number of U.S. law schools for the purposes of qualifying for the Singapore bar.

exports of architectural and engineering services to Singapore totaled a negative $37 million,[76] while U.S. exports of legal services to Singapore totaled $36 million.[77] The net negative in architectural and engineering services exports to Singapore contrasted with net exports of $2.6 billion of such services to all countries in 2001. Singapore accounted for 1 percent of the $3.1 billion in legal services exported in 2001.

Statements to the Commission convey that under the U.S.-Singapore FTA, Singapore agrees to reduce restrictions and provide enhanced market access for U.S. professional service firms and individuals,[78] easing conditions on the practice of architectural, engineering and land surveying, and legal services.[79] Nevertheless, the U.S.-Singapore FTA does not liberalize important segments of Singapore's professional services industry in certain major respects. For example, Singapore includes registration and residency requirements among its reservations on auditing services in the FTA. Moreover, reservations that apply to corporations providing auditing services appear to be more stringent than reservations stated in the Singapore-Australia FTA.[80]

Concerning legal services, foreign law firms operating in Singapore are currently prohibited from practicing the law of Singapore, nor may they hire Singapore lawyers to practice the law of Singapore. Additionally, foreign law firms cannot litigate in Singapore's courts.[81] The removal of the first two restrictions is considered most important to the U.S. industry.[82] However, aside from certain provisions granting U.S. lawyers the ability to practice the law of Singapore provided they work for a Singapore law firm, the U.S.-Singapore FTA includes reservations by Singapore to preserve the restrictions regarded as the most burdensome. The agreement modestly improves conditions of establishment by easing requirements to form joint law ventures

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[76] U.S. exports of construction, engineering, architectural, and mining services to Singapore, for example, were recorded as a negative value in 2001, as the value of contractually linked merchandise exports and outlays abroad for wages, materials, and other expenses exceeded the value of exports of such services.

[77] USDOC, BEA, *Survey of Current Business*, Oct. 2002, pp. 118-119. The data cited are exports of construction, engineering, architectural, and mining services, net of merchandise exports and net of outlays abroad for wages, services, materials, and other expenses.

[78] USDOC, BEA, *Survey of Current Business*, Oct. 2002, p. 118. Export data on accounting services are aggregated with other business, professional, and technical services, unaffiliated, in the same manner as import data cited above. In 2001, exports to Singapore of these services, including accounting services, totaled $30 million.

[79] Myron Brilliant, Vice President - Asia, United States Chamber of Commerce, written submission, Apr. 24, 2003.

[80] H.E. The Hon. Chan Heng Chee, Ambassador of Singapore, written submission, Apr. 24, 2003.

[81] Reservations by Singapore in the agreement with Australia do not include requirements present in the agreement with the United States that not less than two-thirds of the boards of directors must be Singapore-registered public accountants, the business of the corporation must be under the control of directors who are Singapore-registered public accountants, and not less than two-thirds of the voting shares of the corporation must be owned by Singapore-registered public accountants. U.S. Department of State telegram, "Singapore-Australia FTA Signed," message reference No. 00632, prepared by U.S. Embassy, Singapore, Feb. 18, 2003.

[82] "The U.S.-Singapore Free Trade Agreement (FTA)," report of the Industry Sector Advisory Committee on Services for Trade Policy Matters (ISAC 13), available at *http://www.ustr.gov,* retreived Feb. 28, 2003.

or formal law alliances with Singapore law firms.[83] The agreement also enables U.S. lawyers to participate in arbitrations in Singapore with assistance from Singapore lawyers in applying the law of Singapore. Under the agreement, for the first time, law degrees granted to Singapore citizens or permanent residents from four U.S. law schools are to be recognized for the purpose of partially fulfilling requirements for admission to practice law in Singapore.[84] Nonetheless, these relatively narrow gains combined with the small size of the Singapore market suggest that the FTA will not likely result in a notable increase in U.S. exports of legal services.

With respect to architectural and engineering services, U.S. industry sources note that the agreement could improve the conditions under which most engineering firms operate in Singapore and level the playing field among competitors.[85] Nevertheless, Singapore's national treatment reservations raise concern from U.S. industry sources over the lack of a phase-out period for local control of ownership of engineering service firms. Singapore's reservations state that Singapore-registered professionals must comprise at least 51 percent of directors in architectural and engineering corporations, and fully control assets and profits in partnerships. Moreover, U.S. industry sources consider Singapore's government procurement contracts' minimum values ambiguous with regard to construction services, potentially subjecting engineering services to high domestic preference requirements.[86] Singapore maintains a residency requirement on architectural and engineering services. U.S. industry sources condition support of the Singapore FTA on their understanding that a foreign person can easily obtain a type of Singapore residency/employment visa known as the employment pass, which is part of a visa program that allows a professional to remain in Singapore more than 90 days.[87] As with legal services, the apparent limitations and/or liberalization accorded by the U.S.-Singapore FTA will not likely increase or deter exports, as the overall market in Singapore is small.

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[83] Hearing transcript at p. 25.

[84] By comparison, provisions of the Singapore-Australia FTA doubled the number of Australian universities whose law degrees are recognized in Singapore, from four to eight. Nineteen British universities and two New Zealand universities also have law degrees recognized in Singapore. Australian Department of Foreign Affairs and Trade, "Singapore-Australia Free Trade Agreement (SAFTA)," found at *http://www.dfat.gov.au/trade/negotiations/*, retrieved Mar. 20, 2003; and USDOC, FCS, "Singapore Country Commercial Guide FY 2003 - Investment Climate," Aug. 19, 2002, found at *http://www.stat-usa.gov*, retrieved Mar. 26, 2003.

[85] "The U.S.-Singapore Free Trade Agreement (FTA)," report of the Industry Sector Advisory Committee on Services for Trade Policy Matters (ISAC 13), available at *http://www.ustr.gov,* retreived Feb. 28, 2003.

[86] Ibid.

[87] Ibid.

Overview

U.S. Industry

Telecommunication services include both basic and value-added services, both of which can be provided across national borders and through foreign-based affiliates.[88] In terms of revenue, the U.S. telecommunication services industry is the largest in the world. In 2000, U.S. telecommunication services revenues totaled $292.8 billion, representing nearly 33 percent of worldwide revenues.[89] In 2001, the U.S. telecommunication services industry contributed approximately 2 percent to U.S. GDP and employed 1.1 million people, accounting for approximately 1 percent of total U.S. employment.[90] Although the U.S. industry consists of over 700 companies that provide long distance telephone services and approximately 1,300 companies that provide local services,[91] over 90 percent of U.S. telecommunication service revenues are generated by three long-distance companies and the four Regional Bell Operating Companies (RBOCs).[92] Similarly, in 2001, eight service providers accounted for 84 percent of total subscribers in the U.S. wireless telecommunication services segment.[93]

The U.S. telecommunication services industry is currently recovering from the excesses of the late 1990s telecom boom, when many companies borrowed heavily to build broadband networks and develop new services, both domestically and abroad. Ultimately, these firms were left with massive excess capacity and unmanageable debt loads when actual network traffic flows fell far short of predictions. The inflated expectations of demand and profitability that prevailed at the end of the 1990s also encouraged scores of new companies to enter the U.S. market. Subsequent intense competition led to falling service prices and revenue shortfalls in many market segments. As a result, many companies in the U.S. telecommunication services industry filed for bankruptcy, including new entrants such as Global Crossing and incumbents such as Worldcom. Despite the current financial problems in the industry, U.S. telecommunications firms are highly competitive globally. The major U.S. firms, including AT&T, MCI, and Sprint, operate in most international markets, incorporate advanced network technology, and offer innovative services.

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[88] Basic services include the transmission of voice without change in form or content. Value-added services include services such as electronic mail, electronic data interchange, electronic funds transfer, enhanced facsimile, and on-line database access.

[89] International Telecommunications Union (ITU), *World Telecommunication Development Report, 2002*, Geneva: ITU, Mar. 2002, p. A-55.

[90] USDOC, BEA, *Survey of Current Business*, Nov. 2002, p. 32; and USDOC, BEA, *Survey of Current Business*, Aug. 2002, p. 80.

[91] Standard and Poor's, *Telecommunications: Wireline*, Industry Survey, May 31, 2002.

[92] The three long-distance companies are AT&T Corp., Sprint Corp., and MCI, Inc. The four Regional Bell Operating Companies are Verizon Inc., BellSouth, SBC Communications, and Qwest Communications International.

[93] These include Verizon, Cingular, AT&T, Sprint PCS, Nextel, Voicestream, Alltel, and US Cellular.

Industry in Singapore

Singapore has one of the world's most advanced telecommunication networks. The wireline network reaches over 95 percent of Singapore households, and more than 70 percent of the population owns a mobile telephone.[94] In 2001, revenues for telecommunication services in Singapore totaled $2.4 billion, representing less than 1 percent of worldwide telecommunication service revenues. [95]State-controlled Singapore Telecommunications Limited (SingTel) is the dominant player in all segments of Singapore's telecommunication services industry, including national telephone services, public and private network and data services, mobile communications, and international services.[96] Its main competitor is Starhub, which offers competition in the fixed line, Internet, and mobile markets. Other major competitors in Singapore include Internet service provider Pacific Internet and wireless services provider Mobile One. Growth in Singapore's wireline and wireless service markets is unlikely owing to the country's small population as well as high penetration rates for telecommunication services. Despite the small number of companies, Singapore's telecommunication services market is highly competitive, with new entrants competing against incumbent firms for market share. Such competition among existing players in Singapore has led to price erosion in several important markets, resulting in declining industry profitability.

Potential Impact on U.S. Imports

The telecommunication services sector is the subject of a distinct chapter in the U.S.-Singapore FTA, due not only to its prominence in terms of bilateral trade but also owing to its vital role as an input in the production and trade of goods and services. However, while the agreement is noted as further liberalizing market access in telecommunication services,[97] the U.S.-Singapore FTA will likely have no measurable impact on U.S. imports of telecommunication services. Accounting rate reductions are expected to be the major determinant of changes in imports of telecommunication services from Singapore. Cross-border telecommunication services import data primarily reflect U.S. carriers' payments to Singapore firms for the transmission of voice messages, measured in minutes. Such imports largely depend on the accounting rate level, which has fallen by approximately 42 percent since 1998 as a result of reform efforts led by the U.S. Federal Communications Commission. Although declining accounting rates will likely lead to an increase in the volume of voice minutes traded between Singapore and the United States, the value of imports measured in dollars will likely decline as a result of the large reduction in accounting rates.

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[94] USDOC, US&FCS, *Singapore Country Commercial Guide 2003*, found at Internet address *http://www.buyusainfo.net*, retrieved on Mar. 18, 2003; and USDOC, US&FCS, *Recent Developments in Singapore's Telecommunication Industry*, found at *http://www.buyusainfo.net*, retrieved on Mar. 18, 2003.

[95] ITU, *World Telecommunication Development Report, 2002*, p. A-55.

[96] SingTel was partially privatized in 1993, leaving the government with a 67.5 percent share of the company.

[97] Hearing transcript at pp. 26 and 114.

The United States telecommunications market is already relatively open, as is reflected in the WTO Basic Telecommunications Agreement.[98] Moreover, the main provisions of the U.S.-Singapore FTA, which include commitments related to network access and interconnection, licensing and regulatory transparency, and competitive safeguards, are already largely reflected in the reference paper attached to the United States' WTO commitments. Despite such openness, Singapore telecommunication services firms have not entered the U.S. market. In the near term, economic conditions in the domestic U.S. market together with the scarcity of capital for telecommunication projects will likely reduce the incentive for Singapore telecom firms to establish an affiliate in the United States. Over the long term, however, the incremental commitments made in the U.S.-Singapore FTA may benefit prospective U.S.-based Singapore affiliates through increased transparency and greater regulatory certainty.

Potential Impact on U.S. Exports

The U.S.-Singapore FTA will likely have no measurable impact on U.S. exports of telecommunication services. Commitments made by the government of Singapore as part of the WTO Basic Telecommunications Agreement lifted most restrictions. Moreover, the main provisions of the U.S.-Singapore FTA, which include commitments related to network access and interconnection, licensing and regulatory transparency, and competitive safeguards, are already largely reflected in the reference paper attached to Singapore's WTO commitments. Further, the only major limitation scheduled by Singapore in the WTO agreement, a foreign ownership restriction, was unilaterally lifted in April 2000.[99] U.S. industry concerns related to the Singapore telecommunication services market center on the high cost of leased circuits in Singapore. The U.S.-Singapore FTA, by requiring that major Singapore telecommunication suppliers lease circuits at terms, conditions, pricing structures, and rates that are reasonable, nondiscriminatory, and transparent, will likely remove this market impediment.

Although U.S. telecommunication service providers AT&T and MCI have established operations in Singapore, it is not a key market owing to its small population.[100] Moreover, in the short term, poor economic conditions in the U.S. domestic market combined with the scarcity of capital for telecommunication projects will likely limit additional investment in the Singapore telecommunication services sector by U.S. firms. Over the long term, the incremental commitments made in the U.S.-Singapore FTA will benefit U.S. companies with an established commercial presence in Singapore through increased transparency and greater regulatory certainty.

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[98] The WTO Basic Telecommunications Agreement became effective Feb. 5, 1998.

[99] Representative from the Infocomm Development Authority of Singapore, e-mail to Commission staff, Mar. 31, 2003.

[100] In 2001, exports of U.S. telecommunication services to Singapore amounted to only 2.1 percent of total telecommunications exports and only 0.03 percent of total private services exports.

As described above, accounting rate reductions are expected to be the largest determinant of changes in exports of telecommunication services to Singapore. Cross-border telecommunication services export data primarily reflect U.S. firms' receipts from Singapore for the transmission of voice messages, measured in minutes. Although declining accounting rates will likely lead to an increase in the volume of voice minutes traded between Singapore and the United States, the value of exports measured in dollars will likely decline as a result of large reductions in the accounting rate.

CHAPTER 7
Impact of a U.S.-Singapore FTA on Intellectual Property Rights

Singapore is generally noted as having a comparatively strong intellectual property rights (IPR) regime; however, certain difficulties remain. The U.S.-Singapore FTA promises to build on the country's established commitments and practices and address remaining concerns about IPR protection for U.S. firms and industries. The FTA sets out high standards for protection and enforcement for copyrights and other intellectual property and may lead to increased revenues for certain U.S. industries dependent on IPR. The following presents a description of the current status of IPR protection in Singapore, summarizes key provisions of the FTA related to IPR, and to the extent possible describes the potential effects of implementation of IPR provisions in the FTA on U.S. industries and the U.S. economy as a whole.

Current Conditions of IPR Protection in Singapore

Although Singapore is generally considered to have made substantial progress in improving its intellectual property rights (IPR) regime over the past several years, problems remain.[1] As a member of the World Trade Organization (WTO), Singapore must comply with the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights (TRIPs), which it has implemented in its domestic legislation.[2] Singapore also has acceded to several major international IPR treaties including the Paris Convention, the Berne Convention, the Budapest Treaty, and the Nice Agreement. Singapore IPR-related legislation includes the Copyright Act of 1987, the Trade Marks Act of 1998, the Patents Act of 1994, the Geographical Indications Act of 1998, and the Layout Design of Integrated Circuits Act of 1999.[3] Further, improvement in enforcement in recent years led to Singapore's removal from the U.S. Special 301 Watch List[4] in 2001.

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[1] United States Trade Representative (USTR), "Singapore," *2003 National Trade Estimate Report on Foreign Trade Barriers*, Mar. 31, 2003, pp. 343-44.

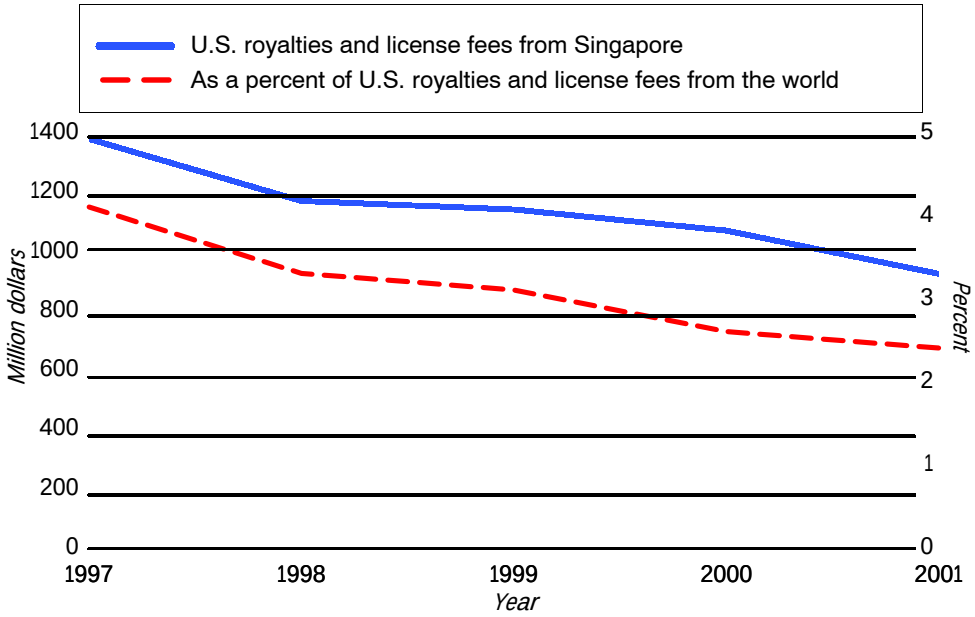
[2] Singapore Economic Development Board (EDB), "Protecting Intellectual Property Rights in Singapore," *Business Resources*, 2003, found at *http://www.sedb.com/edbcorp*, retrieved Feb. 26, 2003.

[3] Ibid.

[4] Special 301 refers to a provision of U.S. trade law that requires USTR to provide an annual report to identify countries that deny adequate and effective protection of intellectual property rights (IPR), or deny fair and equitable market access to U.S. persons or firms that rely on intellectual property protection. Countries with laws, policies, or practices that have the greatest adverse effects on relevant U.S. producers or products must be designated as Priority Foreign Countries unless USTR finds that the countries are entering into good faith negotiations or are making significant progress in bilateral or

Despite its progress, U.S. industry and government officials state that there are still problems with Singapore's IPR regime.[5] Some problems relate to Internet and digital piracy,[6] including difficulty in getting infringing material removed from Internet sites, and unauthorized duplication of optical discs (including CDs and DVDs). Other problems include the failure of the Singapore Government and educational organizations to properly license software and to pay for the reproduction of copyrighted works; transshipment of pirated works through Singapore; and ineffective enforcement by Singapore of its intellectual property laws. U.S. royalties and license fees for IPR products and services from Singapore declined gradually during 1997-2001 to $923 million, while the portion of such U.S. receipts from the world represented by Singapore dropped by over 40 percent (figure 7-1).

Figure 7-1
U.S. royalties and license fees from Singapore, by value, and as a percent of total U.S. royalties and license fees from the world, 1997-2001



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2002.

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[4]—*Continued*
multilateral negotiations to provide adequate and effective IPR protection. Countries that are designated Priority Foreign Countries are subject to investigation and, if necessary, trade sanctions or other actions by USTR. USTR has also created a Priority Watch List and Watch List under the Special 301 provisions. Placement of a trading partner on the Priority Watch List or Watch List indicates that particular problems exist in that country with respect to IPR protection that require attention by the U.S. Government. USTR, *2003 Trade Policy Agenda and 2002 Annual Report of the President of the United States on the Trade Agreements Program*, Mar. 2003, p. 236.

[5] USTR, "Singapore," *2003 National Trade Estimate Report on Foreign Trade Barriers*, pp. 343-44; and U.S. industry representatives, telephone interviews by USITC staff, Feb. 2003.

[6] Commercial piracy covers a range of unauthorized uses which result in commercial advantage to the infringer. This includes unauthorized reproduction of physical product, reproduction in intangible ways (Internet, etc.), physical distribution and sale, transmission (including Internet transmissions), public performances, public exhibitions, broadcasting, cablecasting, satellite transmissions, and the like.

Internet, optical disc, and other digital piracy in Singapore continue to be the major areas of concern. Unlike the United States, Singapore has not yet signed or ratified the World Intellectual Property Organization (WIPO) Copyright Treaty (WCT) or the WIPO Performances and Phonograms[7] Treaty (WPPT),[8] both of which were adopted in 1996 to address Internet and other types of digital piracy (see text box).[9] U.S. industry and government officials state that Singapore's requirements and procedures for removing IPR infringing material from Internet sites are time consuming and ineffective.[10] Further, because Internet service providers are not liable for allowing websites hosted on their servers to offer and sell pirated products, they have little incentive to work with IPR holders to remove such material. Unauthorized duplication of optical discs[11] is another major digital piracy problem as pirated audio and video discs are widely available throughout the country, and software piracy rates, while low for Asia, are significantly higher than in the United States.[12] U.S. industry representatives state that if Singapore required the use of source identification codes on every optical disc produced, it would minimize some of these illicit activities.

The unauthorized use of copyrighted material by schools, businesses, and government agencies is costly to U.S. right holders. Some government-operated educational institutions are still not in compliance with Singapore's legal obligations to pay royalty fees to publishers to obtain the right to duplicate copyrighted printed material for use in course materials.[13] Meanwhile, many businesses and some government agencies use unlicensed software.[14] Failure of these organizations to comply with copyright requirements costs U.S. publishers millions of dollars each year in lost sales and licensing fees.

Transshipment of IPR infringing products from other Asian countries through Singapore has become a problem, because of Singapore's importance as an Asian port.[15] To rectify this, U.S. industry representatives believe that Singapore must respond by enacting criminal sanctions and actively pursue such transshipments, regardless of the origin of the infringing goods.[16] Such efforts would require

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[7] Phonograms are sound recordings.

[8] Hearing transcript at pp. 89 and 92.

[9] These two treaties are often referred to as the "Internet Treaties," because they provide new international standards for the protection of copyrights and related rights in the digital economy. Both treaties went into force as international law in 2002, once the required 30 governments had formally acceded to them. The United States ratified each treaty and implemented them domestically via the Digital Millennium Copyright Act of 1998.

[10] U.S. industry representatives, telephone interviews by USITC staff, Feb. 2003.

[11] Motion Pictures Association of America (MPAA), "Statement by Jack Valenti on the US-Singapore Free Trade Agreement," *MPAA Press Releases*, Jan. 17, 2003, p. 1, found at *http://www.mapaa.org*, retrieved Apr. 8, 2003.

[12] USTR, "Singapore," *2003 National Trade Estimate Report*, pp. 343-44; and U.S. industry representatives, telephone interviews by USITC staff, Feb. 2003.

[13] Ibid.

[14] Ibid.

[15] Hearing transcript at pp. 126-128.

[16] U.S. industry representatives, interviews by USITC staff, June-Aug. 2002.

The WIPO Internet Treaties

The WIPO Copyright Treaty (WCT) and the WIPO Performances and Phonograms Treaty (WPPT) are often referred to as the "Internet Treaties" because they provide new international standards for the protection of copyrights and related rights in the digital age. The two treaties entered into force on March 6 and May 20, 2002, respectively, once the required minimum 30 countries had ratified each.

The WCT introduces standards to protect rights holders of literary and artistic works in the digital environment, including art, books, software, movies, and music.

The WPPT similarly safeguards the interests of producers of sound recordings, as well as of performers.

Both treaties make clear that the traditional IPR right of reproduction (copying) continues to apply in the digital environment, including the storage of material in digital form in an electronic medium.

The treaties establish the right holders' right to control the digital transmission of their works.

The treaties ensure that right holders can use technology to protect their rights online. The treaties' "anti-circumvention" provisions address security and piracy risks, such as those posed by "hacking," by requiring member countries to provide adequate legal protection and remedies against the circumvention of technical measures, such as encryption.

A new "rights management" provision in the treaties requires member countries to prohibit the deliberate alteration or deletion of electronic rights management information. This is the information that can be embedded into the digital code of a creative work and used to identify the work, its author, performer or owner, the terms and conditions for its use, and any other relevant attributes.

Singapore has not yet ratified either of these treaties, while the United States has. The United States implemented it domestically via the Digital Millennium Copyright Act of 1998.

Source: Chris Gibson, *WIPO Internet Copyright Treaties Coming Into Force*, 2002; USTR official; Washington International Trade Association; National Foreign Trade Council; and Global Business Dialogue Program: "TRIPS Implementation: Intellectual Property and the WTO," Washington, D.C., July 17, 2002.

Singapore to change its laws to make the export, transshipment, or brokering of infringing products a crime.[17]

U.S. industry and government officials state that enforcement of IPR laws in Singapore could be improved.[18] Although Singapore has established a special branch in its police force to enforce its IPR laws, right holders are still required to make significant efforts of their own to initiate the prosecution of infringement cases. This places an expensive burden on right holders. According to the U.S. officials, Singapore should treat IPR infringement in the same manner as other crimes of theft, with police taking greater initiatives in the investigation and prosecution of such crimes.

Major IPR Provisions of the U.S.-Singapore FTA

In general, the IPR provisions of the U.S.-Singapore FTA go further than the WTO TRIPs agreement to protect intellectual property rights. National treatment provisions are broad, permit no exceptions, and extend to "any benefits derived" from the "protection and enjoyment" of intellectual property of any kind.[19] Other significant enhancements include stronger protections for copyrights (including those for digital and Internet works), trademarks, patents, and trade secrets. IPR enforcement provisions are also strongly increased in the agreement.[20]

Copyrights

Among the major IPR achievements of the U.S.-Singapore FTA is that it addresses digital and, in particular, Internet piracy by containing a number of copyright provisions included in the WCT and the WPPT, while requiring the ratification of, or accession to, those treaties within one year of the date of entry into force of the FTA.[21] In this regard, the FTA ensures that only authors, composers, and other copyright owners have the right to make their works available online. Further, copyright owners maintain rights to temporary copies of their works on computers, which is important in protecting music, videos, software, and text from unauthorized sharing on the Internet.

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[17] U.S. Department of State, "Fact Sheet: U.S.-Free Trade Agreement With Singapore," pp. 1-11, *Press Release*, Dec. 19, 2002, found at *http://www.state.gov*, retrieved Feb. 21, 2003.

[18] USTR, "Singapore," *2003 National Trade Estimate Report*, pp. 343-44; and U.S. industry representatives, telephone interviews by USITC staff, Feb. 2003.

[19] Industry Functional Advisory Group on Intellectual Property Rights for Trade Policy Matters (IFAC-3), *The U.S.-Singapore Free Trade Agreement: The Intellectual Property Provisions*, Feb. 28, 2003, p. 5, found at *http://www.ustr.gov*, retrieved Mar. 13, 2003.

[20] Hearing transcript at p. 89; and the United States Chamber of Commerce, "Singapore FTA–Almost Concluded–With Free Flow of Capital Caveat," *Asia*, 2003, found at *http://www.uschamber.com*, retrieved Feb. 26, 2003.

[21] MPAA, "Statement by Jack Valenti on the US-Singapore Free Trade Agreement," p. 1; USTR, "Free Trade with Singapore," *Trade Facts*, Dec. 16, 2002, pp. 1 and 5-7; and International Intellectual Property Alliance (IIPA), "The Copyright Industries Laud the Conclusion of the U.S.-Singapore Free Trade Agreement," *Press Release*, Jan. 21, 2003, pp. 1-2.

Also, the FTA provides strict legal protections and remedies against the circumvention of effective technological measures used by copyright holders to prevent piracy and unauthorized distribution of copyrighted materials over the Internet.[22] The FTA states that to knowingly participate in such piracy, circumvention, or unauthorized distribution of copyrighted material will result in criminal and civil liability.[23]

Also included under FTA digital IPR provisions are a number of other requirements. For instance, the unauthorized production of optical discs is prohibited, and authorized production must be licensed.[24] Moreover, every licensee is to ensure that each optical disc manufactured is marked with a source identification or manufacturer's code and that production records are maintained.[25] The alteration of rights management information or trafficking in works from which rights management information has been removed or altered is also prohibited, and such activities are subject to criminal and civil liability. Further, because the pervasive digitization of copyrighted works and their transmission over the Internet leave little justification to continue treating sound recordings differently from other protected works, the FTA does not make a distinction between copyright and "related" rights, in contrast to previous agreements.[26] This change ensures that the level of protection for record producers and performers, often protected under "related" or "neighboring" rights regimes in many other countries, is the same as for other copyright protection provisions, including those provided by the Berne Convention, a principal international treaty governing copyright protection.[27]

In addition, protection for encrypted program-carrying satellite signals is extended to the signals themselves as well as the programming. The manufacture and trafficking of tools to unlawfully intercept the signals is prohibited in order to deter piracy of satellite television programming. Satellite signal piracy is subject to both civil and criminal liability. Finally, each party is to ratify or accede to the Brussels Convention Relating to the Distribution of Programme-Carrying Signals Transmitted by Satellite within one year of the date or entry into force of the FTA.

Other copyright provisions of the FTA extend terms of protection beyond those required by TRIPs.[28] Under the FTA, where the term of protection of a work (including a photographic work), performance or phonogram is to be calculated on the basis of a person's life, the term shall be not less than the life of the author and 70 years after the

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[22] Singapore Ministry of Trade and Industry, *Information Paper on the U.S.-Singapore Free Trade Agreement*, Dec. 16, 2002, pp. 1-8, found at *http://www.mti.gov.sg*, retrieved Feb. 21, 2003.

[23] However, immunity will be provided to Internet service providers for complying with notification and take-down procedures when materials suspected to be infringing are hosted on their servers. Ibid.

[24] Side letter on Intellectual Property, Optical Disks of the U.S.-Singapore FTA.

[25] Singapore may provide an exception to this obligation in cases where each right holder that has a right to the content to be contained on an optical disc expressly requests that no manufacturer's code be marked on the optical disc. Side letter on Intellectual Property, Optical Disks of the U.S.-Singapore FTA.

[26] IFAC-3, *The U.S.-Singapore Free Trade Agreement: The Intellectual Property Provisions*, pp. 8-9.

[27] Ibid.

[28] MPAA, "Statement by Jack Valenti on the US-Singapore Free Trade Agreement," p. 1.

author's death. By reference to the Berne Convention, the term of protection in TRIPs is life of the author and 50 years after his death.[29] In cases where the term of protection of a work (including a photographic work), performance, or phonogram is to be calculated on a basis other than the life of a person, the term in the FTA is 70 years from the end of the calendar year of the first authorized publication of the work. The comparable period of protection in TRIPs is 50 years and does not apply to photographic works. Finally, failing such authorized publication within 50 years from the creation of a work (including a photographic work), performance, or phonogram, the FTA term of protection is to be not less than 70 years from the end of the calendar year of the creation of the work. Again, the comparable period of protection in TRIPs is 50 years and does not apply to photographic works.

The U.S.-Singapore FTA prohibits unauthorized use of software by government agencies. Appropriate administrative or executive decrees, laws, orders, or regulations are to be issued mandating that all government agencies use only computer software authorized for intended use. Records of software present on government agencies' computers and existing software licenses shall be maintained to actively regulate the acquisition and management of such software.

Trademarks

Trademark protections are also strengthened by the U.S.-Singapore FTA, and provisions have been simplified for right holders. The FTA provides that the owner of a registered trademark shall have the exclusive right to prevent third parties not having the owner's consent from using identical or similar signs where such use would result in a likelihood of confusion, with limited exceptions such as fair use of descriptive terms.[30] The FTA broadens protection of well-known marks, extending protection of such marks to dissimilar goods and services, whether registered or not. This broadened protection is based on an association between the goods and services and the owner of the well-known mark and when the interests of the trademark owner are likely to be damaged.[31] Trademark licensees will no longer be required to register their trademark licenses in order to assert their rights to a trademark.[32] Further, the trademark filing process is simplified by allowing applicants to use their own national patent/trademark offices for filing trademark applications for acceptance in the other country.[33] The provisions also apply the principle of "first-to-file, first-in-right" to

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[29] Although the term of protection based on the life of a natural person is not specifically stated in the WTO TRIPs Agreement, Article 9 of that agreement specifies that WTO members shall comply with Articles 1-21 of the Berne Convention for the Protection of Literary and Artistic Works (1971). Article 7 of the Berne Convention provides that "the term of protection granted by this Convention shall be the life of the author and fifty years after his death."

[30] IFAC-3, *The U.S.-Singapore Free Trade Agreement: The Intellectual Property Provisions*, p. 6.

[31] The U.S.-Singapore FTA provides that each party shall, at a minimum, give effect to Articles 1-6 of the Joint Recommendation Concerning Provisions on the Protection of Well-Known Marks (1999), adopted by the Assembly of the Paris Union for the Protection of Industrial Property and the General Assembly of WIPO; and certain provisions of the Trademark Law Treaty.

[32] Singapore Ministry of Trade and Industry, *Information Paper on the U.S.-Singapore Free Trade Agreement*, pp. 1-8.

[33] Ibid.; and USTR, "Free Trade with Singapore," pp. 1 and 5-7.

trademarks and geographical indicators[34] applied to products. Thus, the first to file for a trademark is granted the first right to use that name, phrase, or geographical place name. Trademark provisions of the FTA also ensure government involvement in resolving disputes related to the illegal use of trademarks in Internet domain names.

Patents and Trade Secrets

The patent and trade secret provisions of the U.S.-Singapore FTA clarify and improve on the standards contained in the TRIPs agreement.[35] Each party shall make patents available and exclude inventions from patentability only in limited cases as defined in TRIPs. Grounds for revoking a patent are limited to the same grounds required to originally refuse a patent to prevent arbitrary invalidation of a patent in favor of another party. The provisions also ensure that government product-approval agencies will not grant approval to patent-violating products. Patent terms can be extended beyond the 20-year term required by TRIPs to compensate for up-front administrative or regulatory delays in granting the original patent.[36] Pharmaceutical companies owning patented products are protected against the import of pharmaceutical products by other parties without the patent holder's consent.[37] Patents covering bio-engineered plants and animals are allowed by the FTA, and each party is required to ratify or accede to the International Convention for the Protection of New Varieties of Plants. Finally, test data and trade secrets submitted to a government for the purpose of product approval are to be protected against disclosure for a period of 5 years for pharmaceuticals and 10 years for agricultural chemicals.[38]

Enforcement

The U.S.-Singapore FTA also provides for improved enforcement and tougher penalties for IPR infringement.[39] For instance, the FTA mandates both statutory and actual damages for copyright and trademark violations.[40] This is expected to deter such infringement by providing for monetary damages even when actual economic harm cannot be determined.[41] To further deter copyright and trademark

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[34] Geographical indications identify a product with a given characteristic that is attributable to its geographical origin in a particular region, country, locality, etc. (e.g. Burgundy wine from France, not from California; basmati rice from India, not from Texas).

[35] U.S. Department of State, "U.S.-Free Trade Agreement With Singapore," pp. 1-11.

[36] Singapore Ministry of Trade and Industry, *Information Paper on the U.S.-Singapore Free Trade Agreement*, pp. 1-8.

[37] U.S. pharmaceutical industry representatives, telephone interviews by USITC staff, Feb. 20, 2003.

[38] Pharmaceutical manufacturers state that all proprietary information submitted to a regulatory body should be protected from unfair commercial use. They indicate that if it were not for the obligation to provide test data to governments to gain marketing approval, data generated at considerable cost, time, and risk would be considered a trade secret. Pharmaceutical Research and Manufacturers of America (PhRMA), "Appendix A-1," *PhRMA Special 301 Submission*, Mar. 31, 2003, pp. 151-152, found at *http://www.phrma.org*, retrieved Apr. 8, 2003.

[39] Hearing transcript at pp. 93-94 and 98; and USTR, "Free Trade with Singapore," pp. 1 and 5-6.

[40] U.S. Department of State, "U.S.-Free Trade Agreement With Singapore," pp. 1-11.

[41] Hearing transcript at pp. 93-94.

infringement, the FTA applies criminal procedures and penalties in cases of trademark counterfeiting, copyright, or related rights piracy that are willful or done on a commercial scale. It also makes end-user piracy a criminal offense. Enforcement provisions of the FTA require the seizure, forfeiture, and destruction of counterfeit and pirated goods and the equipment used to produce them. Moreover, IPR laws are to be enforced not only against infringement originating within each country, but also against goods in transit to deter violators from using ports or free-trade zones to traffic in pirated products. To improve such enforcement, authorities may initiate unannounced border actions. To facilitate monitoring of the IPR enforcement provisions of the FTA, laws and regulations pertaining to such enforcement shall be published and made publicly available, and each party to the FTA shall publicize information on its efforts to provide effective enforcement. Finally, the FTA provides for cooperation between the two governments to prevent pirated and counterfeit goods from being imported into each country.

Potential Effects

The intellectual property provisions of the U.S.-Singapore FTA address many of the most significant concerns the U.S. industry has expressed regarding the IPR regime in Singapore.[42] Full implementation and enforcement of the IPR provisions of the FTA by Singapore will increase the level of protection currently afforded to IPR holders and likely result in increased revenues for U.S. industries dependent on copyrights, patents, trademarks, and trade secrets. However, due to the relatively small size of Singapore's economy compared to that of the United States, any increases in revenues for the U.S. IPR industry would likely have a limited effect on the U.S. economy as a whole.[43] As previously indicated, although data on total U.S. revenues derived from the sales of all IPR-dependent products are not available, U.S. royalties and licensing fees from Singapore represented a small percentage of the total of such revenues from the world (figure 7-1).[44]

Among the U.S. copyright industries that would potentially benefit most due to the increased digital technology features of the FTA would be the motion picture industry, the recording industry, the software industry (including producers of both business and

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[42] Hearing transcript at pp. 89, 98, 106, and 114; IFAC-3, *The U.S.-Singapore Free Trade Agreement: The Intellectual Property Provisions*; IIPA, "The Copyright Industries Laud the Conclusion of the U.S.-Singapore Free Trade Agreement," pp. 2-3; The United States Chamber of Commerce, "Singapore FTA–Almost Concluded–With Free Flow of Capital Caveat," p. 1; and MPAA, "Statement by Jack Valenti on the US-Singapore Free Trade Agreement," p. 1.

[43] However, the size of Singapore's economy would have less of a limiting effect on U.S. industry revenues resulting from Singapore's increased responsibilities under the FTA for enforcing laws with respect to infringing goods that are transshipped through its port from other countries.

[44] U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Oct. 2002, p. 98.

entertainment software), and the publishing industry.[45] Industries that would benefit from greater patent protections would include the pharmaceutical industry and the agricultural chemicals industry. A broad range of U.S. industries should benefit from strengthened trademark, trade secret, and other IPR provisions of the FTA.

Because the United States already meets the relatively high standards of IPR protection and enforcement included in the U.S.-Singapore FTA, there would be little if any effect on U.S. industries or the U.S. economy based on U.S. implementation of its obligations under the FTA provisions.

The principal U.S. trade advisory committee representing IPR interests states that the IPR provisions of the U.S.-Singapore FTA are broadly consistent with the negotiating goals and objectives contained in the Trade Act of 2002 and those of the U.S. intellectual property-based industries, creators, and innovators.[46] The committee strongly supports the U.S.-Singapore FTA chapter on IPR, and believes that it establishes precedents to be included in future FTAs, which can raise the level of protection and enforcement globally.

[45] IIPA, "The Copyright Industries Laud the Conclusion of the U.S.-Singapore Free Trade Agreement," pp. 1-2; and United States Chamber of Commerce, "Singapore FTA-Almost Concluded-With Free Flow of Capital Caveat," p. 1.

[46] IFAC-3, *The U.S.-Singapore Free Trade Agreement: The Intellectual Property Provisions*, pp. 2-3.

CHAPTER 8
Impact of a U.S.-Singapore FTA on Investment

The United States and Singapore have relatively open investment regimes and are key investors in each other's economies. Nonetheless, the investment provisions in the U.S.-Singapore FTA go beyond those of any other agreement to which both parties are signatories and may therefore support continued growth in bilateral investment in the long term. The following presents a description of the U.S.-Singapore bilateral investment relationship, summarizes the major investment provisions of the FTA related to investment, and to the extent possible, considers the potential effects of implementation of the investment provisions on U.S. industries and the U.S. economy as a whole.

U.S.-Singapore Investment

The United States and Singapore have a strong investment relationship. In 2001, the U.S. direct investment position in Singapore measured $27.3 billion on a historical cost basis (figure 8-1), which generated income of $2.1 billion.[1] During 1997-2001, U.S. direct investment in Singapore increased at an average annual rate of 11 percent. The United States is the leading foreign investor in Singapore,[2] and only Japan, Australia, and Hong Kong host higher levels of U.S. investment within the Asia-Pacific region.[3] U.S. investment in Singapore is broadly based, with 29 percent in industrial machinery and equipment manufacturing; 26 percent in finance, insurance, and real estate; and 18 percent in electronic equipment manufacturing (figure 8-2).[4]

Singapore's direct investment in the United States is also relatively substantial, with the United States ranking fourth behind China, Hong Kong, and Malaysia as a destination

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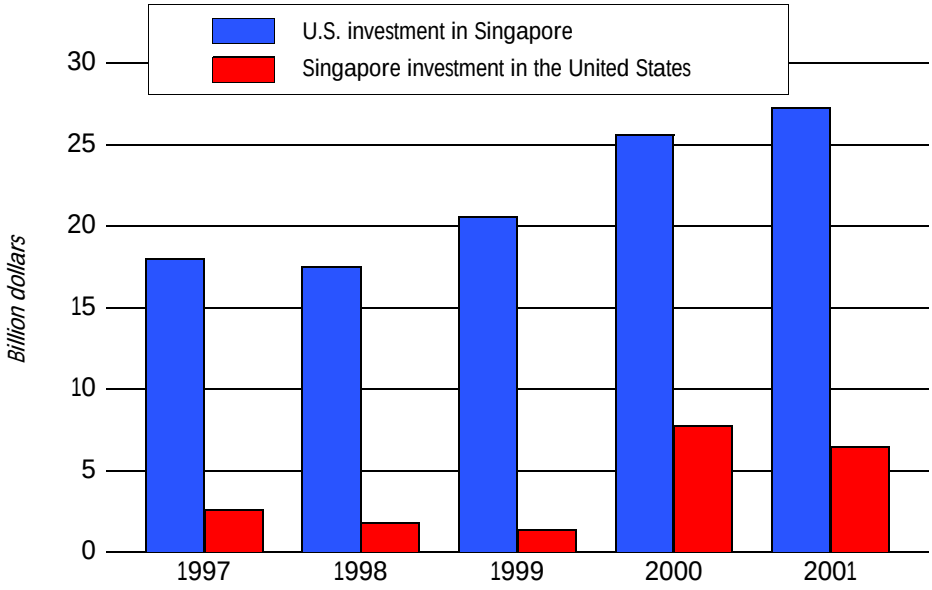
[1] The direct investment position is the value of direct investors' equity in, and net outstanding loans to, their foreign affiliates. Direct investment is defined as ownership of at least 10 percent of the voting securities of an incorporated foreign business enterprise or equivalent interest in an unincorporated enterprise. The investment position is presented on a historical-cost basis, which means that the data reflect the value of the investment at the time the transaction took place. Although other measures, such as current cost and market value, may provide a more accurate depiction of the present value of foreign direct investment, only historical-cost data are available in sufficient detail to permit a discussion of specific countries or industry sectors. U.S. Department of Commerce (USDOC), Bureau of Economic Analysis (BEA), "U.S. Direct Investment Abroad: Detail for Historical-Cost Position and Related Capital and Income Flows, 2001," *Survey of Current Business,* Sept. 2002, p. 69, and table 16, pp. 93-94.

[2] U.S. & Foreign Commercial Service, "Singapore Country Commercial Guide FY 2003 - Investment Climate," Aug. 19, 2002, found at *http://www.stat-usa.gov*, retrieved Mar. 5, 2003.

[3] USDOC, BEA, "U.S. Direct Investment Abroad: Detail for Historical-Cost Position and Related Capital and Income Flows, 2001," *Survey of Current Business,* Sept. 2002, table 16, pp. 93-94.

[4] Ibid., table 10.3, p. 77.

Figure 8-1
U.S. direct investment with Singapore, 1997-2001



Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Sept. 2002, pp. 93-94; and "Foreign Direct Investment in the United States: Country Detail for Selected Items," found at *http://www.bea.doc.gov*, retrieved Mar. 25, 2003.

for Singapore investment.[5] In comparison with other countries in the Asia-Pacific region, only Japan and Australia have a larger direct investment position in the United States.[6] In 2001, the direct investment position of Singapore in the United States measured $6.5 billion, which produced income of $21 million.[7] During 1997-2001, Singapore's direct investment position in the United States increased at an average annual rate of 25 percent, despite a nearly 50-percent decline during 1997-99. Direct investment from Singapore is concentrated in the manufacturing and real estate sectors, which account for 75 percent and 17 percent of the total position, respectively.[8] The specific distribution of investment within the U.S. manufacturing sector cannot be discerned, as data for the manufacturing categories of food products, primary and fabricated metals, and machinery were suppressed to avoid disclosure of data of individual companies.

Singapore's investment regime is described as being very friendly to foreign investors, with no significant performance requirements like joint ventures, and no restrictions on

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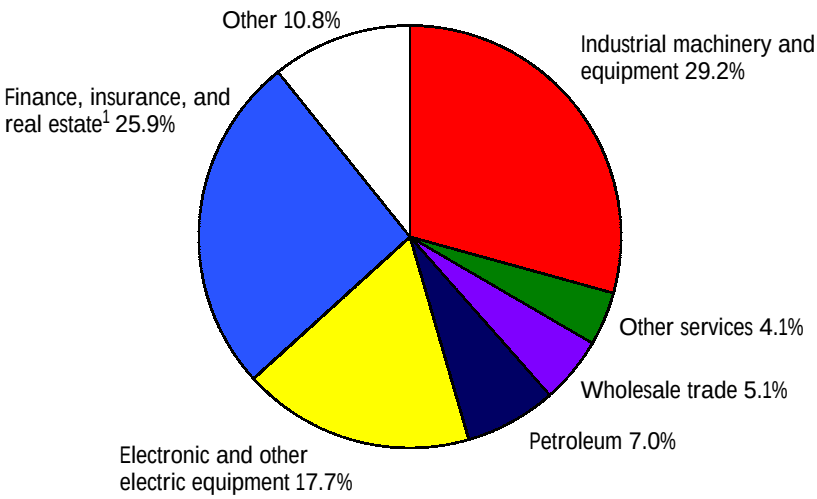
[5] U.S. & Foreign Commercial Service, "Singapore Country Commercial Guide FY 2003," Aug. 19, 2002, found at *http://www.stat-usa.gov*.

[6] USDOC, BEA, "Foreign Direct Investment in the United States: Country Detail for Selected Items," found at *http://www.bea.doc.gov/bea/di/fdi-ctry.htm*.

[7] Ibid.

[8] Maria Borga and Daniel R. Yorgason, "Direct Investment Positions for 2001: Country and Industry Detail," *U.S. Survey of Current Business,* July 2002, table 2.2, p. 33.

Figure 8-2
U.S. direct investment in Singapore, by industry sector, 2001



[1] Excludes depository institutions.

Source: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business,* Sept. 2002, p. 77.

reinvestment or repatriation of earnings or capital.[9] In addition, the judicial system in Singapore reportedly upholds the sanctity of contracts, and court decisions are effectively enforced. The only exceptions to a generally open investment regime are some limitations on foreign investment in specific sectors, including broadcasting and local media, retail banking, and professional services.[10]

Major Investment Provisions of the U.S.-Singapore FTA

The provisions contained in the investment chapter are generally patterned after those of the NAFTA and U.S. bilateral investment treaties.[11] These provisions extend well beyond those contained in any of the international agreements to which both the United States and Singapore are parties, and therefore the FTA represents a significant expansion of bilateral investment obligations. The chapter begins by broadly defining investment to include "every asset owned or controlled, directly or indirectly, by an investor, that has the characteristics of an investment."[12] Forms that an investment may take include, but are not limited to:

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[9] U.S. & Foreign Commercial Service, "Singapore Country Commercial Guide FY 2003," Aug. 19, 2002, found at *http://www.stat-usa.gov*.

[10] Ibid.

[11] The United States has entered into 47 bilateral investment treaties since 1982. USTR, U.S. Bilateral Investment Treaty Program, found at *http://www.ustr.gov/pdf/bit.pdf*, retrieved Mar. 10, 2003.

[12] The characteristics of an investment include the commitment of capital, the expectation of gain or profit, or the assumption of risk.

(a) an enterprise;

(b) shares, stock, and other forms of equity participation in an enterprise;

(c) bonds, debentures, other debt instruments, and loans;

(d) futures, options, and other derivatives;

(e) turnkey construction, management, production, concession, revenue-sharing, and other similar contracts;

(f) intellectual property rights;

(g) licenses, authorizations, permits, and similar rights conferred pursuant to domestic law;

(h) other tangible or intangible, movable or immovable property, and related property rights, such as leases, mortgages, liens, and pledges.

The investment chapter then proceeds to enumerate various disciplines or rules concerning the treatment of investors and investments. These disciplines address national treatment, most favored nation treatment, minimum standard of treatment, performance requirements and incentives, senior management issues, financial transfers, and expropriation, among other things.

The provisions on national and most-favored-nation treatment address the issue of discrimination against or among foreign investors and investments. By committing to accord national treatment, each party agrees to treat investors and investments from the other party no differently from domestic investors and investments. In according most-favored-nation treatment, each party is obliged to treat investors from the other party no less favorably than investors from countries that are not party to the agreement. Ultimately, these two disciplines are designed to ensure that investors from the FTA parties are treated no less favorably than all other investors. Both national and most-favored-nation treatment apply only to the "...establishment, acquisition, expansion, management, conduct, operation, and sale or other disposition of investments."

The minimum standard of treatment discipline addresses how foreign investments are treated by the government in the conduct of its legal system, an area which is outside the scope of national and most-favored-nation treatment. For example, a foreign investor could receive national treatment in the establishment and operation of an enterprise, but face discriminatory treatment in legal proceedings. To address this concern, the minimum standard discipline establishes the customary international law minimum standard of treatment of aliens as the baseline level of treatment. This standard includes the concepts of "fair and equitable treatment" and "full protection and security," which are clarified further to indicate that "...'fair and equitable treatment' includes the obligation not to deny justice in criminal, civil, or administrative adjudicatory proceedings in accordance with the principle of due process embodied in the principle legal systems of the world...," whereas "...'full protection and security' requires each party to provide the level of police protection that is required under customary international law."

The discipline on expropriation and compensation specifies that direct or indirect expropriation or nationalization of a covered investment is permitted only if performed for a public purpose; in a nondiscriminatory manner; with payment of prompt, adequate, and effective compensation; and in accordance with due process of law. The level of compensation is defined as the fair market value of the investment immediately prior to the expropriation. The expropriation discipline is clarified through letters appended to the agreement, which specify that an action must interfere with a tangible or intangible property right in order to be considered expropriation, and further defines what is meant by direct and indirect expropriation. Direct expropriation refers to the formal transfer of title or outright seizure of an investment, whereas indirect expropriation refers to an action or series of actions that have an effect equivalent to direct expropriation without formal transfer of title or outright seizure.[13] The letters conclude by noting that nondiscriminatory regulatory actions to protect legitimate public welfare objectives do not constitute indirect expropriations except in rare circumstances. Such legitimate objectives would include those intended to protect public health, safety, and the environment.

Financial transfers are addressed through article 15.7, which requires both parties to permit all transfers related to covered investments to take place freely and without delay. Exceptions to this provision are possible for the application of laws relating to bankruptcy, securities, criminal offenses, financial reporting, and ensuring compliance with orders or judgments in judicial or administrative proceedings.

The provisions on performance requirements and incentives call for the elimination of certain trade-distorting policy measures. With respect to performance requirements, both parties commit to neither impose nor enforce policies that link an investment with the fulfillment of the following kinds of requirements: export performance, domestic content, local purchasing, trade or foreign exchange balancing, technology transfer, and exclusive regional marketing arrangements.[14] With respect to incentives, both parties similarly commit to neither impose nor enforce policies that condition receiving an investment incentive on compliance with the following requirements: domestic content, local purchasing preference, and trade or foreign exchange balancing. The discipline on performance requirements and incentives is qualified by a number of

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[13] The letters provide additional guidance on how to determine whether an indirect expropriation has taken place by noting that such a determination must be made on a case-by-case basis with consideration of various factors, including the economic impact of the government action, the extent to which the government action interferes with reasonable investment-backed expectations, and the character of the government action.

[14] Export performance requirements impose an obligation to export a given level or percentage of goods or services; domestic content requirements mandate achieving a given level or percentage of local content; local purchasing requirements entail an obligation to purchase, use, or accord a preference to goods produced in a party's territory or to purchase goods from persons in its territory; trade and foreign exchange balancing requirements relate the volume or value of imports as well as local sales of goods or services to the volume or value of exports or to the amount of foreign exchange inflows associated with an investment; technology transfer requirements impose an obligation to transfer a particular technology, production process, or other proprietary knowledge to a person within the territory of a party; and exclusive marketing arrangements include requirements to supply exclusively from the territory of a party the goods that it produces or the services that it provides to a specific regional market or to the world market.

exceptions. In particular, incentives to locate production, provide a service, train or employ workers, construct or expand particular facilities, or carry out research and development are excluded from the scope of this discipline. In addition, measures that are consistent with the provisions of the intellectual property chapter or measures imposed to remedy anticompetitive situations are not subject to the limitation on technology transfer requirements.

Another important exception concerns certain measures that are not directly related to international trade and investment, such as environmental measures, but which potentially could be considered inconsistent with the limitation on performance requirements. The aforementioned measures-if not applied in an arbitrary or unjustifiable manner or if not a disguised restriction on trade and investment-are not subject to the limitation on the use of domestic content, local purchasing, and technology transfer requirements, or the limitation on the use of incentives for domestic content and local purchasing.

Remaining areas excluded from the scope of the disciplines on performance requirements and incentives are export promotion and foreign aid programs, government procurement, and local content requirements related to qualification for preferential tariffs or quotas.

Finally, the investment chapter also includes provisions on senior managers and boards of directors that are designed to ensure that foreign investors retain control over enterprises established abroad. These provisions bar requirements that senior management positions be filled by persons of a particular nationality. However, nationality or residency requirements for the board of directors or other committees are permitted, provided that the ability of the investor to exercise control over its investment is not materially impaired.

Dispute Settlement

The investment chapter includes additional dispute settlement provisions that permit foreign investors to bring claims directly against the host government and potentially receive monetary awards. This "investor-state" dispute settlement differs from the approach used for disputes arising in relation to other chapters of the agreement, for which the claim must be brought by the government of the affected party and no direct awards may be received by individual investors. The investor-state dispute settlement procedures call for an initial period of consultation and negotiation prior to submitting a claim to arbitration. Such a claim must allege a breach of the agreement and that loss or damage was incurred as a result of that breach. Advance notice of 90 days must be given to the respondent prior to the submission of a claim, and this notice should specify the nature of the breach, the legal and factual basis for the claim, and the relief sought, including the approximate amount of damages claimed. The claim may then be submitted to the International Centre for Settlement of Investment Disputes or the Additional Facility of the Centre in accordance with the arbitration rules of the United Nations Commission on International Trade Law. Alternatively, the claim may be

submitted to any other arbitration institution mutually agreed upon by both the claimant and respondent.

In order to bring a claim, the alleged breach of the agreement must have become known to the claimant within three years. In addition, when submitting a claim, the claimant must waive any rights to pursue other administrative or judicial proceedings. In other words, once the claimant decides to pursue arbitration under the investment chapter procedures, it cannot simultaneously pursue the claim in a different venue or make an appeal to a court of law or administrative tribunal if it is dissatisfied with the findings of the arbitration. Finally, the investor-state dispute settlement mechanism provides for transparency during the arbitral proceedings by requiring that relevant documents be made available to the public.[15] In addition, all hearings by dispute settlement tribunals will be open to the public.

Awards granted by the arbitral tribunal may include costs and attorneys' fees, monetary damages plus applicable interest, and restitution of property. Punitive damages may not be awarded, however. The government of the respondent must provide for the enforcement of awards. At present, the agreement does not contain provisions for appealing the decision of a tribunal. However, a side letter leaves open the possibility of creating such an appeals process, stating that, within three years of the entry into force of the agreement, the parties to the agreement shall consider whether to establish an appellate body or similar mechanism to review awards.

Nonconforming Measures

The investment chapter contains provisions for the treatment of existing or future measures that are inconsistent with certain disciplines (specifically, those concerning nondiscrimination, performance requirements, and senior personnel). Existing measures maintained at the central or regional government level are exempted from these disciplines provided that they are described in annex 8A of the agreement. Reservations to ensure that a party maintains flexibility to impose measures in the future that may be inconsistent with these disciplines must be described in annex 8B. Nonconforming measures at the local government level are simply exempted without requiring any notation in an annex. The actual content of these reservations varies widely. Some reservations are horizontal in nature, meaning they address general policy provisions that affect all investments, whereas others apply to specific industry segments. Singapore's horizontal reservations principally concern the treatment of state enterprises and government land, with Singapore essentially reserving the right to accord preference to domestic investors in relation to privatization programs. For example, in divesting a state-owned enterprise, Singapore reserves the right to limit foreign shareholding to 49 percent of the equity. In addition, Singapore listed a

[15] These documents, which may be redacted to prevent disclosure of confidential business information, include all pleadings, memorials, and briefs from the disputing parties; written submissions from the government that is not a participant in the dispute, and *amicus curiae* submissions from any interested parties; minutes or transcripts of hearings; and orders, awards, and decisions of the tribunal.

horizontal reservation for any measures related to the provision of health services by healthcare institutions owned or controlled by the government. Horizontal reservations taken by the United States under annex 8A address the programs of the Overseas Private Investment Corporation and the registration of public offerings of securities, as well as existing nonconforming measures at the state level. Horizontal reservations listed by the United States under annex 8B include a reservation that appears to ensure that U.S. obligations under the FTA concerning the establishment of a service enterprise are equivalent to those undertaken in the General Agreement on Trade in Services (GATS). Annex 8B of the United States also contains a horizontal reservation for measures that accord preferential treatment to countries under bilateral or multilateral international agreements, including international agreements involving aviation, fisheries, or maritime matters.

The specific sectors for which reservations are listed in annexes 8A and 8B are presented in table 8-1 without attempting to characterize the actual substance of the reservation. In many cases, the reservation represents a measure that imposes a partial or potential constraint on foreign investment that may or may not have any significant bearing on the activities of foreign investors. Consequently, the inclusion of a sector in the annex should not be interpreted to mean that the sector as a whole has been exempted from coverage under the investment disciplines.

Table 8-1
Industry sectors included in annex 8A[1] or annex 8B[2] reservations of the U.S.-Singapore FTA

Singapore		United States	
Annex 8A	**Annex 8B**	**Annex 8A**	**Annex 8B**
Business services: Credit bureau services	Broadcasting services	Communications: Radio	Communications
Auditing services	Business services: Armed guard services	Atomic energy	Social services
Architectural services	Betting and gambling services	Mining	Minority affairs
Land surveying services	Collection and administration of proprietary government information	Transportation services: Air transportation	Transportation services: Maritime
Legal services	Defense industries	Customs brokerage	
Patent agent services	Education services		
Professional engineering services	Health and social services: recognition of credentials		
Real estate services	Distribution and publication of printed media		

Table 8-1—*Continued*
Industry sectors included in annex 8A[1] or annex 8B[2] reservations of the U.S.-Singapore FTA

Singapore		United States	
Annex 8A	Annex 8B	Annex 8A	Annex 8B
Residential, commercial, and industrial property ownership	Telecommunication services		
Security services	Sewage and refuse disposal: Hazardous waste management and wastewater management		
Community services: Services of cooperative societies, and trade unions	Social services		
Education services: Higher education services in relation to the training of doctors	Trade services: Supply of potable water		
Manufacturing and services incidental to manufacturing: for beer and stout, cigars, drawn steel products, chewing gum, cigarettes, and matches	Transport services: Public transport services		
Postal services	Services auxiliary to all modes of transport		
Power supply			
Power transmission and distribution			
Transportation and distribution of piped gas			
Trade services: Retailing and wholesaling			
Transport services: Air and water transport services			

[1] Annex 8A contains reservations to preserve existing measures that are inconsistent with the disciplines concerning nondiscrimination, performance requirements, and senior personnel.

[2] Annex 8B contains reservations to ensure that a party maintains flexibility to impose measures in the future that may be inconsistent with the disciplines concerning nondiscrimination, performance requirements, and senior personnel.

Source: Final text of the U.S.-Singapore FTA.

Potential Effects

The U.S.-Singapore FTA has the potential to affect investment in two dimensions. First, liberalization of market access conditions for trade in goods and services is likely to encourage increased trade between the FTA parties, which in turn may be supported by additional foreign direct investment. Consequently, trade liberalization may result in increased foreign investment.

The second dimension concerns the effects of the investment chapter itself, which may influence investment either by encouraging the removal of restrictions or by bolstering the confidence of foreign investors in the transparency and stability of the investment regime. In the particular case of the U.S.-Singapore FTA, neither party will need to make any significant changes to their respective investment policies in order to comply with the obligations of the agreement.[16] As a result, the implementation of the agreement will not have any effect on investment, at least not in the short term. In the longer term, greater confidence resulting from the presence of the investment obligations may have bearing, provided that this agreement affords greater investment protections than any existing agreements to which both parties are presently bound.

At present, there are only two international agreements that affect investment to which both the United States and Singapore are signatories: the Agreement on Trade Related Investment Measures (TRIMs) and the GATS. Both of these agreements were negotiated during the Uruguay Round. The coverage of the TRIMs agreement is extremely limited. The agreement itself does not contain any new disciplines, but simply restates that measures inconsistent with Articles III and XI (national treatment and quantitative restrictions) of the General Agreement on Tariffs and Trade (GATT) are prohibited.[17] These GATT disciplines apply only to measures that affect the import or export of goods, which means that measures affecting the ability to establish and operate locally are not covered, nor are measures affecting services or other forms of investment. For example, national treatment under the TRIMs or GATS refers to the treatment of goods that are imported or exported, so a measure that links the approval of an investment in order to establish a factory to the volume of products exported would be prohibited. However, measures that impose discriminatory requirements that are not linked to merchandise trade are unaffected, such as joint venture requirements, foreign equity limitations, or technology transfer requirements that are linked to receiving approval to establish a commercial presence. Consequently, in comparison with the FTA, the TRIMs agreement applies to only a subset of investment activities, and the disciplines only partially address national treatment and performance requirements. The TRIMs agreement does not address the areas of most-favored-nation treatment, minimum standard of treatment, senior management issues, financial transfers, and expropriation; nor does it address dispute settlement other than by reference to standard GATT procedures.

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[16] U.S. Government representative, interview by USITC staff, Mar. 18, 2003.

[17] Paul Civello, "The TRIMs Agreement: A Failed Attempt at Investment Liberalization," *Minnesota Journal of Global Trade,* vol. 8, No. 97, 1999, p. 98.

The GATS goes considerably further than the TRIMs agreement, but is similarly limited to a subset of issues relative to the FTA. The GATS did break new ground by developinga number of disciplines that affect investment. These include disciplines on market access, national treatment, most-favored-nation treatment, senior management issues, and some financial transfers. But because the GATS concerns only services, these disciplines apply only to investments necessary to establish and operate a service enterprise. Investment in manufacturing as well as portfolio investment are outside the scope. In addition, the GATS disciplines do not address minimum standards of treatment, performance requirements and incentives, and expropriation, which are addressed in the FTA. Another drawback of the GATS relative to the FTA is that it applies a "positive list" methodology for certain disciplines, including market access and national treatment. Under this approach, these disciplines apply only to service sectors that are explicitly listed in an attached "Schedule of Specific Commitments." By contrast, the FTA applies a "negative list" approach, whereby all sectors are presumed to be covered by all disciplines unless they are explicitly excluded in the attached annexes. Although in theory both approaches could yield the same level of coverage, thus far the positive list approach has resulted in more limited coverage as many WTO members have opted to include only selected sectors in their schedules of commitments. Finally, the GATS relies upon the WTO dispute settlement procedures, which do not permit investors to bring a claim on their own behalf or to provide for compensation. Instead, disputes under the WTO must be brought by the government of the investor, and the final determinations address only whether specific policy measures should be changed. Consequently, dispute settlement under the GATS offers a means of changing investment policies in the future, but does not afford any direct recourse to individual investors who have been adversely affected by present policies.

CHAPTER 9
Summary of Views of Interested Parties

Air Courier Conference of America[1]

Air Courier Conference of America (ACCA) represents the express delivery service industry, which specializes in fast, reliable transportation services for documents, parcels, and freight. ACCA's members include large integrated express delivery companies, such as FedEx Corp., United Parcel Service (UPS), DHL Worldwide Express, and TNT U.S.A., Inc.; as well as local and regional couriers and messengers. ACCA members employ 800,000 people worldwide and generate annual revenues of $60 billion.

ACCA supports the U.S.-Singapore FTA and believes express delivery operators will benefit from increased transport volumes as a result of increased trade in goods between the two countries. Additionally, the U.S.-Singapore FTA includes provisions on customs procedures that ACCA thinks will facilitate business operations for express delivery providers in Singapore. Specifically, the FTA promises the simplification and harmonization of customs procedures and the efficient and fair processing of express delivery imports and exports. However, ACCA states that the time frame for shipment release should be reduced from the agreement's stated target of six hours.

ACCA asserts that the U.S.-Singapore FTA's definition of express delivery services accurately reflects the nature of the industry and is encouraged by the FTA's clarification that express delivery commitments apply to all suppliers of the service. ACCA also is encouraged that the FTA includes provisions that limit cross-subsidization of Singapore Post's express letter delivery with funds generated by its monopoly-protected services. However, ACCA advocates that future trade agreements should include more rigorous cross-subsidization provisions that would preclude postal administrations from using monopoly profits to subsidize all their express delivery operations (not just express letter delivery).

[1] David Spence, Chairman, International Trade Subcommittee, Air Courier Conference of America, and Senior Counsel, FedEx Regulatory and Legal Affairs.

American Council of Life Insurers, American Insurance Association, and Financial Services Coordinating Council[2]

The American Council of Life Insurers (ACLI) addresses issues including retirement security, privacy, and international trade. Its 400 member companies are leading providers of financial and retirement security products that cover individual and business markets. The American Insurance Association (AIA) is the leading property-casualty insurance trade organization. The AIA represents more than 424 insurers that write more than $103 billion in premiums each year.

The ACLI and AIA support the Singapore FTA, because the relatively liberal regulatory environment in the Singapore insurance market has resulted in liberal commitments that could establish precedence and momentum for other bilateral, regional, and multilateral agreements. The Singapore FTA incorporates the types of commitments sought by the ACLI and AIA on regulatory best practices that help develop markets by encouraging innovation and competition.

The ACLI and AIA identify as the major accomplishments of the agreement full market access and national treatment commitments; the ability to provide some insurance services on a cross-border basis without establishing a commercial presence; the inclusion of pensions commitments; the right to offer compulsory lines of insurance; full national treatment with regard to financial requirements; legislative and regulatory transparency obligations; and speed to market obligations. The ACLI and AIA state that these provisions enhance stability and ensure effective market access for U.S. firms. Such provisions are critical to member firms' global competitiveness and aid U.S. consumers, stakeholders, and the U.S. economy. In addition to benefitting member firms, the ACLI and AIA state that a regulatory system that promotes solvency and enhances competition supports the growth of the local insurance marketplace and benefits local consumers with the widespread availability of insurance.

The Financial Services Coordinating Council indicates in a letter attached to the Security Industry Association's formal submission that it supports the FTA and seeks to associate itself with the ACLI and AIA's written comments.

American Dehydrated Onion and Garlic Association[3]

The American Dehydrated Onion and Garlic Association (ADOGA), an association composed of two firms accounting for the majority of domestic dehydrated onion and

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[2] Brad Smith, Managing Director, International Relations, American Council of Life Insurers; David F. Snyder, Vice President and Assistant General Counsel, American Insurance Association; and the Financial Services Coordinating Council.

[3] Irene Ringwood, Ball Janik LLP, Washington, DC, counsel for the American Dehydrated Onion and Garlic Association.

garlic production, opposes a U.S.-Singapore FTA. Most of the ADOGA firms' production is sold to institutional and foodservice buyers for use, in small quantities, as an ingredient in other processed foods such as soups, salad dressings, seasoning mixes, condiments, and sauces. With the cost of dried onions or garlic accounting for a very small fraction of the cost of the end product in which it is used, demand for each of these products is derived and price changes will elicit very minor changes in derived demand for these products by end-product producers. Because dehydrators are unable to affect demand through price adjustments for their raw product, the U.S. industry believes it is quite vulnerable to competition from lower-priced imports.

ADOGA states that the production of dehydrated onions and garlic, although separate products, has developed interdependently. ADOGA further states that a dehydrator's ability to run production lines concurrently for both products enhances overall production efficiency and any market competition from lower-priced imports of either product could negatively affect the entire industry. According to the U.S. industry, raw onions and garlic for dehydrating can be grown more cheaply almost anywhere outside of the United States and the costs of other key inputs are also significantly less in other countries such as Singapore. The United States has received a steady flow of fresh garlic and onions for a number of years from Singapore. According to ADOGA, Singapore has had more than 30 vegetable dehydration facilities in operation over the last decade, any of which could be used to dehydrate onions and garlic.

ADOGA emphasizes that the enactment of duty-free treatment for dried onions and garlic entered into the United States, reported to be one of the largest global markets for such vegetables, would be an incentive for increased competition and market displacement in the U.S. market, with little opportunity to sell U.S.-produced dehydrated onions and garlic in Singapore. In addition, dried onions and garlic have extremely high duties, which the industry states have discouraged exports to the U.S. market in recent years but may encourage the circumvention of U.S. duties by Chinese exports transshipped through Singapore.

American Federation of Labor and Congress of Industrial Organizations[4]

The American Federation of Labor and Congress of Industrial Organizations (AFL-CIO) is a voluntary federation of 65 national and international labor unions representing more than 13 million workers nationwide. The organization has four primary goals: strengthening working families by enabling more workers to join together in unions, building a stronger political voice for working families, providing a new voice for workers in the global economy, and creating a more effective voice for working families in communities.

[4] Gregory Woodhead, Ph.D., Representative, Public Policy Department, AFL-CIO.

The AFL-CIO states that the FTA represents a unique challenge because it is the first trade agreement where U.S. tariffs are higher than those of the trading partner prior to the implementation of the agreement. It states that the possibility of lower U.S. tariffs will exacerbate current trade deficits in specific sectors such as machinery, chemicals, and apparel. According to the AFL-CIO, imports from Singapore have contributed to losses in industries already devastated by international competition and technological change.

The AFL-CIO expresses a number of concerns with regard to specific provisions of the FTA: (1) the FTA's rules of origin fail to promote production and employment in the United States or in Singapore; (2) the safeguard provisions offer no more protection than the limited safeguard mechanism in the NAFTA and fail to provide the necessary import surge protections for American workers; (3) the "Integrated Sourcing Initiative" investment provision requires no reciprocal market from the Indonesian islands, which are included in the FTA, and will have a negative impact on U.S. jobs; (4) the labor provisions do not apply to workers' rights violations on these Indonesian islands; and (5) the FTA's protections against transshipment may do little to counter Singapore's attractiveness as a transshipment route. The AFL-CIO also is concerned that the FTA does not address the important issues of external indebtedness, currency manipulation, and financial speculation.

The Boeing Company[5]

The Boeing Company produces civil and military air and spacecraft, weapons systems, and aerospace support services. Its sales totaled $54 billion in 2002, and is the nation's largest single exporter of manufactured products, with customers in 145 countries. It is one of only two producers of large civil aircraft in the world, with Airbus SAS (France) being its sole competitor. The company employs more than 160,000 workers in the United States and has a domestic supplier base of 26,000 companies.

Boeing states it supports the U.S-Singapore FTA. Boeing states that an open, rules-based trading system promotes its competitiveness by contributing to global economic growth, reduces tensions between the United States and key trading partners, improves market access, and addresses unfair trading practices. In addition, Boeing notes that Singapore Airlines, which is one of the leading operators in Asia, has a fleet composed of nearly 90 percent Boeing aircraft. As such, it is one of Boeing's key customers in both the Asia Pacific region and the world, with total sales to Singapore Airlines of approximately $20-25 billion.

[5] Theodore Austell III, Vice President, International Policy, The Boeing Company.

Citigroup[6]

Citigroup is a U.S.-based financial services institution engaging in banking, insurance, and investment operations. The company has 260,000 employees operating in 102 countries, with more than one-third of its revenue generated abroad. Citigroup supports the U.S.-Singapore FTA and states that the agreement will help expand U.S. financial services business opportunities in Singapore, provide a model for future agreements in other parts of Asia, and help the United States promote its diverse efforts to liberalize global trade. Citigroup states that the provision requiring Singapore to lift its current ban on new licenses for full-service banks is important to the company's growth strategy for operations in that country. Further, Citigroup cites the following additional provisions within the FTA as potentially beneficial to its business in Singapore: access to local ATM networks, ability for U.S. institutions to offer asset and portfolio management services in Singapore through the establishment of a local office or by acquisition of a local firm, commitment to open and transparent regulatory procedures, and prohibition of capital controls. Finally, the company emphasizes the importance of new negotiations for the services sector. It states that the potential for growth in services exports is high and in order to capitalize on that, the United States should continue to pursue bilateral and regional free trade agreements that allow for faster and deeper liberalization.

Direct Selling Association[7]

The U.S. Direct Selling Association (DSA) is a national trade association representing more than 140 companies that manufacture and distribute goods and services sold directly to consumers through independent contractors. Worldwide, direct selling accounts for more than $78 billion in retail sales and provides income-earning opportunities to more than 43 million people.

The DSA supports the U.S.-Singapore FTA and advocates full market access for direct selling in Singapore. It asserts that the FTA is critical for the industry's access to the Singapore market and is important for both consumers and businesses. Legislation in Singapore such as the Multi-Level Marketing and Pyramid Selling (Prohibition)(Amendment) Act 2000 and Final Order allow multilevel marketing firms to operate, but prohibit any company from operating if compensation was related to recruitment activities. The DSA states that because many direct selling multilevel companies provide compensation awards based on recruiting, they were either forced to adapt their compensation system for a single market or to forego the Singapore market entirely due to exorbitant expenses and the onerous financial accounting task of operating a separate and secondary compensation system in Singapore.

[6] Jeffrey Shafer, Managing Director, Citigroup Global Markets, Citigroup.
[7] John W. Heese, Senior Attorney, Direct Selling Association.

According to the DSA, the Multi-Level Marketing and Pyramid Selling (Excluded Schemes and Arrangements)(Amendment) Order 2001 provided a regulatory remedy to the recruiting provision of the 2000 Final Order and contributed to an increase in sales for the direct selling industry. However, since the prohibitory act remains in force, Singapore could revoke the 2001 order at any time, creating regulatory uncertainty.

The DSA states that the FTA provides several benefits for the direct selling industry. For example, the Government of Singapore will be required to grant full market access to the industry, including all marketing methods on a more permanent basis. In addition, other governments in the region may consider Singapore's treatment of direct selling when formulating their own policies. Lastly, the DSA notes that the U.S.-Singapore FTA will create a more permanent and stable business environment for U.S. companies, resulting in long-term growth in sales and income-earning opportunities in the United States and Singapore. It asserts the FTA also will provide regional regulatory stability.

Discovery Communications, Inc.[8]

Discovery Communications, Inc. (DCI) is a U.S.-based leading global media and entertainment company with operations in over 155 countries and territories, and over 935 million subscribers worldwide. DCI has operations worldwide including several regional networks. One of these is Discovery Networks Asia, which has its regional headquarters in Singapore. DCI credits Singapore's strategic location, outstanding infrastructure, and talent pool for the exceptional growth of Discovery Networks Asia. Discovery Networks Asia has grown from a single channel to a 3-channel network reaching over 60 million households in over 15 countries and territories throughout Asia-Pacific.

Acknowledging an already productive and beneficial business relationship in Singapore, DCI supports the U.S.-Singapore FTA, viewing it as a comprehensive agreement with potential to benefit the U.S. economy as a whole in addition to numerous U.S. industrial sectors. Furthermore, DCI emphasizes that the FTA will set rules-based precedents in several areas and will provide a strong foundation for future trade agreements in the Asia-Pacific region, other regions, and in the World Trade Organization. Specifically, DCI praises the FTA as a foundation for providing new opportunities for growth and market development by providing state-of-the art intellectual property protections, including comprehensive protection and enforcement; liberalizing Singapore's services regime, which includes the audiovisual and telecommunications sectors; providing important commitments in the area of customs administration and e-commerce; and providing a more stable and attractive investment environment. In addition, DCI supports provisions allowing temporary entry of business personnel.

[8] Alexa Verveer, Vice President, Public Policy and Government Relations, Discovery Communications, Inc.

Whereas DCI commends the U.S.-Singapore FTA, it expresses concern over content and spectrum reservations in the area of broadcast services. DCI would like to see the governments involved eliminate these reservations in the future.

Electronics Industries Alliance[9]

The Electronic Industries Alliance (EIA) is a partnership of electronic and high-tech trade associations representing 2,500 companies and more than 80 percent of the $430 billion electronics industry. EIA states that the U.S.-Singapore FTA will have positive effects in the region. It will be the United States' first FTA with an Asian nation; it will send the message that the United States will pursue trade opportunities in the region; and it will signal the United States' commitment to the region. EIA states that Singapore is a good place to start because it has an admirable track record for pursing open trade, its investment laws are clear and fair, and it has a strong history of protecting private property rights.

EIA states that the agreement will have positive economic effects. As an FTA with Singapore will give Singapore firms better access to the U.S. market than their neighbors enjoy, EIA thinks the agreement will lead other countries to seek similar FTAs. Further, it will erase the disadvantage U.S. firms face from the FTAs that Singapore already has in place with New Zealand, Japan, the European Free Trade Association, and Australia.

EIA states that the agreement also will benefit the electronics industry. Singapore has no tariffs on imports of electronics products; however, the United States still retains some duties on electronics products. The FTA will equalize tariff treatment in electronics trade between the United States and Singapore in comparison with other countries that already have duty-free relations with Singapore. The FTA also will raise standards in areas such as intellectual property rights, e-commerce liberalization, and telecommunications market access.

EIA indicates that the rules of origin proposed by the FTA are similar to those under the NAFTA and, as such, are highly complex. The EIA would like to see the rules of origin improved.

Entertainment Industry Coalition for Free Trade[10]

The Entertainment Industry Coalition for Free Trade (EIC) represents the interests of multichannel programmers and cinema owners; producers and distributors; guilds

[9] Brian L. Kelly, Senior Vice President of Government Relations & Communications, Electronic Industries Alliance.

[10] Bonnie J. K. Richardson, Vice President, Trade and Federal Affairs, Motion Picture Association; and Laura J. Lane, Vice President, International Public Policy, AOL Time Warner.

and unions; trade associations; and individual companies who produce, distribute, and exhibit many forms of creative expression, including theatrical motion pictures, television programming, home video entertainment, recorded music, and video games. The EIC supports the U.S.-Singapore FTA.

The EIC states that the entertainment industries and their employees are dependent for their success on defending their rights to the intellectual content they have created. Achieving enhanced global standards of copyright protection and enforcement, ensuring meaningful market access, and developing trade disciplines that keep pace with technological development are all central to EIC members' ability to remain competitive and to ensure good jobs for America's creative community. However, according to the coalition, growing levels of physical piracy, online piracy, and inadequate enforcement of copyright and other intellectual property right laws internationally are challenging the competitiveness of its industries worldwide.

The EIC reports that the U.S.-Singapore FTA includes numerous commitments that are vital to the members of the coalition such as (1) providing strong protection of intellectual property in the digital age, (2) strengthening copyright enforcement, (3) securing market access for the goods and services produced and distributed by its members, and (4) demonstrating that trade agreements can be constructed to incorporate commitments on opening up service markets while simultaneously addressing countries' specific socio-cultural concerns. According to the EIC, the FTA has succeeded in addressing these challenges in ways that not only bode well for continued high levels of intellectual property right protection in Singapore but also set important precedents for future FTAs. The coalition states that the U.S.-Singapore FTA promotes its members' economic interests and contributes to a strengthened U.S. economy.

General Electric Company[11]

The General Electric Company (GE) is a major multinational corporation with business units providing a wide range of products and services globally. GE exports various products to Singapore, from medical equipment and plastics to power generation equipment and aircraft engines. In addition, Singapore is an important manufacturing and sourcing location for GE, as well as the site for the headquarters of a number of GE businesses that serve the Asian region.

GE supports the U.S.-Singapore FTA. GE sees the FTA as an important way to reinforce the existing positive relationship with Singapore and to facilitate further growth in trade and investment in the ASEAN region. In addition, GE believes this agreement can strengthen overall security and stability in the region. GE notes that Singapore already serves as an attractive location for investment and a magnet for trade because it provides a high standard of investor protection and offers a virtually

[11] R. Michael Gadbaw, Vice President, Senior Counsel, General Electric Company.

open market for trade in goods and services. Nevertheless, GE welcomes a number of improvements brought about through the agreement, including enhanced commitments on financial services that improve market access while also addressing cross-subsidization, regulatory policies, and regulatory transparency in the industry. Other positive developments cited by GE include the adoption of improved investment protections, in particular the insertion of provisions for investor-state dispute settlement; the adoption of provisions on transparency in government procurement; the removal of limitations on the operation of certain professional services; and the addition of a side letter providing for free trade in e-commerce. Finally, GE emphasizes that the real benefit of the agreement is likely to be felt in its potential as a catalyst and model for other bilateral, regional, and multilateral initiatives to promote open trade and investment.

Government of Singapore[12]

The Government of Singapore (GoS) notes that the United States and Singapore enjoy a deep bilateral trade relationship and a multifaceted cooperative alliance. Trade between the United States and Singapore has grown steadily since the mid-1970s, and the United States is currently the largest investor in Singapore, while Singapore is the second largest Asian investor in the United States. The GoS asserts that the U.S.-Singapore FTA will bring immediate economic benefits to Singapore in terms of tariff cuts and market access liberalization; likewise, the United States will benefit from greater security for U.S. investments and businesses in Singapore. The GoS further states that the FTA will have a multiplier effect on bilateral trade and investment flows, could potentially lead to greater exchange of talent and innovation, and will create new opportunities and better lives for the residents of both countries.

Specifically, the GoS indicates that the U.S.-Singapore FTA reinforces, establishes, enhances, and modernizes standards and rules relating to competition, transparency, customs and trade facilitation, intellectual property protection, labor, environment, rules of origin, and e-commerce. According to the GoS, the U.S.-Singapore FTA will provide numerous benefits to U.S. companies including (1) enhanced market access in financial services; (2) greater protection for intellectual property via the implementation of new and expanded laws and rights in Singapore, as well as greater enforcement measures; (3) further deregulation of professional services, particularly with respect to the provision of legal and architectural, engineering, and land surveying services; (4) groundbreaking and bold e-commerce disciplines; (5) improved access for government procurement activities; and (6) closer cooperation with respect to labor and environmental issues. Finally, the GoS points out that, as the first free trade agreement that the United States will sign with an Asian country, the

[12] H.E. The Honorable Chan Heng Chee, Ambassador, Embassy of Singapore, Washington, D.C.

U.S.-Singapore FTA will both strengthen the bridge across the Pacific and serve to anchor the United States in the dynamic Asia Pacific region.

International Intellectual Property Alliance[13]

The International Intellectual Property Alliance (IIPA) is a coalition of six trade associations representing almost 1,100 U.S. companies that produce and distribute materials protected by copyright laws throughout the world.[14] IIPA supports the early adoption by Congress of the U.S.-Singapore FTA. According to IIPA, the U.S.-Singapore FTA sets out the highest standards of protection and enforcement for copyrights and other intellectual property yet achieved in a bilateral or multilateral agreement, treaty, or convention. It builds on the standards currently in force in the WTO Agreement on Trade-Related Aspects of Intellectual Property Rights and in the NAFTA Agreement with the goal to update and clarify those standards to take into account not only the experiences gained since those agreements entered into force, but also the significant and rapid technological and legal developments that have occurred since that time. For instance, IIPA states that the U.S.-Singapore FTA provides the essential legal infrastructure for e-commerce through obligations that will assist intellectual property right holders in safeguarding the transmission of copyrighted works over advanced networks like the Internet and by providing higher standards of protection for digital products generally. As such, IIPA believes that the U.S.-Singapore FTA will set new global standards of intellectual property protection and serve as a precedent for future bilateral, plurilateral, and multilateral free trade negotiations.

Investment Company Institute[15]

The Investment Company Institute (ICI) is the national association of the American investment company industry. Founded in 1940, ICI's membership consists of 8,912 open-end investment companies (mutual funds), 554 closed-end investment companies, and 6 sponsors of investment trusts. ICI's members have over 90 million individual shareholders and aggregate assets of approximately $6.25 trillion, accounting for around 95 percent of total industry assets. ICI points to the many benefits accorded U.S. asset management firms by the U.S.-Singapore FTA and sees

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[13] Eric H. Smith, President, International Intellectual Property Alliance.

[14] IIPA member associations include the Association of American Publishers, the American Film Marketing Association, the Business Software Alliance, the Interactive Digital Software Association, the Motion Picture Association of America, and the Recording Industry Association of America.

[15] Mary Podesta, Senior Counsel, Investment Company Institute.

certain achievements in this bilateral FTA as setting an important precedent for future trade negotiations.

In particular, the FTA makes important strides in market access. ICI notes that the agreement allows for the cross-border provision of portfolio management services with respect to mutual funds, which will ultimately allow U.S. firms to achieve economies of scale and utilize their global expertise in servicing clients in Singapore. The agreement also liberalizes Singapore's minimum staffing requirements, which have heretofore acted as a barrier to entry for U.S. firms. Although the agreement addresses the primary goals and concerns of the asset management industry, ICI expresses disappointment with one aspect of the market access provisions–that is, the maintenance of certain quantitative limitations on pension investments abroad.

Concerning regulatory transparency, ICI indicates that the transparency commitments on financial services, specifically those pertaining to acceptable procedures with respect to application processing and the adoption of rules, are of particular importance to U.S. asset management firms. ICI also expresses satisfaction with provisions in the FTA that allow for the free flow of capital and set forth remedies if either country imposes capital control measures. The industry's approval of the capital control commitments is mitigated, however, by provisions that require investors to wait for one year after the imposition of controls before submitting a claim, a regulation that ICI finds troublesome and potentially hindering. ICI states that the FTA achieves many of the industry's most important objectives and represents significant progress in opening Singapore's market for the U.S. asset management industry. Finally, ICI indicates that the provisions of the U.S.-Singapore FTA will benefit both the United States and Singapore.

Leather Industries of America, Inc.[16]

Leather Industries of America, Inc. (LIA) is a national trade association representing U.S. leather tanners and distributors, and their suppliers. LIA reports that historically when raw hides (classified under HTS headings 4101, 4102, and 4103) are initially tanned and then subsequently dried into crust leather (HTS headings 4104, 4105, and 4106), the country in which the initial tanning was performed has been considered the product's country of origin. Crust leather may undergo further minor processing known as finishing operations. Finishing operations such as applying additional color, embossing, surface coatings and other treatments are performed to enhance the properties of the final product. The proposed U.S.-Singapore FTA addresses country of origin issues in connection with leather that has been further processed or finished (HTS headings 4107, 4112, and 4113). Under the proposed FTA, the country that performs minor finishing operations would be considered the leather's country of

[16] Lauren Howard, Collier Shannon Scott, PLLC, counsel to Leather Industries of America, Inc.

origin. LIA opposes allowing the minor processing involved in finishing operations to confer origin. It asserts that the proposed treatment contradicts numerous Customs Service rulings as well as the rules of origin for leather in NAFTA, which codified historical substantial transformation rules into a tariff shift approach. LIA urges modification of the proposed FTA regarding the country of origin provisions and discourages the incorporation of this provision in future free trade agreements.

Pharmaceutical Research and Manufacturers of America[17]

The Pharmaceutical Research and Manufacturers of America (PhRMA), the national association representing the U.S. research-based pharmaceutical industry, supports the U.S.-Singapore FTA. PhRMA considers Singapore a leader in Asian biomedical research and development, one of the most open trade and investment regimes in the world, and a strong proponent of transparent science-based regulation of pharmaceutical products.

The association notes that there were virtually no government-sanctioned price controls on pharmaceutical products. More specifically, "[M]arket access barriers such as abusive price controls, reference pricing, monopsonistic purchasing practices, state trading monopolies, unreasonable restrictions on listing and government established formularies, toleration of the legal discounts or discounting practices that represent WTO and legal subsidies to local manufacturers, all of which were identified in the TPA Act, section 2018, key negotiating objectives are not an issue in Singapore."[18]

The association believes Singapore to have science-based drug-approval and drug-regulatory procedures that are timely and transparent. The drug regulatory requirements are faithful to generally accepted international scientific standards, and the drug approval process is transparent, allowing all stakeholders to participate in the approval process. PhRMA considers Singapore's Health Sciences Authority to be a regional model for science-based regulation.

PhRMA notes that Singapore has committed itself to strong intellectual property rights. It not only implemented key obligations of the Uruguay Round, but it also added further elements such as data exclusivity and patent-term restoration. In particular, the FTA will extend pharmaceutical patents to compensate for lost time during the drug-approval process.

The association supports the agreement for three reasons: (1) to improve stronger commercial ties between the United States and Singapore and the general interest of

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[17] Joseph Damond, Associate Vice President for Japan & Asia Pacific, Pharmaceutical Research and Manufacturers of America.

[18] Hearing transcript at p. 108.

the private sector, (2) to support Singapore's positive market-oriented and science based policies in support of their sector, and (3) to recognize Singapore's science-based regulatory regime and strong IPR protection. Finally, PhRMA notes that the agreement also will serve as a model for other trade agreements in the future.

Securities Industry Association[19]

The Securities Industry Association represents more than 600 securities firms, including investment banks, broker-dealers, and mutual fund companies. Collectively, member-firms employ more than 495,000 individuals, representing 97 percent of total employment by securities brokers and dealers. In 2001, the U.S. securities industry generated domestic revenues of $280 billion and global revenues of $383 billion.

The association supports the U.S.-Singapore FTA and indicates that it successfully achieves many of the organization's key trade objectives, which include favorable market access conditions, including 100 percent ownership rights and the right to establish in corporate form of choice; national treatment for U.S. financial services firms and investors; transparency of regulations; the elimination of all economic needs tests; and the ability to process and disseminate financial information within country and across borders. The association notes that the U.S.-Singapore FTA "locks-in" current market access levels in Singapore and produces commitments by Singapore to reduce and/or eliminate some of the few remaining establishment barriers. Although the agreement permits the free and immediate transfer of capital related to an investment, the association states that it contains exceptions to this general commitment. The industry hopes that exceptions to free capital movements will not form a template for future trade agreements. The Financial Services Coordinating Council indicates in a letter attached to the association's formal submission that it supports the FTA and seeks to associate itself with these written comments.

Semiconductor Industry Association[20]

The Semiconductor Industry Association is the leading voice for the semiconductor industry and has represented U.S. manufacturers since 1977. Member companies comprise approximately 90 percent of U.S.-based semiconductor production. The association supports the free trade agreement with Singapore. High-technology trade between the United States and Singapore represents about half of total two-way

[19] Lou Costantino, Jr., Vice President and Director, Government Relations, Securities Industry Association.

[20] Anne Craib, Director of International Trade and Governmental Affairs, Semiconductor Industry Association. Ms. Craib also was appearing on behalf of the High-Tech Trade Coalition.

trade. In 2002, the United States exported $6 billion in high-technology products to Singapore and imported $10.6 billion in such goods from that country. The association notes that Singapore is a major supply and logistics hub for the high-technology industry's operations in Asia, and U.S. high-technology firms have made over $1 billion in investments in Singapore. The U.S.-Singapore FTA is the first such agreement in the region, and its further liberalizes the important high-technology relationship between the two countries. Even though Singapore already has removed tariffs on key information technology products via the Information Technology Agreement, the association thinks that the proposed FTA will simplify customs procedures; increase market access for services, including telecommunications and computer-related services; include favorable e-commerce provisions; and improve intellectual property rights protection.

Telecommunications Industry Association[21]

The Telecommunications Industry Association (TIA) is a U.S.-based, non-profit trade association serving the U.S. communications and information technology industries. TIA's activities include domestic and international advocacy, market development, industry trade shows, standards development, and e-business initiatives. Its membership comprises more than 1,000 companies that manufacture and supply telecommunication products and services.

The TIA supports the U.S.-Singapore FTA. The TIA also approves of certain key provisions that it considers are important to its member companies. For example, the TIA approves of provisions in the telecommunication services chapter that ensure access to and use of public telecommunication networks and services on a non-discriminatory basis. The TIA also favors the "negative list" approach, which allows new telecommunication services to be introduced in a fully liberalized environment.

The TIA believes that the provisions of the telecommunications chapter provide a high level of transparency in telecommunication services by ensuring the publication of telecom regulations and consultation on regulatory matters, and by instituting a prior notice period for new regulations and changes to existing regulations. The TIA also supports provisions allowing full-recourse appeals to decisions of regulatory bodies.

The TIA also thinks that the inclusion of non-binding language calling for technological neutrality in the mobile telecommunication services sector serves as a useful starting point. However, it emphasizes the need for binding rules on technological neutrality in future agreements.

[21] Matthew J. Flanigan, President, Telecommunications Industry Association.

Tile Council of America, Inc.[22]

The Tile Council of America, Inc. (TCA) is a national trade association for the ceramic tile industry.[23] TCA represents over 40 manufacturers of ceramic tiles and related products, and its members account for over 50 percent of the ceramic tile produced in the United States.

TCA opposes the U.S.-Singapore FTA as it applies to ceramic tile and other import sensitive products. In its submission, TCA states that the domestic ceramic tile industry is import sensitive and faces a high level of import penetration. According to TCA, competition from low-priced imports has placed downward pressure on prices and forced a number of U.S. tile firms to scale back operations or exit the industry entirely. Moreover, surviving producers are operating far below capacity. TCA notes that while current imports from Singapore do not comprise a significant percent of total U.S. ceramic tile imports, the U.S. ceramic tile industry is concerned about the potential that the U.S.-Singapore FTA could allow for another source of low-priced imports, which would exacerbate the already precarious condition of the U.S. industry. TCA also is concerned that without a sufficient and enforceable rule-of-origin protocol, Singapore could become a transhipment point for low-cost ceramic tiles produced elsewhere in the region. Finally, TCA objects to the inclusion of import sensitive products to tariff reductions or concessions in the negotiations with Singapore, and particularly objects to the shorter 8-year tariff staging received by ceramic tiles (as opposed the longest possible tariff phase out schedule) under the U.S.-Singapore FTA.

United Parcel Service[24]

United Parcel Service (UPS) is the world's largest package delivery company and a leading provider of specialized transportation and logistics services. UPS employs 320,000 in the United States and delivers packages to over 200 countries and territories worldwide. UPS supports the U.S.-Singapore FTA , and believes that it will contribute to industry growth by increasing trade volumes between the United States and Singapore and by reducing barriers that affect the provision of express delivery services (EDS). UPS is pleased that the U.S.-Singapore FTA recognizes EDS as a distinct service sector, and that commitments apply to all suppliers of the service, whether such suppliers are public or private enterprises. UPS believes that although the agreement's provisions on customs procedures could be improved, they are expected to facilitate customs procedures and enhance the ability of EDS suppliers to quickly and reliably

[22] Juliana Cofrancesco and John Bruce, Howrey, LLP, counsel to the Tile Council of America, Inc.
[23] TCA notes that its comments are limited to the likely impact of the U.S.-Singapore FTA on the U.S. industry producing ceramic tiles classified under HTS headings 6907 and 6908.
[24] Selina Jackson, International Public Affairs Manager, United Parcel Service.

meet the needs of their customers. Similarly, UPS believes that the agreement's provisions on cross-subsidization could be improved in future trade agreements by effectively addressing cross-subsidization of EDS by those with government-granted monopoly rights.

U.S. Chamber of Commerce[25]

The U.S. Chamber of Commerce (Chamber) is the world's largest business federation. It represents three million businesses of all sizes and sectors, and from every region of the United States. The Chamber supports the FTA and views it as a significant step toward advancing trade with Singapore and U.S. economic prosperity. The Chamber notes that U.S. two-way trade with Singapore accounts for over $30 billion annually and over 1,500 American companies are operating in Singapore today. Consequently, the Chamber asserts that the FTA will bring tangible commercial benefits to American companies, workers, and consumers and offer greater access to Singapore's market while increasing the U.S. competitive position in the region.

In regards to the general provisions of the FTA, the Chamber contends that key benefits for U.S. companies are in the following areas: trade in goods, investment, competition policy, government procurement, movement of personnel, customs procedures, rules of origin, and intellectual property rights. The Chamber also believes that the FTA will provide substantial benefits to the U.S. service industry. Specific service industries mentioned by the Chamber include: financial services, professional services, telecommunications, express delivery services, electronic commerce, and insurance.

U.S.-Singapore FTA Business Coalition[26]

The U.S.-Singapore FTA Business Coalition (Coalition) is a group of approximately 75 leading U.S. trade associations. The Coalition endorses the U.S.-Singapore FTA and states that the agreement's emphasis on bilateral customs cooperation, expedited customs clearances, and tariff elimination will lead to increased trade volumes. The Coalition contends that the FTA will open new sectors to American companies in Singapore, spur economic growth in both countries, create higher paying jobs for American workers, and increase economic integration between the two countries. Further, the Coalition indicates that for American companies, the FTA represents new investment opportunities and the potential for more profitable business activities. The

[25] Myron Brilliant, Vice President, Asia, U.S. Chamber of Commerce.

[26] Robert D. Baulerlein, Co-Chair, U.S.-Singapore FTA Business Coalition, and Vice President of International Operations, The Boeing Company.

Coalition notes that the FTA also will stimulate interest in the United States as a potential investment destination. The Coalition asserts that the FTA will further solidify America's presence and commitment to the Southeast Asian region. Finally, the Coalition notes that the United States has fallen behind the rest of the world, because it is only a signatory to four of the estimated 130 FTAs that exist.

The Coalition indicates that the largest sector that is to gain from the FTA is the services area. It states that the FTA allows for new and expanded trading opportunities for specific service sector industries which include: financial services, insurance, express delivery services, healthcare, telecommunications, information technology, transportation, and travel and tourism. For example, the Coalition states that in the banking sector, the establishment of more branch operations in Singapore will allow U.S. banks to become more competitive with features such as enhanced customer service capabilities through access to the local ATM network. In regards to intellectual property rights (IPR), the Coalition asserts that the U.S.-Singapore FTA breaks new ground and supports provisions that the American high-technology industry deems essential for marketing its products abroad. The Coalition states that the FTA's IPR provisions will provide benefits to American biotech, chemical, pharmaceutical, entertainment, and multimedia companies that include: nondiscriminatory treatment, government involvement in the investigation and prosecution of violators, as well as active application of anticircumvention rules. For e-commerce, the Coalition asserts that the FTA commits Singapore to the nondiscriminatory treatment of digital products and lowers the barriers on the use and development of e-commerce.

Wal-Mart Stores, Inc.[27]

Wal-Mart Stores, Inc. is the world's largest retailer, with $218 billion in sales in 2002. The company employs more than 1.3 million workers worldwide and maintains facilities in the United States, as well as Argentina, Brazil, Canada, China, Germany, Japan, Korea, Mexico, Puerto Rico, and the United Kingdom.

Wal-Mart support free trade agreements that reduce barriers to trade. Wal-Mart supported the Singapore FTA negotiations and expects that its volume of trade will increase under a liberalized regime. Wal-Mart believes that Singapore represents both a sound economy in which to invest and a significant logistical hub in Asia. According to Wal-Mart, the agreement will advance Singapore's economic development and create a model for regional and economic cooperation. Wal-Mart supports tariff elimination as well as commitments to eliminate technical barriers to trade that impede sales of high-quality, low-cost goods to consumers. Wal-Mart is

[27] Angela Marshall Hofmann, Director, International Trade, National Government Relations, Wal-Mart Stores, Inc.

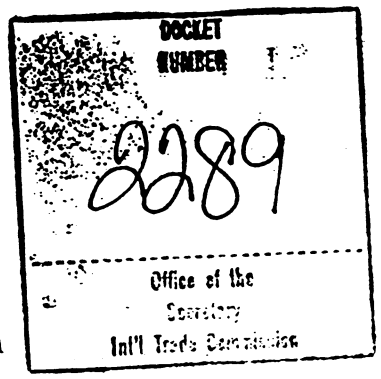
very interested in regulatory transparency disciplines and values the establishment of strong intellectual property rights protections. In addition, Wal-Mart recognizes that the agreement accords market access and national treatment to service providers.

Despite its general support, Wal-Mart believes the rules of origin for textile and apparel products are overly restrictive and may adversely impact apparel sourcing from Singapore. Wal-Mart thinks further liberalization of apparel trade would help Singapore offset China's emerging dominance in apparel sourcing. Wal-Mart hopes that these rules are not used as a precedent in other FTAs, preferring rules that allow for accumulation of inputs from other free trade partners or preferential trade partners.

APPENDIX A
REQUEST LETTER

EXECUTIVE OFFICE OF THE PRESIDENT
THE UNITED STATES TRADE REPRESENTATIVE
WASHINGTON, D.C. 20508

2-ER 8
3-OPS



JAN 21 2003

The Honorable Deanna Tanner Okun
Chairman
U.S. International Trade Commission
500 E Street, S.W.
Washington, D.C. 20436

Dear Chairman Okun:

As you know, the United States and Singapore recently completed the negotiation of a comprehensive bilateral free trade agreement (FTA). We appreciate the advice and assistance that the U.S. International Trade Commission ("Commission") provided throughout the negotiations.

The President intends to notify Congress of his intent to enter into the FTA with Singapore shortly. Pursuant to authority delegated to me by the President and in accordance with section 2104(f) of the Trade Act of 2002 ("Trade Act"), I request the Commission to prepare a report as specified in section 2104(f)(2)-(3) of the Trade Act assessing the likely impact of the FTA on the United States economy as a whole and on specific industry sectors and the interests of U.S. consumers.

I would greatly appreciate it if the Commission could issue its report as soon as possible. USTR staff will provide the Commission with the details of the FTA now and the final text of the Agreement once the legal review is completed. We will be contacting Commission staff regarding procedures for providing this information to the Commission.

Thank you for your cooperation and assistance in this matter.

Sincerely,

Bob

Robert B. Zoellick

APPENDIX B
FEDERAL REGISTER NOTICE

By order of the Commission.

Issued: March 17, 2003.

Marilyn R. Abbott,

Secretary to the Commission.

[FR Doc. 03–6854 Filed 3–20–03; 8:45 am]

BILLING CODE 7020–02–P

INTERNATIONAL TRADE COMMISSION

[Investigations Nos. 701–TA–432 and 731–TA–1024–1028 (Preliminary)]

Prestressed Concrete Steel Wire Strand From Brazil, India, Korea, Mexico, and Thailand

Determinations

On the basis of the record [1] developed in the subject investigations, the United States International Trade Commission (Commission) determines, pursuant to sections 703(a) and 733(a) of the Tariff Act of 1930 (19 U.S.C. 1671b(a) and 1673b(a))(the Act), that there is a reasonable indication that an industry in the United States is materially injured by reason of imports from India of prestressed concrete steel wire strand ("PC strand") that are alleged to be subsidized by the Government of India and by reason of imports from Brazil, India, Korea, Mexico, and Thailand of PC strand that are alleged to be sold in the United States at less than fair value (LTFV). The subject merchandise is provided for in subheading 7312.10.30 of the Harmonized Tariff Schedule of the United States.

Pursuant to section 207.18 of the Commission's rules, the Commission also gives notice of the commencement of the final phase of its investigations. The Commission will issue a final phase notice of scheduling, which will be published in the **Federal Register** as provided in section 207.21 of the Commission's rules, upon notice from the Department of Commerce (Commerce) of affirmative preliminary determinations in the investigations under sections 703(b) and 733(b) of the Act, or, if the preliminary determinations are negative, upon notice of affirmative final determinations in the investigations under sections 705(a) and 735(a) of the Act. Parties that filed entries of appearance in the preliminary phase of the investigations need not enter a separate appearance for the final phase of the investigations. Industrial users, and, if the merchandise under investigation is sold at the retail level, representative consumer organizations have the right to appear as parties in Commission antidumping and countervailing duty investigations. The Secretary will prepare a public service list containing the names and addresses of all persons, or their representatives, who are parties to the investigations.

Background

On January 31, 2003, a petition was filed with the Commission and Commerce by American Spring Wire Corp., Bedford Heights, OH; Insteel Wire Products Co., Mt. Airy, NC; and Sumiden Wire Products Corp., Stockton, CA, alleging that an industry in the United States is materially injured and threatened with material injury by reason of subsidized imports of PC strand from India and by reason of LTFV imports of PC strand from Brazil, India, Korea, Mexico, and Thailand. Accordingly, effective January 31, 2003, the Commission instituted countervailing duty investigation No. 701–TA–432 and antidumping duty investigations Nos. 731–TA–1024–1028 (Preliminary).

Notice of the institution of the Commission's investigations and of a public conference to be held in connection therewith was given by posting copies of the notice in the Office of the Secretary, U.S. International Trade Commission, Washington, DC, and by publishing the notice in the **Federal Register** of February 7, 2003 (68 FR 6511). The conference was held in Washington, DC, on February 21, 2003, and all persons who requested the opportunity were permitted to appear in person or by counsel.

The Commission transmitted its determinations in these investigations to the Secretary of Commerce on March 17, 2003. The views of the Commission are contained in USITC Publication 3589 (March 2003), entitled Prestressed Concrete Steel Wire Strand from Brazil, India, Korea, Mexico, and Thailand: Investigations Nos. 701–TA–432 and 731–TA–1024–1028 (Preliminary).

Issued: March 17, 2003.

By order of the Commission.

Marilyn R. Abbott,

Secretary to the Commission.

[FR Doc. 03–6853 Filed 3–20–03; 8:45 am]

BILLING CODE 7020–02–P

[1] The record is defined in sec. 207.2(f) of the Commission's Rules of Practice and Procedure (19 CFR 207.2(f)).

INTERNATIONAL TRADE COMMISSION

[Investigation TA–2104–6]

U.S.-Singapore Free Trade Agreement: Potential Economywide and Selected Sectoral Effects

AGENCY: United States International Trade Commission.

ACTION: Institution of investigation and scheduling of public hearing.

EFFECTIVE DATE: March 3, 2003.

SUMMARY: Following receipt of a request on January 21, 2003, from the United States Trade Representative (USTR), the Commission instituted investigation No. TA–2104–6, U.S.-Singapore Free Trade Agreement: Potential Economywide and Selected Sectoral Effects, under section 2104(f) of the Trade Act of 2002 (19 U.S.C. 3804(f)).

Background: As requested by the USTR, the Commission will prepare a report as specified in section 2104(f)(2) of the Trade Act of 2002 (19 U.S.C. 3804(f)(2)) assessing the likely impact of the U.S.-Singapore FTA on the United States economy as a whole and on specific industry sectors and the interests of U.S. consumers. Specifically, the report will—

assess the likely impact of the agreement on the United States economy as a whole and on specific industry sectors, including the impact the agreement will have on the gross domestic product, exports and imports, aggregate employment and employment opportunities, the production, employment, and competitive position of industries likely to be significantly affected by the agreement, and the interests of United States consumers.

In preparing its assessment, the Commission will review available economic assessments regarding the agreement, including literature regarding any substantially equivalent proposed agreement, and will provide in its assessment a description of the analyses used and conclusions drawn in such literature, and a discussion of areas of consensus and divergence between the various analyses and conclusions, including those of the Commission regarding the agreement. Section 2104(f)(2) requires that the Commission submit its report to the President and the Congress not later than 90 days after the President enters into the agreement, which he can do 90 days after he notifies the Congress of his intent to do so. The President notified the Congress on January 30, 2003, of his intent to enter into the FTA with Singapore.

FOR FURTHER INFORMATION CONTACT: Further information may be obtained from Diane Manifold, Project Leader, Office of Economics ((202) 205–3271). For information on the legal aspects of this investigation, contact William Gearhart of the Office of the General Counsel ((202) 205–3091). For media information, contact Peg O'Laughlin ((202) 205–1819). Hearing impaired individuals are advised that information on this matter can be obtained by contacting the TDD terminal on ((202) 205–1810).

Public Hearing: A public hearing in connection with the investigation will be held at the U.S. International Trade Commission Building, 500 E Street SW., Washington, DC, beginning at 9:30 a.m. on April 24, 2003. All persons shall have the right to appear, by counsel or in person, to present information and to be heard. Requests to appear at the public hearing should be filed with the Secretary, United States International Trade Commission, 500 E Street SW., Washington, DC 20436, no later than 5:15 p.m., April 10, 2003. Any prehearing briefs (original and 14 copies) should be filed not later than 5:15 p.m., April 17, 2003; the deadline for filing post-hearing briefs or statements is 5:15 p.m., May 1, 2003. In the event that, as of the close of business on April 10, 2003, no witnesses are scheduled to appear at the hearing, the hearing will be canceled. Any person interested in attending the hearing as an observer or non-participant may call the Secretary of the Commission ((202) 205–1816) after April 10, 2003, to determine whether the hearing will be held.

Written Submission: In lieu of or in addition to participating in the hearing, interested parties are invited to submit written statements (original and 14 copies) concerning the matters to be addressed by the Commission in its report on this investigation. Commercial or financial information that a submitter desires the Commission to treat as confidential must be submitted on separate sheets of paper, each clearly marked "Confidential Business Information" at the top. All submissions requesting confidential treatment must conform with the requirements of section 201.6 of the Commission's Rules of Practice and Procedure (19 CFR 201.6). All written submissions, except for confidential business information, will be made available in the Office of the Secretary to the Commission for inspection by interested parties. The Commission intends to publish only a public report in this investigation. Accordingly, any confidential business information received by the Commission in this investigation and used in preparing the report will not be published in a manner that would reveal the operations of the firm supplying the information. To be assured of consideration by the Commission, written statements relating to the Commission's report should be submitted to the Commission at the earliest practical date and should be received no later than the close of business on May 1, 2003. All submissions should be addressed to the Secretary, United States International Trade Commission, 500 E Street SW., Washington, DC 20436. The Commission's rules do not authorize filing submissions with the Secretary by facsimile or electronic means, except to the extent permitted by section 201.8 of the Commission's Rules, as amended, 67 FR 68036 (Nov. 8 2002). The public record for this investigation may be viewed on the Commission's electronic docket (EDIS) at *http://edis.usitc.gov.*

Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at ((202) 205–2000). General information concerning the Commission may also be obtained by accessing its Internet server (*http://www.usitc.gov*).

List of Subjects

Singapore, tariffs, trade, imports and exports.

Issued: March 17, 2003.
By order of the Commission.

Marilyn R. Abbott,

Secretary to the Commission.

[FR Doc. 03–6852 Filed 3–20–03; 8:45 am]

BILLING CODE 7020–02–P

DEPARTMENT OF LABOR

Office of the Secretary

Submission for OMB Review; Comment Request

March 17, 2003.

The Department of Labor (DOL) has submitted the following public information collection request (ICR) to the Office of Management and Budget (OMB) for review and approval in accordance with the Paperwork Reduction Act of 1995 (Pub. L. 104–13, 44 U.S.C. Chapter 35). A copy of this ICR, with applicable supporting documentation, may be obtained by calling the Department of Labor. To obtain documentation contact Darrin King on 202–693–4129 or E-Mail: *King.Darrin@dol.gov.*

Comments should be sent to Office of Information and Regulatory Affairs, Attn: OMB Desk Officer for ETA, Office of Management and Budget, Room 10235, Washington, DC 20503 (202–395–7316), within 30 days from the date of this publication in the **Federal Register.**

The OMB is particularly interested in comments which:

* Evaluate whether the proposed collection of information is necessary for the proper performance of the functions of the agency, including whether the information will have practical utility;
* Evaluate the accuracy of the agency's estimate of the burden of the proposed collection of information, including the validity of the methodology and assumptions used;
* Enhance the quality, utility, and clarity of the information to be collected; and
* Minimize the burden of the collection of information on those who are to respond, including through the use of appropriate automated, electronic, mechanical, or other technological collection techniques or other forms of information technology, *e.g.,* permitting electronic submission of responses.

Agency: Employment and Training Administration (ETA).

Type of Review: Revision of a currently approved collection.

Title: Unemployment Compensation for Ex-Servicemembers (UCX) Handbook.

OMB Number: 1205–0176.

Affected Public: State, Local, or Tribal Government and Individuals or households.

Type of Response: Reporting.

Frequency: On occasion.

Number of Respondents: 53.

Total Annual Responses: 3,306.

Average Response Time: 1 minute for the ETA 843 and 1.5 minutes for the ETA 841.

Total Annual Burden Hours: 55.

Total Annualized Capital/Startup Costs: $0.

Total Annual Costs (operating/maintaining systems or purchasing services): $76,348.

Description: Federal Law (5 U.S.C. 8521 *et seq.*) and the Department's regulations at 20 CFR part 614 provides unemployment insurance protection, to former members of the Armed Forces (ex-servicemembers) and is referred to in abbreviated form as "UCX".

The forms in the Handbook are used in connection with the provisions of this benefit assistance.

Darrin A. King,

Acting Departmental Clearance Officer.

[FR Doc. 03–6795 Filed 3–20–03; 8:45 am]

BILLING CODE 4510–30–M

APPENDIX C
HEARING PARTICIPANTS

CALENDAR OF PUBLIC HEARING

Those listed below appeared as witnesses at the United States International Trade Commission's hearing:

Subject: U.S.- Singapore Free Trade Agreement: Potential Economywide and Selected Sectoral Effects

Inv. No.: TA-2104-6

Date and Time: April 24, 2003 - 9:30 a.m.

Sessions were held in connection with these investigations in the Main Hearing Room (room 101), 500 E Street, SW, Washington, DC.

EMBASSY APPEARANCE:

Republic of Singapore
Washington, D.C.

Her Excellency, Chan Heng Chee, Ambassador, Republic of Singapore

ORGANIZATION AND WITNESS:

U.S. Chamber of Commerce

Myron Brilliant, Vice President, Asia, U.S. Chamber of Commerce

Erin Pham, Director, Asia Trade Policy, U.S. Chamber of Commerce

U.S.-Singapore FTA Business Coalition

Robert D. Bauerlein, Co-Chair, U.S.-Singapore FTA Business Coalition, and Vice President, International Operations, The Boeing Company

Citigroup

Jeff Shafer, Vice Chairman - International, Citigroup Global Corporate Investment Bank

ORGANIZATION AND WITNESS:

Air Courier Conference of America International

David Spence, Chairman, International Trade Subcommittee,
Air Courier Conference of America, and Senior Counsel,
FedEx Regulatory and Legal Affairs

Wal*mart Stores, Inc.

Angela Marshall Hofmann, Director, International Trade,
National Government Relations, Wal*mart Stores, Inc.

Direct Selling Association

John W. Hesse, Senior Attorney, Direct Selling Association

PANEL 2:

International Intellectual Property Alliance

Eric H. Smith, President, International Intellectual Property Alliance

Entertainment Industry Coalition for Free Trade

Bonnie J. K. Richardson, Vice President, Trade & Federal Affair,
Motion Picture Association of America

Laura Lane, Vice President, International Public Policy, AOL
Time Warner

Pharmaceutical Research and Manufacturers of America

Joseph M. Damond, Associate Vice President, Japan & Asia Pacific,
Pharmaceutical Research and Manufacturers of America

Semiconductor Industry Association

Anne Craib, Director, International Trade and Government Affairs,
Semiconductor Industry Association

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APPENDIX D
TECHNICAL APPENDIX

APPENDIX D

The discussion that follows focuses on the quantitative analysis incorporated in this report—the computable general equilibrium analysis presented in chapter 5.

The GTAP Model

In general, the dynamic questions of interest to policymakers involve the ways in which the trade policy under consideration interacts with other changes that are expected in the economies of interest. In this report, the Commission reports policy impacts obtained from sequential solutions of the standard static Global Trade Analysis Project (GTAP) model that was adjusted to address those specific issues.[1] This appendix reviews the procedures used to adapt the standard GTAP model in order to assess the likely impacts of the FTA between the United States and Singapore. First, the basic features of the static GTAP model are introduced. Second, the adjustments made to the standard database are discussed. The third and fourth sections present various aspects of the baseline construction and solution techniques.

The Standard GTAP Model[2]

The GTAP model is a static general equilibrium model consisting of a documented global database on international trade, economywide interindustry relationships, national income accounts, and a standard modeling framework to organize and analyze the data. It allows for comparisons of the global economy in two environments: one in which the base values of policy instruments such as tariffs or export restrictions are unchanged, and another in which these measures are changed, or shocked, to reflect the policies that are being studied. A change in policy makes itself felt throughout the economies depicted in the model. The static model by design does not produce information about the speed with which changes occur, about what happens to various dimensions of the economies in the meanwhile, or what may have happened to change some of the underlying dynamic structures of the economies, such as specific patterns of foreign direct investment or technological changes that may alter the future growth pattern of economies.

Results from the GTAP model are based upon established global trade patterns. This means that the model is unable to estimate changes in trade in commodities that

[1] Other important issues such as adjustment costs and anticipated versus unexpected policies are not addressed here.

[2] For further information, see T.W. Hertel, ed., *Global Trade Analysis: Modeling and Application*, Cambridge: Cambridge University Press, 1997.

historically have not been traded. That is to say, if a particular commodity is not traded between two economies, the model will assume that there will always be no trade in that commodity.[3] Furthermore, patterns of trade may exist for such reasons as the distance between countries or cultural preferences, which are imperfectly captured by the model. The GTAP model does not directly account for historical or cultural factors as determinants of trade patterns. The model assumes that these factors are unaffected by the trade policy change. The model will tend to show smaller effects of policy changes operating on smaller trade flows, and larger effects on larger flows.

In the GTAP model, domestic products and imports are consumed by firms, governments, and households. Product markets are assumed to be perfectly competitive (implying zero economic profit for the firm), with imports as imperfect substitutes for domestic products (i.e., consumers are aware of the source of the products and may distinguish between them based on the foreign or domestic origin), and sectoral production determined by global demand and supply of the output.

Updating the GTAP Database

The current version of the GTAP database (release 5.3) covers trade in 57 commodity aggregates, or GTAP sectors, among 78 economies.[4] For the purpose of the present analysis, the database has been aggregated into 13 economies and 22 commodity groups (table D-1). The commodity aggregation adopted here focuses either on GTAP sectors with either substantial trade between the United States and FTA partner economy or on GTAP sectors with substantial domestic-world prices wedges.

In addition to the data on bilateral trade in each of the commodities in the model, data are incorporated on the domestic production and use of each commodity (including use in the production of other commodities), the supply and use of land, labor, capital, population, and GDP. The database also contains information on tariffs, some nontariff barriers, and other taxes. An additional component of the data is a set of parameters which, in the context of the model's equations, determines economic behavior. This is principally a set of elasticity values that determine, among other things, the extent to which imports and domestically produced goods are substitutes for one another.

The current standard GTAP data is based on the year 1997–i.e., trade flows and barriers, and other data refer to the world in that year. For the purpose of the present study, the standard data set was projected to reflect 2004, using data from the U.S. Department of Commerce (U.S. imports and exports, as well as U.S.-Singapore

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[3] This shortcoming does not affect the analysis here because the sectoral specification, shown in table D-2, is quite aggregated. At that level of aggregation, there is trade for almost all sectors.

[4] Betina V. Dimaranan (2003), "Memo regarding candidate database for GTAP interim release 5.3," Center for Global Trade Analysis, Purdue University, Feb. 7, 2003, and Betina V. Dimaranan and Robert A. McDougall, *Global Trade, Assistance, and Production: The GTAP 5 Data Base*, Center for Global Trade Analysis, Purdue University, 2002.

bilateral trade), and the World Bank (population, GDP, and capital stock). The trade protection data set also was adjusted to represent a policy environment in which policy measures ratified under the Agreement on Agriculture and the Agreement on Textiles and Clothing (ATC) of the Uruguay Round, and scheduled to be implemented the end of 2004, are completed and in place. This updated data set is used as the base data for the current analysis.

Table D-1
Commodity and regional aggregation

Commodity aggregation	Regional aggregation
Fishing	United States
Forestry	Canada and Mexico
Grains	Chile
Sugar crops	Mercosur
Vegetables, fruits, and nuts	Rest of the Americas
Other crops	Singapore
Livestock	East Asia
Coal, oil, gas, and other minerals	Rest of Asia
Meat products	Australia and New Zealand
Dairy products	European Union (EU-15)
Sugar manufacturing	Southern African Customs Union (SACU)
Other processed food and tobacco products	Rest of Sub Saharan Africa
Textiles, wearing apparel, and leather products	Rest of world
Wood products	
Petroleum, coal, chemical, rubber, plastic products, and other mineral products	
Ferrous metals	
Metals n.e.c. and metal products	
Motor vehicles and parts and other transportation equipment	
Electronic equipment	
Other machinery and equipment	
Other manufactures	
Services	

Source: Compiled from the GTAP database.

Construction of the Projected Baseline

In an effort to approximate a dynamic process in which the world's economies change over time, the impacts of the FTA are measured against a 12-year projected baseline (from 2004 to 2016) constructed using data from the U.S. Department of Labor and the World Bank.[5] In order to produce the projected baseline, the model takes into account expected growth in both resources (factors of production) and in the efficiency of the productive technology in the economies under consideration.

GTAP has five factors of production (capital, skilled labor, unskilled labor, land, and natural resources). In creating the projected baseline, the land and natural resource endowments were assumed to remain fixed, while both types of labor and capital are allowed to grow. Estimates of growth in the capital stock were assumed to be in line

[5] This 12-year period is divided into three intervals (beginning of 2004 to beginning of 2008, beginning of 2008 to beginning of 2012, and beginning of 2012 to beginning of 2016). The data include projections of population and GDP.

with the World Bank projections.[6] Growth rates of skilled and unskilled labor were assumed equal to the projections of population growth rates.[7]

The World Bank data do not report expected growth in total factor productivity (TFP), a variable that represents the growth of economic efficiency in each economy. However, the implicit rate of TFP growth can be derived from model simulations that estimate the efficiency gains that would allow the projected growth in inputs to produce the expected growth in output.[8] In order to determine the baseline growth in TFP, the GTAP model is adjusted so that it addresses this, using projections of labor, capital, and GDP. The additional efficiency needed to produce the projected change in output then becomes an input into the projected baseline.[9]

For each time interval of the projected baseline, the protection data are changed to reflect the Uruguay Round (including the Agreements on Agriculture and on Textiles and Clothing). Thus, economic conditions in 2004 reflect reductions in export subsidies and import tariffs for food and agricultural products and expansion of quotas for textiles and clothing agreed at the Uruguay Round.

Solution Technique

A typical experiment conducted in the standard GTAP framework measures the long-term effects of a one-time, full implementation of an agreement.[10] It is assumed in the model that sufficient time is allowed to let the full effect of the agreement work its way through the economy. Reported figures show the effects of a trade policy shock as it would have appeared in the base year of the data. Such estimates require no

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[6] In the development of the baseline from 1997 to 2016, regional investment in new capital goods was made consistent with the capital stock growth rates from the World Bank forecasts.

[7] The World Bank projects population growth, but does not project how the composition of the population changes over time. There are likely to be changes over time in the rate of unemployment, the share of workers that could be considered skilled, and the productivity of the average worker. Without projections on these variables, they are assumed fixed over time.

[8] Solving the model to produce TFP growth rates is equivalent in concept to the growth accounting approach typically used in simple calculations. In growth accounting, 3 percent growth in GDP and 2 percent growth in inputs (capital and labor) implies a 1 percent (3 - 2 = 1) increase in TFP. Because the mathematical structure of the GTAP model is more complicated than the model used in growth accounting, we could not use growth accounting, though the estimates calculated in growth accounting would be quite similar to those calculated within the model. Because the purpose of the exercise is to eventually replicate the GDP forecast exactly, TFP growth must be computed within the context of the model.

[9] Economies undergo several kinds of technological change over time. These assumptions capture only the average change in an economy's ability to change a given bundle of inputs into output. One aspect of technical change is how the nature of an economy's input-output structure changes over time. For example, as a developing economy grows, it may begin to use a larger share of capital (tractors) in agricultural production. These projections assume no change in input-output structures over time.

[10] See, for example, USITC, *The Impact on the U.S. Economy of Including the United Kingdom in a Free Trade Arrangement with the United States, Canada, and Mexico,* USITC Pub. 3339, August 2000, or USITC, *Overview and Analysis of the Economic Impact of U.S. Sanctions with Respect to India and Pakistan*, USITC Pub. 3236, September 1999.

assumptions about the time required for full adjustment. The primary disadvantage of the static approach is that it does not account for expected changes in the economy over time.

In the present counterfactual analysis, the baseline described earlier is assumed to represent a reasonable projection of the likely evolution of the relevant variables in the absence of the U.S.- Singapore FTA or other trade policy changes.[11] The modeling approach is a sequential simulation of the static GTAP model, with an updating procedure that allows key macroeconomic variables in the model to match the World Bank projections of these variables. This framework allows for changes in the productive resources (capital and labor) available in each economy, as well as their productivity, so that the changing trade pattern can be affected both by the tariff cuts and by projected changes in inputs and in economy-wide output. The effects of the agreement at a given point in time are estimated by: (1) calculating baseline data by shocking the model with cumulative increases in labor, capital, and TFP, (2) solving the model once again using the FTA liberalization, and (3) reporting the results of the modeling. This procedure is done for each solution point (2004, 2008, 2012, and 2016). It is assumed that trade barrier elimination starts in 2004, with gradual phase-outs. Economic agents portrayed in the model are not able to link the periods of time when they make their decisions.[12] Thus, the decision makers are neither forward- nor backward-looking, they simply act in each period as the relevant resource constraints bind them to do.

Measuring the Impacts of the FTA

The probable effects of the U.S.-Singapore FTA reported are simply the deviations of the relevant variables from their levels in the projected baseline, at any given solution point. Reported deviations in economic variables like production, trade, and income, indicate the likely degree to which the policy causes the modeled economies to deviate from their expected paths. Changes in the variables of interest are measured in percentage terms, relative to the projected baseline.

Tables D-2 to D-4 report sectoral impacts for U.S. imports, exports and output at mid-point implementation of the agreement for simulations with the base case parameters.

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[11] It should be stressed that the baseline is not intended as a forecast, but as a projection that relies on average expected growth rates. Unexpected events may lead the actual macroeconomic evolution of the variables of interest to differ substantially from the projected baseline. The projected baseline is simply the Commission's best estimate of how these variables are expected to evolve, given the projections from the World Bank.

[12] In this sense, the model is not quite as rigorous as some dynamic CGE models, which allow the agents the possibility to consider future outcomes when making current decisions.

Table D-2
Effects on U.S. exports, 2004-16 (relative to baseline)

	U.S. total exports to the world					U.S. exports to Singapore				
	2004	2004	2008	2012	2016	2004	2004	2008	2012	2016
	Million dollars	*Percent change*				*Million dollars*	*Percent change*			
Fishing	743	0.0	0.0	0.0	0.0	1	0.0	0.1	0.1	0.1
Forestry	1,842	0.0	0.0	0.0	0.0	2	0.0	0.1	0.2	0.3
Grains	11,564	0.0	0.0	0.0	0.0	14	0.0	0.2	0.3	0.3
Sugar crops	3	0.0	0.0	0.0	0.0	0	0.0	0.1	0.2	0.3
Vegetables, fruits, and nuts	6,363	0.3	0.3	0.3	0.3	60	37.2	37.0	36.9	36.9
Other crops	12,669	0.0	0.0	0.0	0.0	5	0.1	0.3	0.5	0.6
Livestock	4,571	0.0	0.0	0.0	0.0	11	-0.1	-0.1	-0.1	-0.1
Coal, oil, gas, and other minerals	7,004	0.0	0.0	0.0	0.0	22	0.8	0.7	0.7	0.6
Meat products	9,651	0.1	0.1	0.1	0.1	33	36.6	36.6	36.8	37.0
Dairy products	798	0.3	0.3	0.3	0.3	7	29.0	29.0	29.0	29.0
Sugar manufacturing	88	0.0	0.0	0.0	0.0	0	0.0	0.1	0.1	0.1
Other foods	29,284	0.1	0.1	0.1	0.1	215	18.7	18.6	18.6	18.5
Textiles and apparel	23,362	0.0	0.0	0.0	0.0	97	0.4	0.9	1.9	2.5
Wood products	10,141	0.0	0.0	0.0	0.0	35	-0.1	-0.1	-0.1	-0.2
Petroleum, coal and chemical products	133,361	0.0	0.0	0.0	0.0	2,936	0.2	0.2	0.2	0.2
Ferrous metals	26,630	0.0	0.0	0.0	0.0	352	0.2	0.2	0.2	0.1
Metals n.e.c. and metal products	18,372	0.0	0.0	0.0	0.0	96	0.0	0.0	-0.1	-0.1
Transportation equipment	174,483	0.0	0.0	0.0	0.0	4,877	0.3	0.4	0.4	0.4
Electronic equipment	126,476	0.0	0.1	0.1	0.1	4,590	0.3	0.2	0.2	0.2
Other machinery and equipment	197,235	0.0	0.0	0.0	0.0	4,958	0.3	0.3	0.3	0.3
Other manufactures	37,523	0.0	0.0	0.0	0.0	363	0.1	0.2	0.3	0.3
Services	354,557	0.0	0.0	0.0	0.0	3,300	0.3	0.3	0.4	0.4
All sectors	1,186,720	0.0	0.0	0.0	0.0	21,974	0.6	0.6	0.7	0.7

Sources: GTAP database and USITC calculations.

Table D-3
Effects on U.S. imports, 2004-16 (relative to baseline)

	U.S. total imports					U.S. imports from Singapore				
	2004	2004	2008	2012	2016	2004	2004	2008	2012	2016
	Million dollars	*Percent change*				*Million dollars*	*Percent change*			
Fishing	1,817	0.0	0.0	0.0	0.0	15	0.2	0.2	0.2	0.2
Forestry	415	0.0	0.0	0.0	0.0	1	4.8	4.8	4.8	4.8
Grains	900	0.0	0.0	0.0	0.0	0	2.8	2.5	2.4	2.5
Sugar crops	1	0.0	0.0	0.0	0.0	0	2.5	2.2	2.2	2.2
Vegetables, fruits, and nuts	8,043	0.0	0.0	0.0	0.0	0	2.3	7.3	14.6	18.5
Other crops	5,584	0.0	0.1	0.1	0.1	4	34.6	102.4	102.5	102.5
Livestock	3,248	0.0	0.0	0.0	0.0	0	2.7	2.5	2.5	2.5
Coal, oil, gas, and other minerals	99,310	0.0	0.0	0.0	0.0	0	-0.2	-0.2	-0.1	-0.1
Meat products	4,637	0.0	0.0	0.0	0.0	3	19.3	19.2	19.1	19.0
Dairy products	1,401	0.0	0.0	0.0	0.0	0	271.7	271.3	271.0	270.8
Sugar manufacturing	805	0.0	0.0	0.0	0.0	0	393.2	392.8	392.4	392.2
Other foods	30,064	0.0	0.1	0.1	0.1	81	12.0	38.4	46.8	51.3
Textiles and apparel	106,316	0.0	0.0	0.1	0.1	314	15.8	49.6	113.3	155.2
Wood products	35,117	0.0	0.0	0.0	0.0	13	2.6	9.0	8.9	8.8
Petroleum, coal and chemical products	181,443	0.1	0.1	0.0	0.0	1,139	18.8	19.7	19.7	19.7
Ferrous metals	38,764	0.0	0.0	0.0	0.0	52	10.4	20.6	20.4	20.3
Metals n.e.c. and metal products	25,170	0.0	0.0	0.0	0.0	28	12.2	12.1	12.0	12.0
Transportation equipment	197,560	0.0	0.0	0.0	0.0	171	9.8	9.7	9.4	9.2
Electronic equipment	176,789	0.1	0.1	0.1	0.1	11,186	2.7	2.8	2.7	2.7
Other machinery and equipment	161,163	0.1	0.1	0.1	0.1	1,309	13.9	17.3	17.1	17.0
Other manufactures	73,844	0.0	0.0	0.0	0.0	175	1.4	2.2	2.2	2.1
Services	172,392	0.0	0.0	0.0	0.0	4,213	-0.5	-0.6	-0.8	-0.8
All sectors	1,324,783	0.0	0.0	0.0	0.0	18,706	4.1	4.9	5.5	5.9

Sources: GTAP database and USITC calculations.

Table D-4
Effects on sectoral output in the United States, 2004-16 (relative to baseline)

	2004	2008	2012	2016
	Percent change			
Fishing	0.00	0.00	0.00	0.00
Forestry	0.00	0.00	0.00	0.00
Grains	0.00	0.00	0.00	0.00
Sugar crops	0.00	0.00	0.00	0.00
Vegetables, fruits, and nuts	0.04	0.04	0.05	0.05
Other crops	-0.01	-0.01	-0.01	-0.01
Livestock	0.00	0.00	0.00	0.00
Coal, oil, gas, and other minerals	0.00	0.00	0.00	0.00
Meat products	0.01	0.01	0.01	0.01
Dairy products	0.00	0.00	0.00	0.00
Sugar manufacturing	0.00	0.00	0.00	0.00
Other foods	0.01	0.01	0.01	0.01
Textiles and apparel	-0.01	-0.02	-0.04	-0.05
Wood products	0.00	0.00	0.00	0.00
Petroleum, coal and chemical products	-0.01	-0.01	-0.01	-0.01
Ferrous metals	0.00	0.00	0.00	0.00
Metals nec. and metal products	0.00	0.00	0.00	0.00
Transportation equipment	0.01	0.01	0.01	0.01
Electronic equipment	0.00	0.00	0.00	0.00
Other machinery and equipment	0.00	-0.01	-0.01	-0.01
Other manufactures	0.00	0.00	0.00	0.00
Services	0.00	0.00	0.00	0.00

Sources: GTAP database and USITC calculations.

Model Limitations

Although economic models capture the most important factors for the question under consideration, they are limited in their ability to reflect the degree of complexity evident in the real world. A number of caveats are thus in order regarding this modeling framework. One source of bias, found in virtually any quantitative analysis of economic data, arises from the process of data aggregation. In particular, international trade occurs in thousands of different products and services. The United States collects trade data under about 17,000 statistical categories and some 10,000-plus tariff rate lines. For most general equilibrium analysis, these groupings represent far too much detail to be tractable computationally. Furthermore, analysis and comparison of data collected from different economies require that data be aggregated into categories that are generally comparable from one economy to another. This reduction and aggregation process introduces two general sources of bias into a modeling exercise.

One source of bias involves the calculation of tariffs for aggregated product categories. In this study, trade-weighted average tariffs were calculated, using the value of trade in a tariff line to weight the tariff in that line. This procedure tends to mask the importance of those products within the aggregate that have particularly high

tariffs, and which therefore present a greater barrier to imports than would be the case if all goods within the aggregation had the same average tariff. The relationship between the level of an import-weighted average tariff and the effects of the individual tariffs that comprise the group depend on the correlation between the level of these tariffs and the price responsiveness of final demand for the goods in question.[13] As a result, modeling the reduction of an aggregate average tariff would tend to understate the effect of reducing the tariff of a high-tariff component of the aggregate.

Another source of aggregation bias is due to the likelihood that goods within an aggregate may not be close substitutes for one another. In particular, imported goods of a particular category may be quite dissimilar to a economy's domestic product in that category. However, when the price of an import falls, for example, the trade model may indicate a certain amount of substitution of that import for the domestic product when, in fact, they are not close substitutes. In this case, the model would overstate the impact of a given average tariff reduction.[14]

A number of further caveats apply to the dynamic analysis, which requires some additional assumptions about the timing and nature of the economies' responses to the proposed policy shocks. First, the static model makes no specific assumptions about the speed with which changes affect the relevant economies. Because the modeling technique applied here requires a time frame to the adjustment process, assumptions about adjustment times are necessary. Second, the model assumes a single macroeconomic time path, and so does not allow for consideration of unexpected macroeconomic events such as recessions or large currency movements. Assumptions about the path of the projected baseline can affect estimates of the impact of the tariff cuts. Finally, because there is no information about how input-output relationships are expected to evolve over time, the model assumes no changes in the economies' input-output structures, so that economic or technical changes that lead an industry to substitute one input for another are not considered.

Despite these limitations, the simulations performed here, can be quite useful in providing insights on the effects of an FTA on a number of economic measures. The model presents a unified framework in which to assess the likely effects of the policy. Tying the proposed trade policy framework to a time line that includes expected future economic changes allows estimation of the economic effects in the future.

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[13] See James E. Anderson and J. Peter Neary, "Measuring the Restrictiveness of Trade Policy," *World Bank Economic Review*, vol. 8, No. 2, May 1994, pp. 151-69.

[14] This type of bias is reduced in empirical trade models, like the GTAP model, that apply the Armington assumption, which treats products produced in different economies as imperfect substitutes.