Publication 3201

The Economic Effects of Significant U.S. Import Restraints

Second Update 1999

Investigation No. 332-325

United States
International Trade
Commission

May 1999

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This report was prepared by
Office of Economics:

Hugh M. Arce, Nancy Benjamin, Michael P. Gallaway, Kyle Johnson, Christine McDaniel, Walker Pollard, Sandra A. Rivera

Office of Operations:
Linda A. Linkins

Office of Industries:
Laura Bloodgood, Richard Brown, Jonathan Coleman, David Datelle, Kathleen Lahey, George Serletis

Supporting assistance was provided by:
Cecelia Allen, Brenda Carroll, Tracey McCray, Cynthia Payne, Paula Wells

Publication Design and Reproduction Services:
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Address all communications to
Secretary to the Commission
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Washington, DC 20436

www.usitc.gov

PREFACE

On June 5, 1992, the United States International Trade Commission (USITC) instituted investigation No. 332-325, The Economic Effects of Significant U.S. Import Restraints. The investigation, conducted under section 332(g) of the Tariff Act of 1930, is in response to a request from the United States Trade Representative (USTR) (see appendix A). Reports were delivered to the USTR in November 1993 and December 1995. The USTR also requested that the report be updated by the Commission at intervals of approximately 2 years. This study is the second update of the original report delivered in November 1993.

The purpose of this investigation is to assess the impact of significant U.S. import restraints on U.S. firms, workers, and consumers and on the net economic welfare of the United States. In particular, the USTR requested an economy-wide assessment of the effects of simultaneously liberalizing all of the sectors covered by significant import restraints. The USTR also requested an assessment of liberalizing each of the covered sectors individually.

The USITC solicited public comment for this investigation by publishing a notice in the *Federal Register* of December 10, 1997 (62 F.R. 237) and holding a public hearing on May 12, 1998. Appendix A contains a copy of the notice and Appendix B contains a list of the submissions that were received and USITC hearing participants.

ABSTRACT

This update of earlier USITC reports (published in 1993 and 1995) presents results on the economic effects on the U.S. economy of removing significant U.S. import restraints in manufacturing, agricultural products, and services. Most of the quantitative results described in the report are derived using the USITC Computable General Equilibrium model of the United States, applied to data on the U.S. economy as of 1996; thus, the questions analyzed in the report are of the nature of the following: Had specific import restraints not been in place in 1996, how would the economy have differed from its actual condition that year? Differences in the economy are measured as differences in trade flows, production, and employment in specific industry sectors, including those whose trade barriers are removed as well as sectors which are upstream suppliers to the liberalized sectors, and downstream purchasers of their output. Aggregate measures of economic change include a measure of economic welfare.

The import restraints examined include tariff rate quotas on agricultural products, quotas applied to textiles and apparel, the ban on the import of maritime cabotage services, and MFN tariffs above a level of 6.2 percent ad valorem equivalent, calculated at the 4–digit SIC level of aggregation.

Two general equilibrium simulations were performed for sectors subject to significant import barriers. First, the effect of eliminating all subject barriers simultaneously was examined; second, the effects of eliminating barriers for each individual sector were estimated. Two sectors, peanuts and pressed and blown glass, were analyzed using partial equilibrium methods, since data for these sectors were not available in a form permitting their inclusion in the USITC CGE model.

In terms of the effect on the U.S. economy, the barriers to imports of textile and clothing products were the most significant of those examined. Removal of these barriers would result in a calculated increase in the national welfare equivalent to $10.4 billion. Liberalization of the maritime cabotage restrictions yields a calculated benefit of $1.3 billion, and liberalization of trade barriers in sugar and sugar–containing products produces a welfare gain of just under $1 billion. Simultaneous elimination of all barriers (other than those on peanuts and pressed and blown glass) yields a calculated welfare gain of $12.4 billion.

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EXECUTIVE SUMMARY

Analytical Approach

This report is an update of earlier USITC reports in 1993 and 1995 on the economic effects of significant U.S. import restraints on the U.S. economy, prepared at the request of the United States Trade Representative. Like its predecessors, this report addresses the economic effects of a liberalization of significant U.S. import restraints in manufacturing, agriculture, and services.

The base year for this study is 1996, the year for which the most recent data are available on the structure of the U.S. economy. Therefore, the primary analysis in this report concerns the effects of liberalizing trade barriers as they existed in 1996.

The import restraints examined in this study are tariffs, tariff-rate quotas (TRQs), and nontariff barriers (NTBs) such as quotas and cabotage (the carriage of products or people between two points within a country) restrictions in transportation services. During 1996, the following import restraints on certain U.S. imports were in place: certain "significant" tariffs; quotas on certain textiles and apparel pursuant to the Uruguay Round Agreement on Textiles and Clothing (ATC) and bilateral textile agreements with non-WTO member countries, successors to the Multifiber Arrangement (MFA); TRQs on meat, dairy products, peanuts and peanut butter and peanut paste, cigarette tobacco, and sugar and sugar-containing products; and the ban on the importation of cabotage maritime services.

Significant tariffs are identified at the four-digit SIC level as the average MFN ad valorem equivalent rate calculated on a customs basis for 1996 that are one standard deviation higher than the mean duty on U. S. imports, averaged over all four-digit sectors. This average includes sectors with zero tariffs. In each case, trade and tariffs are calculated after aggregating 1996 trade data at the 8-digit Harmonized Tariff System (HTS) level to the four-digit SIC level. The calculation of the tariff threshold level is conducted at the SIC classification level because it best corresponds to the level of the sectors in the U.S. computable general equilibrium (CGE) model. Applying this standard yields a duty threshold of about 6.2 percent ad valorem. In addition, only sectors that have at least $100 million in imports are considered. While some of the apparel and textile sectors meet this criteria, these sectors are not reanalyzed in the significant tariff section. The 10 high-tariff sectors are

(1) frozen fruits, fruit juices, and vegetables, (2) footwear[1], (3) leather gloves and mittens, (4) personal leather goods, (5) pressed and blown glass, (6) ceramic tile, (7) china tableware, (8) cutlery, (9) ball and roller bearings, and (10) costume jewelry.

The method used to choose sectors with high tariffs in this study differs from the methodology used in previous investigations. In the 1995 report, the selection criteria for significant tariff levels were an MFN average ad valorem equivalent rate of at least 7.5 percent (calculated on a CIF value basis) and at least $100 million in dutiable imports covered by the tariff. In addition, industries with tariff revenues of over $350 million were also considered as high-tariff sectors in the 1995 update.

The USITC's CGE model of the United States is the principal tool used in the Commission's quantitative analysis. The model extends the analysis beyond the specific sectors subject to import restraints by explicitly accounting for upstream and downstream production linkages and intersectoral competition for labor and capital. In addition, it estimates the economy-wide change in economic welfare that results from removing import restraints.

The report includes two types of general equilibrium analyses for the sectors subject to significant import restraints. The first simulation, reported in chapter 2, estimates the economy-wide effects of simultaneously removing all significant import restraints for the covered sectors. Second, the effects of eliminating the barriers for each sector individually are estimated, as reported in chapters 3 through 6. Each simulation yields estimates of net welfare changes for the economy as a whole due to liberalization of the specific sector, as well as estimated effects on trade, output, and employment for the sector(s) being liberalized and for the rest of the economy.

The peanut sector and the pressed and blown glass sector were not included in the CGE analyses because they are not represented in the general equilibrium model as separate sectors. Partial equilibrium models were used to analyze these sectors and for assessing the removal of the domestic build requirement of the Jones Act. These models are discussed in chapters 4, 5, and 6.

Results

Economic Welfare Effects

Economic welfare is the measure of the overall benefit or cost to the economy from removing import restraints. It aggregates various (possibly offsetting) effects. As significant import restraints are lifted, prices of goods

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[1] The footwear sector includes: nonrubber men's footwear; nonrubber women's footwear; nonrubber footwear, not elsewhere classified; and rubber footwear.

and services drop, causing household purchasing power to increase (income effect). In addition, as prices drop, the returns to capital (interest) and labor (wages) in these sectors also fall relative to other sectors. This change induces inputs to move away from previously protected sectors to other sectors with relatively higher returns. Eliminating quotas means that quota rents that had been transferred from U.S. purchasers to foreign firms and individuals will remain in the United States. Finally, the welfare effect captures losses in employment and profits that occur as imports replace production and employment in some sectors. If the output of previously protected sectors declines, their upstream suppliers may also experience adverse effects as a result of diminished demand for their products.

If simultaneous liberalization had been in place in 1996 for all trade barriers considered herein, it would have resulted in an estimated net welfare gain of approximately $12.4 billion for the U.S. economy (see table ES-1). The largest effect by far is in liberalization of the textiles and apparel sector, amounting to $10.4 billion. The estimate for textiles and apparel reported in table ES-1 is based on the case where high tariffs meeting the criteria described above and quotas are removed simultaneously. If only the quotas are removed, the welfare gain is an estimated $5.7 billion in 1996. The next largest effect is found in the liberalization of the Merchant Marine Act of 1920 (Jones Act), which yields a gain of $1.3 billion.

Of the agricultural sectors examined in the study, two—dairy and sugar—showed measurable benefits from liberalization. The TRQs for the meat, tobacco, and cotton sectors were generally not filled in 1996. For the meat TRQ, only one supplying country (Uruguay) filled its quota; however, it accounted for 3 percent of the total quota allotment, and the effects of elimination of this TRQ would in all likelihood be negligible. The TRQ for tobacco was only binding for a few countries, whose allotments totaled 24 percent. Again, the effects of the elimination would likely be small; however, the inability to measure quality differences among imported and domestic tobacco varieties precluded conclusive evaluation of these restraints. In response to low domestic cotton production, special import quotas were added to the cotton TRQ. These special quotas mitigated the restrictiveness of the TRQ by increasing the market access level of cotton imports when domestic prices relative to specific import prices exceeded an established threshold. To the extent that the cotton TRQ did have an effect on economic welfare in 1996, it was in all likelihood small. A partial equilibrium framework is used to analyze the peanut sector. The results are not directly comparable to those obtained using a CGE framework. Liberalization in the peanut sector brings a net welfare gain of $8 million as a result of lower peanut prices (see table ES-1).

Removal of the tariffs in footwear; ball and roller bearings; and frozen fruit, fruit juices, and vegetables would have demonstrated the largest welfare effects among the high-tariff sectors, increasing welfare by $501 million, $49 million, and $28 million, respectively. The net welfare estimate obtained for

Table ES-1
Economic welfare change from liberalization of all significant restraints, by sector, 1996

(Million dollars)

Sector	Economic welfare change
CGE estimates:	
Simultaneous sector liberalization of all significant restraints[1]	12,402
Individual liberalization:	
Textiles and apparel[2]	10,376
Maritime transport (Jones Act)[3]	1,324
Sugar	986
Footwear	501
Dairy	152
Ball and roller bearings, and parts	49
Frozen fruit, fruit juices, and vegetables	28
Costume jewelry and costume novelties	19
Leather gloves and mittens	16
Personal leather goods	14
China tableware	12
Ceramic tile	9
Cutlery	4
Partial equilibrium estimates:	
Maritime transport (domestic build requirement)[3]	380
Pressed and blown glass	34
Peanuts	8

[1] Does not include the effects of liberalization of peanut quotas or high tariffs on pressed and blown glass.
[2] Estimate of eliminating quotas and high tariffs simultaneously. See chapter 3.
[3] Two separate analyses were performed for the maritime transport industry. The first, using a general equilibrium framework, eliminates all of the Jones Act requirements that reserve domestic deep-water shipping for domestic carriers. The second, using a partial equilibrium framework, relaxes only the requirement for domestically-built ships. Unlike the first analysis, the second does not allow imports of cabotage services. Because of these differences, the second result is not a component of the first. See chapter 5.

Source: Estimated by the staff of the USITC.

pressed and blown glass was $34 million. As with the welfare estimate for peanuts, the welfare estimate for pressed and blown glass is not directly comparable to that obtained for the other high-tariff sectors, because it is generated by a partial equilibrium model.

Employment, Output, and Trade Effects

As noted above, two analyses were conducted on industry sectors subject to significant import restraints: (1) simultaneous removal of all significant restraints and (2) individual liberalization of each sector, one at a time. For

ease of presentation, the following discussion of employment, output, and trade effects focuses on the estimates from the first analysis, the simultaneous liberalization (see table ES-2). The sector-level estimates for the first analysis reflect the effects of removing all import restraints while those in the second group of experiments shows the effects of removing only the barriers in the specific sector. Thus, they are not directly comparable, but they generally have similar magnitudes. In general, imports would have increased significantly while exports would have declined across most liberalized sectors. In addition, removal of significant import restraints generally results in a decline in employment and output in the liberalized sectors; however, these declines would have been offset by increases in employment and output in the rest of the economy. The majority of the increases in employment in the rest of the economy would have occurred in durable manufacturing and other services.

Textiles and Apparel

Textile and apparel quotas covered under the ATC and other bilateral agreements are the only significant NTBs within the manufacturing sector. Elimination of quotas and significant tariffs would have resulted in increasing imports in most of the sectors directly affected by liberalization. Table ES-2 shows that the apparel sector would register the largest increase in imports, both in absolute and percentage terms ($12.7 billion or 24.4 percent). A few of the textile sectors experience small declines in imports, reflecting general contraction of the sector or the effects of increasing prices driven by the depreciation of the exchange rate.

As shown in table ES-2, the industries that would be most affected by quota and tariff removal in percentage terms are knitting mills and knit fabric mills, apparel, broadwoven fabric mills, narrow fabric mills, thread mills, and yarn mills and textile finishing. Apparel, knitting mills and knit fabric mills, and broadwoven fabric mills show the largest declines in employment levels (81,740, 16,840, and 14,620 jobs, respectively).

Agriculture

Imports of sugar and sugar-containing products would have increased by an estimated $820 million, or 14.0 percent (see table ES-2). Among dairy subsectors, imports of butter, cheese, and dry and condensed milk products show increases in imports ranging from 11.6 to 13.1 percent. The corresponding estimated job loss is approximately 1,990 jobs in sugar and sugar-containing products and about 160 dairy jobs.

Services

Significant U.S. import restraints at the federal level do not generally exist in the services sectors, with the exception of transportation services. While foreign providers of some services face constraints on operations in the United

Table ES-2
Economic effects of simultaneous liberalization, changes in FTE, value and percent, by sector, 1996

Sector	Employment		Output		Imports		Exports		Composite Price
	FTE[1]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Percent*
Focus sectors									
Textile and apparel sectors:									
Apparel, includes only apparel made from purchased materials	–81,740	–13.0	–8,021	–13.1	12,718	24.4	–796	–12.9	–8.6
Broadwoven fabric mills	–14,620	–7.4	–2,324	–7.5	150	3.5	–199	–7.1	–2.2
Canvas and related products, pleating, stitching, and embroidery	–1,390	–3.9	–97	–3.9	21	5.5	–2	–3.2	–1.2
Carpets and rugs	120	0.2	16	0.1	–7	–0.6	4	0.5	–0.1
Home furnishings, including curtains and draperies	–1,200	–1.8	–142	–1.8	315	14.3	–3	–0.7	–2.4
Hosiery	–70	–0.1	–8	–0.2	25	4.8	([3])	0.1	–0.8
Knitting mills and knit fabric mills	–16,840	–13.8	–1,986	–13.8	127	20.0	–120	–14.7	–0.8
Miscellaneous textile goods	40	0.1	2	([4])	–12	–0.7	6	0.3	–0.2
Narrow fabric mills	–1,280	–7.1	–106	–7.1	–25	–6.7	–36	–6.6	–2.2
Thread mills	–490	–7.2	–70	–7.2	9	12.5	–10	–6.6	–1.4
Yarn mills and textile finishing	–6,020	–6.5	–823	–6.5	55	10.7	–28	–6.3	–0.4
Other fabricated textile products	–1,690	–1.5	–166	–1.5	–46	–2.6	–4	–0.6	–0.5
Luggage, handbags, and purses	–150	–1.7	–23	–1.7	331	8.4	2	0.6	–10.5
Man–made fibers	–1,560	–3.5	–601	–3.5	–89	–5.0	–103	–4.0	([4])
Other miscellaneous products	480	0.4	49	0.4	–15	–0.5	11	0.6	([4])
Agricultural sectors:									
Butter	([6])	([4])	([3])	([4])	2	12.5	([3])	0.6	([4])
Cheese	–100	–0.3	–71	–0.3	100	13.1	([3])	([4])	–0.5
Dry/condensed milk products	–60	–0.4	–35	–0.4	64	11.6	([3])	–0.1	–1.0
Sugar	–1,960	–7.7	–592	–7.7	645	47.8	–15	–4.7	–9.3
Sugar–containing products	–30	([4])	–53	–0.1	175	3.9	25	0.5	–0.5
Maritime transportation	–4,680	–53.2	–1,555	–53.2	2,154	([5])	([5])	([5])	–23.0

High MFN tariff sectors:									
Ball and roller bearings	–650	–1.2	–69	–1.2	62	3.6	–13	–1.1	–2.1
Ceramic wall and floor tile	–670	–8.5	–71	–8.5	75	10.2	–2	–7.7	–6.4
China tableware	–260	–5.2	–22	–5.2	22	5.8	–2	–5.1	–4.1
Costume jewelry and costume novelties	–10	–0.1	–3	–0.1	31	4.2	(3)	0.1	–1.4
Footwear	–300	–0.7	–32	–0.7	809	5.4	4	0.6	–6.9
Frozen fruit, fruit juices and vegetables	–160	–0.4	–38	–0.4	80	6.7	2	0.2	–1.3
Leather gloves and mittens	–50	–2.7	–3	–2.7	26	7.8	(3)	0.5	–9.2
Personal leather goods	–40	–0.7	–3	–0.7	27	4.6	1	1.4	–3.6
Cutlery	–70	–0.6	–13	–0.7	26	3.2	–3	–0.7	–1.8
Rest of the economy									
Agriculture, forestry, and fisheries	6,040	0.3	772	0.3	–87	–0.4	790	2.5	0.1
Construction	2,030	(4)	120	(4)	(5)	(5)	(5)	(5)	0.1
Durable manufacturing	65,840	0.6	11,352	0.6	–2,927	–0.5	4,739	0.9	0.1
Finance, insurance, and real estate	6,630	0.1	531	(4)	–93	–0.5	248	0.7	0.1
Mining	1,880	0.3	424	0.3	15	(4)	86	0.9	0.3
Nondurable manufacturing	12,060	0.2	2,191	0.2	–759	–0.6	656	0.5	0.1
Services, other	18,620	0.1	1,515	(4)	–284	–0.5	593	0.6	0.1
Transportation, communications, and utilities	7,870	0.1	1,105	0.1	–406	–0.5	482	0.8	0.1
Wholesale and retail trade	14,480	0.1	466	(4)	(5)	(5)	(5)	(5)	0.1

[1] Full–time equivalents.
[2] In millions of dollars in base year prices.
[3] Change less than $500,000.
[4] Change less than 0.05 percent.
[5] Nontraded sector.
[6] Change less than 5.

Source: Estimated by the staff of the USITC.

States, most of these barriers are requirements that foreign service providers adhere to the same domestic regulatory requirements faced by domestic providers of the service, and are consistent with multilateral obligations regarding national treatment.

Within transportation services, maritime transport is subject to import restraints by means of regulations that restrict foreign access to the market. One of the more important restrictions is the Merchant Marine Act of 1920, which prohibits foreign vessels from carrying domestic freight between U.S. ports, primarily through domestic-flag requirements, including ownership, crewing, and a domestic build requirement.

If the present restrictions had been lifted in 1996, the model simulation shows that after liberalization, imports of deepwater maritime cabotage services would rise by about $2.2 billion, while domestic production in this sector would fall by $1.6 billion, or by about 53 percent. Employment in this sector would drop by an estimated 4,680 full-time equivalents (FTEs), or by approximately 53 percent of total employment in the domestic deepwater sector. As discussed in chapter 5, if partial liberalization had been implemented by lifting the domestic-build provision, the volume of output and employment in this sector would increase by approximately 8 to 22 percent. There would be no change in imports, because foreign-owned providers would still be prohibited from participating in domestic deepwater operations.

Like the marine transportation industry, air and truck transportation have restrictions that limit the access of foreign operators in the U.S. market. As traditional tariff and quantity restrictions have fallen over time, technical and regulatory barriers—such as standards, testing, and safety regulation—have risen in relative importance. The lack of consistent price and cost data precluded the formal modeling of these two transport sectors.

High MFN Tariff Sectors

Among the high tariff sectors that were analyzed using the CGE model, table ES-2 shows that footwear imports would have increased the most as a result of duty elimination, with an estimated $809 million (5.4 percent) gain. Imports of ceramic tile increased by $75 million (10.2 percent), and frozen fruits, fruit juices, and vegetables by $80 million (6.7 percent). The largest job losses would have occurred for ceramic tile, ball and roller bearings, and footwear (670, 650, and 300 jobs, respectively). As discussed in chapter 6, a partial equilibrium analysis shows that imports of pressed and blown glass would have increased by $298 million, while estimated employment losses in this sector would have amounted to 660 FTEs.

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CHAPTER 1
Introduction

Scope of the Study

This study analyzes the economic effects of significant U.S. import restraints on the U.S. economy and updates U.S. International Trade Commission (USITC) reports that were transmitted to the United States Trade Representative (USTR) in November 1993 and December 1995.[1] The purpose of this study and its predecessor studies is to provide a quantitative assessment of the effect of significant U.S. import restraints on U.S. firms, workers, and consumers and on the net economic welfare of the United States. These import restraints include tariffs, tariff-rate quotas (TRQs), and nontariff barriers (NTBs) such as quotas.[2]

The study provides an economy-wide assessment of the effects of simultaneously liberalizing all of the sectors covered by significant import restraints (chapter 2), as well as an assessment of liberalizing each of these sectors one at a time (chapters 3-6). The report estimates the effects of the restraints, by sector, on the value of output (domestic production), domestic employment levels, and the value of exports and imports. Effects on consumers occur through changes to income and prices that are measured as changes in net welfare.

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[1] See USITC, *The Economic Effects of Significant U.S. Import Restraints: First Biannual Update*, USITC publication 2935, Dec. 1995 and USITC, *The Economic Effects of Significant U.S. Import Restraints*, USITC publication 2699, Nov. 1993. Previous USITC studies requested by the U.S. Congress addressed liberalizing significant U.S. import restraints on a sector-by-sector basis in manufacturing, agriculture, and services, respectively. These reports are USITC, *The Economic Effects of Significant U.S. Import Restraints, Phase I: Manufacturing*, USITC publication 2222, Oct. 1989; USITC, *The Economic Effects of Significant U.S. Import Restraints, Phase II: Agricultural Products and Natural Resources*, USITC publication 2314, Sept. 1990; and USITC, *The Economic Effects of Significant U.S. Import Restraints, Phase III: Services*, USITC publication 2422, Sept. 1991.

[2] This report excludes, as requested by USTR (see appendix A), all import restraints resulting from final antidumping or countervailing duty investigations, section 337 or 406 investigations, or section 301 actions. It is no longer permissible under WTO rules for WTO members to apply quotas, voluntary restraint agreements (VRAs), or voluntary export restraints (VERs) against other WTO members, with the exception of trade in textiles and apparel (which is administered under the Uruguay Round Agreement on Textiles and Clothing) or in limited safeguard actions.

The original request letter from USTR (see appendix A) requested that the Commission provide quantitative assessments of the effects of significant import restraints using partial equilibrium and general equilibrium frameworks. All of the estimated economic effects that are discussed in this report are derived from computable general equilibrium (CGE) or partial equilibrium models.

The base year for this study is 1996, the latest year for which the necessary data are available for the policy simulations. Consequently, this analysis examines those domestic import restraints that were in effect in 1996. The analysis includes modifications to these import restraints that took effect at the beginning of 1995 as a result of the General Agreement on Tariffs and Trade (GATT) Uruguay Round Agreements (URA).[3]

This report uses the same definition of "significant import restraints" used in the previous 1995 study. If the quantity of imports is substantially less than the quantity specified by a quota,[4] then the quota does not affect the price of imports and is said to be "nonbinding." On the other hand, if the quantity of imports is actually restricted by the barrier in place, the quota does affect the price of imports and is said to be "binding." In this report, all binding quotas (and TRQs) are considered to be significant, while nonbinding quotas are not analyzed.[5]

During 1996, the following quantitative restraints on certain U.S. imports were in place: quotas on certain textiles and apparel pursuant to the Uruguay Round Agreement on Textiles and Clothing (ATC) and bilateral agreements with non-WTO member countries, successors to the Multifiber Arrangement (MFA); TRQs on meat, cotton, dairy products, peanuts and peanut butter and peanut paste, cigarette tobacco, and sugar and sugar-containing products; and the ban on the importation of cabotage maritime services.[6] Of these sectors,

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[3] It should be noted that this report analyzes the complete elimination of significant restraints as they existed in 1996, and does not attempt to analyze the liberalization effects of the URA. The effects of the URA were assessed by the Commission in USITC, *Potential Impact on the U.S. Economy and Industries of the GATT Uruguay Round Agreements*, USITC publication 2790, June 1994. The analysis in that report examined the long-run effects of the URA on 48 U.S. sectors by using a partial equilibrium model. In addition, that analysis examined the effects of multilateral liberalization between the United States and its GATT-signatory trading partners. Consequently, the estimates from the 1994 report are not comparable to the estimates in this report.

[4] For ease of presentation, the above discussion focuses on the effects of a quota. However, the same discussion applies to a TRQ when it restricts imports to the quota level. In such a case, quotas and TRQs are analytically equivalent.

[5] The point at which a TRQ or quota is considered nonbinding is an empirical question specific to each sector with TRQs or quotas. This question is considered in chapter 4 of this report.

[6] Cabotage is a term used in the transport industry to indicate the carriage of products or people between two points within a country.

the quota levels for meat, cotton, and cigarette tobacco TRQs were, for the most part, found to be nonbinding in 1996 and hence had either negligible or indeterminate effects on the prices of these products. Consequently, quantitative estimates for these sectors are not provided.

With respect to tariffs, the method used to choose sectors with high tariffs in this second update differs from the methodology used in previous investigations.[7] Specifically, for this update, high tariff sectors are those where the average duty applied to the sector is one standard deviation higher than the mean duty on U. S. imports, averaged over all sectors at the four-digit SIC level.[8] Applying this criterion yields a duty threshold of about 6.2 percent ad valorem. In addition, only sectors that have at least $100 million in imports were considered. Sectors covered elsewhere in the report are not analyzed again in the significant tariff section. The 10 sectors analyzed in this part of the report are: (1) frozen fruits, fruit juices, and vegetables, (2) footwear[9] , (3) leather gloves and mittens, (4) personal leather goods, (5) processed and blown glass, (6) ceramic tile, (7) china tableware, (8) cutlery, (9) ball and roller bearings, and (10) costume jewelry.

Approach of the Study

For this study, a computable general equilibrium (CGE) model is used to estimate the economy-wide and sectoral effects for all sectors except peanuts and pressed and blown glass. For these two sectors, a partial equilibrium

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[7] In the 1993 report, the selection criteria for significant tariff levels were an MFN average ad valorem equivalent rate of at least 9 percent (calculated on a dutiable value basis for 1991) and at least $100 million in dutiable imports covered by the tariff. However, tariff rates in the USITC CGE model are calculated on a CIF basis. To maintain consistency with the CGE model, tariffs were calculated in terms of CIF value. An ad valorem equivalent rate of 7.5 percent, calculated on a CIF basis, was approximately equivalent to an ad valorem tariff rate of 9 percent, calculated on a dutiable value basis. The 1995 report used the same criteria that were used in 1993, in addition to including sectors with tariff revenues of over $350 million. The changes in these criteria are an attempt to refine the methods used in selecting high tariffs. Specifically, the selection criterion (one standard deviation above the mean) used in the current report defines a benchmark that can be extended to future studies. A consistent criterion based on the observed distribution of tariffs allows flexibility in identifying high tariffs, especially in an environment in which levels of protection change considerably over time.

[8] The average tariff rates were calculated for each 4-digit SIC. The mean and standard deviation of all the 4-digit SICs were calculated. If the tariff rate for a specific SIC is greater than the mean plus the standard deviation, the sector is selected for analysis.

[9] The footwear sector includes: nonrubber men's footwear; nonrubber women's footwear; nonrubber footwear, not elsewhere classified; and rubber footwear.

framework is used.[10] In addition to the general equilibrium analysis of the Jones Act restrictions, a partial equilibrium framework is used to analyze the effects of liberalizing only a limited part of the Jones Act, specifically, the domestic build requirement (chapter 5). Partial equilibrium (PE) models generally specify a supply and demand structure for domestic output and for competing imports. PE models typically assume that any linkages between the sector that is analyzed and other sectors in the economy are held constant. In addition, PE models assume no movement of labor and capital between sectors. Therefore, the partial equilibrium approach does not consider any secondary liberalization effects in other sectors such as the changes that could result as capital and labor move from the less productive sectors to the more productive sectors of the economy.

General equilibrium models analyze market interactions within an economy between producers and consumers for goods, services, labor, and physical capital. The distinguishing feature of a general equilibrium model is its economy-wide coverage and multisectoral nature. A general equilibrium model explicitly accounts for upstream and downstream production linkages and competition between sectors for labor and capital. In addition, the general equilibrium approach considers the balance of trade, income transfers associated with quotas and tariffs, and economy-wide resource constraints for labor and capital. These additional features of general equilibrium models provide a more complete or comprehensive assessment of employment, output, and trade effects of policy changes.[11]

Both the partial and general equilibrium approaches analyze the removal of tariffs, TRQs, and NTBs as a reduction in the cost of imports in the protected sector. The resulting decline in the price of imports in the protected sector

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[10] In the original 1992 request letter from the USTR (see appendix A), the USITC was asked to examine the removal of individual import restraints in a partial equilibrium framework and examine the simultaneous removal of all import restraints in a general equilibrium framework. In the 1993 study, after consultations with the USTR outlining the benefits of a general equilibrium approach over a partial equilibrium approach and coupled with the USTR's desire to compare results from simulations of individual restraint removal with the results of simultaneous liberalization of all restraints in a consistent framework, the USITC proceeded to analyze all but one (the peanut TRQ) of the significant U.S. import restraints in a general equilibrium approach, and that form of analysis is repeated here. Both the peanut and the pressed and blown glass sectors are contained within the broader sectors of the ITC CGE model and cannot be separated out. Therefore, both are assessed using a partial equilibrium approach.

[11] See Jaime de Melo and David Tarr, "Welfare Costs of U.S. Quotas in Textiles, Steel and Autos," *Review of Economics and Statistics*, vol. 72 (Aug. 1990), 489-97. See also, Mary F. Kokoski and V. Kerry Smith, "A General Equilibrium Analysis of Partial-Equilibrium Welfare Measures: The Case of Climate Change," *American Economic Review*, 77, No. 3, 1987, pp. 331-341. Their research suggests that when changes affecting multiple sectors of the economy are being assessed, partial equilibrium models may overstate the welfare effects arising from such changes.

induces an increase in the quantity of imports demanded and simultaneously induces a reduction in the demand for the competing domestic product. The primary effects of removing the import restraints are a decline in the output of the domestic product and the concomitant decline in domestic employment.

There are secondary effects of liberalization that are realized in sectors that are upstream and downstream to the liberalized sector. The CGE model allows the estimation of both primary and secondary effects. These secondary, or indirect, effects are important since they can enhance or diminish the direct effects of liberalization in the protected sectors. In the model, these secondary effects occur mainly through changes to the real exchange rate and the reallocation of production inputs—labor and capital.

For example, when the wage-rental ratio[12] increases, the price of labor rises relative to the price of capital. Consequently, producers have the incentive to use more capital and less labor to reduce costs. If liberalization raises the economy-wide wage-rental ratio, it is possible that some sectors may use fewer workers, despite producing more output.

Liberalization can also cause the U.S. real exchange rate either to depreciate or appreciate. The real exchange rate in the USITC model is defined as the relative price between tradeable and nontradeable goods and services.[13]

If the real exchange rate as defined in the model depreciates as a result of removing the import restraints, then the price of tradeable goods rises relative to nontradeable goods, raising both import and export prices. Thus, there is a tendency for consumers to import less and producers to export more. This change is the same effect that would be observed for a depreciation of the conventional real exchange rate. However, for the specific sectors that are liberalized, this economy-wide exchange rate effect is generally overshadowed by the increased import penetration due to lost protection. Consequently, the

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[12] The price of labor is the wage, whereas the price of capital is called the "rental price of capital." The ratio of these two prices is called the "wage-rental ratio."

[13] Nontradeable or nontraded goods and services consist of economic activity that does not enter into international trade such as construction, government, and certain types of production. Conventional discussions of the real exchange typically define it as the relative currency valuations among countries adjusted by their relative inflation rates. (See Sebastian Edwards, "Real Exchange Rates in the Developing Countries: Concepts and Measurement," National Bureau of Economic Research working paper 2950, April 1989, for a discussion of the various definitions of real exchange rates used in economic research.) However, the USITC model does not depict domestic or international monetary flows, inflation, or nominal currency valuations. The trade effect of a change in the real exchange rate—i.e., the inflation adjusted relative currency valuation—is equivalent to the effect of a change in the relative price between tradeables and nontradeables. Therefore, the model relies on this equivalent relationship when depicting the real exchange rate.

real exchange rate effect is more useful in explaining why sectors that are not directly affected by liberalization experience trade effects.[14]

USITC CGE Model

The USITC CGE model used in this analysis is very similar to the model that was used in the previous two reports. The current model retains all the features of the previous model but adds flexibility by distinguishing between industries and commodities.[15] For this study, the model is used to assess the effect of the elimination of tariffs, quotas, and TRQs. The basic structure of the model is described in technical detail in appendix D. Many of the behavioral and structural parameters of the protected sectors are updated;[16] consequently, the results of this model are not entirely comparable to the results in the previous report.

Basic Structure

The USITC CGE model estimates both economy-wide results and sector-specific results. For the individual sectors highlighted in a particular policy simulation, the model specifically reports estimated changes in employment, output, imports, and exports for the liberalized sectors, as well as for the other sectors that are upstream suppliers and downstream consumers to the liberalized sectors. The model, as implemented for this study, assumes that the labor force is fixed in size, so that any changes to employment in one sector are balanced by offsetting changes in other sectors. The economy-wide results reported include the change in wages, the wage-rental ratio, the real exchange rate, and net welfare. These results are reported for the simulations that examine the effects of completely liberalizing the covered sectors in 1996.

The net welfare effect reported by the USITC CGE model measures the net welfare change of U.S. households as a result of a policy change in the economy. Specifically, net welfare is measured in the USITC model using a concept that measures the income change that would be needed, at base year prices, for households to remain equally well off under trade liberalization as

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[14] In some cases, the indirect effect of a depreciation of the real exchange rate may outweigh the direct effect of liberalization, namely the output decline, and make it possible for exports to rise in some of the liberalized sectors.

[15] This structure is similar to that of the CGE model of the U.S. economy developed by staff at the Economic Research Service, U.S. Department of Agriculture. Kenneth Hanson, at ERS, advised ITC staff on various revisions that were made to the structure of the current ITC database and model.

[16] The behavioral and structural parameters are described in greater detail in appendix D. In particular, many of the import substitution elasticities, which describe the degree of substitutability between imports and domestic products, were re-estimated from new data.

they are with import restraints in place. In measuring welfare changes, a general equilibrium model does not isolate individuals as consumers or producers. The two groups are linked by the flow of payments from households to firms for goods and services, and by the flow of income from firms to households for factors of production. Therefore, changes in the income of firms from liberalization translate into corresponding changes in the income of households. The net welfare measure includes the change in income payments to households from firms that results from the removal of import restraints and captures the income gain that consumers experience from lower prices due to liberalization. The net welfare measure does not include any adjustment costs. Changes to the economy due to liberalization are assumed to take place with no temporary, transitional unemployment or other costs.

In addition to the income that flows between domestic households and firms, net welfare also takes account of income that accrues to the U.S. government, in the form of tariff revenues, or that accrues to foreign exporters or domestic importers, in the form of quota rents. Quota rents occur in the case where import restraints are in the form of a quantity restriction, such as a quota, or binding TRQ. These quantity restrictions generate economic rents, or above-normal income, that might accrue to either foreign exporters or domestic importers, depending on who holds the quota rights to import these goods into the United States.[17]

It should be noted that the estimates obtained from the CGE model emphasize the effect of import restraints in isolation from all other factors that affect the economy such as U.S. fiscal and monetary policies or trade policies in foreign countries. In addition, the results do not incorporate expected future changes in the economic variables that are analyzed. Therefore, the estimates of this analysis are not forecasts. Finally, the CGE model is a static model that assesses the impact of trade policy changes at one point in time. Consequently, the model does not capture dynamic effects that may result from trade liberalization such as an increase in the rate of economic growth in the U.S. economy.

Data

The data used by the USITC CGE model are in the form of a large social accounting matrix (SAM). The SAM organizes data in a consistent framework of interindustry flows, value added, imports, and final demand for 497 production sectors. The USITC SAM is based on 1996 national accounts data provided by the Bureau of the Census, the most recent (1992) U.S. Department

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[17] See USITC, *Significant U.S. Import Restraints*, 1995, especially chapter 7 for further discussion of quota rents.

of Commerce input-output table,[18] and 1996 trade flows from the U.S. Department of Commerce. The other major inputs into the USITC model are the parameters that represent the behavior of producers and consumers in the U.S. economy. These parameters are in the form of elasticities[19] and are either estimated by the staff of the USITC or gathered from published sources.[20] For example, these behavioral parameters include, among others, elasticities of substitution between domestic and imported products, income elasticities, and export demand elasticities.

Any quantitative analysis of the removal of U.S. import restraints requires measures of the magnitudes of these restraints. Among these restraints, tariffs are readily quantifiable. In addition to import data, the SAM contains the estimated duties collected by the Treasury from official statistics of the U.S. Department of Commerce. For each sector that is analyzed, an average ad valorem rate is calculated using import shares as weights.

Tariff-rate quotas are a type of tariff restraint, with a lower tariff applied to in-quota imports and a higher tariff applied to over-quota imports.[21] Depiction of a TRQ within a model is more complex than that of a quota. If the over-quota rate is not so high as to prohibit imports, or if imports are significantly below the quota limit, the appropriate tariff rate is used. If the over-quota tariff is prohibitive, the TRQ is binding and the impact of the TRQ is analytically identical to a quota.

Although the quantified effects of binding quotas[22] in the market are difficult to model, one can estimate the tariff equivalent of the binding quota,

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[18] U.S. Department of Commerce, Bureau of Economic Analysis, *Benchmark Input-Output Accounts of the United States, 1992*, (Washington, DC: U.S. Government Printing Office, Sept. 1998).

[19] Elasticities depict the (percentage) change in an economic variable in response to changes in another related variable. For example, the expenditure elasticity contained in the SAM shows the percentage change in the demand for a particular commodity relative to a 1-percent change in income. See appendix D for further discussion of these elasticities.

[20] These parameters are described in more detail in USITC, *An Introduction to the ITC Computable General Equilibrium Model*, USITC publication 2423, Washington, DC, Sept. 1991.

[21] In the case of agriculture, border measures, including the former U.S. section 22 quotas and the U.S. Meat Import Act, were converted to tariffs (tariffication) under the GATT Uruguay Round Agreement. The tariffication process involved the introduction of tariff-rate quotas, with specified access levels being provided at lower duties (inside of quota tariff rates) and with higher, more restrictive over-quota tariff rates. Even though TRQs have a specified access or quota level, they are generally defined as tariff barriers.

[22] For ease of presentation, this discussion focuses on quotas. However, the same discussion applies other NTBs that are binding as well as to TRQs when the over-quota rate is prohibitive.

namely, a tariff that has the same effect on prices and quantities as the quota. For all of the sectors with prohibitive quota levels, a tariff equivalent is estimated and used in the USITC model to analyze the effects of liberalizing that sector.[23] The techniques used in this study to quantify the price premium associated with a particular binding quota are the price-gap method, the cost-push method, and an approach that makes use of license prices. These techniques are described in Appendix F.

Tariff equivalents that are estimated using the price-gap method measure the percentage differential between the U.S. domestic price of a good and the world price of that good. The method assumes that the price differential between the domestic and imported goods is caused entirely by the TRQ, quota, or NTB. The application of the price-gap method depends primarily on the existence of reliable pricing data and was applied to the TRQs on sugar, peanuts, dairy products, and the cabotage restriction on maritime transportation. However, reliable pricing data were not available for sugar-containing products or for textiles and apparel.

In the case of sugar-containing products, the cost-push method was used to obtain a tariff-equivalent. The TRQs on these products are maintained to prevent the disruption of the upstream TRQs on sugar. The cost-push method assumes that the tariff equivalent for these downstream products is directly related to the one for sugar. Specifically, the relationship between these two tariff equivalents is derived from the proportion of sugar that goes into producing sugar-containing products. The proportion is measured as the share of costs accounted for by sugar.

In the case of textiles and apparel, license prices were used to calculate the export tax equivalents for exports from Hong Kong, China, and India that were covered by restrictive quotas under the ATC or, in the case of China, a bilateral agreement. License price data were not available for other restricted country suppliers covered by the ATC or bilateral agreements. An alternative approach that makes use of third-country import data and estimated Hong Kong supply prices was used to estimate the export taxequivalents for these country suppliers. This approach is described more fully in chapter 3 and appendix F.

Organization of the Study

Chapter 2 presents the results of simultaneously liberalizing all significant import restraints analyzed individually in the subsequent chapters. In this model simulation, the only upstream and downstream linkages discussed are

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[23] In the case where the over-quota rate of a TRQ is prohibitive, the over-quota rate may be greater than the actual market price that is paid by U.S. consumers. In such a case, the over-quota rate cannot be used in the model because it would overstate the effects of the TRQ. Consequently, tariff equivalents are estimated to reflect actual market prices that existed in 1996.

those among the liberalized sectors themselves. The analysis highlights the importance of economy-wide considerations of an economic policy.

Chapter 3 presents the results of liberalizing the significant quantitative restrictions in the manufacturing sector, which are limited to the ATC and bilateral textile agreements. The chapter also includes the results of eliminating tariffs on "high tariff" textile and apparel sectors.

Chapter 4 presents the results of liberalizing the significant quantitative restrictions in the agricultural sector. These restrictions include TRQs on the dairy products, peanut, sugar, cigarette tobacco, meat, and cotton sectors.

Chapter 5 describes the results of liberalizing a significant quantitative restriction in the services sector, namely, the restrictions placed on maritime transport services under the Merchant Marine Act of 1920, commonly referred to as the Jones Act. Also, this chapter provides a brief discussion of other services sectors.

Chapter 6 illustrates the results of individually liberalizing sectors protected only with significant MFN tariffs. The ten sectors that were identified generally correspond to those in the USITC CGE model.

CHAPTER 2
Simultaneous Changes in All Significant U.S. Import Restraints

This chapter contains an analysis of the effects of simultaneously eliminating all significant U.S. import restraints that were in place during 1996. It isolates those sectors that have significant U.S. import barriers to illustrate the effect the removal of these barriers would have on the sectors as well as on the U.S. economy as a whole.

Identification of Significant Import Restraints

This study identifies 32 sectors in the U.S. economy with significant import restraints. These barriers take two general forms: import quantity restrictions and high tariffs. Table 2-1 lists 30 sectors[1] with import protection covered in this analysis, their 1996 MFN tariff rates, tariff or export tax equivalent estimates of their import quantity restrictions, and the quota rents associated with those sector-specific quotas.[2] Textile and apparel products covered under the WTO Agreement on Textiles and Clothing (ATC) and separate bilateral agreements are represented in the first 15 sectors listed. The next 5 sectors include specific agricultural products that are subject to tariff-rate quotas, with high tariffs on over-quota imports. The Merchant Marine Act of 1920 (commonly called the Jones Act) places important restrictions on maritime transportation between U.S. ports. Maritime transportation services is the only service sector included in this analysis. The last 9 sectors are called the "high MFN tariff sectors" because they are not subject to quota restrictions but do have significant MFN tariff rates.

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[1] Two sectors are omitted from the simultaneous liberalization simulation: the peanut sector and the processed and blown glass sector. These sectors are too small to be identified in the USITC model, but are analyzed with partial equilibrium models in chapters 4 and 6.

[2] Economic rent in the context of an import quantity restriction refers to profits accruing to owners of a quota which are derived from higher prices that occur because the quantity restriction induces artificial scarcity in the market.

Table 2-1
Significant U.S. import restraints, by sector, 1996

USITC sector	Average MFN tariff rate[1]	Tax or tariff equivalent[2]	Quota rents
	Percent		*Million dollars*
Textiles and apparel:			
Apparel, includes only apparel made from purchased materials	13.2	6.0	2,620
Broadwoven fabric mills	10.6	1.7	66
Canvas and related products, pleating, stitching, and embroidery	7.6	0.2	1
Carpets and rugs	4.8	0.1	1
Home furnishings, including curtains and draperies	7.7	2.7	54
Hosiery..	7.2	0.6	3
Knitting mills and knit fabric mills	11.9	0.9	5
Miscellaneous textile goods	4.5	0.2	3
Narrow fabric mills	6.2	0.3	1
Thread mills	10.0	0.9	1
Yarn mills and textile finishing.	7.2	1.0	5
Other fabricated textile products	2.8	0.2	3
Luggage, handbags, and purses	13.9	1.8	61
Man-made fibers	5.1	([3])	([6])
Other miscellaneous products	2.2	([3])	([6])
Agricultural sectors:			
Butter	8.5	15.0	1
Cheese	8.0	15.0	50
Dry/condensed milk products	0.3	15.0	71
Sugar	0.5	74.9	576
Sugar–containing products	2.2	3.2	136
Maritime transportation	([5])	64.6	([5])

High MFN tariff sectors:			
Ball and roller bearings	7.6	[5]	[5]
Ceramic wall and floor tile	16.3	[5]	[5]
China tableware	10.4	[5]	[5]
Costume jewelry and costume novelties	6.7	[5]	[5]
Footwear	10.7	[5]	[5]
Frozen fruit, fruit juices, and vegetables	11.8	[5]	[5]
Leather gloves and mittens	13.3	[5]	[5]
Personal leather goods	8.4	[5]	[5]
Cutlery	6.4	[5]	[5]

[1] Ad valorem tariff rate, c.i.f. basis, concorded specifically for the USITC CGE model.
[2] Tariff equivalent quota premium rate of quantity restrictions, or export tax equivalent for textiles and apparel. Tariff equivalents for the agriculture sector quotas are inclusive of MFN tariffs.
[3] Less than 0.05 percent.
[4] No duties collected.
[5] Not applicable.
[6] Less than $500,000.

Source: Ad valorem tariff equivalents compiled from official statistics of the U.S. Department of Commerce. Tariff equivalents or export tax equivalents of the quotas are estimated by USITC staff. Quota rents are calculated by USITC staff using the USITC CGE model.

Ad valorem tariffs are shown in the first column of table 2-1 and are applied to imports in all sectors except maritime transportation.[3] Quantitative import restrictions were in place for 21 of the 30 sectors recognized as having significant import barriers. Quantity restrictions are represented in the USITC CGE model through the use of ad valorem tariff equivalents of the import quotas, or export tax equivalents in the case of textile and apparel products. These are estimated using the methods described in appendix F and are reported in the second column of table 2-1. The price-gap approach is the primary technique used to estimate these tariff equivalents. However, quantity restrictions in the textile and apparel and sugar-containing products sectors are estimated by employing alternative techniques,[4] details of which are presented in chapters 3 and 4, respectively.[5] The experiment reported in this chapter simulates the removal of tariff and non-tariff barriers in the listed agricultural sectors and maritime transportation, tariff barriers in the "high MFN tariff" sectors, and quotas in the textile and apparel sectors. In addition, the removal of tariffs is simulated for those industries among the textile and apparel sectors having high tariff rates. These sectors include apparel, broadwoven fabric mills, narrow fabric mills, thread mills, yarn mills and textile finishing, hosiery, home furnishings, knitting and knit fabric mills, canvas and related goods, and luggage, handbags, and purses.

Rents generated by the import quantity restrictions are estimated by the USITC CGE model and reported in column three of table 2-1. As a group, the 15 textile and apparel sectors produce an estimated $2.8 billion in quota rents. These rents, which represent transfers to foreign producers or exporters of textiles and apparel, are heavily concentrated in one sector, apparel made from purchased materials (apparel), which produces 95 percent of the total textile and apparel rents. Quantity restrictions on the 6 agricultural products modeled lead to an estimated $834 million in quota rents. The quota rents generated by this set of products are slightly more evenly distributed among the group, although 70 percent of the group's rents accrue to sugar.

Economy-Wide Effects of Removing All Significant U.S. Import Restraints

The analysis in this chapter addresses the USTR's request for a quantitative assessment of the *overall* impact of removing significant U.S. import restraints. The overall effect of import relief is obtained by simultaneously liberalizing the

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[3] Maritime transportation is not subject to MFN tariffs.

[4] The cost-push method is used for the sugar-containing product sectors. Tax equivalent estimates for quotas on textile and apparel imports are based on license prices and, when necessary, on third-country import data.

[5] In the present analysis, the estimated quota premiums for the textile and apparel sectors are estimated under the assumption that a quota is binding when 90 percent of the targeted imports are supplied.

1996 level of protection in the 30 sectors, other than peanuts and processed and blown glass, identified as having significant import barriers.

Estimates of the overall effects are found using the USITC CGE model, which explicitly accounts for linkages among all sectors in the economy. This model allows the liberalization in one sector to affect all other sectors, including other liberalized sectors. Therefore, the results reported in this chapter are not equivalent to adding up the results of a series of experiments in which *individual* trade barriers are liberalized. Results of such experiments are reported in the following chapters. Instead this chapter's results account for the cross-commodity interactions that are present in the model. In addition, the interaction between sectors that results from simultaneous liberalization may produce changes in output, employment, imports, or exports of a different direction than those reported in the individual sector analyses. All changes in imports, exports, and output are reported in value terms, with imports reported on a c.i.f. basis value terms and exports and output reported as value of shipments.

In the USITC CGE model, firm income is remitted to households in the form of wages and rents for the use of capital, so changes in firm income translate into changes in consumer income. Therefore, the net welfare measure derived in this analysis captures the impact on consumers net of the income effects due to gains and losses incurred by the firms as a result of eliminating all the identified significant import restrictions. Simultaneous liberalization of all import restraints described in this study would result in a net welfare gain of approximately $12.4 billion for the year 1996. This result implies that the simultaneous removal of the significant import barriers discussed in the report is approximately equivalent to a $12.4 billion increase in consumer incomes.

To provide an indication of the relative importance of the import restraints analyzed in this report, two benchmark experiments were performed. In the first, measured MFN tariffs were removed on four sectors, in addition to those discussed above. These were: industrial chemicals, motor vehicles and auto bodies, blast furnace and steel mill products, and household audio and video equipment. These sectors have low ad valorem equivalent tariff rates (below the threshold level for focus sectors), but because of the volume of imports, they account for a large amount of tariff revenue. The second experiment removes all measured tariffs and non-tariff barriers on all imports. In comparison with the $12.4 billion welfare gain attributed to the scenario described in this chapter, the addition of the four sectors resulted in a total welfare gain of $14.5 billion. The elimination of all import restraints led to a calculated total welfare gain of $14.9 billion.

Several economic factors are responsible for the gains in welfare associated with the removal of import barriers. First, as the significant import restraints are lifted, capital and labor move from less productive sectors into sectors that can more effectively use these inputs in production. Second, consumers and producers that use products formerly subject to import restraints will experience lower prices for these imported goods, which increases their

purchasing power. Third, domestic welfare increases with the removal of the quota rents that had been transferred from U.S. purchasers to the foreign and domestic firms and individuals that had held those import rents. For quota rent payments, the extent to which transfers to foreigners are eliminated is especially important because this represents a component of expenditure for which there is no domestic income or consumption of goods or services.

Liberalization of all significant import restraints has costs as well. The costs captured in this analysis include displacement of employment and profits that occur as imports replace production and employment in some sectors. If previously protected sectors decline, their upstream suppliers may also experience adverse effects as a result of diminished demand. These interactions are captured in the USITC CGE model and are reflected in the estimated effects that are reported in this chapter.

Other economy-wide results from liberalization include an estimated 0.1 percent drop in the ratio of labor's wages to capital's returns, indicating that labor's remuneration rate would be expected to decline very slightly relative to the returns accruing to capital. Removal of all significant import restraints also causes a 0.7 percent appreciation in the real exchange rate, which would tend to increase import demand and lower the incentive to export. For the previously protected sectors, the exchange rate effect is generally enhanced by sector-specific decreases in import prices, which further increase import demand. These effects cause a real increase in total imports of 1.2 percent. Reallocation of resources leads to export gains in the economy at large, but the exchange rate change helps restrain the real increase in aggregate exports to only 0.7 percent.

Sectoral Effects of Removing All Significant U.S. Import Restraints

Table 2-2 illustrates the sector-specific effects on employment, output, imports, and exports of simultaneously removing all significant U.S. import restraints. In general, when import barriers are eliminated, the previously protected sectors decline in terms of production and employment and the rest of the U.S. economy gains. The following discussion first describes the effects of removing import restraints from the previously protected sectors identified separately in the report (focus sectors), and concludes with a description of the economic impact on the nine aggregate sectors that represent the remainder of the U.S. economy.

Focus Sectors

The primary effect of removing the tariffs and quotas on the focus sectors is a reduction in the prices of imported goods. This drop generally leads households to shift consumption from domestically produced goods to imports in the liberalized sectors. However, because some of these sectors have

important upstream and downstream linkages to other liberalized sectors, these relationships have effects that may intensify or counteract the direct impact of trade liberalization.

As a group, elimination of the textile and apparel quotas and tariffs (for the high tariff textile and apparel sectors) accounts for the largest effects among the focus sectors. Textile and apparel product imports are estimated to increase by $13.6 billion, or 18.3 percent on average, displacing domestic production and employment in these sectors. Employment is estimated to fall by about 126,400 full-time equivalent workers in the textile and apparel sectors, and domestic production is $14.3 billion lower after imports are liberalized. Apparel, broadwoven fabric mills, narrow fabric mills, thread mills, knit fabric goods, and yarn mills would experience the largest estimated changes as a result of complete liberalization. Model results indicate that employment and output would fall by at least 6 percent in each of these sectors and imports increase by at least 5 percent, except for broadwoven fabric mills. The effect of import liberalization on exports from these sectors is also large relative to the other textile and apparel sectors. Import liberalization raises the price of exports relative to domestic sales, so that exports decline proportionally less than domestic production. The net effect here would be a drop in exports of about 6 percent by value.

There are two primary reasons for the large changes in these sectors. First, the removal of significant import restraints in these sectors yields strong price competition from imports that generally shrinks the domestic industries. For several sectors, the magnitude of these changes is increased by the elimination of quotas and of MFN tariffs which are above 10 percent on an ad valorem equivalent basis. In many cases, the restrictive impacts of the MFN tariffs are greater than the quotas as measured by the export tax equivalents.

Second, the effects in the thread and yarn mills sectors are driven mainly by the impact of changes in downstream sectors. The relatively small increase in imports of thread mill products is accompanied by a strong decline in production and employment because the apparel sector, an important downstream purchaser of thread mill output, would decline significantly when all import barriers are removed. Similarly, the decline in domestic apparel, the most important purchaser of knit fabric mill products, reduces demand for the knit fabric mill products. This, combined with a large tariff and quota liberalization in the knit fabric mill products sector itself, reduces domestic economic activity in that sector significantly.

The simultaneous removal of all significant import restraints in all sectors would generally reduce the prices paid for imported textiles and apparel by more than 5 percent, and up to 15 percent in the case of apparel. This also causes domestic producers to lower prices as they adapt to the increased price competition of imports. The general effect of price reductions in the textile and apparel sectors is a 0.2 percent decrease in aggregate consumption on a value basis. Consumer prices fall most in the luggage (10 percent) and apparel (9 percent) sectors, and these correspond to sectors with the largest increases in

Table 2-2
Economic effects of simultaneous liberalization of import restraints, changes in FTE, value and percent, 1996

Sector	Employment		Output		Imports		Exports		Composite Price
	FTE[1]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Percent*
Focus sectors									
Textile and apparel sectors:									
Apparel, includes only apparel made from purchased materials	–81,740	–13.0	–8,021	–13.1	12,718	24.4	–796	–12.9	–8.6
Broadwoven fabric mills	–14,620	–7.4	–2,324	–7.5	150	3.5	–199	–7.1	–2.2
Canvas and related products, pleating, stitching, and embroidery	–1,390	–3.9	–97	–3.9	21	5.5	–2	–3.2	–1.2
Carpets and rugs	120	0.2	16	0.1	–7	–0.6	4	0.5	–0.1
Home furnishings, including curtains and draperies	–1,200	–1.8	–142	–1.8	315	14.3	–3	–0.7	–2.4
Hosiery	–70	–0.1	–8	–0.2	25	4.8	(3)	0.1	–0.8
Knitting mills and knit fabric mills	–16,840	–13.8	–1,986	–13.8	127	20.0	–120	–14.7	–0.8
Miscellaneous textile goods	40	0.1	2	(4)	–12	–0.7	6	0.3	–0.2
Narrow fabric mills	–1,280	–7.1	–106	–7.1	–25	–6.7	–36	–6.6	–2.2
Thread mills	–490	–7.2	–70	–7.2	9	12.5	–10	–6.6	–1.4
Yarn mills and textile finishing	–6,020	–6.5	–823	–6.5	55	10.7	–28	–6.3	–0.4
Other fabricated textile products	–1,690	–1.5	–166	–1.5	–46	–2.6	–4	–0.6	–0.5
Luggage, handbags, and purses	–150	–1.7	–23	–1.7	331	8.4	2	0.6	–10.5
Man–made fibers	–1,560	–3.5	–601	–3.5	–89	–5.0	–103	–4.0	(4)
Other miscellaneous products	480	0.4	49	0.4	–15	–0.5	11	0.6	(4)
Agricultural sectors:									
Butter	(6)	(4)	(3)	(4)	2	12.5	(3)	0.6	(4)
Cheese	–100	–0.3	–71	–0.3	100	13.1	(3)	(4)	–0.5
Dry/condensed milk products	–60	–0.4	–35	–0.4	64	11.6	(3)	–0.1	–1.0
Sugar	–1,960	–7.7	–592	–7.7	645	47.8	–15	–4.7	–9.3
Sugar–containing products	–30	(4)	–53	–0.1	175	3.9	25	0.5	–0.5
Maritime transportation	–4,680	–53.2	–1,555	–53.2	2,154	(5)	(5)	(5)	–23.0

High MFN tariff sectors:									
Ball and roller bearings	–650	–1.2	–69	–1.2	62	3.6	–13	–1.1	–2.1
Ceramic wall and floor tile	–670	–8.5	–71	–8.5	75	10.2	–2	–7.7	–6.4
China tableware	–260	–5.2	–22	–5.2	22	5.8	–2	–5.1	–4.1
Costume jewelry and costume novelties	–10	–0.1	–3	–0.1	31	4.2	(3)	0.1	–1.4
Footwear	–300	–0.7	–32	–0.7	809	5.4	4	0.6	–6.9
Frozen fruit, fruit juices and vegetables	–160	–0.4	–38	–0.4	80	6.7	2	0.2	–1.3
Leather gloves and mittens	–50	–2.7	–3	–2.7	26	7.8	(3)	0.5	–9.2
Personal leather goods	–40	–0.7	–3	–0.7	27	4.6	1	1.4	–3.6
Cutlery	–70	–0.6	–13	–0.7	26	3.2	–3	–0.7	–1.8
Rest of the economy									
Agriculture, forestry, and fisheries	6,040	0.3	772	0.3	–87	–0.4	790	2.5	0.1
Construction	2,030	(4)	120	(4)	(5)	(5)	(5)	(5)	0.1
Durable manufacturing	65,840	0.6	11,352	0.6	–2,927	–0.5	4,739	0.9	0.1
Finance, insurance, and real estate	6,630	0.1	531	(4)	–93	–0.5	248	0.7	0.1
Mining	1,880	0.3	424	0.3	15	(4)	86	0.9	0.3
Nondurable manufacturing	12,060	0.2	2,191	0.2	–759	–0.6	656	0.5	0.1
Services, other	18,620	0.1	1,515	(4)	–284	–0.5	593	0.6	0.1
Transportation, communications, and utilities	7,870	0.1	1,105	0.1	–406	–0.5	482	0.8	0.1
Wholesale and retail trade	14,480	0.1	466	(4)	(5)	(5)	(5)	(5)	0.1

[1] Full–time equivalents.
[2] In millions of dollars in base year prices.
[3] Change less than $500,000.
[4] Change less than 0.05 percent.
[5] Nontraded sector.
[6] Change less than 5.

Source: Estimated by the staff of the USITC.

consumption.[6] In the remainder of the textile and apparel sectors, price reductions are generally less than 3 percent. While these price drops affect producers in the textile and apparel sectors adversely, they simultaneously benefit consumers by increasing the purchasing power of their incomes.

Agricultural products are the second most affected group in terms of the total effects of trade liberalization. Agricultural products have tariff equivalents generally at or above a 15 percent ad valorem equivalent rate (column 2 in table 2-1), which makes the impact of their removal significant. Sugar, butter, and cheese exhibit the largest percentage increases in imports of all the sectors studied, reflecting the high levels of protection that are being removed.

The sugar-containing products sector illustrates the indirect effects of liberalization on production and trade. Imports increase, and domestic production of most products declines, but exports increase when all significant import relief is eliminated. The increase in exports occurs not only because this sector becomes more competitive internationally as the dollar depreciates, but also because the input prices decline as upstream sectors are also liberalized. This is especially true of the sugar-containing products that have an important upstream linkage with sugar.

In general, large increases in imports are offset by reductions in domestic agricultural production, while domestic demand remains roughly constant. Employment in the previously protected agricultural sectors is estimated to fall by just over 2,100 full-time equivalent workers and production to decline by $751 million. Individually, sugar experiences the largest changes, as production and employment fall by 7.7 percent and imports increase by 48 percent. The elimination of the sugar quota cuts the price of imported sugar by about 40 percent.

Among the high MFN tariff sectors other than agriculture, textiles, and apparel, all sectors experience a decrease in domestic production and employment. All sectors show increases in imports, but the direction of export changes varies by sector. Sectors with the largest reductions in output and employment are ceramic tile (8.5 percent for each), china tableware (5.2 percent for each), and leather gloves and mittens (2.7 percent for each). Sectors with the largest increases in imports are ceramic tile (10.2 percent), frozen fruits and vegetables (6.7 percent), china tableware (5.8 percent), and leather gloves and mittens (7.8 percent).

Import liberalization generally reduces import prices by 5 to 13 percent in the high-tariff sectors. However, when combined with the prices of goods produced domestically, the most significant changes in aggregate prices faced by consumers occur in leather gloves (9.2 percent), ceramic floor and wall tile

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[6] The USITC CGE model calculates sector-specific price changes faced by consumers as a composite of the import and domestic price shifts.

(6.4 percent), footwear (6.9 percent), and china tableware (4.1 percent). The remaining sectors experience price drops of less than 4 percent.

Overall, removal of the Jones Act restrictions would increase imports of foreign-supplied deep-water transportation by $2.2 billion, and domestic output of these protected services would decrease by $1.6 billion.[7] This change yields an estimated decrease in employment of 4,680 full-time equivalent positions.

Rest of the U.S. Economy

Table 2-2 also highlights 9 aggregate sectors that represent broad sectors in the rest of the U.S. economy. Trade effects in these sectors are explained primarily through movements in aggregate variables such as the real exchange rate appreciation and changes in the demand for and availability of capital and labor resources.[8] Appreciation of the real exchange rate lowers the price of traded goods relative to nontraded goods. This appreciation tends to increase imports and reduce the incentive for domestic producers to export. These exchange rate effects are small, however, and the overall effect of liberalization on the rest of the economy is illustrated by the reductions in imports in the aggregate sectors and similarly, the increase in exports in the aggregate sectors. The durable manufacturing sector posts the largest percentage output gain, at 0.6 percent, while agriculture, forestry, and fisheries experience the largest proportional increase in exports, at 2.5 percent.

Unlike the majority of focus sectors, when import restraints are lifted the rest of the economy generally experiences output gains due to lower input prices and increased demand from both domestic and export sources. Employment gains are also found in all of the 9 aggregate categories representing the rest of the economy.

The value of aggregate output is estimated to increase by $18.5 billion in the nine aggregate sectors, reflecting an indirect impact of significant import barriers on the remainder of the U.S. economy. Employment in the aggregate sectors is estimated to increase by about 135,000 full-time equivalent positions. As the previously protected sectors lose import relief and become smaller, labor and capital are released into the rest of the economy. Durable manufacturing and other services have the largest employment gains, accounting for increases of 65,840 and 18,620 full-time equivalent workers, respectively.

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[7] The changes reported here combine the portion of maritime transportation that is protected by the Jones Act with the remaining water transportation activities including shipping services.

[8] A third important factor is that the current account deficit is assumed to remain constant. Therefore, increases in imports that occur as a result of lower import barriers must be balanced by lower imports or higher exports in other sectors.

CHAPTER 3[1]
Textiles and Apparel

In 1996, total U.S. imports of textiles and apparel amounted to $52.4 billion, generating an import to shipments ratio of 34.3 percent. Total U.S. exports amounted to about $14.0 billion and accounted for 9.1 percent of U.S. shipments (table 3-1). Unlike many other sectors within manufacturing, U.S. imports of textiles and apparel were subject to relatively high ad valorem tariffs.[2] Moreover, trade in these products was governed by various bilateral and multilateral agreements that allowed for the use of bilateral quotas to control import flows. Although the majority of imports covered by these quotas correspond to various textile and apparel industry categories, a small percentage of the quota-affected imports corresponds to production of other types of goods such as man-made fibers, luggage and handbags, and boot and shoe cut stock and findings.[3] The following section briefly describes U.S. market access provisions for these products. Subsequent sections include a discussion of previous research, an evaluation of the restrictiveness of import restraints in 1996, specification of the model, and a discussion of potential liberalization effects.

Market Access Provisions

Tariff Treatment

The import-weighted average ad valorem tariffs applied to U.S. imports of textiles and apparel were 8.4 and 12.6 percent, respectively, in 1996. These averages take into account the portion of U.S. imports of these products that

[1] Quantitative measures imposed on U.S. imports of machine tools and automobiles were not in effect during 1996. Thus, unlike previous reports, these sectors are not included in the current study.

[2] The average import-weighted tariff applied to U.S. imports of all goods was just over 2 percent in 1996. Generally, the tariffs applied to U.S. imports of textiles and apparel were substantially higher. U.S. tariff treatment is discussed in more detail in the following section. Use of the descriptor ad valorem includes ad valorem equivalent rates.

[3] Appendix G provides a concordance between the sectors examined in this analysis, the BEA input-output category numbers, and the SIC codes.

Table 3-1
Textiles and Apparel: Summary data, 1996

USITC sector	Employment	Shipments	Imports	Exports
	1,000 workers		*Million dollars*	
Textiles and apparel:				
Broadwoven fabric mills	181.7	23,664	3,499	2,146
Narrow fabric mills	16.7	1,417	313	408
Yarn mills and textile finishing	86.1	13,410	437	327
Thread mills	6.3	972	60	119
Carpets and rugs	55.0	10,806	893	705
Miscellaneous textile goods	61.3	10,070	1,291	1,582
Knitting mills and knit fabric mills	113.2	14,325	566	547
Hosiery	56.2	4,672	416	274
Apparel[1]	641.1	51,453	41,171	6,845
Home furnishings[2]	68.6	7,071	1,828	371
Canvas and related products, pleating, stitching and embroidery	36.6	2,453	310	60
Other fabricated textile products	118.6	12,341	1,584	588
Total	1,441.4	152,653	52,369	13,972
Other products covered by quotas:				
Luggage, handbags, and purses	9.1	1,130	3,308	277
Man–made fibers	44.5	12,383	1,452	2,113
Other miscellaneous products	124.2	14,188.4	2,487	1,341

[1] Includes only apparel made from purchased materials.
[2] Includes curtains and draperies.

Source: Compiled from official data of the U.S. Department of Commerce.

entered free of duty or at reduced rates.[4] For example, most goods exported to the United States from Mexico and Canada qualified for preferential duty treatment under NAFTA and those imported from Israel under the U.S.-Israel Free Trade Agreement. In addition, duty-free treatment under the Caribbean Basin Economic Recovery Act (CBERA) was accorded to textiles and apparel made chiefly of silk and non-cotton vegetable fibers. Finally, imports from a number of countries qualified for reduced duty treatment under heading 9802.00.80 of the Harmonized Tariff Schedule of the United States. A portion of imports under this heading from certain CBERA countries also benefitted from preferential quota access.[5]

Under the URA, the United States agreed to reduce its tariffs on various textile and apparel products by amounts ranging from roughly 9 to just over 40 percent.[6] These reductions are to be fully phased in by January 1, 2004.

ATC

The ATC went into effect on January 1, 1995, as a part of the WTO agreements. The ATC replaced the Multifiber Arrangement (MFA) quotas, which had governed much of the world's textiles and apparel trade since 1974. Under the ATC, the United States and the three other WTO members with MFA quotas (the EU, Canada, and Norway), agreed to eliminate the textile and apparel quotas over a 10-year period that ends on January 1, 2005. At that time, all trade in textiles and apparel among WTO members will have been integrated into the GATT regime and thus will be subject to the same trade rules as goods of other sectors.

The ATC calls for quotas to be phased out in three stages. At the beginning of the first stage (January 1, 1995), the WTO members were required to integrate at least 16 percent of textile and apparel trade into the GATT regime, based on their respective 1990 import volumes. The ATC required these countries to implement accelerated annual growth rates for the remaining quotas, with an increase of 16 percent for the major supplier

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[4] The average tariffs faced by countries that do not qualify for preferential duty treatment was significantly higher. The average ad valorem tariff applied to U.S. imports of textiles and apparel from these countries amounted to approximately 11 and 17 percent, respectively, in 1996.

[5] Preferential quota access was limited to apparel and other articles made from fabric that was wholly formed and cut in the United States. For additional information regarding the various programs under which preferential tariff and/or quota treatment was granted, see USITC, *The Year in Trade: Operation of the Trade Agreements Program during 1997*, USITC publication 3103, May 1998.

[6] For further discussion, see USITC, *Potential Impact of the GATT Uruguay Round Agreement*, 1994, pp. IV-10 - IV-11 and IV-14 - IV-15.

countries and 25 percent for small suppliers during the first stage.[7] At the beginning of the second stage (January 1, 1998), an additional 17 percent of trade was integrated into the GATT regime and quota growth rates were increased by 25 percent and 27 percent, respectively, for the major and small supplier countries. At the beginning of the third stage (January 1, 2002), an additional 18 percent of trade will be integrated and annual growth rates for the remaining quotas will be increased by 27 percent.[8] The remaining 49 percent of textiles and apparel trade will be integrated on January 1, 2005.[9]

As noted above, all WTO members are subject to the requirements of the ATC and only WTO members are eligible for the ATC's benefits. As shown in table 3-2, the United States imposed quotas on imports from 46 countries in 1996, of which 38 were WTO members. The remaining eight countries were subject to quotas imposed by the President pursuant to section 204 of the Agricultural Act of 1956, which authorizes the President to enter into agreements with foreign governments to limit the export of textiles and apparel to the United States and the importation of such goods into the United States, and to issue regulations to carry out such agreements.[10] The non-WTO members, led by China and Taiwan, accounted for around 21 percent (in terms of value) of total U.S. imports of textiles and apparel in 1996.

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[7] Small suppliers are those countries that account for 1.2 percent or less of an importing country's total quotas as of December 31, 1991. Small suppliers subject to U.S. import quotas include Bahrain, Bulgaria, Colombia, Costa Rica, Czech Republic, Dominican Republic, Egypt, El Salvador, Fiji, Guatemala, Hungary, Jamaica, Kenya, Kuwait, Macau, Mauritius, Poland, Qatar, Romania, Slovak Republic, United Arab Emirates, and Uruguay.

[8] If the annual growth rate for a major supplier country was 6 percent prior to implementation of the ATC, the growth rate during stage one would be 6.96 percent; during stage two, 8.7 percent; and during stage three, just over 11 percent.

[9] The Textile Monitoring Body, established under the ATC, noted that, with one exception, the products integrated by the importing developed countries in the first stage were not subject to quotas and consisted mainly of relatively lower value added products such as yarns and fabrics. Products integrated in the second stage also consisted mainly of relatively lower value-added products (WTO 1997, para. 15 and 57). For additional discussion regarding the implementation of the ATC see USITC, *The Year in Trade*, 1998; Laura Baughman, Rolf Mirus, Morris E. Morkre, and Dean Spinanger, "Of Tyre Cords, Ties, and Tents: Window-Dressing in the ATC." *World Economy* 20 (4), July 1997, 407-34; and Rolf Mirus, Barry Scholnick, and Dean Spinanger, "Front-Loading Protection: Canada's Approach to Phasing Out the Multi-fiber Arrangement," *The International Trade Journal* XI(4), 433-451, Winter 1997.

[10] 7 U.S.C. 1854.

Table 3–2
Trading partners with which the United States had textile and apparel quotas in 1996, and U.S. bilateral imports of textiles and apparel in 1996

(Million dollars)

Trading partner	Imports
WTO members subject to the ATC:	
Bahrain	63
Bangladesh	1,091
Brazil	170
Bulgaria	42
Burma (Myanmar)	77
Colombia	302
Costa Rica	651
Czech Republic	36
Dominican Republic	1,638
Egypt	288
El Salvador	676
Fiji	48
Guatemala	734
Honduras	1,105
Hong Kong	3,734
Hungary	59
India	1,617
Indonesia	1,375
Jamaica	463
Kenya	26
Kuwait	5
Macau	698
Malaysia	655
Mauritius	155
Pakistan	939
Philippines	1,577
Poland	52
Qatar	70
South Korea	1,907
Romania	63
Singapore	309
Slovak Republic	23
Sri Lanka	1,042
Thailand	1,288
Turkey	689
United Arab Emirates	210
Uruguay	13

Table continued on next page.

Table 3–2—Continued
Trading partners with which the United States had textile and apparel quotas in 1996, and U.S. bilateral imports of textiles and apparel in 1996

(Million dollars)

Trading partner	Imports
Non–WTO members subject to section 204 of the Agricultural Act of 1956	
China	4,573
Former Yugoslav Republic of Macedonia	54
Laos	9
Nepal	97
Oman	106
Russia	85
Taiwan	2,531
Ukraine	59
WTO member subject to the North American Free–Trade Agreement	
Mexico	3,871

Source: U.S. Department of Commerce, International Trade Administration, Office of Textiles and Apparel.

NAFTA

On January 1, 1994, the United States eliminated existing quotas on imports of textiles and apparel from Mexico that met NAFTA rules of origin.[11] The United States did not and does not apply quotas to imports of textiles and apparel from Canada. U.S. quotas on imports of textiles and apparel from Mexico that do not meet the NAFTA rules of origin are scheduled to be eliminated by January 1, 2004. In 1996, 2 quotas (covering 3 quota categories) were in place on U.S. imports from Mexico that did not meet rules of origin requirements. None of the quotas appear to have had a restrictive effect on U.S. imports because fill rates for these categories amounted to less than 70 percent.[12] In addition, 12 designated consultation levels (DCLs) were established on goods imported under 18 quota categories.[13] The fill rates reported for these products were all less than 50 percent.

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[11] Generally, the NAFTA rule of origin requires that textiles and apparel be produced in a NAFTA country from the yarn formation stage forward in order to qualify for benefits under the agreement. Certain goods assembled in Mexico from fabrics that are wholly formed and cut in the United States are eligible for duty- and quota-free entry under HTS heading 9802.00.90.

[12] U.S. Department of Commerce, Office of Textiles and Apparel, *Expired Performance Report*, Feb. 4, 1998.

[13] DCLs are a more flexible import control than specific limits. DCLs are usually set at levels that exceed existing trade levels and, once reached, cannot be exceeded unless the United States agrees to allow entry of further shipments.

Results of Previous Work

There has been considerable research on the effects of the quotas on international trade in textiles and apparel. Recent studies focusing on the impact of these quotas on the U.S. economy report estimates of economy-wide gains from quota elimination ranging from around $7 to $11 billion. The results of these analyses vary because of differences in the type of model used, the time period under review, and the scope of the analysis. For example, Hufbauer and Elliott, using a partial equilibrium model, estimated that had the United States eliminated tariffs and quotas in 1990, the resulting welfare gain would have amounted to $8.6 billion.[14] Commission staff, in previous reports, used the USITC CGE model to estimate that quota elimination in 1993 would have generated economy-wide welfare gains of $7.7 to 9.2 billion.[15] Harrison, Rutherford, and Tarr, using a global CGE model and data based in 1992, estimated gains to the U.S. economy of $7.4 to $11.3 billion as a result of quota elimination by the United States, the EU, and Canada.[16] For the most part, other research efforts have produced similar results.[17]

In addition to efforts to estimate the overall effects of trade liberalization in these sectors, other recent research has examined issues such as the impact of liberalization and increased import competition on the distribution of income within the U.S. economy and the re-employment experiences of unemployed textile and apparel workers. Hanson and Reinert, for example, found that quota elimination would result in income gains across all income groups but

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[14] Gary C. Hufbauer and Kimberly A. Elliott, *Measuring the Costs of Protection in the United States*, (Washington D.C.: Institute for International Economics, 1994).

[15] See, for example, USITC, *Significant U.S. Import Restraints*, 1995.

[16] Glenn W. Harrison, Thomas F. Rutherford, and David G. Tarr, "Quantifying the Uruguay Round," in *The Uruguay Round and the Developing Economies*, World Bank Discussion Paper 307, ed. W. Martin and L.A. Winters (Washington, DC: The World Bank, 1995) 215-284. Their lower-bound estimate is based on a short-run, steady-state model. The upper bound reflects long-run elasticities and the allowance for capital stock adjustments.

[17] See, for example, Jaime de Melo and David Tarr, *A General Equilibrium Analysis of U.S. Foreign Trade Policy* (Cambridge, MA: The MIT Press, 1992); Joseph F. Francois, Bradley McDonald, and Håkan Nordström, "Assessing the Uruguay Round," in *The Uruguay Round and the Developing Economies*, World Bank Discussion Paper 307, ed. W. Martin and L.A. Winters (Washington, DC: The World Bank, 1995) 117-214; and Yongzheng Yang, Will Martin, and Koji Yanagishima, "Evaluating the benefits of abolishing the MFA in the Uruguay Round package," in *Global Trade Analysis: Modeling and Applications*, ed. Thomas W. Hertel (Cambridge: Cambridge University Press, 1997) 253-279. One exception to this research is Robert E. Scott and Thea M. Lee, "The Costs of Trade Protection Reconsidered: U.S. Steel, Textiles, and Apparel," in *U.S. Trade Policy and Global Growth*, ed. Robert A. Blecker (Washington, DC: Economic Policy Institute, 1996) 108-133. Scott and Lee assume that imperfect competition prevails in both the U.S. import and retail markets. They use a partial equilibrium model to estimate that had quotas and tariffs been eliminated in 1986, there would have been a reduction in net national welfare of $1.4 billion.

that the change would be slightly regressive.[18] This result contrasts with Cline's earlier estimates that suggested that trade liberalization within these sectors would provide greater benefits to lower-income groups.[19] Field and Graham examined whether workers laid off by textile or apparel firms had a more difficult experience finding re-employment than workers who were laid off in other manufacturing industries.[20] They conclude that textile and apparel workers were somewhat less successful finding new jobs than workers in other industries.[21] Moreover, both textile and apparel workers were more likely to find jobs in industries other than those in which they had worked prior to unemployment. As a result, their duration of unemployment was somewhat higher than that for workers in other manufacturing industries but less than that for workers in the non-manufacturing sector.[22] However, apparel workers who were re-employed generally were able to improve their wage rates. The average wage ratio (new/old) was 1.05 for apparel workers who were re-employed in the apparel sector and 1.34 for those workers employed by other industries. In contrast, workers in all other industries generally maintained their wage rates if they were re-employed in the same industry, but experienced a reduction in wages if they were employed elsewhere.[23]

Restrictiveness of Import Restraints

Textile and apparel quotas control the quantity of imports entering the United States on an individual quota category and, in some cases, a group basis. Occasionally, the quota applies only to a portion of the products that are classified in the quota category. Although products generally cannot enter the

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[18] Kenneth A. Hanson and Kenneth A. Reinert, "The Distributional Effects of U.S. Textiles and Apparel Protection," *International Economic Journal* 11 (3), Autumn 1997, 1-12.

[19] See ch. 8 of William R. Cline, *The Future of World Trade in Textiles and Apparel* (Washington, DC: Institute for International Economics, 1987).

[20] Their research was based on longitudinal data collected by the Employment Security Commission of North Carolina. Alfred J. Field and Edward M. Graham, "Is There a Special Case for Import Protection for the Textile and Apparel Sectors Based on Labour Adjustment?" *The World Economy* 20 (2), Mar. 1997, 137-57.

[21] The percentage of textile and apparel workers who found new jobs within the 5-year study period was 90.6 percent and 86.4 percent, respectively. In contrast, 90.9 percent of workers in non-manufacturing industries and 93.9 percent of laid-off workers in other manufacturing industries found new employment. Ibid., p. 141.

[22] The average duration of unemployment for apparel workers was 2.3 quarters; for textile workers, 2.1 quarters; for workers in other manufacturing, 1.9 quarters; and for those in non-manufacturing, 2.5 quarters. Ibid., p. 141.

[23] Ibid., p. 150.

United States when a quota category's limit is reached, the bilateral agreements often allow for flexibility through "swing," "carry-forward," and "carry-over" provisions. This flexibility makes systematic analysis of quota utilization and quota restrictiveness difficult.[24] Nevertheless, following most research, this analysis considers quotas to be binding when utilization levels reach 90 percent.[25]

Export tax equivalent estimates were calculated for exports of textiles and apparel to the U.S. market for each of the countries restricted by quotas in 1996. These estimates provide some measure of the extent to which the 1996 quotas may have raised prices of these goods prior to entry into the U.S. market. The estimated export tax equivalents used in this analysis take into account U.S. imports that were either not covered by quotas or covered by non-binding quotas, on both a quota category and country-by-country basis. Imports that are not restricted by quotas are assigned a tax equivalent of zero. Because the estimated tax equivalents used as inputs in the model are import-weighted, nonrestricted imports serve to lower the average tax equivalents.[26] Imports entering under guaranteed access levels (GALs) are not considered binding, regardless of the level of the fill rate. The export tax equivalents and import-weighted ad valorem tariffs for each sector are shown in table 3-3.

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[24] See discussion in Refik Erzan, Junichi Goto, and Paula Holmes, "Effects of the Multi-Fibre Arrangement on Developing Countries' Trade: An Empirical Investigation," in *Textiles Trade and the Developing Countries: Eliminating the Multi-Fibre Arrangement in the 1990s*, ed. Carl B. Hamilton (Washington DC: The World Bank, 1990), 68; and Rajiv Kumar and Sri Ram Khanna, "India, The Multi-Fibre Arrangement and the Uruguay Round," in *Textiles Trade and the Developing Countries: Eliminating the Multi-Fibre Arrangement in the 1990s*, ed. Carl B. Hamilton (Washington, D.C.: The World Bank, 1990), 182-212.

[25] In this regard, the current report differs from the analysis conducted in previous Commission reports that also included estimates based on the assumption that the quotas were binding when utilization levels reached 80 percent. This assumption resulted in higher, "upper-bound" estimates. See, for example, USITC, *U.S. Import Restraints*, 1995, 3-5. Since the quotas are currently being phased out under the ATC and both quota levels and quota growth rates are well-publicized, this assumption seems unlikely.

[26] In 1996, the following countries were covered by quotas, but were not restricted (inasmuch as quota fill rates were less than 90 percent): Bulgaria, Burma (Myanmar), Colombia, Czech Republic, Honduras, Hungary, Jamaica, Kenya, Kuwait, Laos, Mexico, and Uruguay. Constructing averages on the basis of import weights may lead to a downward bias in the estimates. However, the use of alternative aggregation methods such as a CES aggregator or the trade restrictiveness index were not feasible for this study. For a discussion regarding the aggregation bias associated with import weighting, see James E. Anderson and J. Peter Neary, "Measuring the Restrictiveness of Trade Policy," *The World Bank Economic Review*, 8 (2) 1994, 151-169.

Table 3–3
Estimated ad valorem export tax equivalents for textile and apparel quotas and import–weighted, average tariffs by USITC sectors, 1996

(Percent)

Sector	Ad valorem export tax equivalent	Average tariff rate[1]
Textiles and apparel:		
Broadwoven fabric mills	1.7	10.6
Narrow fabric mills	0.3	6.2
Yarn mills and textile finishing	1.0	7.2
Thread mills	0.9	10.0
Carpets and rugs	0.1	4.8
Miscellaneous textile goods	0.2	4.5
Knitting mills and knit fabric mills	0.9	11.9
Hosiery	0.6	7.2
Apparel	6.0	13.2
Home furnishings	2.7	7.7
Canvas and related products, pleating, stitching and embroidery	0.2	7.6
Other fabricated textile products	0.2	2.8
Other products covered by quotas:		
Luggage, handbags, and purses	1.8	13.9
Man–made fibers	(2)	5.1
Other miscellaneous products	(2)	2.2

[1] Ad valorem equivalent.
[2] Less than 0.1 percent.

Source: Estimated by the staff of the USITC.

The United States Association of Importers of Textiles and Apparel (USA-ITA) noted in its post-hearing brief that firms that import these products from countries covered by bilateral agreements face numerous administrative costs that would not exist if the quotas were eliminated.[27] It is not clear whether these additional costs significantly affect the export prices of these goods or whether they affect the prices of the goods upon or after entry into the U.S. market. The estimates shown in table 3-3 only measure distortions that are included in the export prices. There is not sufficient information to estimate what any additional price gap associated with these costs might have been in 1996. Thus, the discussion in the section below regarding the effects of liberalization does not reflect these additional price effects.

[27] Specifically, USA-ITA reported that one of its members (a large importer) "... indicated that the costs of its customs compliance program, including full time personnel dedicated to compliance issues, is approximately $500,000 per year." USA-ITA also noted that although it had insufficient data to estimate the total cost of compliance faced by its members, it "...guesses that hundreds of millions of dollars are being spent by importers, above and beyond the basic costs associated with sourcing abroad." Post-Hearing Statement of United States Association of Importers of Textiles and Apparel, p. 9.

As in previous years, the degree of protection provided by the quotas and tariffs applied to these sectors varies considerably. In addition, the levels of the export tax equivalents estimated for the current study are considerably lower than those estimated for previous Commission investigations.[28] Two factors contribute to this difference. First, for some countries or customs regions the volume of unrestricted exports relative to restricted exports has increased. For example, in 1993 all of Hong Kong's exports to the United States that were covered by the MFA were covered by quotas and, on a value basis, most were covered by binding quotas. In 1996, only 23 of the 147 quota categories had fill rates that were 90 percent or greater. Hong Kong's exports classified under the 23 restricted quota categories accounted for just over 50 percent of total exports.

Second, Commission staff used a different estimation method to calculate the export tax equivalents for countries or customs regions other than Hong Kong. In the case of Hong Kong, staff calculated estimates using average annual quota license prices as proxies for the respective price gaps. License prices were also available for U.S. imports from China. These data allowed for the direct calculation of tax equivalent estimates for China as well. For India, staff relied on estimates reported by Kathuria and Bhardwaj that were similarly calculated.[29] The availability of license price-based estimates for India and China allowed Commission staff to compare these "direct" estimates to those based on two alternative methods. First, staff calculated export tax equivalent estimates using the approach taken in previous Commission reports.[30] Second, staff constructed indices that reflect the relative price differences of the quota-restricted products from Hong Kong and each of the other restricted suppliers based on import data for an unrestricted market. These indices were then used in conjunction with other data to develop export tax equivalent estimates.[31] The second method resulted in estimates that were closer to the license price-based estimates. Therefore, the second approach was used to calculate estimates for the remainder of the quota-restricted suppliers. Although this approach generated the best estimates (in the sense that the results were closer to those based on license prices), the estimated export tax equivalents shown in table 3-3 should be viewed as rough approximations. A description of data sources and a full discussion of the estimation method is provided in appendix F.

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[28] Had the estimates been of the same magnitude as those reported in previous studies, the estimated effects of liberalization discussed in subsequent sections of this chapter would have been greater.

[29] Sanjay Kathuria and Anjali Bhardwaj, "Export Quotas and Policy Constraints in the Indian Textile and Garment Industries," World Bank Working Paper No. 2012 (Washington, DC: The World Bank, Nov. 1998).

[30] See ch. 3 of USITC, *Significant U.S. Import Restraints*, 1995.

[31] See, Yongzheng Yang, "The Impact of MFA Phasing Out on World Clothing and Textile Markets," *The Journal of Development Studies*, 30 (4) 1994, 892-915.

Model Specification

As discussed in chapter 1 and appendix D, the USITC CGE model is used to examine the effects of eliminating tariffs and quotas applied to U.S. imports of textiles and apparel. The model's database is aggregated to highlight 15 sectors that are directly affected by textile and apparel quotas, one upstream sector, one downstream composite sector, and nine aggregate sectors comprising the remainder of the U.S. economy.[32] As in previous Commission reports, two cases are examined: (i) removing only the quotas; and (ii) eliminating both quotas and tariffs.[33] However, unlike the previous studies, tariffs are removed only on sectors that have average aggregate ad valorem tariffs that are one standard deviation above the overall average ad valorem tariff applied to U.S. imports of all goods.[34] The sectors designated as "high tariff" sectors for the purpose of this analysis include all of the sectors except carpets and rugs, miscellaneous textile goods, other fabricated textile products, man-made fibers, and other miscellaneous products.[35]

As noted earlier in this chapter, as a part of the ATC, the United States (along with the EU, Canada, and Norway) has agreed to eliminate the textile and apparel quotas for WTO member countries. The quota elimination scenario examined below (case 1) is comparable to the quota elimination scenarios examined in the previous two USITC reports regarding significant U.S. import restraints.[36] It differs from the actual phase out in three respects. First, case 1 considers only the impact of eliminating U.S. import restraints. Because the model used in this report consists only of the U.S. economy, it cannot capture the price and volume effects of other countries' trade policy changes on third countries. However, in terms of the effects on the U.S. economy, the difference between the unilateral liberalization examined in this study and the

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[32] The sectors correspond to six-digit Bureau of Economic Analysis (BEA) input-output categories. As noted above, appendix G provides a concordance between the aggregated textile and apparel categories used in the current analysis, the BEA input-output categories and the corresponding three and four-digit SIC categories. As in previous Commission reports, wool production has not been isolated as an upstream sector, but rather is included in the aggregate agriculture, forestry, and fisheries sector. The composite downstream sector includes industries that are significant users of one or more of the textile and apparel sector's output. Appendix G lists the industries included in this sector.

[33] USITC, *Significant U.S. Import Restraints*, 1993 and 1995.

[34] Chapter 1 provides a full discussion of the selection criteria used for the identification of the "high tariff" sectors.

[35] Although imports of many of the products within these sectors face relatively high tariffs, the average ad valorem tariffs for the aggregated sectors and the individual 4-digit SIC sectors within them were below the "high tariff" threshold.

[36] See, USITC, *Significant U.S. Import Restraints*, 1993 and 1995.

multilateral liberalization specified under the ATC may be small.[37] Second, case 1 examines the impact of eliminating U.S. quotas on imports from all of the U.S. trading partners that were restricted by quotas in 1996. As table 3-2 illustrates, two non-WTO members (China and Taiwan) accounted for a significant share of total imports of textiles and apparel in that year. Had the scenario been restricted to the WTO members, the economy-wide and sectoral effects would have been somewhat lower. Third, as noted earlier, the ATC allows the United States and the other WTO members to phase out the quotas in stages, with complete elimination occurring only on January 1, 2005. Case 1 considers what the impact would have been on the U.S. economy had quotas been eliminated in 1996.

The effects discussed in the following sections are influenced by a variety of factors. In addition to the variance in the level of the ad valorem tariffs and estimated tax equivalents, differences in the share of domestic consumption accounted for by imports have an important influence on the magnitude and distribution of the economic effects. Moreover, sectoral differences in the price responsiveness of both demand and supply have an impact, as does the degree to which imports substitute for domestic production.[38]

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[37] Commission staff used a global CGE model and the Global Trade Analysis Project (GTAP) database to run two simulations: one in which only the United States eliminates textile and apparel quotas and one in which the United States, the EU, Canada, and Norway remove their respective quotas. These simulations suggest that there may be little overall difference between unilateral and global quota elimination on the U.S. economy. A direct comparison of the results of the USITC CGE model and the global model is not possible due to differences in the base data and levels of aggregation.

[38] Previous Commission reports allowed for the possibility that a portion of the rents generated by the quotas accrued to U.S. importers. This activity is referred to as "rent-sharing." Although there is some evidence that U.S. importers have sufficient market power to capture some of the quota rents, empirical research on this issue is limited. Krishna and Tan, for example, examined U.S. imports of apparel from Hong Kong and could not rule out the possibility that rent-sharing occurred during the period under examination (1981-88). Similarly, Bannister examined U.S. imports from Mexico and could not rule out the possibility of rent-sharing for a few quota categories. See, Kala Krishna and Ling Hui Tan. "On the Importance and Extent of Rent Sharing in the Multi-Fibre Arrangement: Evidence from U.S.-Hong Kong Trade in Apparel," in *Analytical and Negotiating Issues in the Global Trading System*, ed. Alan V. Deardorff and Robert M. Stern (Ann Arbor: The University of Michigan Press, 1994), 95-131; and Geoffrey J. Bannister, "Rent Sharing in the Multi-Fibre Arrangement: The Case of Mexico." *Weltwirtschaftliches Archiv*, 130, No. 4, 801-827, 1994.

If rent-sharing (as measured by an additional "import-side" price gap) had been assumed in the current analysis, the estimated economy-wide effects discussed below would have been somewhat larger (with the magnitude depending on the size of the tariff equivalent of the associated price gap) and would have reflected the redistribution of such rents from U.S. importers to U.S. consumers. The estimated sectoral effects would also have been larger, again depending on the size of the estimated tariff equivalents.

Effects of Liberalization

Economy-wide Results

As shown in table 3-4, eliminating the textile and apparel quotas (case 1) would have lead to an economy-wide net welfare gain, of $5.7 billion in 1996.[39] Quota removal causes the exchange rate to depreciate slightly, thereby raising the prices of exports across all sectors and imports in the sectors not directly affected by the quotas.[40] Overall tariff revenue increases by 0.4 percent despite the reduction in import volumes for many of the sectors and price declines in most of the target sectors. Although overall labor and capital income increase somewhat, the growth in capital income outpaces that of labor, as denoted by the slight decline in the wage-rental ratio.

Simultaneous removal of both the textile and apparel quotas and "high" tariffs (case 2) generates an economy-wide gain in welfare of $10.4 billion (table 3-4).[41] Increases in labor and capital income are slightly larger than in case 1, but the decline in the wage-rental ratio is essentially the same.[42] As with case 1, the exchange rate depreciates, but to a slightly greater extent. This leads to small increases in the price of exports across all of the sectors. Import prices decline in most of the sectors directly affected by quotas.

Table 3-4
Economy–wide effects of tariff and quota elimination

Item	Case 1	Case 2
Tariff revenue *(percentage change)*	0.4	–34.8
Wage to rental ratio *(percentage change)*	–0.1	–0.2
Exchange rate *(percentage change)*	0.1	0.6
Net welfare gain *(billion dollars)*	5.742	10.376

Source: Estimated by staff of the USITC.

[39] Sensitivity analysis was conducted by using lower- and upper-bound substitution elasticities for the model sectors. The associated lower- and upper-bound equivalent variation estimates were $5.103 and $6.394 billion, respectively.

[40] As discussed in chapter 1, the exchange rate is the measure of the relative prices of tradeable to nontradeable goods. Import prices also increase for the manmade fiber and "other miscellaneous goods" sectors, but by negligible amounts. Both sectors are characterized by extremely low export tax equivalents.

[41] The lower- and upper-bound equivalent variation estimates were $8.445 and $12.242 billion, respectively.

[42] Case 1 results in a 0.02 percent and 0.05 percent increases in overall labor and capital income, respectively. With simultaneous removal of quotas and high tariffs (case 2) labor and capital incomes rise by 0.06 percent and 0.14 percent, respectively.

However, for the 5 sectors in which tariffs are not eliminated, import prices increase, but by negligible amounts. Unlike in case 1, tariff revenue declines substantially (34.8 percent).

In both cases, the sector-specific effects of quota removal are influenced by the level of the export tax equivalents of the quotas and the estimates of various behavioral parameters. In particular, differences in the levels of the substitution elasticities (between imports and domestically produced goods) generate significant differences in the impact of quota (and tariff) elimination.[43] These values are shown in appendix D. In case 1, sectors with relatively high export tax equivalents such as apparel and sectors with high substitution elasticities (broadwoven fabric mills, yarn mills, thread mills, knitting and knit fabric mills, and apparel) tend to be more adversely affected by quota elimination than the other target sectors. In case 2, sectors with high combined levels of protection (e.g., apparel; luggage, handbags, and purses; knitting and knit fabric mills; broadwoven fabric mills; and thread mills) and high substitution elasticities are the most adversely affected. Finally, although most of industries produce products that are specific to that industry (e.g., apparel firms produce goods that are classified as apparel), a few of the textile sectors include a number of firms whose production falls into different commodity categories. For example, although most of the broadwoven fabric mill sector's production consists of products classified as broadwoven fabrics, the sector also produces commodities classified as home furnishings. Similarly, most of the output of the knitting mills sector is classified as apparel.[44] When these industries produce a variety of goods that are subject to liberalization, the impact on the industry sector's overall output and employment is determined, in part, by: (1) the level of protection shown in table 3-3 for its primary products (e.g., broadwoven fabrics); (2) any indirect effects resulting from contraction in sectors that purchase these products; and (3) the level of protection afforded any downstream products the sector also produces (e.g., home furnishings).

Sectoral Results

Case 1: Removal of textile and apparel quotas

The four sectors most affected by quota removal, in percentage terms, are apparel, knitting mills and knit fabric mills, narrow fabric mills, and broadwoven fabric mills. In particular, the apparel sector contracts by 4.7 percent, with an employment loss of 29,390 FTEs and a $2.8 billion reduction

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[43] Higher values of the substitution elasticity reflect a greater willingness of purchasers to switch between U.S.-produced and imported products in response to a change in the relative prices of these products.

[44] Knitting mills accounted for over 40 percent of total output of the combined knitting mills and knit fabric mills sector.

in output (see table 3-5).[45] The four sectors with the greatest declines in output and employment are apparel, knitting mills and knit fabric mills, broadwoven fabric mills, and yarn mills and textile finishing. Three of the liberalized sectors (carpets and rugs, hosiery, and other miscellaneous goods) show extremely small gains in output and employment. All three sectors are characterized by relatively small tax equivalents. As a result, changes in import prices are negligible and the net change in the value of imports of these goods is less than 0.5 percent. Moreover, all three sectors use upstream products such as broadwoven fabric, yarn, and man-made fibers. As a result, the sectors benefit from declining input prices that serve to offset the direct (albeit small) increase in import competition.[46] The composite downstream sector and the remainder of the economy show small gains in both output and employment.

Quota removal results in a large increase (7.8 percent) in imports of apparel. Other sectors that experience import growth include home furnishings; luggage, handbags, and purses; hosiery; and yarn mills and textile finishing. However, a number of sectors upstream from the apparel sector actually show a decline in imports as a result of the contraction in domestic production in that and other sectors. In particular, imports of thread and broadwoven, narrow, and knit fabrics show declines ranging from 0.6 to 2.6 percent. Generally, changes in the export sector are small. With the exception of the apparel sector (which experiences a decline of 2.9 percent), consumer price declines are small, and in many instances are negligible.

Case 2: Removal of tariffs and quotas

With the exception of carpets and rugs and other miscellaneous goods, all of the liberalized sectors experience declines in output and employment (table 3-6).[47] As noted above, sectors with the highest combined ad valorem tariff and tax equivalents were the most adversely affected by liberalization. Hardest hit by quota and tariff removal in percentage terms are knitting mills and knit

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[45] As noted earlier, case 1 does not correspond directly to the 10-year phase-out of the quotas specified under the ATC. This scenario represents a complete liberalization based on the levels of protection that prevailed in 1996. It is also important to note that the scenario does not reflect other trade policy changes that are underway (e.g., NAFTA) or other changes in U.S. market conditions that may contribute to employment and production declines.

[46] In the case of other miscellaneous goods, imports decline slightly, although the change is negligible.

[47] As noted above, the high tariff sectors include: broadwoven fabric mills; narrow fabric mills; yarn mills and textile finishing; thread mills; knitting mills and knit fabric mills; hosiery; apparel; home furnishings; canvas and related products, pleating, stitching and embroidery; and luggage, handbags, and purses.

fabric mills, apparel, broadwoven fabric mills, narrow fabric mills, thread mills, and yarn mills and textile finishing. Apparel, knitting mills and knit fabric mills, and broadwoven fabric mills decline the most in terms of employment levels (83,510, 17,200, and 14,970 FTEs, respectively).[48] Output declines in these sectors amount to $8.1, $2.0, and $2.4 billion, respectively.[49] The composite downstream sector shows small gains from liberalization, in terms of output and employment. Similarly the remainder of the economy benefits from liberalization.

Simultaneous elimination of quotas and tariffs results in increasing imports in most of the sectors directly affected by liberalization. The apparel sector registers the largest increase, both in absolute and percentage terms ($12.2 billion or 24.2 percent). As in case 1, a few of the textile sectors experience small declines in imports, reflecting a general contraction of the sectors combined with the price effects generated by the depreciation of the exchange rate. Similarly, a number of the target sectors experience declining exports as a result of overall contraction. Although all of the target sectors experience declining consumer prices, those for luggage, handbags, and purses and apparel are the largest, reflecting, in part, the initial levels of their respective estimated export tax equivalents and average tariffs.

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[48] As discussed earlier, the estimates shown for case 2 reflect the outcome of complete liberalization of U.S. tariffs (for the high tariff sectors), as well as quotas—as these restraints existed in 1996. Therefore, they do not describe the likely effects of the ATC and reductions in U.S. tariffs that are currently underway.

[49] Nonetheless, the decline in apparel sector production and employment is somewhat mitigated by declining input costs for products such as broadwoven fabric, narrow fabric, and thread. If quota and tariff elimination were limited to the apparel sector alone, the decline in production and employment would amount to approximately 14.1 percent rather than the 13.3 percent decline shown in table 3-6.

Table 3–5
Case 1: Sector–specific economic effects of textile and apparel quota elimination, changes in value and percent, 1996[1]

Sector	Employment		Output		Imports		Exports		Composite Price
	FTE[3]	*Percent*	*Million dollars*	*Percent*	*Million dollars*	*Percent*	*Million dollars*	*Percent*	*Percent*
Liberalized sectors:									
Textiles and apparel:									
Broadwoven fabric mills	–4,550	–2.3	–729	–2.3	–32	–0.7	–63	–2.3	–0.4
Narrow fabric mills	–460	–2.5	–38	–2.5	–10	–2.6	–13	–2.4	–0.3
Yarn mills and textile finishing	–1,830	–2.0	–252	–2.0	1	0.1	–9	–2.0	–0.1
Thread mills	–150	–2.1	–21	–2.2	([4])	–0.6	–3	–2.0	–0.2
Carpets and rugs	40	0.1	3	([5])	([4])	([5])	1	0.1	([5])
Miscellaneous textile goods	–60	–0.1	–10	–0.1	([4])	([5])	–2	–0.1	([5])
Knitting mills and knit fabric mills	–5,490	–4.5	–648	–4.5	–10	–1.6	–37	–4.5	([5])
Hosiery	20	([5])	1	([5])	2	0.4	([4])	([5])	–0.1
Apparel	–29,390	–4.7	–2,842	–4.7	3,939	7.8	–414	–4.7	–2.9
Home furnishings	–390	–0.6	–47	–0.6	95	4.2	–2	–0.4	–0.6
Canvas and related products, pleating, stitching and embroidery	–330	–0.9	–24	–0.9	–4	–0.9	–1	–0.8	–0.1
Other fabricated textile products	–730	–0.6	–73	–0.6	–13	–0.7	–4	–0.5	–0.1
Other products covered by quotas:									
Luggage, handbags, and purses	–20	–0.2	–3	–0.2	41	1.1	([4])	0.1	–1.4
Man–made fibers	–510	–1.1	–196	–1.1	–26	–1.4	–35	–1.4	([5])
Other miscellaneous goods	70	0.1	5	([5])	–1	([5])	1	0.1	([5])

Upstream and downstream sectors:									
Cotton	–380	–1.1	–69	–1.2	–7	–2.0	–13	–0.4	–0.1
Composite downstream sector	4,810	([5])	443	([5])	–89	–0.1	33	0.1	([5])
Rest of the economy:									
Agriculture, forestry and fisheries	1,400	0.1	132	([5])	–2	([5])	81	0.2	([5])
Mining	410	0.1	59	([5])	8	([5])	12	0.1	([5])
Construction	1,010	([5])	33	([5])	([6])	([6])	([6])	([6])	([5])
Nondurable manufacturing	3,110	0.1	378	([5])	–46	([5])	79	0.1	([5])
Durable manufacturing	7,070	0.1	1,048	0.1	–181	([5])	416	0.1	([5])
Transportation, communications, and utilities	2,360	([5])	245	([5])	–24	([5])	63	0.1	([5])
Retail trade	10,450	0.1	280	([5])	([6])	([6])	([6])	([6])	([5])
Finance, insurance, and real estate	4,490	0.1	603	([5])	–1	([5])	36	0.1	([5])
Other services	9,070	([5])	784	([5])	–21	([5])	71	0.1	([5])

[1] Percentage changes reflect the net change in volumes and prices, unless indicated otherwise.
[2] Price of the composite good (i.e., imports and domestic production) faced by consumers.
[3] Change in full–time equivalents.
[4] Change less than $500,000.
[5] Change less than 0.05 percent.
[6] Nontradeable sector.

Source: Estimated by the staff of the USITC.

Table 3–6
Case 2: Sector–specific economic effects of textile and apparel quota and tariff liberalization, changes in values and percent, 1996[1]

Sector	Employment		Output		Imports		Exports		Composite Price
	FTE[3]	*Percent*	*Million dollars*	*Percent*	*Million dollars*	*Percent*	*Million dollars*	*Percent*	*Percent*
Liberalized sectors:									
Textiles and apparel:									
Broadwoven fabric mills	–14,970	–7.6	–2,396	–7.7	145	3.3	–206	–7.3	–2.2
Narrow fabric mills	–1,320	–7.3	–111	–7.4	–26	–6.9	–37	–6.8	–2.2
Yarn mills and textile finishing	–6,170	–6.6	–845	–6.7	55	10.7	–29	–6.6	–0.5
Thread mills	–500	–7.4	–72	–7.4	9	12.6	–11	–6.8	–1.4
Carpets and rugs	120	0.2	14	0.1	–5	–0.5	4	0.4	–0.1
Miscellaneous textile goods	–50	–0.1	–11	–0.1	–11	–0.7	2	0.1	–0.2
Knitting mills and knit fabric mills	–17,200	–14.1	–2,029	–14.1	129	20.3	–123	–15.1	–0.8
Hosiery	–70	–0.1	–8	–0.2	25	5.0	([4])	([5])	–0.8
Apparel	–83,510	–13.3	–8,071	–13.3	12,228	24.2	–1,171	–13.2	–8.9
Home furnishings	–1,210	–1.8	–145	–1.9	320	14.2	–4	–0.8	–2.5
Canvas and related products, pleating, stitching and embroidery	–1,330	–3.7	–94	–3.8	23	5.9	–2	–3.1	–1.3
Other fabricated textile products	–1,920	–1.7	–191	–1.7	–50	–2.7	–7	–0.9	–0.5
Other products covered by quotas:									
Luggage, handbags, and purses	–170	–1.8	–25	–1.9	335	8.5	([4])	([5])	–10.6
Man–made fibers	–1,620	–3.6	–625	–3.7	–90	–5.0	–110	–4.2	([5])
Other miscellaneous goods	410	0.3	39	0.3	–12	–0.4	10	0.6	([5])

Upstream and downstream sectors:									
Cotton	–1,150	–3.4	–207	–3.5	–24	–6.9	–21	–0.7	–0.5
Composite downstream sector	13,510	0.1	1,287	0.1	–875	–0.8	198	0.6	0.1
Rest of the economy:									
Agriculture, forestry and fisheries	9,320	0.5	1,258	0.4	–32	–0.1	836	2.1	0.1
Mining	1,780	0.3	371	0.2	15	([5])	99	0.7	0.2
Construction	2,650	([5])	103	([5])	([6])	([6])	([6])	([6])	([5])
Nondurable manufacturing	11,200	0.2	1,835	0.1	–604	–0.4	573	0.4	0.1
Durable manufacturing	42,450	0.4	7,107	0.4	–1,816	–0.4	3,013	0.6	0.1
Transportation, communications, and utilities	8,280	0.1	1,046	0.1	–311	–0.4	498	0.6	0.1
Retail trade	12,900	0.1	233	([5])	([6])	([6])	([6])	([6])	0.1
Finance, insurance, and real estate	8,940	0.1	792	([5])	–67	–0.4	265	0.5	0.1
Other services	19,640	0.1	1,517	([5])	–248	–0.4	453	0.5	([5])

[1] Percentage changes reflect the net change in volumes and prices, unless indicated otherwise.
[2] Price of the composite good (i.e., imports and domestic production) faced by consumers.
[3] Change in full–time equivalents.
[4] Change less than $500,000.
[5] Change less than 0.05 percent.
[6] Nontradeable sector.

Source: Estimated by the staff of the USITC.

CHAPTER 4
Agriculture

Import restraints in the agricultural sector have undergone significant changes since the last report in this series. The URA was historic in that it was the first successful attempt to bring agriculture into the general discipline of the GATT and brought about policy changes upon which future multilateral trade agreements will likely build.

While several agreements under the URA are relevant to agriculture, two of them—the Agreement on Agriculture[1] and the Agreement on the Application of Sanitary and Phytosanitary Measures (or SPS Agreement)[2]—apply specifically to agriculture. The Agreement on Agriculture covers 3 areas: export subsidies, market access, and internal supports. The agreement is being implemented over the 6-year period, 1995-2000.

Restraints on agricultural commodity trade are being addressed directly through the Agreement's market access provisions, which require all nontariff import barriers to be converted to bound tariffs (a process called "tariffication"). These tariffs—as well as other pre-existing tariffs—are being reduced by a minimum of 15 percent, and on average 36 percent over the implementation period. In addition, for products subject to the tariffication process, countries agreed to maintain current access opportunities and to establish quantitative commitments for new access opportunities if imports in the 1986-88 base period were low or non-existent.

Prior to 1995, several of the most trade-sensitive commodities were protected through import quotas.[3] However, as part of the agreement, the negotiating countries agreed to tariffy the quotas on these commodities. Most were converted to tariff-rate quotas (TRQs). These TRQs typically involved a two-level tariff, with a relatively low duty rate (in-quota rate) applied on imports up to a threshold level (TRQ quantity) and a secondary, significant

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[1] Uruguay Round Agreement Act, Statement of Administrative Action, published in H.Doc.103-316, 103d Cong., 2nd Sess., pp. 709-41.

[2] Uruguay Round Agreement Act, Statement of Administrative Action, published in H.Doc.103-316, 103d Cong., 2nd Sess., pp. 742-63.

[3] For example, quotas were imposed on U.S. imports of dairy products and cotton under section 22 of the Agricultural Adjustment Act of 1993, while U.S. import quotas on beef were established under the Meat Import Act of 1979. TRQs have existed for sugar since 1990.

tariff rate (over-quota rate) applied to imports that exceed the threshold. If the over-quota tariff is prohibitive, the impact of the TRQ is nearly identical to the earlier quantity restrictions.

The U.S. agricultural sectors that are affected by significant U.S. import restraints in this report are those identified in previous series of this report, namely dairy, meat, sugar, cotton, tobacco, and peanuts. Each of the sections below provides a brief overview on the sector, the nature of its trade barriers, an evaluation of the restrictiveness of import restraints in 1996, an examination of previous work, specification of the model and, finally, a discussion of potential liberalization effects.

Dairy Products

Import restraints are applied to several milk products, including fluid milk and cream, butter, cheese, powdered milk products, ice cream, infant formula, and animal feeds containing milk. Table 4-1 presents the value of shipments, level of employment, and trade for certain dairy products during 1994-96. U.S. shipments amounted to $48 billion in 1996, with fluid milk accounting for about 42 percent of such shipments, cheese for 38 percent, dry/concentrated milk for 16 percent, and butter for 3 percent. U.S. trade in dairy products is relatively small in comparison to the domestic market. In 1996, for example, the total value of dairy imports was $1.2 billion, representing only about 2 percent of the total value of dairy shipments, while dairy exports, valued at $414 million, represented less than 1 percent of such shipments. Almost all U.S. imports consist of cheese and casein/caseinates,[4] while major dairy exports are cheese and whey.

Nature of Trade Barriers

The U.S. Government supports dairy-farm incomes through a price support system for manufactured products which establishes domestic prices significantly higher than world prices.[5] To prevent the U.S. market from being flooded by imports, several dairy products (including butter, most

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[4] Casein and caseinates are not currently produced in the United States and have not been since the early 1950s. After the U.S. Department of Agriculture (USDA) established a price support program for milk, U.S. butter and powder producers realized greater returns from drying their skim milk into nonfat dry milk (NDM) and selling it to the government intervention agency, the Commodity Credit Corporation (CCC), than from processing it into casein. Therefore, domestic demand for casein has since been furnished from imports.

[5] Under the system, market prices for butter, cheddar cheese, and NDM are supported through CCC purchases of domestic surpluses. The CCC is a government-owned and operated corporation within the U.S. Department of Agriculture (USDA). Under the Federal Agricultural Improvement and Reform (FAIR) Act of 1996, dairy supports are being phased out and will be eliminated by 1999.

Table 4–1
Dairy: Summary data, 1994–96

Item	1994	1995	1996
Shipments (*million dollars*):			
Butter	1,017	1,196	1,542
Cheese	16,426	16,802	18,284
Dry/condensed milk products	7,482	7,795	7,748
Cream[1]	18,874	19,196	20,029
Employment (*FTEs*):			
Butter	1,400	1,200	1,000
Cheese	33,600	36,200	35,700
Dry/condensed milk products	15,000	14,600	14,200
Cream[1]	61,800	61,600	59,300
Imports (*million dollars*):			
Butter	2	1	9
Cheese	491	549	584
Dry/condensed milk products	423	493	592
Cream[1]	4	4	4
Exports (*million dollars*):			
Butter	108	63	42
Cheese	72	89	105
Dry/condensed milk products	259	376	238
Cream[1]	43	21	29

[1] The data for this sector are for the entire fluid milk sector, of which cream is a part.

Source: Shipments and employment data are based on U.S. Department of Commerce, Bureau of Census, *1992 Census of Manufacturers. Industry Series: Dairy Products*, No. MC92–I–20B, Apr. 1995; Milk Industry Foundation, *Milk Facts: 1996 Edition*, Washington, DC, Sept. 1996; National Cheese Institute, *Cheese Facts*: *1996 Edition,* Washington, DC, Sept. 1996; and International Ice Cream Association, *The Latest Scoop: 1996 Edition*, Washington, DC, Dec. 1996. Trade data are from U.S. Department of Commerce.

domestically-produced cheese, nonfat dry milk (NDM), fluid milk, and ice cream) are subject to TRQs,[6] while others (e.g., whey protein concentrates, milk protein concentrates, and caseinates) are covered by fixed tariffs that do not depend on the level of imports. A few categories of dairy products (those with negligible domestic production) are imported at a duty rate of "Free" (e.g., casein and milk albumin).

[6] The TRQs, introduced in 1995 under the URA, replaced the existing dairy quotas that had been imposed under section 22 of the Agricultural Adjustment Act of 1933. The section 22 quotas had originally been designed to limit imports of dairy products to a quantity equivalent to approximately 2 percent of the U.S. production of milk.

For products with TRQs to receive the in-quota rate, importers must obtain an import licence issued by the USDA. A typical license will identify the product, the country from which it may be imported, and the maximum quantity that can be imported. Many licenses are country-specific (i.e., the import source country is specified). However, an "other country" license allows the importer to source product up to a certain quantity from any country other than countries that have country specific TRQs,[7] while an "any country" license allows an importer to source imports up to a certain quantity of a particular product from any country in the world, including those with country-specific licenses. There are also two types of license: historical and nonhistorical. Historical licenses are renewable from one year to the next and are valid for the same product from the same country. A license will be renewed as long as the importer has met the requirements of the regulation. Nonhistorical licenses are not renewable. Importers may reapply for an identical nonhistorical license for the next year, but the application may or may not be granted because these licenses are issued through a lottery-type system.[8] Certain dairy products for which there are TRQs may be imported without a license under a "first-come, first-served" system administered by the U.S. Customs Service.[9] No licenses are required to import at the over-quota rate.

In addition to licensing, U.S. imports of dairy products are also subject to various health and sanitary regulations. For example, U.S. imports of fluid milk products are prohibited unless accompanied by a valid permit issued by the U.S. Secretary of Health and Human Services under the provisions of the Import Milk Act of 1927.[10]

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[7] For example, in 1996 the following suppliers had specific country TRQ allocations for American-type cheese: Australia (1,000 mt), New Zealand (2,000 mt), the European Union (287 mt), and other countries (169 mt). An importer with an "other country" license for American-type cheese could source imports up to the license amount from any country (such as, in the case of 1996, Slovak Republic and Jamaica), except for Australia, New Zealand, or the EU.

[8] There are also designated licenses for cheese imports issued to cheese importers who have met the regulation's qualification standards and have been designated by the government of the exporting country to receive a license. Not all countries participate in the designation process.

[9] This requirement means these products may be brought in at the in-quota rate until a specified TRQ is filled, and once the TRQ is filled, importers must pay the over-quota rate. The items covered under the first-come, first-served system include: dairy products from Mexico; certain dairy products from Israel; cheddar cheese from Canada (made from unpasteurized milk and aged nine months or more); fluid milk or cream (fresh or sour); milk or cream (condensed or evaporated and in airtight containers); dried buttermilk or whey; infant formula; ice cream; and animal feed containing milk.

[10] 44 Stat. 1101.

Market Access Provisions Under the URA

Under the URA, the United States established TRQs totaling about 150,000 metric tons (mt) of dairy products in the initial year (1995), rising to about 200,000 mt in the final year (year 2000). In addition, out-of-quota tariff rates are being reduced by the minimum required 15 percent in equal installments over the 6 year implementation period. Specifically, the United States agreed to reduce its over-quota tariffs from 65 cents per pound to 56 cents per pound (approximately 170 percent ad valorem equivalent, based on U.S. prices in 1996) for cheese, 82 cents per pound to 70 cents per pound (approximately 137 percent ad valorem equivalent) for butter, and 46 cents per pound to 39 cents per pound (approximately 32 percent ad valorem equivalent) for NDM. In-quota tariff rates are bound at zero or nominal levels.

Tariffication under the URA increased market access significantly for some dairy products, while for others it did not. In-quota quantities were significantly increased for butter and butter substitutes. The combined section 22 quotas for these products in 1993 was 865 mt, while in 1996, the TRQ was almost ten-fold higher at 8,578 mt. The TRQ for ice cream more than doubled the section 22 quota, as did the TRQ for NDM. The section 22 quota for dried whole milk and cream was only 3 mt in 1993, which increased to 1,061 mt in 1996. By contrast, there were only small increases in market access for fluid milk and cheese. Although market access grew, import limits remained small compared with overall consumption.

The URA also introduced the "any country" import license. In 1993, the base year used in the analysis of the previous report, licenses were only country-specific. For example, the section 22 quota for NDM was 820 mt., allocated only to Australia (600 mt) and Canada (220 mt.) Thus, imports from any other country (such as New Zealand) were excluded. Under the TRQ system, Australia and Canada were allocated licenses to ship 600 mt and 220 mt, respectively; in addition, an "any country" allocation of 1,241 mt was made available to any other country, including Australia and Canada.[11] Thus, the U.S. market was opened up to any country that could supply products, subject to quantity limits.

Restrictiveness of Barriers

The TRQ system made over-quota imports uncompetitive in the U.S. market. In the case of butter, for example, the 1996 U.S. price ($1 per pound) was higher than the price of imports at the in-quota tariff ($0.83 per pound), but significantly lower than the price of imports at the over-quota tariff ($1.55 per pound). For cheddar cheese and NDM, the over-quota tariff was sufficient to deter imports above the TRQ level. In 1996, for dried milk powder, butter and butter substitutes, and cheese, the TRQs appear to be restrictive, as

[11] So, for example, in 1996 Canada shipped all 820 mt in its country-specific allocation, plus 512 mt under the "any country" allocation, for total imports of 1,332 mt.

indicated by a ratio of imports to TRQ of almost 100 percent. This is supported by major world importers of dairy products who argue that the U.S. import restraints are binding,[12] and also by the fact that major U.S. producer and processor groups have not expressed concern over excessive imports.[13]

Generally, TRQs were not constraining imports that are unable to compete with domestically produced goods.[14] The quotas do not appear to be binding in the cases of fluid milk (74 percent fill), condensed and evaporated milk (35 percent fill), articles containing 5.5 percent to 45 percent butterfat (53 percent fill), and ice cream (1 percent fill). However, because the licensing system involves allocation of country-specific quantitative limits, it is very difficult to gauge the extent to which quotas are binding. For example, in 1996, the TRQ on condensed milk and cream in airtight containers was 1,847 mt, compared with actual imports of only 479 mt. Thus, only 26 percent of the total TRQ was filled, suggesting the quota was not a binding constraint. However, the Netherlands completely filled its quota of 153 mt, while the other country-specific quota was not filled.[15]

In addition to tariff measures, importers argue that the licensing system is a significant nontariff barrier to trade in dairy products.[16] They point to reasons why many quotas are not filled even though U.S. prices are significantly above international prices. These include that the allocation of the quotas by product is not attractive to importers, end-users, and exporters; small TRQs for several products, such as infant formulas (100 mt) and cream powder (100 mt), make commercial utilization problematic; the import system does not encourage commitment by exporters, importers, and end-users to a confirmed business relationship;[17] and the system for reallocating country-specific cheese quotas is complicated.[18]

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[12] New Zealand Dairy Board, written submission to the USITC for Investigation 332-325, June 10, 1998.

[13] USITC phone conversations with industry representatives, July 1998.

[14] For example, the fluid milk quota of 11.4 million liters was not filled. This is largely because imports for most countries (except Canada and Mexico) cannot be transported to the United States at a sufficiently low cost to make them competitive. Milk market regulation in Canada also makes the U.S. market unattractive to Canadian producers.

[15] For example, Denmark used none of its 605 ton quota. This shows that in evaluating the extent to which quotas are constraining, and thus the economic impact of import restraints, it is crucial to analyze bilateral trade flows and develop price gaps on a country-specific basis.

[16] New Zealand Dairy Board, written submission to the U.S. International Trade Commission, for Investigation 332-325, June 10, 1998, p.7.

[17] For example, the first-come, first-served creates uncertainty about the ability to obtain product on a continuous basis so that business planning and the establishment of normal long-term supplier/customer relationships are compromised.

[18] New Zealand Dairy Board, written submission to the U.S. International Trade Commission, for Investigation 332-325, June 10, 1998, pp. 6-7.

Previous Work

In previous releases of reports in this investigation, the Commission staff estimated price distortions—measured as ad valorem tariff equivalents—that result from the section 22 quotas for 4 dairy products: butter, cheese, dry/condensed products, and cream. From the 1995 analysis, the estimated overall effect of liberalizing the dairy quotas amounted to a welfare gain of approximately $1 billion.

In their study, Zhu, Cox and Chavas (1998) used a spatial equilibrium model of the global dairy sector to examine the effects of the URA and full liberalization.[19] The authors found that for the U.S. dairy sector, policy impacts of the URA and complete liberalization in world dairy markets would be relatively small. Under full liberalization, there are very small impacts on U.S. milk producers, since prices and production are not expected to change. However, big changes occur in the U.S. dairy processing sector: more milk is used to produce cheese and less to produce lower-valued butter and milk powders. Further, the United States switches from a net cheese importer to a net cheese exporter. Net U.S. dairy exports increase 20 percent on milk solids over the base scenario.

Model Specification

The USITC CGE model includes the dairy farm sector, four dairy manufacturing sectors (butter, cheese, dry/condensed milk products, and cream), and about 490 other sectors collected into nine aggregate sectors. Although the dairy manufacturing sectors were protected by the 1996 TRQs, the dairy farm sector—which produces raw milk—is upstream to the dairy processing sectors. Removal of the dairy TRQs, while maintaining all domestic price support policies intact, would have required an enormous expansion of Commodity Credit Corporation (CCC) purchases of dairy products. That is, to prevent domestic prices from falling below support price levels, the CCC would have to buy all excess cheese, butter, and NDM (including imports) in the U.S. market. To avoid this outcome, the model simulates the joint removal of the U.S. dairy quotas and the elimination of domestic price support policies.[20]

Procedures used by the USDA to administer the TRQ system for dairy products are highly complex. As a result, accurate estimation of price gaps (the difference between domestic prices and the prices that would be charged without the TRQ) is highly problematic. In all, there are 23 TRQs covering

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[19] Young Zhu, Tom Cox and Jean-Paul Chavas "A Spatial Equilibrium Analysis of Trade Liberalization and the U.S. Dairy Sector," Final Report for NRI Grant #94-37400-0966 (Dec. 1998)

[20] Federal milk marketing orders, which set prices for fluid milk in the United States, were not explicitly modeled.

dairy products. In most cases, several HTS subheadings are attributed to each individual TRQ. For example, in 1996, the butter TRQ was 4,577 mt., covering imports under three HTS subheadings: 0401.30.50 (milk and cream exceeding 45 percent fat), 0403.90.74 (sour cream, over 45 percent fat), and 0405.10.10 (butter).

The effects of the U.S. dairy quotas are estimated by means of an equivalent ad valorem tariff. USDA collects both domestic and world price data for NDM, butter and cheese. These three price series serve as a basis for the estimates of the tariff equivalents of the U.S. dairy quotas used in the CGE model. The butter and cheese sectors make a straightforward application of the price-gap method possible because data exist for both domestic and world prices. For the dry/condensed milk products, the price gap for NDM was used as a proxy, because NDM contributes a large share of the dry/condensed milk products trade. The world prices for these three products were the New Zealand f.o.b. prices adjusted for exchange rates and transportation costs. These landed prices of imports from New Zealand were then compared with domestic prices. For the three products, the price gap was estimated at 15 percent.[21] In the case of cream, a price gap of zero was assumed. This assumption was made because the high cost of transporting milk and cream provides a natural monopoly for U.S. producers in the domestic market. Because of these high costs, U.S. imports of fresh milk and cream have been negligible in recent years and quota fill rates have been well below 100 percent.

The welfare effects of TRQ liberalization can be affected by the assumptions concerning the rents generated by quotas. The quotas for butter and cheese require USDA licenses which are allocated to qualified domestic importers, implying that the quota rents most likely would accrue to these domestic firms. However, research on the cheese quotas by Hornig et al.[22] indicates that the export side of the cheese market is highly concentrated, resulting in market power for both importers and exporters.[23] They estimate that in 1980 the quotas generated rents of about $41 million for importers and $52 million for exporters. Based on this work, the quota rents are split on

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[21] The price gap for cheese was based on a U.S. cheese price of $1.40 per pound, a New Zealand price of $1.00 per pound, and a transportation cost of 20 cents per pound. The price gap for butter was based on a U.S. butter price of $1.15 per pound, a New Zealand price of 77 cents per pound, and a transportation cost of 20 cents per pound. The price gap for NDM was based on a U.S. NDM price of $1.20 per pound, a New Zealand price of 92 cents per pound, and a transportation cost of 10 cents per pound.

[22] Ellen Hornig, Richard N. Boisvert, and David Blandford, "Explaining the Distribution of Quota Rents for U.S. Cheese Imports," *Australian Journal of Agricultural Economics*, Apr. 1990, pp. 1-20; and Hornig, Boisvert, and Blandford, "Quota Rents and Subsidies: The Case of U.S. Cheese Import Quotas," *European Review of Agricultural Economics*, 1990, pp. 421-34.

[23] For example, the New Zealand Dairy Board has an export monopoly on all dairy exports from the country.

a 50/50 basis between domestic importers and foreign exporters for both the butter and cheese sectors. The quotas for the dry/condensed milk products and cream sectors are administered by the U.S. Customs Service on a first-come, first-serve basis. Consequently, it is assumed that foreign exporters capture all of the quota rents in these two sectors; the import side is unconcentrated and the foreign exporters benefit from higher prices for their products.

The Effects of Liberalization

The model estimates show that the overall effect of liberalizing the dairy quotas and eliminating price support in 1996 is a welfare gain of $152 million to the U.S. economy. Contributing to the gain in economic welfare is the decline in composite prices as a result of liberalizing the dairy sector. Specifically, the model estimates show that the largest price declines would occur for (1) dry/condensed milk products, 1.0 percent; (2) cheese, 0.6 percent; and (3) butter, 0.1 percent. Table 4-2 presents the model estimates of employment, output, and trade effects of unrestricted imports in the U.S. dairy sector.

The upstream dairy farm sector experiences a decline of about 0.2 percent in output and employment, which translates into declines of $45 million and 170 full-time equivalent workers, respectively. Employment and output were estimated to decrease in all of the dairy manufacturing sectors, with the dry and condensed milk sector experiencing the largest relative decline of about 0.1 percent. In all liberalized sectors, generally imports increase and exports decrease. The model estimates showed that the cheese sector experienced the largest trade increase: imports increased by $93 million, a 13.7 percent change.

Meat

The analysis in this sector applies to red meats, primarily bovine, sheep, and goat meat (SIC sector 2011), but excludes sausages, smoked meats, and similar products (SIC sector 2013). Table 4-3 contains summary data on shipments, employment, imports, and exports in the meat-packing industry during 1994-96. Shipments were valued at $47 billion in 1996, while the sector provided 123,300 full-time jobs. Sector exports in 1996 amounted to $3.4 billion, while imports were valued at $2 billion (see table 4-3).

In recent years, the United States has been the world's leading importer of beef (on a quantity basis) and one of the leading exporters, after Australia and, in some years, the European Union (EU). Most of the U.S. exports have consisted of relatively high-value meat derived from grain-fed animals, whereas most imports have consisted of manufacturing-type beef derived from grass-fed animals. During 1994-96, imports of beef accounted for 7 to 9 percent of consumption by quantity (not value). In the mid-1990's the United

Table 4–2
Dairy: Economic effects of tariff–rate quota removal, changes in FTE, value and percent, 1996

Sector	Employment		Output		Imports		Exports		Composite Price
	FTE[1]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Percent*
Liberalizing sectors:									
Butter	([3])	([4])	–1	([4])	1	13.1	([5])	–0.1	–0.1
Cheese	–130	([4])	–73	([4])	93	13.7	([5])	–0.3	–0.6
Dry/condensed milk products	–100	–0.1	–44	–0.1	65	12.4	–3	–0.5	–1.0
Cream	–30	([4])	–10	([4])	([5])	([4])	([5])	([4])	([4])
Upstream sector:									
Dairy farms	–170	–0.2	–45	–0.2	([3])	–0.2	([5])	–0.2	([4])
Rest of the U.S. economy:									
Agriculture, forestry, and fisheries	110	([4])	–16	([4])	–2	([4])	2	([4])	([4])
Mining	([3])	([4])	2	([4])	([5])	([4])	1	([4])	([4])
Construction	([3])	([4])	([5])	([4])	([6])	([6])	([6])	([6])	([6])
Nondurable manufacturing	20	([4])	5	([4])	–11	([4])	4	([4])	([4])
Durable manufacturing	260	([4])	48	([4])	–14	([4])	18	([4])	([4])

Transportation, communications, and utilities	30	([4])	5	([4])	–2	([4])	3	([4])	([4])
Wholesale and retail trade	–40	([4])	–2	([4])	([6])	([6])	([6])	([6])	([6])
Finance, insurance, and real estate	30	([4])	9	([4])	([5])	([4])	2	([4])	([4])
Other services	220	([4])	30	([4])	–2	([6])	4	([5])	([4])

[1] Full–time equivalents.
[2] In millions of dollars in base year prices.
[3] Less than five jobs.
[4] Change less than 0.05 percent.
[5] Change less than $500,000.
[6] Nontraded sector.

Source: Estimated by the staff of the USITC.

Table 4–3
Meat: Summary data,[1] 1994–96

Item	1994	1995	1996
Shipment *(million dollars)*	46,545	47,276	47,093
Employment (1,000 *FTEs*)	114.0	120.8	123.3
Imports (*million dollars*)	1,502	1,792	2,081
Exports (*million dollars*)	2,855	3,142	3,441

[1] Data for SIC 2011, meat packing plants.

Source: U.S. shipments estimated by USITC; employment derived from U.S. Department of Labor; imports and exports derived from U.S. Department of Commerce.

States was the world's third leading importer of pork, after Japan and the EU, and the second leading exporter, after the EU. Imports of pork accounted for nearly 4 percent of consumption in recent years. Between 1994 and 1996, the United States was the world's third leading importer of meat of sheep (mutton and lamb meat), after the European Union and Japan; U.S. sheep meat exports have been negligible. Imports of sheep meat rose from 11 percent of consumption in 1994 to 20 percent in 1996.

Nature of trade barriers

Prior to the URA, U.S. imports of certain meats-mainly fresh, chilled, or frozen beef, mutton, and goat meat-were subject to quantitative restrictions under the Meat Import Act of 1979.[24] Such meats were also subject to voluntary restraint agreements (VRAs) negotiated under the Agricultural Act of 1956.[25] Under the URA, effective January 1, 1995, the Meat Import Act was repealed and almost all U.S. imports of fresh, chilled, or frozen beef (including veal) became subject to TRQs. As a result of the 1989 U.S.-Canada Free-Trade Agreement, the United States and Canada were generally prohibited from imposing quantitative restrictions on meat imports from each other. Under NAFTA, there is no limit to the quantities of the stipulated meat that enter from Canada and Mexico, subject to in-quota rates of duty.[26] U.S. imports of pig meat and lamb were subject to absolute import tariffs but not TRQs.

U.S. imports of meat are also subject to nontariff measures. The Federal Meat Inspection Act[27] generally limits U.S. imports of meat to those from countries that enforce inspection and other requirements that are at least equal

[24] Public Law 96-177, 93 Stat. 1291 (1979).

[25] 7 U.S.C. 1854.

[26] Additional U.S. Notes (#3) ch. 2, *HTS*, 1996, p. 2-1.

[27] 21 U.S.C. 661 and 21 U.S.C. 620.

to those applied at Federally-inspected establishments. Also, most U.S. imports of fresh, chilled, or frozen meat are limited to those from countries that the U.S. Secretary of Agriculture has found to be free of Foot-and-Mouth and Rinderpest diseases.

Market Access Provisions Under the URA

Under the URA, the United States converted quantitative restrictions under the Meat Import Act to TRQs to bring U.S. law into conformity with new U.S. obligations under the WTO Agreement on Agriculture. The general in-quota tariff for boneless frozen bovine meat is 4.4 cents per kilogram or 10 percent ad valorem, depending on the HTS heading. The base over-quota rate was 31.1 percent ad valorem in 1995 and is being reduced by 15 percent, in equal installments over 6 years, resulting in a bound rate of 26.4 percent ad valorem beginning January 1, 2000.

The United States agreed to an annual TRQ quantity of 656,621 mt (1.5 billion pounds), product weight, and an additional 20,000 mt (44.1 million pounds) each from Uruguay and Argentina when those countries met sanitary and phytosanitary requirements. Uruguay met the requirements in mid-November 1995[28] and Argentina met the conditions in 1997.[29] The 1996 in-quota allocations for other countries are show in the tabulation below:[30]

Country	*metric tons*	*1,000 pounds*
Australia	378,214	883,819
New Zealand	213,402	470,471
Japan	200	441
Other	64,805	142,871

These allocations remain fixed throughout the 1995-2000 URA implementation period.[31]

Restrictiveness of Barriers

For countries receiving the general rate of duty, the in-quota rates vary depending on the HTS subheading, but the bulk of the imports in 1996, as in

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[28] 60 F.R. 55440 (Nov. 1, 1995).

[29] 62 F.R. 34385 (June 26, 1997).

[30] In 1993, the maximum allowable imports of meat from Australia and New Zealand was 649.9 and 425.0 million pounds, respectively. Compared to 1993 levels, 1996 imports from Australia increased 36 percent, while imports from New Zealand increased just over 10 percent. For more information, please see additional U.S. Notes (#3) ch. 2, *HTS*, 1998, p. 2-1.

[31] Marilyn Moore, Agricultural Sector, USTR, telephone interview with USITC staff, Sept. 6, 1996.

other years, consisted of frozen boneless beef dutiable at 4.4 cents per kilogram. The ad valorem equivalent of that rate of duty in 1996 was 2.8 percent. The over-quota tariff rate for 1996 was 29.5 per cent ad valorem.

The Meat Importers Council of America (MICA), a trade association, contends that the over-quota rates of duty are so high that the TRQ system is as prohibitive to trade as were the absolute quotas under the Meat Import Act.[32] However, actual 1996 imports were: Australia, 400 million pounds; New Zealand, 369 million pounds; Uruguay, 43 million pounds; Japan, 13,000 pounds; other countries or areas, 73 million pounds. Overall, the quota fill was 896 million pounds, representing about 58 percent of the 1.5 billion pounds TRQ quantity.[33] The 1996 quotas were not filled largely because of high levels of U.S. domestic production, and because higher beef output in Canada led to increased imports of Canadian beef that year.

Uruguay essentially filled its quota in 1996 and 1997. In 1996, Uruguay requested reallocation of 10,000 mt (or 22.2 million pounds) for 1997. MICA estimates that Uruguay would have exported approximately 40,000 mt (product weight) of beef to the United States in 1996 had it not been restricted by the 20,000 metric ton TRQ.[34] At the public hearing on this investigation, the American Meat Institute supported the adoption of a policy to enable the reallocation of shortfalls in individual country TRQs.[35] Among major supplying countries, New Zealand had the highest ratio of imports to quota, at 78 percent in 1996. In 1995 (and again in 1997), New Zealand's ratio of imports to quota was 90 percent. Australia, the other leading supplier of the subject imports, had a ratio of imports to quota of 59 percent in 1995 and 48 percent in 1996.

U.S. imports of fresh, chilled, or frozen beef are expected to increase in 1998.[36] Indeed, New Zealand has reinstated a certification program for its meat exporters in anticipation of supplying all of the quantity (about 470 million pounds, product weight) eligible to receive the lower in-quota tariff rate as provided for under the URA.[37] The certification is to preclude any imports being dutiable at the over-quota rate.

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[32] Testimony of Rufus E. Jarman, Jr., of Barnes, Richardson, and Colben on behalf of the Meat Importers Council of America, hearing transcript for USITC investigation No. 332-371, *Cattle and Beef: Impact of the NAFTA and Uruguay Round Agreements on U.S. Trade*, Mar. 20, 1997, p. 66.

[33] USITC, *Cattle and Beef: Impact of the NAFTA and Uruguay Round Agreements on U.S. Trade*, investigation 332-371, USITC publication 3048, July 1997, table D-52, p. D-31.

[34] Supplemental written statement by the Meat Importers Council of America, Dec. 23, 1998, p. 1.

[35] Testimony statement of Leonard W. Condon, Vice President for International Trade, American Meat Institute, p. 3, submitted May 8, 1998.

[36] USDA, ERS, *Livestock, Dairy, and Poultry Monthly*, LDP-M-50, Feb. 19, 1998, p. 5.

[37] USITC staff interview with officials of the New Zealand Embassy in Washington, D.C. and the New Zealand Meat Producers Board, Feb. 7, 1998.

Previous Work

In the most recent report in this series,[38] the Commission estimated the overall effect of removing tariffs and quotas in the meat-packing sector to be a welfare gain of $185 million. Almost all of the meat imports affected by the VRAs, 98.5 percent, fell under a single tariff line for boneless frozen bovine meat.[39] Of these imports, those from Australia and New Zealand accounted for 87.4 percent of all U.S. imports of boneless frozen bovine meat.

The Effects of Liberalization

As indicated in the above discussion, the total quota level for meat TRQs was not filled in 1996 and fell well below what could be considered the binding range, i.e., 58 percent. Furthermore, on an individual country basis, Uruguay was the only country to fill its quota. However, Uruguay only accounts for 3 percent of the total quota allotment. Consequently, it is unlikely that the elimination of the TRQs in 1996 would have had a significant effect on the overall price of meat imports subject to the TRQs. Similarly, the effects on U.S. net welfare, domestic output, imports and exports are all likely to have ranged from negligible to small, had the TRQs been eliminated.[40]

Sugar and Sugar Containing Products

The sugar and sugar-containing products (SCP) sector consists of three 4-digit SIC categories: raw cane sugar (2061), cane sugar refining (2062), and beet sugar (2063). Of total U.S. consumption of sweeteners, sugar has lost share to corn-based and low-calorie sweeteners since the mid-1980s. However, the industry's contribution to overall agricultural GDP and employment has remained important. For example, the 1996 value of shipments from the sugar sector amounted to almost $7 billion, comprised of about $2.8 billion from beet sugar, $2.5 billion from cane sugar refining, and the remaining $1.6 billion from raw cane sugar (table 4-4), while in the same year the sector provided 16,400 full-time jobs (down from 18,600 in 1994). The United States is also important in world sugar production and trade. In 1996, the United States produced 6.6 million mt of sugar, representing about 6 percent of world sugar

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[38] The restrictiveness of the VRAs negotiated in 1993 were described in USITC, *The Economic Effects of Significant U.S. Import Restraints: First Biannual Update*, investigation No. 332-325, USITC publication 2935, Dec. 1995, pp. 4-11 to 4-13.

[39] HTS 0202.30.60, "Meat of bovine animals, frozen: Boneless: other," hereinafter referred to as "boneless frozen bovine meat." This tariff line describes industrial beef products used as inputs into other food products (e.g., restaurant hamburgers).

[40] The effects of tariff liberalization for this sector were not considered because the in-quota tariff was not significant, as defined in chapter 1.

Table 4–4
Sugar: Summary data, 1994–96

Item	1994	1995	1996
Shipments (*million dollars*):[1]			
Raw cane sugar	1,527	1,571	1,634
Beet sugar	2,519	2,717	2,798
Cane sugar refining	2,450	2,441	2,546
Employment (*FTEs*):[1]			
Raw cane sugar	6,400	5,300	5,000
Beet sugar	8,100	8,500	8,300
Cane sugar refining	4,100	3,400	3,100
Imports (*million dollars*):			
Raw cane sugar	531	651	1,051
Refining sugar	43	34	37
Exports (*million dollars*):[2]	7	150	95

[1] The three subsectors depicted in the table correspond to 4–digit SIC categories: raw cane sugar (SIC 2061), cane sugar refining (SIC 2062), and beet sugar (2063).
[2] The value includes exports of cane and beet sugar.

Source: U.S. Department of Commerce.

production, while imports—mainly raw cane sugar—were valued at $1.1 billion. During 1994-96, about 23 percent of domestic sugar consumption was imported.[41]

Nature of Trade Barriers

Domestic sugar prices in the United States are set significantly higher than world price levels through a system of nonrecourse loans and import restrictions.[42] Nonrecourse loans[43] are made to millers and processors who agree to pay the growers the USDA-established minimum price support levels based on loan rates for cane sugar and beet sugar.[44] Because U.S.

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[41] USDA, ERS, *Sugar and Sweetener Situation and Outlook Report*, June 1996, p. 42.

[42] Greater than 80 percent of all sugar produced in the world has a predetermined destination under a specific management program. The world price of sugar typically refers to the remaining or residual sugar supply that is traded on the open market.

[43] Loans are recourse when the level of the TRQ is at or below 1.5 million short tons (raw value); if the quota is raised above that level, the loans become nonrecourse.

[44] For a discussion of U.S. sugar programs, see USDA, ERS, *Sugar: Background for 1995 Farm Legislation*, Agricultural Economic Bulletin No. 711, Apr. 1995; and USDA, ERS, *Provisions of the Federal Agriculture Improvement and Reform Act of 1996*, Agricultural Information Bulletin, No. 729, Sept. 1996, pp. 20-22.

consumption exceeds production, imports are required to make up the difference. However, unlimited imports of low-priced sugar from the world market would force domestic prices below the loan rate and result in large forfeitures of sugar to the CCC. Thus a system of TRQs is used to restrict the volume of sugar imports.

The TRQ for raw cane sugar is allocated on a country-by-country basis among sugar exporting countries in proportion to their average market share of U.S. raw sugar imports during 1975-81, exclusive of the highest and lowest years. The TRQ for refined sugar is on a global first-come, first-served basis. In addition, there are three quota-exempt programs for sugar administered by the U.S. Department of Agriculture (USDA). They are the refined sugar re-export program, the sugar-SCP products re-export program, and the polyhydric alcohol program. The first two programs provide for access to quota-exempt sugar (at world prices), as long as the sugar refined or the product manufactured is subsequently exported. The polyhydric alcohol program allows for access to world-price sugar to use in the manufacture of polyhydric alcohol for non-food industrial processes. Sugar imported under these programs must be entered under licenses issued by the USDA.

Apart from the URA, the other major change since the last update of this report was the elimination of the domestic marketing allotments on sugar, high fructose corn syrup, and crystalline fructose under the Federal Agriculture Improvement and Reform (FAIR) Act of 1996. Import restrictions and commodity loans are the remaining government tools for supporting the price of sugar. In FY 1997 (October 1996), The USDA added a new element to administering the TRQ in an effort to stabilize the level of sugar supplies and stocks to U.S. sugar users. Under the new system, an initial allocation of raw sugar TRQs was announced for the coming year, with the possibility of additional 3,200 mt tranches for January, March, and May of the fiscal year. These additional tranches were made available if the stock-to-use ratio fell under a certain level, and were allocated among current quota holders.[45]

The price of sugar is also supported by quotas on imports of certain SCP, which prevent imports of these products from disrupting the price-support programs for sugar cane and sugar beets. These quotas are applied to 5 categories of products: (1) blended syrups containing sugar, not in retail containers; (2) edible preparations containing over 65 percent sugar, not in retail containers; (3) sweetened cocoa powder; (4) flour mixes and doughs containing over 10 percent sugar, except doughs in retail containers; and (5) edible preparations containing over 10 percent sugar.

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[45] http://www.ustr.gov/releases/1997/03/97-19.html and USDA Press Release No. 0440.96, Aug. 13, 1996.

Market Access Provisions Under the URA

Implementation of the URA in January 1995 did not change the basic features of the U.S. sugar programs, nor did it change significantly market access for sugar and SCPs. The TRQ system (originally implemented in the Food, Agriculture, Conservation, and Trade (FACT) Act of 1990) continued under the 1996 FAIR Act, and the lower duty applicable to in-quota imports was not changed.

Upon implementation of the URA, the over-quota duty rate for raw sugar was increased by 1 cent—from 16 cents per pound (raw value) to 17 cents (approximately 150 percent ad valorem equivalent). This rate is being phased down by the minimum 15 percent over the six-year implementation period, to reach 14.45 cents per pound (approximately 130 percent ad valorem equivalent) in the year 2000.[46] Raw sugar imported under the TRQ level (HTS 1701.11.10) enters with a "General" duty of approximately 0.625 cent per pound; however, imports from countries that benefit from special agreements under the GSP, NAFTA, CBERA, and ATPA, face a duty rate of "Free." This accounts for all quota holders under the TRQ except Argentina, Australia, Brazil, Gabon, and Taiwan. Under the URA, over-quota imports of raw sugar (which enter under HTS subheading 1701.11.50) are assessed a duty of 16.27 cents per pound (approximately 150 percent ad valorem equivalent) for all countries in 1998 under the general rate of duty, and 14.84 cents per pound (approximately 135 percent ad valorem equivalent) for Mexico. The TRQ quantity is established annually by the Secretary of Agriculture and, under the provisions of the URA, the quota quantity can not be less than 1.117 million mt of raw sugar and 22,000 mt of refined sugar.

Additional TRQ's exist for five categories of SCP, converted under the URA in 1995 from absolute quotas. For these products, the United States agreed to replace then-existing section 22 quotas with TRQs that would provide a level of protection comparable to the section 22 quotas. For SCP, within-quota tariff rates for these products remained unchanged at between 6 and 12.2 percent ad valorem, whereas the over-quota tariff rates are based on the tariff equivalent for refined sugar and are being reduced by 15 percent over the 6-year URA implementation period (from 150 to 130 percent ad valorem equivalent). The TRQ quantity is 70,796 mt per year from countries other than Mexico. The TRQ for imports from Mexico started at 12,791 mt in 1994 and increases to 16,203 mt in 2002; no tariffs will apply to imports from Mexico beginning in 2003.

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[46] Under the URA implementing legislation, fees imposed under section 22 of the Agricultural Adjustment Act of 1933 were eliminated and converted to tariffs. In 1994, the only fee (tariff) on sugar imposed under section 22 authority of the Agricultural Adjustment Act of 1933 was a 1-cent-per-pound fee on refined sugar imports which, effective January 1, 1995, was replaced by a new tariff on sugar.

Restrictiveness of Barriers

The 1996 TRQ levels were set according to the URA schedule. For raw sugar, the level was set at 2.4 million mt, while the over-quota tariff was 16.58 cents per pound or 150 percent ad valorem equivalent (the in-quota rate was 0.625 cent per pound). For SCP, the TRQ was established at 89,641 mt. Under the TRQs in place in 1993-the base year in the last update of this report-the in-quota quantity for sugar was 2.5 million mt, while for SCPs, the combined section 22 quotas amounted to 85,274 mt.

Because of the wide margin between domestic and world prices for raw sugar,[47] the TRQs for sugar and SCP are virtually filled each year, indicating that the TRQs are restrictive. For example, the total TRQ allocated for the period October 1, 1995 to September 30, 1996[48] was 2,413,168 mt., while actual imports amounted to 2,308,001 mt (a fill rate of 96 percent).[49] However, according to the rules under which the TRQs are administered, a country not filling its quota may carry it forward to the next TRQ period. For example, in the 1995/96 TRQ period, the Philippines had a balance of 19,451 mt of quota that remained unfilled (a fill rate of 92.9 percent). This quantity could then be imported over its TRQ limit for 1996/97.

Previous Work

Several studies have examined the effects of TRQs on the sugar sector. In the 1995 report, the USITC analysis estimated an overall gain to the U.S. economy due to the liberalization of the restraints on sugar and SCP of approximately $661 million.

According to Public Voice, the sugar program acts like a regressive tax on consumers, adding approximately $1.17 billion a year to the cost of boxed and bagged sugar and processed foods at the retail level.[50] It is estimated that consumers would receive a near-term benefit of about $500 million annually from elimination or significant reform of the sugar program.[51] A 1993 report by the General Accounting Office estimated the sugar program to cost U.S. consumers $1.4 billion annually.[52]

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[47] In 1996, the world raw sugar price, as reported on the NY Coffee, Sugar, and Cocoa Exchange, was 12.24 cents per pound. In the same year, the U.S. domestic price was 22.4 cents per pound, a difference of over 10 cents per pound.

[48] TRQs are administered on a fiscal year basis.

[49] USDA, ERS, *Sugar and Sweetener, Situation and Outlook*, May 1998, table 17, p. 37.

[50] Public Voice is an advocacy organization that represents consumer interests on food and agricultural issues. Public Voice, "The Sugar Program and Consumers: An Update," Feb. 12, 1998.

[51] John Schnittker, Coalition for Sugar Reform, transcript of hearing, May 12, 1998, Washington, DC.

[52] General Accounting Office, *Sugar Program: Changing Domestic and International Conditions Require Program Changes*, GAO/RCED-93-84, Apr. 1993.

Boyd, Doroodian and Power state that the benefits to various sectors of the U.S. economy in discontinuing the sugar quota policy outweigh the losses for the economy as a whole.[53] Their results show that benefit—amounting to about $254,000 annually—are accrued in all sectors of the economy with a few small exceptions.[54] The authors report that the largest losses are realized by the combined agriculture and forestry sectors, by an amount less than one percent of the sector's production.

Model Specification

The USITC CGE model was used to estimate the effects of restraints on sugar and SCP imports on the U.S. economy. The model details two liberalized sectors (sugar processors and SCP), one upstream sector (sugar crop), one downstream sector (bakery products and cereal breakfast foods), and nine aggregate sectors representing the remainder of the U.S. economy. Removal of the sugar TRQs, with all domestic policies remaining would result in a large number of loan defaults by sugar processors. To avoid this outcome, the model simulates the joint removal of the U.S. TRQs and the elimination of domestic price-support policies. The effects of both the U.S. TRQs on sugar and SCP in 1996 are estimated using an equivalent ad valorem tariff. The tariff equivalent for sugar was calculated by using the price-gap method. The tariff equivalent for the sugar-containing product sector was calculated by using the cost-share method, derived by multiplying the estimated tariff equivalent for sugar by the average sugar-cost share of SCP covered by the quotas. The TRQs on both sectors were removed simultaneously to prevent the market distortions that would arise from removing only one quota while leaving the other intact.[55]

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[53] Roy Boyd, Khosrow Doordian, and Amy Power "The Impact of Removing the Sugar Quota," *Journal of Policy Modeling* 18(2), 185-201, June 1996.

[54] Exceptions include agriculture production, petroleum refining, and the financial industry. Ibid., p. 199.

[55] The 1996 ad valorem tariff equivalent for raw cane sugar-74.9 percent-was calculated by taking the difference between the U.S. price and the world price inclusive of transportation costs and import duties; this difference was then stated as a percentage of the world price. In 1996, the world price for sugar was 26.98 cents per kilogram and the U.S. price was 49.39 cents per kilogram. The average transportation charges from CBERA countries to the U.S. East Coast were 7.85 cents per kilogram. The sources for these data were the U.S. Department of Commerce. Using the cost-push method, the tariff equivalent for sugar-containing products was estimated to be 3.17 percent. It should be noted that the SCP model sector includes products that are not covered by the TRQs. Therefore, estimated tariff equivalent reflects the trade weight of restricted products within the broader group.

The Effects of Liberalization

The overall effect of liberalizing both sectors, sugar and SCP, is a net welfare gain of approximately $986 million if the quotas had been removed in 1996. Contributing to the gain in net welfare was the decline in prices in the sugar sector by about 8.6 percent.

Table 4-5 presents estimates of the effects of liberalization on domestic employment, output, and trade. Direct effects on the sugar processors industry from tariff removal are a reduction in output of $556 million and a loss of 1,830 FTE jobs. Both figures represent a 7.2 percent fall from original 1996 levels. Imports by sugar processors increase by $601 million, an increase of 49.2 percent, while exports decrease by $15 million, a fall of 4.9 percent.

The significant upstream sector of sugar crops is affected, with losses of $186 million in output and 260 FTE jobs, or 7.1 percent, respectively. There are modest reductions in imports and exports, with each accounting for change of over 7 percent from 1996 values. The downstream sector of bakery products and cereal breakfast foods benefits from tariff reduction, with a $23 million increase in output and an additional 170 FTE jobs. Both figures represent an increase of 0.1 percent over 1996 numbers. Trade effects for other reference sectors are negligible.

Sugar-containing products also experience a reduction in output ($58 million) and a loss of 200 FTE jobs. Both figures represent a less than 1-percent fall from original 1996 levels. Imports of sugar-containing products increase by $113 million, an increase of 2.8 percent, while exports increase by $3 million, a change of less than 0.1 percent Most of the products in the SCP sector are not covered by the quotas. In many cases, both quotas have diverted U.S. imports toward SCP that are not subject to the quotas.

Cotton

During marketing years 1993/94 - 1995/96, the United States produced about 19 million bales[56] of cotton annually,[57] of which U.S. textile mills used only about 11 million bales and an average of 8 million bales were exported. These exports accounted for close to 30 percent of world trade in raw cotton, making the United States the world's largest raw cotton exporter, by a substantial margin.[58] Although the United States is a major cotton exporter, a small volume of imports enter the country each year. Table 4-6 presents data on production and trade in cotton for the years 1994-96. In 1996, the value of production was estimated at $6.4 billion, with exports of $2.7 billion. Imports

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[56] A bale of cotton weighs 460 pounds.

[57] This number represents about 20 percent of global production.

[58] U.S. exports are followed by Uzbekistan, with about 19 percent. Kent Lonclos, National Cotton Council, transcript of hearing, May 12, 1998, Washington, DC.

Table 4–5
Sugar: Economic effects of tariff–rate quota removal, changes in FTE, value and percent, 1996

Sector	Employment		Output		Imports		Exports		Composite Price
	FTE[1]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Percent*
Liberalizing sectors:									
Sugar processors	–1,830	–7.2	–556	–7.2	601	49.2	–15	–4.9	–8.6
Sugar–containing products	–200	–0.1	–58	–0.1	113	2.8	3	(3)	0.4
Upstream sector:									
Sugar crops	–260	–7.1	–186	–7.1	(4)	–7.2	(4)	–7.2	(3)
Downstream sector:									
Bakery products and cereal breakfast foods	170	0.1	23	(3)	–3	–0.3	1	0.1	–0.2
Rest of the U.S. economy:									
Agriculture, forestry, and fisheries	–90	(3)	–11	(3)	–1	(3)	–3	(3)	(3)
Mining	–20	(3)	–2	(3)	1	(3)	–1	(3)	(3)
Construction	–20	(3)	(4)	(3)	(5)	(5)	(5)	(5)	(3)
Nondurable manufacturing	130	(3)	38	(3)	7	(3)	4	(3)	(3)
Durable manufacturing	–320	(3)	–52	(3)	62	(3)	–32	(3)	(3)

Transportation communications, and utilities	–140	([3])	–22	([3])	5	([3])	–9	([3])	([3])
Wholesale and retail trade	750	([3])	46	([3])	([5])	([5])	([5])	([5])	([3])
Finance, insurance, and real estate	370	([3])	128	([3])	2	([4])	–1	([3])	([3])
Other services	1,440	([3])	209	([3])	6	([4])	1	([3])	([3])

[1] Full–time equivalents.
[2] In millions of dollars in base year prices.
[3] Change less than 0.05 percent.
[4] Change less than $500,000.
[5] Nontraded sector.

Source: USITC staff estimates.

Table 4–6
Cotton: Selected U.S. sector data, 1994–96

Item	1994	1995	1996
Acreage (1,000):[1]	13,720	16,931	14,634
Trade data *(million dollars)*			
Production	6,795	6,530	6,194
Exports	2,653	3,681	2,715
Imports	7	10	283
Trade balance	2,646	3,671	2,432

[1] Acreage data are used instead of employment data and production data are used instead of shipment data because they are more meaningful for an agricultural commodity.

Source: Compiled from official statistics of the U.S. Department of Agriculture.

generally represent less than one percent of domestic consumption. However, the share of imports was significantly higher in 1996, due to a sharp drop in area harvested and production in that year, and an increase in imports.

Nature of Trade Barriers

The 1985 Food Security Act provides the basis for most of the guiding principles and provisions of the current cotton program.[59] Introduced in the 1985 Act, the marketing loan program (and the competitive adjustment procedures to make the marketing loan more effective) supported the significant turnaround in the overall health of the U.S. cotton economy since the mid-1980s.[60] The cotton provisions of the 1990 FACT ACT were designed to keep U.S. cotton competitive in world and domestic markets, and to maintain a better balance between production and total use by giving producers more flexibility to respond to market prices. The FACT ACT provisions were mostly continued in the FAIR Act of 1996, with minor modifications to the loan program and establishment of program expenditure limits.[61]

Cotton imports are controlled by quotas of which there are three types: TRQs,[62] limited import quotas, and special import quotas.[63] The TRQs

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[59] USDA, ERS, *Cotton: Background to the 1995 Farm Legislation*, Agricultural Economic Report, No. 706, Apr. 1995, p. iii.

[60] Prior to 1985, the upland cotton loan rate placed an artificial floor under U.S. prices, which encouraged foreign production.

[61] USDA, USD/ERS, "Provisions of the 1996 Farm Bill," *Agricultural Outlook*, Apr. 1996, p. 9.

[62] The TRQs replaced quotas previously imposed under section 22 quotas of the Agricultural Adjustment Act.

[63] Both the special import quota and the limited global import quota are considered in-quota quantities for purposes of various trade agreements, so these imports are not subject to over-quota tariffs.

are administered on a first-come, first-served basis and are allocated to specific countries based on historical shipments. Quotas are also allocated for different staple lengths. Limited import quotas were established in the 1996 FAIR Act, under which a limited global import quota for upland cotton is authorized whenever the average monthly price of the base quality of upland cotton in designated spot markets exceeds 130 percent of the average price in these markets for the preceding 36 months. The quota amount is equal to 21 days of domestic mill consumption of upland cotton (seasonally adjusted) in the most recent 3 months for which data are available.[64] Special import quotas for upland cotton apply when, for any consecutive 10-week period, the weekly average price quotation for the U.S.-Northern Europe price exceeds the Northern Europe price by more than 1.25 cents per pound. The quota is equal to 1 week's domestic mill consumption of upland cotton at the seasonally adjusted rate (or about 225,000 bales, at the current annual rate of consumption) for the most recent 3 months for which data are available.[65]

Market Access Provisions Under the URA

The URA did not require any modifications in the domestic aspects of the U.S. cotton program, and overall domestic support levels for cotton were not reduced. However, the URA required the United States to convert its section 22 quotas to TRQs. In-quota imports became subject to existing tariff rates, while over-quota cotton tariffs were set at to 36.9 cents per kilogram for cotton and 9.2 cents per kilogram for cotton waste. These tariffs are being reduced by the minimum required 15 percent in equal annual installments over the 6-year implementation period, to 31.4 cents per kilogram (approximately 17 percent ad valorem equivalent) and 7.8 cents per kilogram, respectively, by year 2000.[66]

Under the minimum access provisions of the URA, in-quota imports were set at 3 percent of a 1986-88 base period of U.S. domestic consumption, rising to 5 percent of base-year consumption by the end of the implementation period. The United States established a TRQ for cotton of 237,980 bales that is being increased to 369,634 bales by the year 2000 (table 4-7). The additional quotas are allocated to individual countries in the same proportions as quota allocations in 1995. Mexico is reserved 10,000 mt. of the TRQ in accordance with NAFTA.

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[64] USDA, ERS, *Provisions of the Federal Agriculture Improvement and Reform Act of 1996,* Agricultural Information Bulletin, No. 729, Sept. 1996, p. 12.

[65] Ibid.

[66] USDA, FAS, *Cotton Factsheet, An Overview of the Agricultural Provisions of the Uruguay Round,* http://www.fas.usda.gov/itp/policy/gatt/cotton.html.

Table 4–7
Cotton: Quota amounts under the URA

Year	Quota amount
	(480–lb. bales)
1995	237,980
1996	269,711
1997	301,442
1998	333,173
1999	364,904
2000–2002	369,634
Percent change, 1995–2002	55

Source: *URA Agreement on Agriculture*

Restrictiveness of Barriers

In 1993, section 22 quotas limited imports of cotton to about 125,000 bales of cotton, of which only 6,000 bales were imported, indicating a fill rate of only 5 percent. The low fill rate is attributable largely to the fact that cotton is a bulky commodity, often requiring large volume transactions to cover transportation and handling charges. Thus, the small import quota quantities allotted to individual countries are generally too small to be commercially viable. The absolute import quotas under section 22 were converted to tariff rate quotas effective in 1995. These TRQs were also allocated country-by-country, with imports from individual countries on a first-come, first-served basis. Thus, the within-quota amounts available to individual countries were not commercially viable. However, poor domestic crops and low production in 1995 resulted in increasing domestic and world prices which triggered a mechanism by which the U.S. Department of Agriculture announced special import quotas. These revolving weekly quotas are for approximately 200,000 bales each and cover upland cotton (virtually all cotton except extra-long staple cotton). The increased imports allowed under these special import quotas are dutiable at in-quota tariff rates. The 408,000 bales imported into the United States in 1995 and the 403,000 bales imported in 1996 entered almost entirely under the special import quotas, as the United States declared to the WTO for 1995 and 1996. Of the four TRQ fill rates for the WTO quotas, three were zero and one was 2 percent (for HTS item 5201.00, not carded or combed cotton with a staple length under 1-1/8 inches).

Previous Work

In the Commission's 1995 report, the effects of the quotas were estimated by means of an equivalent ad valorem tariff based on the price-gap method. The analysis found that the section 22 quotas were applied to three distinct categories of cotton, all roughly equivalent in size: Orleans/Texas "B" index cotton; Memphis East Grade A cotton; and better than Grade A cotton. The

analysis found that the section 22 cotton quotas went largely unfilled because the quantities allotted were generally too small to be commercially viable for foreign exporters. Consequently, the overall effect of removing the cotton quota was a welfare gain of 0.3 million dollars.

The 1995 report expected that the TRQs would continue discouraging U.S. imports, because (1) the tariff rate for above-quota cotton is prohibitive, (2) there is continued uncertainty involved in importing a product which may or may not be within quota upon arrival at U.S. Customs, and (3) some of the country-specific quota allotments are not commercially viable.

The Effects of Liberalization

It is difficult to determine the extent to which cotton quotas are restrictive, because the quantity restrictions depend on market conditions. That is, when the import restrictions become binding, domestic prices move up relative to world prices which, in turn, triggers a relaxation of the quotas. Because of these quota adjustments and the resulting uncertainty in the measurement of fill rates and quota restrictiveness, the effects of cotton quotas on domestic output, employment, and prices in 1996 were indeterminate.

Tobacco and Tobacco Products

Unmanufactured leaf tobacco and tobacco products consist of five 4-digit SIC categories: unmanufactured tobacco (0132), cigarettes (2111), cigars (2121), chewing and smoking tobacco and snuff (2131), and tobacco stemming and redrying-processed tobacco (2141). The United States is a dominant world producer and consumer of tobacco and tobacco products with both U.S.-produced leaf and cigarettes regarded as the highest quality products produced worldwide. Tobacco and tobacco products subject to the TRQ include leaf tobacco (mainly flue-cured and burley), and manufactured tobacco products, used in the production of cigarettes consumed in the United States.[67]

U.S. production of unmanufactured tobacco in 1996 amounted to $3.2 billion, 93 percent of which was flue-cured and burley tobacco, representing about 10 percent of world production (see table 4-8).[68] The United States

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[67] The harmonized system categories include: (2401.10.63) unmanufactured tobacco (whether or not threshed or similarly processed), tobacco refuse, not stemmed or stripped; (2401.20.33) not stemmed or threshed partly or wholly stemmed/stripped; (2401.20.85) threshed or similarly processed; (2401.30.33) tobacco stems not cut, ground or pulverized; (2401.30.35) stems cut, ground or pulverized; (2401.30.37) other includes cut, ground and pulverized; (2403.10.60) manufactured and manufactured tobacco substitutes, reconstituted tobacco, tobacco extracts and essences; (2403.91.45) homogenized and reconstituted tobacco; (2403.99.60) extracts and essences.

[68] Estimated by USITC staff using data from USDA, FAS *Tobacco: World Markets and Trade*, Oct. 1998.

Table 4–8
Tobacco: Summary data, 1994–96

Item	1994	1995	1996
Production (*million dollars*):			
Unmanufactured Tobacco	2,901	2,973	3,179
Cigarettes	24,200	26,967	28,247
Employment (*FTEs*):			
Unmanufactured Tobacco	4,000	4,000	4,000
Cigarettes	16,400	14,400	14,700
Imports (*million dollars*):			
Unmanufactured Tobacco	613	550	923
Cigarettes	73	52	38
Exports (*million dollars*):			
Unmanufactured Tobacco	1,303	1,400	1,390
Cigarettes	4,966	4,771	4,737

Source: U.S. production estimated by USITC; employment derived from U.S. Department of Labor; imports and exports derived from U.S. Department of Commerce.

exported $1.3 billion of unmanufactured tobacco in 1996, amounting to 43 percent of production, while imports totaled $613 million the same year. Cigarette production in 1996 totaled over $38 billion, with employment totaling 14,700 full-time workers. U.S. exports of cigarettes dropped to $4.7 billion in 1996 due to increased investment and production by U.S. manufacturers in foreign markets.

U.S. production of tobacco is subject to quantity restrictions and price level support. A national tobacco marketing quota, approved by farmer referendum, is based on domestic cigarette manufacturers purchasing intentions plus expected export demand. Lots of tobacco which do not receive bids above the support price are guaranteed by a system of non-recourse loans.[69] The tobacco program effectively elevates the price of U.S. tobacco leaf above world levels and makes imported leaf more competitive in the U.S. market, even allowing for the superior quality of U.S.-produced leaf. Prices for U.S. flue-cured and burley average about $1/kg higher than quality leaf produced in other countries.

Recent world consumption trends indicate strong and increasing demand for American-style cigarettes (a lighter blend of flue-cured, light air-cured burley), and oriental tobacco has replaced other blend types of cigarettes. Consequently, tobacco growing countries have shifted production to "American-blend" types of tobacco with significant improvement in quality, particularly for flue-cured types produced in Brazil and Zimbabwe, and

[69] The system is financed by the CCC, with no-net cost administrative costs funded by a marketing assessment on tobacco producers and buyers for each pound of tobacco marketed. See Jasper Womach, *Tobacco Price Support Program: An Overview of the Program*, found at http://www.econ.ag.gov/briefing/tobacco/crs1.htm, and Tom Capehart, *The Tobacco Program–A Summary and Update* found at: http://www.econ.ag.gov/briefing/tobacco/program2.htm.

burley grown in Malawi. With increased levels of foreign tobacco production and quality, U.S. cigarette manufacturers have increasingly sourced leaf from foreign producers.

U.S. imports of unmanufactured leaf tobacco consequently increased dramatically in the early 1990's, rising over 150 percent during 1990-1992. In response to the rise in tobacco imports, an amendment to the Omnibus Budget Reconciliation Act of 1993 was attached by Senator Ford of Kentucky requiring all domestically produced cigarettes to contain at least 75 percent domestically produced tobacco, whether the products were for domestic consumption or export.[70] When the URA was adopted, this rule was deemed WTO/GATT inconsistent, which led to the establishment of the TRQ in 1995.

Nature of Trade Barriers

The TRQ was established by Presidential Proclamation, effective September 13, 1995, and applies to imports of unmanufactured leaf tobacco and manufactured tobacco used in the production of cigarettes destined for domestic consumption, mainly flue-cured and burley tobacco.[71] TRQ allotments were negotiated with supplier countries, based on production levels and market share, which specify the maximum quantity that may be imported at a low tariff rate during the quota-year (September 13 through September 12, the following year). The U.S. Customs Service tracks the quantity of imports from the countries of origin on a first-come, first-served basis. Other than the country-by-country allotments, no quota import rights or licenses are issued to exporters or importers. In the tabulation below, the total 1996 TRQ quantity amounted to 150,450 mt, with Brazil accounting for over 53 percent of the total.

1996 Tobacco TRQ

Country	Quantity (*metric tons*)
Brazil	80,200
Argentina	12,000
Malawi	12,000
Zimbabwe	12,000
EU	10,000
Guatemala	8,500
Thailand	7,000
Philippines	3,000
Chile	2,750
Other countries or areas	3,000

[70] The effective date of the domestic content rule was January 1, 1994. Cigarette producers not complying with the 75 percent provision would be fined a domestic market assessment. USDA, ERS, "U.S. Tobacco Import Update," *Tobacco Situation and Outlook Report*, Sept. 1996.

[71] The proclamation also abolished duties on oriental, and cigar binder and filler tobacco.

Market Access Provisions Under the URA

Implementation of the URA in January 1995 resulted in the abolishment of the domestic content rule and the adoption of the TRQ. Provision for expanding market access was only granted to Guatemala in the amount of 1,125 mt. The 1996 under-quota duties for unmanufactured tobacco (H.S. 2401), the bulk of imported tobacco subject to the TRQ, ranged from 26.7 cents/kg to $1.13/kg, while the current 1999 rates range from 24.6 cents/kg to $1.01/kg. All over-quota imports are subject to a 350 percent ad valorem duty, though a draw-back provision exists for over-quota imports which are re-exported in cigarettes. Canada, Mexico and Israel are not subject to the quantitative restrictions set forth in the TRQ because of superceding trade agreements.

Restrictiveness of Barriers

The establishment of the TRQ has increased access to the U.S. market for tobacco products used in the manufacture of cigarettes. U.S. imports of unmanufactured tobacco increased 51 percent during 1994-96, after the adoption of the TRQ. Under the previous domestic content regime, domestic producers were assessed penalties for content in excess of 25 percent whether the products were consumed domestically or exported. The present TRQ quantity restrictions apply only to cigarettes produced and consumed domestically. Moreover, the quantities allotted to tobacco exporting countries were set at high levels, such that the total quota has never been filled. Only Argentina has effectively filled its allotment in each of the 3 quota years since the inception of the TRQ regime. Brazil—the largest allotment holder—has never filled its quota. For some countries—Argentina, Thailand, and Malawi—the TRQ may be restraining trade during some quota years, however for most suppliers of leaf tobacco to the United States, the TRQ has actually increased access relative to the previous domestic content requirement regime.

Tobacco TRQ Percentage Fill Rates[1]

Country/Quota–year	1996	1997	1998
Argentina	99.9	99.9	99.6
Brazil	68.4	85.9	53.3
Chile	99.4	84.3	58.5
EU	69.3	23.2	31.4
Guatemala	23.3	46.9	50.9
Malawi	99.9	99.9	89.2
Philippines	6.0	9.6	0.3
Thailand	99.9	99.9	48.3
Zimbabwe	45.6	53.0	25.5
Other countries	100	100	99.9

[1] U.S. Customs Service.

Previous Work

To date, no previous analysis of this TRQ has been conducted. However, one study from 1997 did examine the effects of the U.S. domestic content rule. The welfare and trade effects of the U.S. domestic content requirement were examined by Beghin, Brown and Zaini, using a simulation model.[72] The analysis indicated, as the content policy intended, a significant substitution effect in favor of U.S.-grown tobacco. In all scenarios examined, an increase in the domestic content ratio yielded a significant increase in demand for domestically-produced tobacco and a substantial reduction of imports of penalized foreign-produced tobacco. The study also suggested a small decrease in U.S. cigarette output and domestic demand, and a slight reduction in demand for U.S. cigarette exports due to the higher prices of U.S.-grown tobacco caused by the policy.

The Effects of Liberalization

As indicated in the discussion above, the total quota level for tobacco TRQs was not filled in 1996. The overall fill rate was 71 percent, well below what could be considered the binding range. As noted in chapter 1, nonbinding quotas in general do not affect import prices. However, assessing the effect of the tobacco TRQs becomes difficult for a number of reasons. First, the quotas for Argentina, Malawi, Thailand, Chile and certain other countries were filled in 1996. The share of the total quota allotment for these countries amounted to 24 percent. Therefore, there is a likelihood that the restricted import supply from these countries could have had some effect on overall import prices in 1996. The extent of the effect will depend on the size of the market share for bound imports and on the substitutability between imports from countries with binding and nonbinding quotas.[73]

In addition, tobacco leaf is a highly variable product with respect to quality. In constructing a tariff equivalent using the price-gap method, it is crucial that price comparisons between U.S. prices and prices of exports to nonrestricted markets be made using the same quality of tobacco. However, one of the shortcomings of this approach is that the United States imports a differentiated product from that imported by other countries. Therefore, any observed price gap between domestic and imported tobacco is likely to be made up of quality differences which cannot be explicitly accounted for with available data.

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[72] John C. Beghin, A. Blake Moore, M. Hasyim Zaini, "Impact of Domestic Content Requirement in the U.S. Tobacco and Cigarette Industries," *Agricultural Economics*, vol. 15, no. 3 (Jan. 1997) pp. 201-12.

[73] Another factor attenuating the effect of the TRQs is the use of duty drawbacks for tobacco imports that are later exported as cigarettes. Any in-quota and over-quota duties paid by importers for tobacco subject to the TRQs are refunded when the products are exported.

Commission staff therefore determined that observed price gaps between domestic and imported tobacco would be misleading in assessing the effects of the tobacco TRQs. The impact of eliminating quotas in 1996 has, therefore, not been determined.

Peanuts

Since 1934, the United States has had programs designed to increase or stabilize domestic peanut prices. Edible peanuts produced by domestic quota holders within the national poundage quota may be placed on loan with the CCC at the quota support price, and quota peanuts sold into the domestic market tend to sell at prices close to the quota support price. Peanuts grown in the United States by non-quota-holding farmers and by quota holders in excess of their poundage quotas (known as "additional" peanuts) cannot be sold into the edible market, but must be exported, sold into the domestic crush market, or placed under loan with the area growers' association at a substantially lower support price. Some elements of the peanut program were modified by the 1996 Federal Agricultural Improvement and Reform Act (the 1996 FAIR Act, which establishes U.S. farm policy through 2001/02), although the basic structure remains in place.

Nature of Trade Barriers

In support of these programs, import limitations have been in effect since 1953. These limitations were carried out under the authority of section 22 of the Agricultural Adjustment Act until 1995, when they were replaced by a tariff-rate quota, as required by the Uruguay Round Agreements. The section 22 import quota was 1.7 million pounds, or 775.18 mt (shelled basis), amounting to one-tenth of 1 percent of domestic edible consumption.[74] Starting April 1, 1995, imports of peanuts and certain peanut products, from countries other than Mexico, became subject to a tariff-rate quota of 30,393 mt (shelled basis) for the year beginning April 1. This tariff-rate quota will increase to 52,906 mt by the year 2000. The rates of duty on imports within the quota limitation[75] are substantially below the rates of duty for imports above the

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[74] On occasion, the import quota has been temporarily increased due to shortfalls in the domestic harvest. Requests for relaxation of the import quota have typically arisen from U.S. producers of peanut butter and other processed nut products. Presidential proclamations which temporarily increased the import quota amount were in effect in 1955, 1956, 1980, and 1991. For additional background on both the U.S. domestic peanut program and the import quotas, see USITC, *Peanuts: Report to the President on Investigation No. 22-52 Under Section 22 of the Agricultural Adjustment Act, as Amended*, USITC publication 2369, Mar. 1991, pp. A-2 through A-16.

[75] Rates of duty are 6.6 cents/kg for shelled peanuts (HTS subheading 1202.20.40) and certain peanut products (HTS subheadings 2008.11.25 and 2008.11.45) and 9.35 cents/kg for in-shell peanuts (HTS subheading 1202.10.40).

quota.[76] The above-quota rates of duty are being reduced in stages from the original rates by a total of approximately 15 percent by 2000.[77]

Market Access Provisions Under the URA

Starting January 1, 1995, imports of peanut butter and peanut paste-which were not previously subject to section 22 import restrictions-became subject to a TRQ of 19,150 mt for the year beginning January 1, increasing to 20,000 mt in 2000.[78] The Section 22 import quota was designed to limit the cost of domestic price support programs to the U.S. Treasury, and the TRQ is its successor. The United States is a net exporter of peanuts, due to favorable agroclimatic conditions for peanut growing in a number of Southern States. Exports have averaged about 20 percent of U.S. production in recent years. Such imports as do occur are primarily motivated by the high U.S. market price associated with domestic price support programs.

Table 4-9 presents summary data on U.S. production, imports, and exports of peanuts for recent years. The crop year under analysis, 1996/97, was the first crop year under the 1996 Farm Act. The national poundage quota was reduced to 1 million mt (2,200 million pounds) from 1.2 million mt (2,700 million pounds), and the quota support price was reduced to 30.5 cents per pound from 33.92 cents per pound.[79] Production in the 1996/97 crop year was almost 6 percent higher than production in the 1995/96 crop year, but nearly 7 percent below the average of the previous 10 years.

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[76] The above-quota tariff rates in 1995 were 151.1 percent ad valorem for shelled peanuts and certain peanut products and 187.9 percent for in-shell peanuts. The rates will fall to 131.8 percent and 163.8 percent, respectively, in 2000.

[77] Imports of peanuts and certain peanut products from Mexico are not subject to the overall tariff-rate quota. However, imports from Mexico are subject to a tariff-rate quota under NAFTA. The tariff-rate quota level for 1995 was 3,478 mt, and will increase annually through 2007. Beginning in 2008, imports from Mexico will not be subject to tariff-rate quota limitations. Imports from Mexico enter duty-free within the quota limitation, but quantities above the quota limitation are subject to the higher rate of duty.

[78] In 1995, imports within the tariff-rate quota limitation (HTS subheading 2008.11.05) were dutiable at 1.9 cents per kilogram, were reduced in stages to zero in 1998, and imports over the limitation (HTS subheading 2008.11.15) were dutiable at 139.5 percent ad valorem, falling in stages to 131.8 percent in 2000. Imports of peanut butter from Mexico are not subject to the Uruguay Round tariff-rate quota limitation, but are subject to provisions of NAFTA.

[79] U.S. Department of Agriculture, Economic Research Service, *Oil Crops Situation and Outlook*, Oct. 1997.

Table 4–9
Peanuts (farmers' stock basis[1]): Summary data, crop years 1994/95–96/97

Item	1994/95	1995/96	1996/97
Production (million dollars)	1,229	1,013	1,043
Production (million lbs., in–shell)	4,247	3,461	3,661
Imports[2] (million lbs., in–shell)	154	228	228
Exports (million lbs., in–shell)	878	824	666

[1] The term "farmers' stock peanuts" refers to picked and threshed peanuts that have not been shelled, crushed, cleaned, or otherwise changed (except for the removal of foreign material, loose shelled kernels, and excess moisture) from the form in which they are customarily marketed by producers.

[2] Includes imports of peanut butter and peanut paste.

Source: Compiled from official statistics of the U.S. Department of Agriculture. U.S. Department of Agriculture, Economic Research Service, *Oil Crops Situation and Outlook*, October 1997 and USDA, ERS, *Agricultural Outlook*, Dec. 1998.

The Effects of Liberalization

The modeling in this section simulates the joint removal of U.S. peanut import tariff-rate quotas and the elimination of the peanut price support program. Removal of the tariff-rate quotas alone would result in the U.S. government supporting the world price of peanuts at the U.S. support price, and huge purchases by the U.S. government.

As noted above, the United States is a net exporter of edible peanuts and would probably continue to export a significant portion of its crop in the absence of the current import tariff-rate quota and price supports. A number of U.S. peanut farmers produce primarily for the export and crush markets, selling almost no peanuts at the U.S. support price,[80] which indicates that they are low-cost producers in the world market. The implication of this low-cost producer status is that it is likely that the United States would not import significant quantities of edible peanuts if import tariff-rate quotas and price supports were eliminated, with the exception of imports of specialty products or because of weather-related or seasonal factors.

The estimated tariff equivalents for peanuts and the U.S. and world prices for peanuts are reported in table 4-10. These tariff equivalents are estimated using the price-gap method. Most peanuts sold in world trade are shelled because of economies of scale in shipping, and world prices are specified on a shelled basis. The U.S. quota support price is specified in terms of farmers' stock (in-shell). Comparison of the in-shell support price with the shelled

[80] See Thomas C. Early, *Overdue for Reform: Policy Alternatives for the U.S. Peanut Program*, report commissioned by the American Peanut Product Manufacturers, Inc., the Western Peanut Growers Association, and the Panhandle Peanut Growers Association, Nov. 1994, p. 16.

Table 4–10
Peanuts: Prices and tariff equivalents, crop year 1996/97[1]

	Price		Tariff equivalent	
	World	U.S.	Specific	Ad valorem
	Cents per lb.			*Percent*
Shelled	39.09	56.20	17.11	43.8
In–shell	19.21	28.50	11.29	58.8

[1] Based on price of U.S. peanuts in Rotterdam and U.S. support price for edible peanuts.

Source: Computed by USITC staff. Price data provided by U.S. Department of Agriculture, Foreign Agricultural Service and Economic Research Service. *Oil Crops Situation and Outlook,* Oct. 1997

world price requires the construction of a shelled support price or the construction of an in-shell world price. The prices presented in table 4-10 reflect these constructions when appropriate.

Price Data

The world price used in estimating the economic effects of the peanut import quota is the simple average of monthly prices for U.S. shelled medium runner peanuts quoted c.i.f. Rotterdam, over the August 1996 through July 1997 crop year, adjusted for transportation costs from the United States to Europe. The U.S. price used is the U.S. support price for edible peanuts. The former price is on a shelled basis whereas the latter is on a farmers' stock basis, so comparison can be made only after they are put on the same basis. For example, to construct the support price on a shelled basis, the formula in table 4-11 is used.

To construct the "world" in-shell price in the United States, first, an estimate of shipping costs from the U.S. to Europe of 6.6 cents per kilogram was subtracted from the simple average c.i.f. Rotterdam price for U.S. medium shelled runners of $926 per mt.[81] Then, the formula in table 4-11 was reversed to construct an in-shell price of 19.21 cents per lb. from a shelled price.

Modeling and Estimates

A partial equilibrium model is used to evaluate the welfare effects of removing the U.S. import quota on peanuts because the peanut sector is too small to be identified in the USITC model.[82] The estimated economic welfare effects of removing the peanut import quota are shown in table 4-12. The gain to consumers of paying the world price for peanuts consists of two parts: (1) the value to the consumer of the lower price paid for peanuts at the current level of consumption, which is equal to the transfer from producers, import suppliers, and the U.S. Treasury to consumers, and (2) the value in excess of the world price to consumers of the additional peanuts they would consume at the world price but not at the higher domestic support price-the deadweight loss recovered.[83] To illustrate (1), consider that in crop year 1996/97 domestic

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[81] The simple average of monthly prices in Rotterdam was taken from United States Department of Agriculture, Foreign Agricultural Service, *Oilseeds: World Markets and Trade*, July 1998, p. 51.

[82] The partial equilibrium model is illustrated in appendix E.

[83] The gain to consumers of paying the world price of peanuts is measured by the change in "consumer surplus." Consumer surplus is defined as the difference between what consumers would be willing to pay for a product and the price they actually pay. See appendix E for an illustration of this concept. For an intermediate level discussion of consumer surplus, see Jack Hirshleifer and David Hirshleifer, *Price Theory and Applications* (Englewood Cliffs, NJ: Prentice Hall, 1998). For a more advanced discussion, see Hal Varian, *Microeconomic Analysis* (New York: W.W. Norton and Company, 1992).

Table 4–11
Shelled U.S. peanuts: Constructed U.S. domestic market price, crop year 1996/97

U.S. in–shell support price[1]		Less volume loss from shelling[2]		Less volume loss from culling[3]		Plus cost of shelling, culling, etc.[4]		Equals constructed U.S. price of shelled peanuts
(*cents/lb.*)						(*cents/lb*)		
30.5	x	1.333	x	1.136	+	10.0	=	56.2

[1] Farmers' stock basis.
[2] Shelling loss estimated to be 25 percent (multiply by 1.333).
[3] Culling loss estimated to be 12 percent (multiply by 1.136).
[4] Costs are estimated as 10 cents per lb. (add 10 cents per lb.).

Source: U.S. Department of Agriculture, Economic Research Service. Formula from USITC, *Estimated Tariff Equivalents of U.S. Quotas on Agricultural Imports and Analysis of Competitive Conditions in U.S. and Foreign Markets for Sugar, Meat, Peanuts, Cotton, and Dairy Products*, USITC publication 2276, Apr. 1990.

Table 4–12
Peanuts: Economic welfare effects of removing the import quota, crop year 1996/97 (includes peanut butter)

(*Million dollars*)

Item	1996/97
Consumer benefit:	
Transfer from producers, import suppliers, and the U.S. Treasury	240.3
Deadweight loss recovered	8.0
Total consumer benefit	248.3
Producer, import supplier, and U.S. Treasury loss:	240.3
From U.S. producers	214.8
From import suppliers	22.7
Lost tariff revenue	2.8

Source: Estimated by USITC staff.

consumption of peanuts for food uses (including imports of peanut butter and peanut paste) was reported by USDA to be 2,128 million pounds (farmers' stock basis). Multiplying this consumption by the 11.29 cents per pound tariff equivalent yields $240.3 million in consumer savings. To illustrate (2), it is estimated that an additional 142 million pounds of peanuts would be consumed at the lower price than at the higher price. The value to consumers of this additional consumption is estimated to be $8.0 million. The total loss to U.S. producers, import suppliers, and the U.S. Treasury is the difference between the support price and the world price times the current sales for food use at the support price. This loss can be divided into a $214.8 million loss to U.S. producers, a $22.7 million loss to import suppliers, and a $2.8 million loss of tariff revenues to the U.S. Treasury. This loss is identical to part (1) of the consumer savings—$240.3 million.[84] No downstream effects are estimated because neither data on the retail value of peanut products nor on employment in the peanut-processing industry were available.

By comparison, the Commission's 1995 *Import Restraints* report estimated the effects of peanut import restraints for crop year 1993/94 to be substantially smaller than the current estimates.[85] The primary reason for the smaller estimate is that 1993/94 was a bad harvest year for U.S. peanut farmers. Production in 1996/97 increased by almost 8 percent from the 1993/94 level, from 3,392 million pounds to 3,661 million pounds. The bad harvest in 1993/94 had the effect of lowering U.S. peanut exports by over 44 percent. Since the United States is an important exporter, this meant that the world price of peanuts rose substantially while the U.S. price, tied closely to the quota

[84] See appendix E for more details on this analysis.

[85] The tariff equivalent was estimated to be approximately 4.4 cents per pound, the additional consumption of peanuts under liberalization to be 46 million pounds, the transfer from consumers to producers to be $92 million, and the deadweight loss to be $1 million.

price in the price support program, remained relatively stable. The estimated tariff equivalent, based on the gap between the U.S. and world prices, was much smaller than normal. The 1996/97 crop year was closer to a normal harvest year, leading to higher U.S. exports, a lower world price, higher tariff equivalent, and a larger effect of peanut import restraints on the U.S. peanut market.

CHAPTER 5
Services

Services imports into the United States are generally free of tariffs, quotas, and other common trade barriers. Instead, import impediments generally take the form of prohibitions or restrictions on market access. These restrictions (typically in the form of licensing requirements and investment regulations) exist at the federal, state, and local levels, and are consistent with "national treatment" obligations under multilateral trade agreements if both U.S. and foreign firms face the same degree of restrictiveness. State and local restrictions are not imposed by the U.S. Federal government and therefore are not analyzed in this report.

Previous investigations of services industries have identified the maritime transportation sector as a U.S. industry protected by import restraints. Like the maritime transportation industry, the air and truck transportation industries also have restrictions limiting the access of foreign operators in the U.S. market. Within the trucking sector, lack of harmonization between U.S. and NAFTA partners' operating regulations may also act as an import impediment; however, a preponderance of these regulations are recognized as safety-related.

Other services industries have measures in place that might be considered import restrictions, but the impediments are regulatory barriers not explicitly related to international trade. This chapter focuses primarily on the restraints within the transportation sector. It provides a simulation analysis of the cabotage restrictions within the maritime transport sector. The restraints to truck and air transport services are also examined; however, a lack of consistent pricing and cost data precludes the formal modeling of these service sectors.

Maritime Transport[1]

The United States protects U.S.-flag carriers and U.S. shipbuilders from import competition in the U.S. domestic maritime market primarily through section 27 of the Merchant Marine Act of 1920, commonly referred to as the Jones Act.[2] Section 27 prohibits merchandise from being transported by water

[1] The Uruguay Round Agreements do not cover this sector and have no effect on the operation of the non–tariff barrier.

[2] 46 U.S.C. 883; 19 CFR 4.80 and 4.80(b).

between U.S. ports "in any other vessel than a vessel built in and documented under the laws of the United States and owned by persons who are citizens of the United States." The United States protects U.S.-flag carriers and vessels engaged in the international trades mainly through a collection of cargo preference requirements. In addition, other laws and regulations restrict the foreign ownership of, and the citizenship of crews on, U.S.-flag and U.S.-registered ships. Collectively, these laws are typically referred to as cabotage laws.[3] Many of these regulations operate separately from the Jones Act. In general, the purposes of the laws are to ensure a U.S. merchant fleet sufficient to provide a naval auxiliary in time of war or national emergency and to participate substantially in the carriage of domestic commerce. The purpose of this analysis is to provide information on the costs and effects of only the Jones Act. The analysis does not seek to draw conclusions regarding the desirability of cabotage laws or make recommendations for changes that could be made to those laws, nor does this report attempt to quantify or assess other costs or benefits, such as those associated with national defense issues, that are linked with the support of a domestic fleet. As originally requested, this analysis quantitatively assesses the economic costs of specific Jones Act restrictions on deep-sea domestic shipping.[4]

Current Operation of the Jones Act[5]

The current cabotage prohibition on foreign vessels covered in section 27 of the Merchant Marine Act of 1920 effectively reserves U.S. maritime cabotage to ships that are registered and built in the United States and that are owned and crewed by U.S. citizens.[6] Similar laws affect the transport of passengers[7] and other kinds of marine activity, such as fishing, towing

[3] Cabotage refers to the transportation of merchandise between U.S. ports, either directly or via a foreign port.

[4] Deep–sea domestic shipping refers to freight carried by ocean–going vessels. The inland trades, which include river, canal, and lakewise traffic, are not addressed in this analysis. In addition, the Passenger Vessel Act prevents foreign cruise vessels from transporting passengers between U.S. ports. However, the effects of the Passenger Vessel Act on the passenger market are not addressed in this analysis. The U.S. deep–sea domestic cruise industry is too small to have measurable effects using the current model.

[5] For a more detailed discussion of the history of the Jones Act, see USITC, *The Economic Effects of Significant U.S. Import Restraints, Phase III: Services*, publication 2422, Sept. 1991; and Lawrence J. White, *International Trade in Ocean Shipping Services: The United States and the World*, (Cambridge, MA: An American Enterprise Institute/Ballinger Publication, 1988).

[6] Ships operating in trades that are protected by the Jones Act are prohibited from receiving operating and construction subsidies that other U.S.–flag ships may receive.

[7] 46 App. U.S.C. 289; 19 CFR 4.80(a). The primary exception to this law is that passengers may travel between the U.S. mainland and Puerto Rico on a foreign–flag passenger vessel, provided there is no eligible U.S. vessel offering such service [46 U.S.C. 289(c)].

(except where the towed vessel is in distress), salvage, and dredging. While many nations have a variety of cabotage restrictions, very few require the use of domestically-built vessels. Most nations, including the United States, maintain cabotage restrictions on inland waterways, rivers, and lakes, for reasons of sovereignty and national security; however, the United States and several other countries also maintain coastal and non-contiguous cabotage restrictions.

There are a number of limited territorial/conditional exemptions to these U.S. cabotage laws, the most notable of which apply to American Samoa, the Northern Marianas, and the Virgin Islands; operators that do not comply with certain Jones Act restrictions may serve these markets. Moreover, foreign-built U.S. flag vessels may operate between Guam,[8] American Samoa, Wake, Midway or Kingman Reef and other U.S. ports.[9] The U.S. Coast Guard considers a vessel to be built in the United States if all major components of its hull and superstructure are fabricated in the United States and the vessel is assembled entirely in the United States (46 CFR Part 67). [10]

In addition to the Jones Act, other statutes reserve transport of certain types of U.S. cargo to U.S.-flag vessels. For example, although the 1995 Alaska Power Administration Asset Sale and Termination Act now permits the export of Alaskan oil, the law also requires that exports of Alaskan crude oil be carried solely by U.S.-flagged and U.S.-owned vessels. The Act ensures that although the oil may be exported, transport service is still reserved for U.S.-flag vessels.[11] (Formerly, the Export Administration Act[12] prohibited export of Alaskan oil and, in effect, also reserved such cargo for the domestic trades.)

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[8] The Office of the Governor of Guam maintains that this exception has little practical benefit, because of higher transport costs for goods on intermediate routes between the U.S. mainland and Guam that are subject to Jones Act restrictions (e.g., U.S. mainland to Hawaii). Office of the Governor of Guam, testimony before the U.S. International Trade Commission, in connection with Inv. no. 332–325.

[9] Under special circumstances, a foreign–built vessel may operate in U.S. domestic service. For example, a foreign–built or foreign–flagged vessel wrecked in U.S. waters, that is subsequently salvaged and rebuilt in the United States may be reflagged and awarded domestic operating authority if the cost of the rebuilding is at least three times the appraised value of the vessel immediately following salvage (46 U.S.C. 14).

[10] A U.S.–built vessel that has operated under foreign registry may return to U.S. registry, but loses U.S. domestic trading privileges. However, there have been instances in which Congress enacted special legislation to restore domestic trading privileges of U.S.–built, reflagged vessels. Also, a U.S.–built vessel that has been rebuilt overseas loses U.S. domestic trading privileges. Determination of when rebuilding has occurred requires a technical assessment by the U.S. Coast Guard.

[11] There is no U.S.–build requirement.

[12] 50 U.S.C., app., 2406(d). In addition, section 4 of the Outercontinental Shelf Lands Act of Aug. 7, 1953, 43 U.S.C. 1333 and 1346 reserved the supply of offshore drill rigs and other exploration activities to U.S.–flag vessels.

Characteristics of the U.S. Oceangoing and Great Lakes Fleet

As of July 1, 1998, the active Jones Act fleet consisted of 113 oceangoing vessels over 1,000 tons, including self-propelled integrated tug-barges.[13] The Great Lakes fleet[14] consists of another 65 large vessels and tug/barge units.[15] The inland trades, which are comprised of river, canal, and lakewise traffic, are not included in the scope of this analysis, because they do not appear to be significantly vulnerable to foreign competition that may occur in the absence of Jones Act restrictions. (The cost structure of a U.S.-flag vessel engaged in the inland trades would likely be competitive with a similar foreign vessel if the latter were allowed to provide similar service, because a foreign vessel engaged in the inland trades would, necessarily,[16] be required to comply with U.S. laws and regulations that exist independently of the Jones Act.[17])

In 1996, all domestic waterborne commerce covered by the Jones Act, including oceanborne (coastwise/intraterritory), lakewise, and inland shipping, amounted to approximately 1,101 million short tons of traffic and revenues of $7.7 billion. Of this amount, oceanborne and lakewise cargo accounted for 36 and 8 percent, respectively, of the value of total shipments (see table 5-1). According to the U.S. Army Corps of Engineers, in 1996, the dominant share of Jones Act cargo consisted of liquid bulk shipments of petroleum and petroleum-based products—approximately 79 percent—with the remaining 21 percent consisting of dry cargo.

Types of vessels and trends

The Jones Act affects transport in both bulk and liner trades. The petroleum trades are bulk trades and utilize various types and sizes of tankers. Dry cargo may be in the form of either bulk, container, or other types of dry cargo. The liner trade generally includes vessels with regular sailing schedules. The U.S. domestic liner industry is highly concentrated, and the few remaining dry-bulk

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[13] Maritime Administration, Marine Data Sheet, "Deployment of U.S.–Flag Oceangoing Self–Propelled Merchant Vessels," Apr. 1, 1998.

[14] The Great Lakes fleet is not limited to oceangoing vessels.

[15] Lake Carriers Association, "U.S. Flag–Shipping on the Great Lakes," found at Internet address http://www.lcaships.com/brochure/lcabro1.html, retrieved Sept. 29, 1998. The number of inland vessels, other than lakewise, over 1,000 gross registered tons (grt) is not immediately available, but is probably negligible. Moreover, because of the competitiveness of U.S. barge and smaller shipbuilders, this portion of the Jones Act trade would likely remain competitive even in the absence of Jones Act restrictions.

[16] Compliance would be effectively ensured because of geographic and other practical considerations.

[17] The inland trade would be subject to U.S. employment/immigration rules (necessitating U.S. crews) and U.S. regulatory and environmental standards; moreover, operators in the inland trade acquire vessels from the internationally competitive U.S. barge and smaller shipbuilders and so have substantially more competitive capital costs.

Table 5-1
U.S. domestic cargo sector, for vessels 1,000 grt and over: Total revenue and employment, by type, 1994-96

Item	1994	1995	1996
Revenue *(million dollars)*:			
Oceanborne	2,929	2,774	2,778
Lakewise	577	585	580
Inland	4,239	4,353	4,322
Total	7,745	7,712	7,680
Employment *(shipboard jobs)*:			
Oceanborne[1]	10,200	9,400	8,800
Lakewise	2,045	1,935	1,736
Inland	13,750	13,725	13,710
Total	25,995	25,060	24,246

[1] For vessels normally employed on longer voyages, one billet may be filled by more than one seaman during a calendar year. The Maritime Administration uses a conversion ratio of 2.3. Therefore, 3,850 billets may provide employment for approximately 8,800 seamen during a calendar year.

Source: U.S. Department of Transportation, Bureau of Transportation Statistics, "NTS Water Transport Profile 1998," and U.S. Maritime Administration, "U.S. Merchant Marine Data Sheet," various editions.

carriers left in the U.S. fleet are engaged in the Great Lakes trades. Moreover, few, if any, intra-U.S. coastal freighters operate on a regular basis on either the East or West Coast of the United States.[18]

Representatives of Jones Act operators have noted that certain technological changes have increased the use of integrated barges in the U.S. deepwater[19] coastal fleet, and lowered both capital acquisition costs and manning costs.[20] Foreign industry representatives have indicated that there is little or no use of integrated barges in the international deepwater trades,[21] perhaps because internationally, very few vessels are employed on fixed trade routes, as they are in the U.S. market. Therefore, vessels in the international trades would be unable to avail themselves of the primary advantage of barge use (i.e., leaving the barge but repositioning the engine to use with another barge). The greater use of such barges in the U.S. trades may also be partially attributed to the lower capital and operating costs of such vessels, including the aforementioned lower manning requirements. It is likely that in the absence of at least some of the Jones Act's requirements, there would be less use of integrated barges in the U.S. domestic deepwater trades, because although barges are less costly, they are also slower and less efficient.

The size of the self-propelled deepwater Jones Act fleet has continued to decline. However, it should be noted that the volume of cargo carried by the fleet has not experienced a proportionate decline because of the increased productivity of vessels. Concurrently, as more activity has been transferred to barges and other lower-cost vessels, employment has declined.

The use of older, fully depreciated vessels is most extensive for operators of vessels with high initial capital costs, i.e., container vessels, because the operators cannot afford to purchase newer vessels and still contain costs.[22] Although new petroleum tankers have been ordered by a number of firms to comply with the double-hull standard,[23] a premium is paid for vessels built in a

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[18] Steel Manufacturers Association, "Revive Competition in Deepwater Coastal Port Shipping," found at Internet address http://www.steelnet.org/sma/jonesact.html, retrieved Sept. 28, 1998.

[19] Deepwater, or alternatively, bluewater, are other terms used for ocean–going vessels.

[20] U.S. maritime industry officials, interviews by USITC staff, Washington, DC, Oct.–Nov., 1998.

[21] European maritime industry officials, interviews by USITC staff, London, May 24–27, 1998.

[22] Manning costs for container vessels are also considerably higher than for tanker vessels.

[23] The Oil Pollution Act of 1990 requires all tankers operating in U.S. waters to be double–hulled by 2010. See the following section for further information.

U.S. yard in order to fulfill the Jones Act build requirement.[24] If the U.S.-build requirement were eliminated or modified, the value of vessels built specifically for the Jones Act would drop sharply, and carriers would see revenues from the operation of those vessels decline as well, because the freight rates they could charge for the use of such vessels are likely to decline correspondingly.

Compliance with U.S. Liability and Other Laws and Regulations

While not specifically prohibiting any transport activity, several other regulations significantly affect the number and costs for foreign-flagged and/or foreign-built vessels entering U.S. waters.[25] In 1994, regulations enacted under the Oil Pollution Act (OPA '90) introduced U.S. requirements for insurance certificates of financial responsibility for vessels entering or transiting U.S. territorial waters.[26] These substantially higher U.S. liability standards are intended to limit foreign vessels operating in U.S. waters to premium vessels that can adequately comply with the U.S. standards and fully address liability concerns. For example, since OPA '90 requires that all tankers trading in U.S.

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[24] The average premium for all types of ocean–going vessels may be estimated at a minimum of 50 percent, and is commonly assessed at 50 to 150 percent. Recent studies by KPMG, First Marine International, and Stellers Carson Associates (among others) have confirmed that large commercial shits built in U.S. yards are about 1.5 – 2.5 times the cost of similar ships built in leading overseas yards. Executive Control Board of the National Shipbuilding Research Program, in cooperation with the Department of Defense Advance Research projects Agency (DARPA), the U.S. Navy, and the U.S. Department of Transportation,"MARITECH *Advanced Shipbuilding Enterprise: Strategic Investment Plain – The U.S. Shipbuilding Industry,"* found at Internet address http://www.nsrp.org/plan_doc/thechallenge.html, retrieve Apr. 19 1999.

[25] U.S. General Accounting Office, "*Maritime Issues: Assessment of the International Trade Commission's 1995 Analysis of the Economic Impact of the Jones Act,"* Report to the Chairman of the Senate Committee on Commerce, Science, and Transportation, Mar. 6, 1998. In its analysis of the USITC report, the GAO noted that any analysis should include an assessment of other applicable laws that raise U.S. carriers' costs. It has been posited by Jones Act shippers and proponents that if the Jones Act were repealed or significantly modified, foreign shippers would be able to participate in the U.S. domestic market without complying with U.S. employment laws and other rules and regulations. However, a number of U.S. laws governing insurance, employment, liability, etc., exist outside the scope of the Jones Act, and would continue to apply to any shipper engaged in the U.S. market.

[26] Approximately 29 percent of the foreign vessel boardings carried out by the Coast Guard discovered deficiencies. Deficiencies inspected for range from minor structural problems (such as a loose railing), to inadequate manning, as specified by the safe manning document [guidance provided by Annex 2 of the International Maritime Organization (IMO) Resolution A.481(XII)]. In the event that the vessel is not subject to international conventions detailing safe manning requirements, U.S. standards for a like vessel are applied. U.S. Coast Guard, "Authority and Provisions for Merchant Vessel Inspections," found at http://www.uscg.mil/hq/g–m/nmc/ pubs/msm/v2/c1.htm

waters comply with double-hull[27] requirements by 2010, the likely result is that vessels engaged in these trades in U.S. waters will be newer, premium vessels. With or without the Jones Act,[28] because of U.S. requirements in several areas (particularly pollution and liability) that legally apply to all vessels calling in U.S. waters, it is likely that total costs for any vessel operating in U.S. waters will still be higher than elsewhere.

Because of open-ended liability for shipowners/operators, several—particularly those that operate tankers containing crude oil—have withdrawn from the U.S. market. Moreover, greater consolidation, particularly in the tanker trades,[29] may adversely affect the availability of vessels for the U.S. trade, further driving up freight rates to the United States.[30] Although most developed country tanker markets have standards comparable to those of the United States,[31] and International Maritime Organization (IMO) rules have had the effect of regularizing standards internationally, only the United States has an "open-ended" liability structure that causes shippers intent on minimizing costs to actively avoid the U.S. market. For example, a number of major oil companies have divested their marine transportation activities and now contract for such services, and most major oil companies have reduced product tanker ownership exposure.[32] The primary reasons cited include the high cost of liability insurance and the uncertainty of outcomes associated with cases brought in the individual U.S. states. However, bulk carriers experience little variance between insurance rates in the United States and other areas. In addition to insurance costs, the costs of operating in the U.S. are higher for all vessels because of the requirement for an established pollution response plan.

Improved port-state enforcement of safety standards is compelling more vessel owner/operators to comply with international safety requirements. The sector is subject to international safety measures (ISM) set by the IMO, and the United States has indicated that it will refuse ships that are not ISM certified.

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[27] U.S. shipyards hope to take advantage of demand for double–hull tankers by companies engaged in the Jones Act trades. See the previous section in this chapter entitled "Types of vessels" for more information. New IMO double–hull rules are similar to U.S. rules.

[28] Proponents of reforms note that foreign vessels competing in the U.S. coastwise trade should comply with U.S. environmental regulations, immigration laws, and workforce health and safety regulations. Steel Manufacturers Association, "Revive Competition in Deepwater Coastal Port Shipping," found at Internet address http://www.steelnet.org/sma/jonesact.html, retrieved Sept. 28, 1998.

[29] It is likely that consolidation will be concentrated in the tanker trades because of new IMO standards.

[30] N. Shashikumar, "Tanker Markets in the 21st Century: Competitive or Oligopolistic?," paper presented at the First Regional Conference of the International Association of Maritime Economists, Cambridge MA, Dec. 16, 1995.

[31] Japan, Norway, and Australia were reported to have particularly stringent standards.

[32] Drewry Shipping Consultants, "Product Tankers: Will demand keep pace with supply?" London, Aug. 1997, p. 79.

As a result, international vessels still trading in U.S. waters now exhibit a high degree of compliance with both international and U.S. standards and requirements. According to marine insurance executives, there is a high probability of being inspected because U.S. Coast Guard vigilance is good, and their inspections meet high standards. Importantly, the costs of noncompliance are high and so act as a significant deterrent to violators.

Although it is not possible to determine with certainty the environmental and labor-related rules and regulations that would still apply to a modified or "reformed" Jones Act trade, it should be noted that, ostensibly, any vessel calling at a U.S. port is legally obligated to comply with such U.S. regulations or like international regulations as defined by U.S. law, regardless of flag of origin. Therefore, it is reasonable to assume that regulations specified *exclusively* by the Jones Act (or relevant U.S.-flag requirements) would not necessarily continue to apply if the Jones Act were removed. However, it also may be assumed that environmental, immigration, and workforce laws provided for by law outside the provisions of the Jones Act—or related U.S.-flag requirements—would continue to apply to any vessels calling at, or trading between, U.S. ports.

Cost Differentials: U.S. Coastwise vs. Foreign Trades

Vessel costs are made up of a number of components, including operating[33] and capital costs (see table 5-2). The relative proportions of each of these costs with respect to total costs may depend on whether or not the vessel is Jones Act, U.S.-flag, or foreign-flag. For example, the percentages of capital costs and manning costs will be similar for comparable Jones Act and other U.S.-flag vessels. For foreign-flag vessels with different manning requirements and no domestic-build provision, both capital and manning costs will be lower, though not necessarily a smaller portion of total costs, because foreign-flag total costs are generally much lower overall. For costs that are a function of the route, ports of call, and vessel and cargo type, there may be no differential effect per se.

The magnitude and allocation of both operating and capital costs are important factors determining the difference between U.S. and foreign shipping rates. However, the concepts of vessel costs and rate differentials should be kept distinct, especially in the context of an analysis of the effects of the Jones Act on domestic shipping services. Shipping rates are influenced by shipping market demand and supply (demand and supply of the service itself), while costs are affected by the demand and supply of factors used in producing shipping services. Although the information on costs developed in this section indicates that much of the cost differential for Jones Act vessel operators is

[33] Operating cost the are not specific to a particular voyage–specific operating cost include bunker fuel, supplies and port charges and canal tolls.

Table 5-2
Typical cost components and differential effect for Jones Act, U.S. registry and foreign-flag vessels

Type of cost	Components	Differential effect for vessels in comparable trades
Voyage costs	Port and bunker costs	Little or no differential effect.
Operating costs	Manning costs	For a comparable vessel, U.S. costs are approximately twice that paid in international trades (net costs, not per seaboard job)
	P&I/cost of insurance	Higher insurance rates are associated with increased vessel age, number of owners, ports of call, cargo, etc., but comparable vessels with comparable cargos calling in U.S. waters would not expect to pay significantly different rates for insurance.[1]
	Repair & maintenance	Though U.S. yards generally are not as cost competitive with respect to oceangoing vessels (overhead is substantially higher), U.S. yards will be chosen for repairs to U.S. vessels as long as the 50-percent vessel repair duty is in effect.[2] Otherwise, geographic advantage prevails.
	Other, incl. stores/ administrative costs	The least definitive component of operating costs; varies depending on scale of operations, owner control over technical/commercial functions. [3]
Capital costs	Shipbuilding	For a U.S.–built tanker, there is a minimum 50 percent premium vs. a Korean- or Japanese-built ship.

[1] The age of the ship is less important with respect to insurance costs than the number of owners of a ship. A record of more owners is associated with higher claims.
[2] 19 U.S.C. 1466 "Equipment and repairs of vessels - Vessels subject to duty: penalties." This portion of the Tariff Act of 1930 has a significant impact on the cost of ship repairs performed on U.S. flag vessels outside of the United States.
[3] Drewry, Aug. 1997, p. 89.

Source: Compiled by staff from interviews with European ship brokers and Drewry Shipping Consultants, "Product Tankers: Will demand keep pace with supply?" Aug. 1997, p. 89.

attributable to U.S. laws that increase operating and capital costs, and that these laws have a significant effect on the rate differential, they are not the only determinant.

While voyage and cargo expenses are the largest single cost component to all shipowners—both U.S. and foreign—U.S. manning and capital costs generally account for most of the comparative cost difference between U.S.- and foreign-flag vessel operations.[34] For example, when comparing a U.S.-built, U.S.-flag, self-propelled, oceangoing 45,000 ton product tanker[35] with a similar foreign-flag, foreign-built tanker in the international trades, capital costs for the U.S.-built vessel exceed those of the foreign-built vessel by 48 percent, operating costs are higher for the U.S.-flag vessel by 99 percent, and total costs are higher by 82 percent.[36]

The cost structure for liner vessels varies somewhat from the tanker model. For a foreign-flag liner vessel in the international trades, approximately half the daily rate may be attributed to capital costs.[37] The daily cost breakout for U.S.-flag liner operators is as follows: crew, 32 percent; fuel, maintenance and repair (M&R), insurance, supplies, and other, approximately 42 percent; and capital (average for all vessels), 26 percent.[38]

The total operating cost differential between a U.S.-flag and a foreign-flag vessel may be further illustrated by the difference between annual vessel operating costs as reported by subsidized U.S. operators and average operating differential subsidy (ODS)[39] annual payments per vessel. Total vessel operating cost (per vessel) as reported by U.S. vessel operators (excluding capital

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[34] Department of Transportation, Maritime Administration, Report to the Chairman, Senate Committee on Commerce, Science, and Transportation on the issue of introducing competitive bidding to the Maritime Security Program (MSP) P.L. 104–239, June 1, 1997, p. 10.

[35] A product tanker carries petroleum products other than crude. The cost structure of a product tanker is higher overall than that of a crude oil tanker.

[36] Compiled by USITC analysts from industry data provided by the Maritime Cabotage Task Force, Post Hearing Brief submitted in connection with Inv. no. 332–325, June 12, 1998.

[37] It should be noted again the the total costs are significantly lower for foreign–flag carriers.

[38] However, at present, the portion of costs attributable to capital costs may be significantly lower in certain Jones Act liner/container trades, where a high percentage of vessels are fully amortized, older vessels. As a result of the high initial acquisition cost, new vessels often cannot be purchased because they cannot be economically operated in these trades.

[39] The ODS Program compensated U.S. carriers on a reimbursable basis for their higher crew, insurance, and maintenance and repair costs. DOT, MARAD, Report to the Chairman, Senate Committee on Commerce, Science, and Transportation on the issue of introducing competitive bidding to the MSP, June 1, 1997, p. 2.

costs[40]) equaled $10.2 million per annum.[41] Estimated ODS payments per vessel would have totaled $4.3 million per annum.[42] These figures represent average operating costs for U.S.-flag vessels and are over 40 percent higher than those for a comparable foreign vessel in the liner trades.[43]

Previous Work

A few studies have estimated the economic costs of the Jones Act for a given year.[44] Using partial equilibrium analysis, Hufbauer and Elliott estimated a net cost to the economy of $1.1 billion in 1990.[45] They assumed that with repeal of the Jones Act, foreign shippers would capture half the coastwise cabotage trade, but less than half of inland shipping. A general equilibrium analysis conducted by the USITC for 1995 showed a U.S. economic welfare gain of approximately $2.8 billion if the Jones Act were repealed.[46]

Because foreign carriers are totally excluded from the market, it is difficult for any analysis to assess the extent to which foreign carriers would enter the U.S. deepwater market if the Jones Act were modified to allow foreign participation.[47] As noted above, some analyses have assumed that foreign carriers would take half of the domestic market for cabotage trade while other

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[40] The difference in capital costs varies significantly not only by vessel type but also by the age of the vessel.

[41] DOT, MARAD, Report to the Chairman, Senate Committee on Commerce, Science, and Transportation on the issue of introducing competitive bidding to the MSP, June 1, 1997, Attachment VI–B.

[42] Ibid., Attachment V.

[43] While it has been noted that barges transport a substantial portion of the cargo in the coastal trade, and that barges have both lower capital and operating costs, the absence of barge use in the international trades precludes construction of a table of comparable costs. Moreover, in the absence of a Jones Act U.S.–build requirement, it may be less likely that such extensive use of barges would continue.

[44] Other studies have found varying estimates. The Congressional Budget Office found that the Jones Act imposed a $1.3 billion cost on the U.S. economy in 1983; see Congressional Budget Office, *U.S. Shipping and Shipbuilding Trends and Policy Choices* (Aug. 1994). A study conducted by White estimated the costs to be $2 billion in 1984; see Lawrence J. White, *International Trade in Ocean Shipping Services: The United States and the World* (Cambridge, MA, American Enterprise Institute/Ballinger Publication, 1988).

[45] Gary C. Hufbauer and Kimberly A. Elliott, *Measuring the Costs of Protection in the United States* (Washington DC: Institute for International Economics, 1993).

[46] USITC, *The Economic Effects of Significant U.S. Import Restraints: First Biannual Update,* USITC publication 2935, Dec. 1995.

[47] Foreign, in this case only, could be interpreted to include several different vessel–operator types currently barred from participation in the Jones Act market, i.e., operators of U.S.–controlled foreign–flag vessels, or foreign–controlled vessels.

studies have assumed that they would take the entire market.[48] Similarly, opinions vary widely among maritime analysts who follow these markets. Several conclude that foreign carriers would capture the entire U.S. cabotage market, while others indicate that international carriers would probably capture 70 to 80 percent, as a result of lower costs borne by those carriers.[49] Furthermore, mergers and alliances would likely occur as a result of opening the U.S. market.[50] In the analysis that follows, the USITC staff assumes that U.S. carriers retain approximately half of the market.

Economic Effects of Removing Jones Act Restrictions

To analyze the maritime transport sector, the USITC CGE model divides the U.S. economy into 10 sectors that, in addition to the 9 aggregate sectors, account for the rest of the U.S. economy. The highlighted sectors include the cabotage and water transportation sectors, which are directly affected by the Jones Act, and those sectors that have significant upstream or downstream linkages to cabotage services or to petroleum and refined petroleum products.

Two liberalization scenarios are analyzed below. As in previous versions of this report, the first scenario analyzes complete removal of the Jones Act. The second, new scenario, analyzes recent proposals to liberalize only certain components of the Jones Act, namely the U.S.-build requirement.

Complete Liberalization

The current CGE simulation, like those cited from previous work, deals only with oceanborne cargo.[51] In addition, substantial domestic production is retained, indicating that domestic shippers may continue to operate using imported ships under U.S. national rather than Jones Act labor laws.

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[48] For example, the general equilibrium analysis conducted by the ITC for 1991, which deals only with oceanborne cargo, shows the domestic oceanborne Jones Act fleet shutting down completely with its services replaced by imports. USITC, *The Economic Effects of Significant U.S. Import Restraints,* USITC publication 2699, Nov. 1993.

[49] European maritime industry officials, interviews by USITC staff, London, May 24–27, 1998.

[50] Liberalization of certain components of the Jones Act have recently been proposed as an alternative to complete liberalization. For instance, if the Jones Act were modified only to allow the use of foreign–built vessels by U.S. carriers, the size of the market would likely increase as capital costs borne by U.S. carriers decreased, but foreign carriers would still be prohibited by law from entering the market.

[51] Inland shipping was not treated in the model simulation because, as noted earlier, domestic inland shippers are considered to be efficient in this market, as indicated by U.S. exports of inland waterways vessels—the main tradable component of costs in inland shipping. Therefore, inland shipping was included in the other water transportation sector.

The effects of the Jones Act on oceanborne cabotage services are estimated here by introducing the possibility of importing cabotage services at the world price. This figure is calculated as the output-weighted average difference between the U.S. and world prices for shipping the main types of cargo transported: wet-cargo, which consists mostly of petroleum bulk cargo, and dry-cargo, which consists of liner and nonliquid bulk cargo.[52] The tariff equivalent estimated for this analysis is 64.6 percent.[53]

The economy-wide effect of removing the Jones Act is a U.S. economic welfare gain of approximately $1.32 billion. (See table 5-3.) This figure can also be interpreted as the annual reduction in real national income imposed by the Jones Act. A primary reason for the large gain in welfare is a decline of approximately 22 percent in the price of shipping services formerly restricted by the Jones Act (table 5-4). Prices in the other water transportation sector as well as in other sectors in the economy decline by only negligible amounts.

Table 5-4 presents the estimated domestic employment, output, and trade effects of opening the cabotage sector to foreign competition. According to the model, removal of the Jones Act reduces the domestic price of cabotage services, causing an increase in domestic demand for them. Imports rise by approximately $2.4 billion while domestic output falls by $1.5 billion, or 51 percent,[54] with employment declining by 4,500 full-time equivalent jobs.[55]

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[52] Cabotage output was measured in terms of ton–miles, i.e., the number of ton–miles for wet– and dry–cargo in the U.S. domestic market. The dry–cargo premium was taken from previous estimates used in USITC, *The Economic Effects of Significant U.S. Import Restraints, Phase III: Services*, publication 2422, Sept. 1991. U.S. and world prices for transporting "wet," or petroleum cargo, were obtained from the State of Alaska and the 1996 OPEC Annual Report.

[53] The tariff equivalent estimated for the Jones Act restrictions–64.6 percent—is a weighted average of wet– and dry–cargo tariff equivalents. The wet–cargo tariff equivalent is weighted by the portion of cabotage trade in crude petroleum, 79 percent. The dry–cargo tariff equivalent is weighted by its portion of cabotage trade, 21 percent. The tariff equivalent for wet cargo was based on the weighted average of the price gap, or difference, between the average of the U.S. price for shipping Alaskan North Slope (ANS) crude petroleum to all destinations ($.0069 per ton mile) and the average world price ($.0038 per ton mile) for a comparable tanker shipment transported an equal distance, with a U.S. port on one end of the shipment (data derived from transportation costs cited in the 1996 OPEC Annual Report and from Alaska Revenue data). The tariff equivalent for dry cargo is based on estimates reported by Clinton H. Whitehurst, Jr., *American Domestic Shipping in American Ships: Jones Act Costs, Benefits, and Options* (Washington, DC: American Enterprise Institute, 1985).

[54] The cabotage sector includes not only cabotage trade (Jones Act fleet), but also other port services associated with cabotage trade.

[55] Since the base level of imports in the sector is zero, a certain initial level of imports must be assumed in order for the model to find a new equilibrium of domestic output and imports that corresponds with the lower world price for imported shipping services.

Table 5-3
Economy—wide results of eliminating the Jones Act

Item	Change
Tariff revenue (*percent*)	-0.01
Wage to rental ratio (*percent)*	0.02
Exchange rate (*percent*)	0.06
Equivalent variation (*billion dollars*)	1.32

Source: Estimated by staff of the USITC.

The increase in demand for cabotage leads to a negligible increase in the demand for other water transport services.[56] The removal of the Jones Act also brings about a reduction in domestic shipbuilding; output and employment decline by approximately 1 percent. Similarly, upstream management and consulting services show small declines in output and employment. Most of the downstream users of maritime cabotage services increase output and employment approximately 0.1 percent. Aside from the 10 focus sectors (liberalizing, upstream, and downstream), most of the other sectors in the economy showed changes in output and employment measuring approximately 0.1 percent or less.

Partial Liberalization

The second scenario is based on recent proposals to liberalize only certain components of the Jones Act, namely the U.S.-build requirement. Several proposals have been suggested by proponents of partial liberalization. For example, one proposal would allow a brief period of time for domestic owners to replace aging containership and roll-on/roll-off vessels that are used in the domestic trades.[57] Another plan for partial liberalization is the Brownback bill. In 1998, Senator Sam Brownback (R-KS) introduced S. 2390 in the 106th Congress, a bill to modify the Jones Act by allowing non-U.S.-built ships to be used in coastwise trade. Such ships would still be required to be U.S.-crewed and meet U.S. safety and environmental standards. It is anticipated that changing the U.S.-build requirement could significantly increase the fleet eligible for U.S. coastwise trade, thereby providing more capacity for shipping bulk and other agricultural commodities.[58] However, in both of the above proposals, foreign-owned and operated carriers would still be prohibited by law from entering the market.

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[56] The water sector includes other services related to non–Jones Act activity such as international traffic between U.S. and foreign ports, dock and port services incidental to international traffic, dock workers' services, tug boat services, and other water–transport services.

[57] For further discussion of this proposal, see Warren Leback, "Open a Jones Act window, briefly," *Journal of Commerce*, Mar. 31, 1999.

[58] S. 2390 was the subject of a hearing in the Senate Commerce, Science and Transportation Committee in September 1998. At that hearing, the Committee Chairman promised further hearings in 1999. No Jones Act reform has been introduced in the 106th Congress.

Table 5–4
Jones Act: Economic effects of liberalization, changes in FTE, value and percent,1996

Sector	Employment		Output		Import		Exports		Composite Price
	FTE[1]	*Percent*	*Dollar*[2]	*Percent*	*Dollar*[2]	*Percent*	*Dollar*[2]	*Percent*	*Percent*
Liberalizing sectors:									
Cabotage	–4,500	–51.1	–1,494	–51.1	2,388	([3])	([3])	([3])	–22.0
Other water transportation	510	0.4	104	0.4	–3	([4])	89	0.4	([4])
Upstream sectors:									
Management/consulting services	–1,030	–0.1	–70	–0.1	([5])	([5])	([5])	([5])	([4])
Shipbuilding	–1,420	–1.2	–144	–1.2	–1	–1.2	–5	–1.1	([4])
Downstream sectors:									
Chemicals	260	0.1	87	0.1	–7	([5])	40	0.1	([4])
Electric utilities	40	([4])	28	([4])	–1	–0.1	([6])	0.1	([4])
Logging, sawmills, and millwork	150	0.1	36	0.1	–2	([5])	14	0.2	([4])
Petroleum refining and petroleum products	–50	([4])	1	([4])	–14	([4])	6	0.1	([4])
Plastics	320	0.1	84	0.1	–23	–0.2	15	0.1	([4])
Steel and steel products	290	0.1	59	0.1	–18	–0.1	7	0.1	([4])
Rest of the U.S. economy:									
Agriculture, forestry, and fisheries	1,050	0.1	186	0.1	–2	([5])	102	0.3	([4])
Mining	190	0.1	42	0.1	–4	–0.1	23	0.2	([4])
Construction	–210	([4])	14	([4])	([5])	([5])	([5])	([5])	([4])
Nondurable manufacturing	1,070	([4])	326	([4])	–112	–0.1	69	0.1	([4])
Durable manufacturing	4,740	0.1	958	0.1	–307	–0.1	418	0.1	([4])

Transportation, communications, and utilities	200	([4])	70	([4])	–32	([5])	51	0.1	([4])
Wholesale and retail trade	1,300	([4])	129	([4])	([5])	([5])	([5])	([5])	([4])
Finance, insurance, and real estate	–890	([4])	32	([4])	–11	–0.1	25	0.1	([4])
Other services	–2,020	([4])	–122	([4])	–32	–0.1	46	([4])	([4])

[1] Change in full–time equivalents.
[2] In millions of dollars in base year prices.
[3] Not applicable since base level trade is zero.
[4] Change less than 0.05 percent.
[5] Nontraded sector.
[6] Change less than $500,000.

Source: Estimated by the staff of the USITC.

In the discussion that follows, staff relied on a partial equilibrium analysis to determine the effects on the domestic water sector, and a qualitative analysis to determine the effects on the shipbuilding sector. These two approaches were used instead of the general equilibrium approach used in the full liberalization scenario. Proper general equilibrium analysis of removing the U.S.-build provision requires data on the structure of at least four distinct industries: protected ("Jones Act") water transportation,[59] other water transportation, the shipbuilding industry that supplies protected transportation, and the shipbuilding industry that supplies other water transportation. Less than 15 percent of the U.S. shipbuilding sector's output goes into the downstream domestic sector. The remainder goes into the other water transportation sectors and consists of ships contracted for by the U.S. Government (i.e., Navy, Coast Guard, etc.) and by commercial carriers for use in foreign trades. The decision to use both partial-equilibrium and qualitative analyses is based primarily on a lack of quantitative information about the structural relationships affecting these sectors. For example, Jones Act carriers use different types of ships and operate with different input proportions than non-Jones Act carriers, especially Navy vessels. Furthermore, the shipbuilding sub-sectors are also different in important and unmeasured ways. For example, builders of Navy/Coast Guard vessels compete in a very different and more specialized market than builders of Jones Act ships.[60] Information that quantifies these relationships, such as the degree of substitution between capital and labor used in the two upstream sectors, is not available.

For the partial-equilibrium and qualitative analyses, the staff examined a scenario similar to the Brownback proposal: domestic carriers are allowed to purchase foreign ships, but foreign carriers are prohibited from entering the market. As with the full liberalization analysis above, only the domestic deepwater trade is considered. The effects of partial liberalization are estimated here by introducing the possibility of domestic carriers buying foreign-built ships at a price indicated by the U.S.-world price-gap for the types of ships used in these trades. As noted in table 5-2, the lowest estimate of this price gap is approximately 50 percent. Other studies have placed the price gap as high as 150 percent.[61] In addition, as discussed earlier, capital costs (which are primarily the amortized cost of the ship) on average account for approximately 26 percent of the daily cost breakout for U.S.-flag liner operators, including primarily container vessels, but also tankers and other types of bulk vessels. Therefore, daily costs, including capital costs, are 13 to 39 percent higher than they would be if domestic carriers were allowed to purchase foreign-built ships. Within the partial-equilibrium analysis, removal of the U.S.-build

[59] As before, this distinction refers to the deep–sea coastwise and noncontiguous trade.

[60] For further discussion, see USITC, *Shipbuilding Trade Reform Act of 1992: Likely Effects on Enactment*, Publication 2495, June 1992.

[61] The results of recent studies examining this issue are summarized by the National Shipbuilding Research Program, found at http://www.nsrp.org/main.html.

requirement is simulated by applying a reduction to the cost (i.e., factor supply) of deepwater cabotage services that is equivalent to the range of the cost gap, 13 to 39 percent.

Table 5-5 presents the estimated effects on domestic employment, output, price, and consumer welfare if domestic carriers had been allowed to purchase foreign-built ships in 1996. The estimated 5 to 12 percent reduction in the domestic price of cabotage services would have caused an increase in demand.[62] Domestic revenues would have increased by $69.5 million to $188.9 million, or by 2.5 percent to 6.8 percent, respectively. Similarly, employment in the deepwater domestic sector would have increased by 670 to 1,920 full-time equivalent jobs, or approximately 8 to 22 percent, respectively. The increased consumption of cheaper cabotage services would have benefitted domestic consumers of cabotage services with a welfare increase ranging from $138 million to $380 million.[63]

Table 5–5
Partial–equilibrium results of partial elimination of the Jones Act

Item	Estimate	
	Low	High
Price of cabotage *(percent)*	–4.8	–12.3
Volume of shipments *(percent)*	7.6	21.8
Revenue:		
Value *(million dollars)*	69.5	188.9
Percent	2.5	6.8
Employment change:		
FTEs[1]	670	1,920
Workers *(percent)*	7.6	21.8
Consumer welfare *(million dollars)*	138	380

[1] Full–time equivalents.

Source: Estimated by staff of the USITC.

[62] The partial equilibrium model that was used is a version of the COMPAS model. For further description of this model, see Joseph F. Francois and H. Keith Hall, "Partial Equilibrium Modeling," in Joseph F. Francois and Kenneth A. Reinert, eds., *Applied Methods for Trade Policy Analysis, A Handbook* (Cambridge: Cambridge University Press, 1997). A demand elasticity of –1.5 and a supply elasticity of 2 were used to obtain the estimates in table 5–5.

[63] The supply of U.S.–flag operators in the international trades after partial liberalization would depend upon whether such operators were permitted to purchase foreign–built vessels under the terms of the partial liberalization, and whether such vessels could continue to receive any federal operating subsidies or preference cargo. It is not possible to determine the likelihood of the various legislative alternatives. The sector of the U.S.–flag fleet engaged in international operations has also declined substantially; the subsidized and unsubsidized segments of the U.S.–flag, non–Jones Act fleet employ approximately the same number of merchant seamen as are employed by the deep–sea Jones Act fleet.

Because very few large vessels have been built by U.S. shipbuilders for the domestic market in recent years, an amendment to allow U.S. operators to purchase foreign-built vessels of 1,000 grt and over would have little effect on current production or employment levels. Such an amendment could hurt potential business and employment for U.S. yards because: 1) the U.S. containership fleet is old, and most tonnage will need to be replaced in the near future;[64] and 2) U.S. yards have estimated that more than 40 tankers may be replaced or rebuilt to meet the 2010 double-hull requirement. If U.S. operators could purchase such vessels in foreign yards, which have lower production costs and a tremendous current exchange-rate advantage, U.S. yards would receive few, if any, of these orders.

Truck Transport

Import restrictions in the United States truck transportation sector can be classified as technical or regulatory barriers to trade. As traditional tariff and quantitative restrictions have fallen over time, technical barriers to trade such as standards, testing, and safety regulation, have increased in relative importance. Therefore, these factors have become the focus of analysis to determine how they may act as import impediments. If trade-specific impediments to trucking competition are identified and judged significant in this sector, an attempt will be made to determine the economic impact of these impediments. Cross-border truck traffic between the United States, Canada, and Mexico is governed by the three countries' existing regulatory and safety regimes and by a schedule of liberalization agreed to under the NAFTA to afford national treatment to signatories and to ensure harmonization of standards. NAFTA contained a timetable for the removal of barriers affecting the free movement of international cargo. It was intended that, in 1995, Mexican trucks would be allowed to carry cargo anywhere in the border states of California, Arizona, New Mexico, and Texas instead of just to cities and counties adjacent to the border, and all restrictions on cross-border access would be lifted by the year 2000.[65] Safety concerns in the United States have resulted in postponed implementation dates for this agreement.

Truck traffic comprises the largest percentage of cross-border exports and imports with Canada and Mexico, carrying over 85 percent of U.S.-Mexico trade, and nearly 70 percent of U.S.-Canada trade.[66] Summary data for the truck transport sector are presented in table 5-6.

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[64] Warren Leback, "Open a Jones Act window, briefly," *The Journal of Commerce*, Mar. 31, 1999.

[65] OECD, "Liberalisation in the Transport Sector in North America," Oct.

[66] American Trucking Associations, submission to the U.S. International Trade Commission in connection with inv. No. 332–325, the Economic Effects of Significant U.S. Import Restraints, June 12, 1998, p. 2.

Table 5-6
Truck transport: U.S. industry summary data, 1993–96

Item	1993	1994	1995	1996
Revenues (*billion dollars*)	142.6	155.7	161.8	172.7
Employment (*thousand workers*)	1,512	1,652	1,721	1,725
Exports (*billion dollars*)[1]	1.5	1.7	1.9	2.1
Imports (*billion dollars*)[1]	2.2	2.5	2.5	2.8

[1] Exports and imports represent cross-border trade only.

Source: U.S. Department of Commerce, Bureau of Economic Analysis; U.S. Department of Commerce, Economics and Statistics Administration, Bureau of the Census; U.S. Department of Transportation, Bureau of Transportation Statistics; and the American Trucking Associations.

Canada

With respect to cabotage, in a final rule published Feb. 22, 1999,[67] the U.S. Customs Service (USCS) has changed the way it determines whether foreign-based vehicles are engaged in international or domestic traffic.[68] The new rule further aligns U.S. and Canadian rules.[69] Now, the USCS allows commercial vehicles participating in international traffic to transport goods between points in the United States, as long as the local movement is incidental to an immediately prior or subsequent international trip. The new rule includes a more liberal definition of an incidental move than was previously the case: formerly, to qualify as incidental, a trip had to be in the general direction of an export movement, or part of the return movement of the vehicle to its base country.[70] Moreover, the USCS no longer automatically considers the movement of an empty vehicle between two U.S. points to be a domestic move, making it easier for an operator to reposition empty vehicles.

The Canadian Trucking Alliance (CTA)[71] has stated approval of this regulation to decrease restrictions on foreign-based trucks operating in the United States. Although December 1997 changes to USCS administrative rules had gone some way toward harmonization, U.S. cabotage restrictions over incidental moves by Canadian-based vehicles remained more restrictive than comparable Canadian laws governing U.S.-based vehicles operating in Canada.[72] The final rule was recently approved by the U.S. Department of the Treasury and completes a three-stage process of harmonizing U.S. and Canadian regulations governing trucking equipment cabotage. The effort to adopt the rule was the result of a cooperative effort between the CTA and the American Trucking Associations (ATA), along with the Canadian and U.S.

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[67] Federal Register, Vol. 64, No. 30, pp. 7502–7504.

[68] The International Report, found at http://www.equipmentsearch.com/misc/rpmcanada/11–12–97 internationalreport.htm, retrieved Jan. 27, 1999.

[69] However, the U.S. and Canadian trucking associations maintain that the changes do not address a remaining important immigration barrier. Kevin G. Hall, "Customs eases cabotage rules; immigration service still balks," *Journal of Commerce*, Feb. 25, 1999.

[70] The new rule considers vehicles transporting loads originating in one country and terminating in another to be engaged in international traffic even if there is an incidental move, as long as the incidental move is immediately preceded or followed by an international move. Formerly, a foreign–based truck could not move freight between two U.S. points even if the vehicle had only international freight on board and was part of an international movement.

[71] Canadian Trucking Alliance, Press Release, "Canadian Truckers Applaud Proposal to Relax Cabotage Restrictions in the US," May 26, 1998, found at internet address http://www.ontruck.org/cta/pressrel/1998/ ctapr98may26–01.htm, retrieved Jan. 27, 1999.

[72] Canadian Trucking Alliance, submission to the U.S. International Trade Commission in connection with inv. No. 332–325, the *Economic Effects of Significant U.S. Import Restraints*, May 7, 1998, p. 6.

federal governments, to establish comparable cabotage regulations for the domestic use of foreign-based trucks operating primarily in international commerce.[73]

Mexico

NAFTA was to provide Mexican truckers full access[74] to U.S. border states (California, Arizona, New Mexico, and Texas) starting in December 1995, and to the entire United States by 2000. However, in December 1995, the U.S. Department of Transportation suspended processing of applications by Mexican trucking firms to serve these border states until safety concerns were resolved.

The lack of comparability between Mexican inspection procedures and U.S. standards, and the impracticability of U.S. border officials inspecting all Mexican drivers or trucks for violations, have been cited by U.S. officials as a reason for continuing to delay full implementation of the NAFTA trucking provisions.[75] The United States and Canada have developed uniform inspection and safety standards for both trucks and drivers. However, Mexico does not have a similar truck inspection program. A recent audit by the U.S. Department of Transportation's (DOT) Office of the Inspector General found that too few U.S. inspections of Mexican trucks were being conducted at border crossings relative to the volume of traffic, and of those inspections that did occur, a high percentage of Mexican trucks failed.[76] Because trucks that are not inspected are allowed to cross the border, this may indicate that a number of trucks entering the United States may fail to comply with U.S. safety standards. Of Mexican trucks inspected, approximately 44 percent were removed from

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[73] In December 1997, the U.S. Customs Service changed its interpretation of international traffic, to look to the origin and destination of goods carried, rather than the routes traveled by the vehicles themselves. In addition, vehicles moving in the United States without a payload were no longer considered to be engaged in local traffic. The change that is now being proposed by the U.S. Customs Service will remove important restrictions on the domestic use of foreign–based equipment. There are no parallel Canadian restrictions. Canadian Trucking Alliance, submission to the U.S. International Trade Commission in connection with inv. No. 332–325, the *Economic Effects of Significant U.S. Import Restraints*, May 7, 1998, p. 6.

[74] Mexican trucks already have access to a 20–mile zone along the U.S. border under a pre–NAFTA bilateral arrangement.

[75] Jack Burke, "Border beefs: As NAFTA trucking talks continue, little apparent progress, same promises for crossborder trucking," *Journal of Commerce*, Mar. 16, 1998.

[76] Transport Topics: "Audit: Poor Truck Inspections at Border," American Trucking Associations (ATA), Jan. 4, 1999, found at http://www.ttnews.com/members/topNews/0000606.html, retrieved Jan. 12, 1999.

service because of serious safety violations, in contrast with a 25 percent out-of-service rate for U.S. trucks and a 17 percent out-of-service rate for Canadian trucks.[77]

Mexico has requested that the United States process the more than 100 requests by Mexican carriers for U.S. operating authority. The United States, however, maintains that opening U.S. border states to Mexican trucking[78] is contingent upon mutually acceptable truck safety inspections and enforcement.

Consequently, Mexico has sought formal consultations under NAFTA dispute settlement procedures. Consultations began in January 1996, and technical discussions among safety officials continued without reaching a satisfactory solution. In July 1998, by requesting a meeting of the Free Trade Commission created by NAFTA, Mexico began the second phase of the dispute settlement mechanism.

Lack of progress in this matter has also been criticized by the American Trucking Associations (ATA). The ATA maintains that failure to open borders has harmed the U.S. trucking industry, and has prevented cooperation in other areas of importance to trucking firms, such as permission for U.S. 53-foot trailers to operate in Mexico, increased investment by U.S. companies in Mexican trucking firms, and the finalization by the Government of Mexico of small parcel delivery regulations for U.S. carriers into Mexico.[79] The ATA also noted that the indefinite delay has resulted in up to 50 percent of trucks crossing the border empty, resulting in further congestion and delays at ports of entry.

Recent reports suggest that efforts to resolve the trucking dispute are intensifying, particularly in light of the approaching year 2000 deadline for full access. The United States and Mexico, along with Canada, have been working to implement the cross-border provisions. The Land Transportation Standards Subcommittee (LTSS), created by NAFTA to address the development of more compatible standards, held its fifth meeting in June 1998. Although NAFTA calls for the LTSS to complete its work on reciprocal safety regimes by 2000, the Subcommittee noted that work in some areas may extend beyond the specified time frame.[80] Work is progressing on issues such as the exchange of

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[77] Department of Transportation, Office of the Inspector General, Audit: Motor Carrier Safety Program for Commercial Trucks at U.S. Borders, found at http://www.dot.gov/oig/whatnew.html, retrieved Jan. 19, 1999.

[78] Citing similar grounds, the United States decided to delay implementation of NAFTA commitments on bus transportation, which called for lifting of restrictions on regular–route, cross–border scheduled bus service on January 1, 1997. Mexican Ministry of Commerce and Industrial Development, Press Release: "Mexico Pursues the NAFTA Dispute Settlement Mechanism Regarding the Opening of Cross–Border Transportation Services," Embassy of Mexico, Washington, D.C., July 24, 1998.

[79] ATA submission, p. 2.

[80] NAFTA Land Transportation Subcommittee, "Joint Statement of Accomplishments, Montreal, June 8–12, 1998," found at http://ostpxweb.dot.gov.aviation/X20/NAFTA.HTM, retrieved Dec. 12, 1998.

motor carrier safety data, inspection standards training, emissions, vehicle weights and dimensions, hazardous materials transport regulation, an emergency response guide, and tank truck inspections. In order to address follow-on standards issues in detail, the LTSS also created the Transportation Consultative Group, which consists of five separate working groups that meet periodically. In addition, a new agreement on drug and alcohol testing of drivers has removed a significant safety concern. In June 1998, the United States and Mexico signed a memorandum of understanding on drug and alcohol testing of commercial drivers, to ensure that Mexico's testing program meets U.S. standards.[81]

Air Transport

In the international marketplace, air transport is governed by (1) a network of bilateral agreements that regulate entry or directly restrict the competitiveness of foreign airlines; (2) domestic regulatory systems that effectively restrict entry of foreign carriers; (3) restrictions on ancillary domestic markets that impair a foreign carrier's ability to compete; and (4) subsidization and state ownership of competing foreign airlines. The URA does not cover this sector and has no effect on the operation of these nontariff barriers. Summary data for the air-transport sector are presented in table 5-7.

Recent Developments in International Air Services

Although bilateral agreements between governments still govern air transport, bilateral Open Skies arrangements are being negotiated to increase the freedom of airlines to choose and expand service on international routes. These agreements enable airlines from one country to fly to any city in the other country, extend flights to third countries, also known as "beyond rights," and jointly market their services in code-sharing arrangements.[82] However, the accepted definition of a fully liberalized Open Skies agreement does not allow cabotage,[83] nor does it incorporate provisions on foreign ownership and control

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[81] U.S. Department of Transportation, Press Release: "U.S., Mexico Sign Memorandum of Understanding on Drug and Alcohol Testing of Commercial Drivers," Washington, DC, June 10, 1998.

[82] A code–sharing arrangement is an alliance between airlines whereby airlines share reservation computer codes, coordinate flight schedules, and allow single payments through either carrier for connecting flights to facilitate faster, more efficient transfer of passengers to final destinations.

[83] Cabotage is the transport of passengers between any two points in the same country. Therefore, Open Skies agreements do not allow foreign carriers to transport passengers point–to–point within the partner country.

of U.S. carriers. The U.S. Department of Transportation (DOT) defines a fully liberalized Open Skies agreement to include:

- No limits on the number of airlines designated by either country
- Unrestricted capacity and frequency on all routes
- Unrestricted route and traffic rights, including no restrictions as to intermediate and beyond points
- Pricing flexibility
- Liberal charter arrangements
- Ability to convert earnings and remit in hard currency promptly and without restriction
- Open code-sharing opportunities
- Self-handling provisions (the right of a carrier to perform and control its airport functions in support of its operations)
- Ability of carriers to enter freely into commercial transactions related to their flight operations
- Explicit commitment to nondiscriminatory operation of and access to computer reservation systems
- The option to exchange seventh freedom[84] rights for scheduled and charter all-cargo service[85]

The U.S. Government expects full Open Skies agreements to increase competition, decrease fares and freight rates, and increase trade and tourism in signatory countries.[86] However, the benefits of new Open Skies agreements are likely to be less significant in markets that have capacity constraints, existing liberal access, or a small number of dominant carriers that control a substantial number of takeoff and landing slots.

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[84] Seventh freedom is the right of one country's carriers to carry traffic between two foreign countries on a service with no connection to the home country.

[85] Office of the Assistant Secretary for Aviation and International Affairs, "Elements of Open Skies," found at Internet address http://www.ostpxweb.dot.gov/aviation/IntAv/OpenSky.htm, retrieved Sept 22, 1997.

[86] U.S. Department of Transportation (DOT) representative, telephone interview by USITC staff, Jan. 15, 1998.

On March 31, 1992, the U.S. Secretary of Transportation announced the first in a series of initiatives that led to the Open Skies Initiative in Europe and agreements with 12 European countries.[87] More recent U.S. efforts to liberalize global aviation services have yielded multiple new agreements. To date, the United States has signed 33 full Open Skies agreements and a number of partial air service agreements. In June 1997, the United States proposed a set of talks with other nations designed to work toward an open global market in international aviation services. Subsequently, the United States concluded a full Open Skies agreement with Italy and more limited agreements with Japan, Korea, and France. These limited agreements liberalize air traffic but are not full Open Skies agreements.[88] For example, only the three so-called incumbent U.S. carriers (Northwest Airlines, United Airlines, and Federal Express) may fly between any U.S. city and any Japanese city, as can All Nippon Airways and Japan Airlines.

U.S. negotiations with the United Kingdom remain deadlocked over issues pertaining to a proposed alliance between British Airways and American Airlines. British Airways currently controls sufficient landing slots at London's Heathrow International Airport to hinder competition with U.S. and other airlines, and the United States and the United Kingdom disagree on the number of landing slots British Airways should cede. The U.S. Government has made an Open Skies agreement a precondition for approval of the proposed alliance. The European Union (EU) Commission has cautioned that an alliance would provide the two airlines with 60 percent of the scheduled passenger traffic to the United Kingdom.[89] Moreover, the European Commission has stated that the two airlines must relinquish 267 weekly slots at Heathrow and Gatwick as a precondition for the proposed alliance.[90] In response, the scope of the alliance is likely to be scaled back.

Other Services

Other U.S. service markets feature relatively few import restraints, which for the purposes of this discussion comprise limitations on market access or national treatment.[91] The U.S. Schedule of Commitments, submitted to the

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[87] Angela Edwards, "Foreign Investment in the U.S. Airline Industry: Friend or Foe?" *Emory International Law Review*, Vol. 9, Fall 1995, No. 2, found at Internet address http://www.law.emory.edu/EILR/volumes/fall95/ edwards.html, retrieved July 15, 1997.

[88] According to the aforementioned DOT criteria.

[89] Neil Buckley, "BA Accuses Brussels of Sloppiness," http://www.newsedge, retrieved Sept. 6, 1997.

[90] CNNfn, "BA scales back AA link," Oct. 30, 1998, found at http://www.cnnfn.com/hotstories/ deals/9810/30/ba/, retrieved Feb. 13, 1999.

[91] Under the principle of national treatment, a nation accords regulatory treatment to foreign service suppliers that is no less favorable than that accorded to domestic service suppliers.

World Trade Organization (WTO) upon completion of negotiations over the General Agreement on Trade in Services (GATS), binds a degree of openness that is matched or exceeded by few other countries in the world.[92] For instance, in its initial schedule submitted in April 1994, the United States scheduled full or partial commitments to accord market access and national treatment in 63 percent of the industries addressed in the GATS. Corresponding percentages for the European Union and Japan, whose schedules also exhibited relatively few restrictions, were 45 percent and 64 percent, respectively.[93] Almost every other trading partner fell well below this level of openness.[94]

Nonetheless, the United States does restrict imports in certain service industries. Restrictions believed to have economy-wide effects are found in the basic telecommunication and financial service industries. These industries' contributions to the U.S. economy are highlighted in tables 5-8 and 5-9. Other service industries—particularly professional service industries such as the accountancy, legal, architecture, and engineering service industries—are also subject to import restraints, but the effects of these restraints are believed to have narrower impacts.[95] In addition, the WTO Working Party on Professional

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[92] For a fuller discussion of commitments scheduled under the General Agreement on Trade in Services, see U.S. International Trade Commission (USITC), *General Agreement on Trade in Services: Examination of Major Trading Partners' Schedules of Commitments*, USITC publication 2940, Dec. 1995; USITC, *General Agreement on Trade in Services: Examination of South American Trading Partners' Schedules of Commitments*, USITC publication 3007, Dec. 1996; USITC, *General Agreement on Trade in Services: Examination of Schedules of Commitments Submitted by Asia/Pacific Trading Partners*, USITC publication 3053, Aug. 1997; and USITC, *General Agreement on Trade in Services: Examination of Schedules of Commitments Submitted by Eastern Europe, the European Free Trade Association, and Turkey*, USITC publication 3127, Sept. 1998.

[93] USITC, *U.S. Trade Shifts in Selected Industries: Services*, USITC publication 2969, June 1996, pp. 4–12 through 4–14; and USITC, *General Agreement on Trade in Services: Examination of Schedules of Commitments Submitted by Eastern Europe, the European Free Trade Association, and Turkey*, p. 15–8.

[94] Significant exceptions are Canada, Iceland, Norway, and Switzerland. Using a similar methodology, the World Bank, reached similar conclusions. See Bernard Hoekman, *Tentative First Steps: An Assessment of the Uruguay Round Agreement on Services*, paper presented at The Uruguay Round and the Developing Economies Conference of the World Bank, Washington, DC, Jan. 26–27, 1995.

[95] Geza Feketekuty, "Setting the Agenda for the Next Round of Negotiations on Trade in Services," paper presented at the Institute for Institutional Economics, (Apr. 15, 1998).

Table 5-7
Air transport: U.S. industry summary data, 1993-96

Item	1993	1994	1995	1996
Revenues (*billion dollars*)	84.7	88.3	94.3	101.7
Employment (*thousand workers*)	537	543	547	565
Exports (*billion dollars*)	19.2	20.3	22.8	24.4
Imports (*billion dollars*)	13.7	15.8	17.6	19.0

Source: U.S. Department of Commerce, Bureau of Economic Analysis, U.S. Department of Transportation, Federal Aviation Administration, and the Air Transport Association.

Table 5-8
Telecommunication services: Summary data, 1994-97

Item	1994	1995	1996	1997
Production (*billion dollars)*	142.1	144.1	149.6	([1])
Employment (*thousand workers*)	838	838	855	914
Exports (*million dollars*)[2]	2,865	3,228	3,270	3,771
Imports (*million dollars*)[3]	6,928	7,305	8,304	8,113

[1] Not available.
[2] Predominantly includes net settlement receipts of U.S. carriers for terminating inbound foreign calls.
[3] Predominantly includes net settlement payments by U.S. carriers to compensate foreign carriers for terminating outbound U.S. calls.

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

Table 5-9
Banking, insurance, and other financial services: Summary data, 1994-97

Item	1994	1995	1996	1997
Production (*billion dollars)*	660.3	518.6	562.3	([1])
Employment (*thousand workers*)	5,361	5,300	5,362	5,482
Exports (*million dollars*)[2]	7,439	8,325	10,353	13,455
Imports (*million dollars*)[3]	5,688	7,832	6,768	9,114

[1] Not available.

[2] For banking and securities, the figures reflect brokerage services, private placement services, underwriting services, financial management services, credit card services, credit-related services, financial advisory and custody services, securities lending services, and other financial services. For insurance, the figures reflect primary and reinsurance premiums (net of claims remitted) paid by foreign persons to U.S. carriers operating in the U.S. market.

[3] For banking and securities, the figures reflect brokerage services, private placement services, underwriting services, financial management services, credit card services, credit-related services, financial advisory and custody services, securities lending services, and other financial services. For insurance, the figures reflect primary and reinsurance premiums (net of claims receipts) paid by U.S. persons to foreign carriers operating in their home markets.

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

Services (WPPS) has recently adopted disciplines and guidelines regarding accounting—the first industry treated by the group—that may aid in the dismantling of these restrictions in the United States and abroad.[96]

Basic Telecommunication Services

Under the WTO Agreement on Basic Telecommunications, the United States scheduled binding commitments that ensure foreign access to markets for voice telephone services, packet-switched data transmission services, circuit-switched data transmission services, telex services, telegraph services, facsimile services, and private-leased circuit services.[97] However, the United States retained partial restrictions on foreign access to satellite-based services. The Communications Satellite Corporation (COMSAT)—a private corporation created by the Communications Satellite Act of 1962—retains monopoly links with the International Telecommunications Satellite Organization (INTELSAT) and the International Maritime Satellite System (INMARSAT). In addition, the United States declined to schedule commitments that accord foreign firms full market access and national treatment in the U.S. market for Direct to Home (DTH), Direct Broadcast Satellite (DBS), and satellite-based digital audio services, and further retained an exemption to the general "Most Favored Nation" (MFN) obligation pertaining to these services. Consequently, for example, the United States can restrict foreign access to and/or provision of DTH, DBS, and digital audio services in the U.S. market if a country does not award U.S. firms substantially full market access or national treatment in return.

Furthermore, foreign direct investment in common carrier radio licenses is limited to 20 percent of firm equity, with no restrictions on indirect investment. Common carrier radio licenses may not be directly held by foreign individuals, foreign governments, or foreign corporations. In essence, this requires foreign firms to establish U.S. holding companies prior to the establishment or acquisition of a telecommunications carrier in the U.S. market.

Financial Services

Regulation of the financial services market in the United States is complex, characterized by myriad regulations and multiple regulatory bodies at both the state and federal levels. In the insurance sector, each state's Insurance Commissioner is the primary regulator of the industry. In the banking sector, state and federal regulators have jurisdiction over different banks and different

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[96] WTO, press release, "WTO Adopts Guidelines for Recognition of Qualifications in the Accountancy Sector," May 29, 1998; and WTO, press release, "WTO Adopts Disciplines on Domestic Regulation for the Accountancy Sector," Dec. 14, 1998.

[97] WTO, GATS, United States: Schedule of Specific Commitments, supplement 2 (GATS/SC/90/Suppl. 2), Apr. 1997.

aspects of the industry. The securities sector is primarily regulated at the federal level by the Securities and Exchange Commission (SEC), although many states impose restrictions to protect small investors.

There are many restrictions on foreign trade in financial services outlined in the U.S. Schedule of Commitments,[98] although the degree to which these restrictions constitute impediments to trade is believed to be small, given the level of foreign penetration of the U.S. financial services market. Due to the number of restrictions, most import restraints are summarized in tables C-1 and C-2 in appendix C. Table C-1 outlines state and federal import restraints in the insurance sector, and table C-2 outlines state and federal restraints in the banking and securities sectors. Some of these regulations, principally those on insurance and banking, condition market entry and licensing on citizenship or residency, while others limit lines of business. In the securities industry, the SEC operates under a system of equal market access. This means that most SEC requirements are applied to financial firms equally, whether they are owned by U.S. or foreign citizens, and whether the firms are based in the United States or elsewhere. All broker-dealers are required to register with the SEC, but they are not required to report the extent to which they are owned by foreigners.[99] The single exception to the principle of equal market access is that foreign investment advisers are required to register with the SEC.[100]

In addition, the United States claims several exemptions from MFN obligations for the financial services sector.[101] The majority of these exemptions provide for reciprocity tests, in order to ensure market access to U.S. firms operating abroad, and they apply equally to all countries. In the insurance sector, the United States imposes measures according differential treatment to insurance companies desiring to establish or expand businesses in the United States. These measures are influenced by whether foreign companies are based in countries which have acted to compel a U.S. person or company to reduce its share of ownership in an insurance services provider to a level below that prevailing on December 12, 1997.[102]

In the banking and securities sectors, several specific exemptions from MFN obligations are claimed. First, before observing the MFN principle, the United States reserves the right to employ reciprocity tests to:

- grant foreign persons the authority to act as sole trustees of an indenture for a bond offering in the United States;

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[98] WTO, GATS, United States: Schedule of Specific Commitments, supplement 3 (GATS/SC/90/Suppl.3), Feb. 26, 1998.

[99] U.S. Department of the Treasury, "National Treatment Study," Nov. 1998, p. 100.

[100] U.S. Department of the Treasury, "National Treatment Study," Nov. 1998, p. 100.

[101] WTO, GATS, United States: List of Article II (MFN) Exemptions, supplement 3 (GATS/EL/90, Suppl.3), Feb. 26, 1998.

[102] This date marks the signing of the WTO Financial Services Agreement.

- designate a foreign person as a primary dealer in U.S. Government debt securities; and
- in specific states,[103] permit foreign persons to establish state-licensed branches, agencies, or representative offices, or to own commercial bank subsidiaries.

In addition, two exemptions from MFN obligations pertain to the placement of assets. The United States claims a particular exemption for Canada, allowing a broker-dealer registered under U.S. law but based in Canada to maintain its required reserves in a Canadian bank, subject to Canadian supervision. The state of Michigan also claims an exemption from MFN requirements to permit corporate central credit unions to place deposits in banks chartered in Canada or the European Common Market, but not in banks chartered in other foreign countries.

As noted, in aggregate, the degree to which these restraints impede trade is believed to be small. The current business activities of foreign firms in the U.S. financial services markets provide substantial evidence of their penetration of the U.S. economy. As of March 31, 1998, 271 foreign banks from 59 countries were operating in the United States, with a total of $2.1 trillion in assets. Foreign banks currently account for about one-fifth of the assets of all banking offices in the United States.[104] As of 1996, there were 429 foreign insurance companies operating in the United States: 95 life insurance companies, 281 non-life companies, and 53 reinsurance companies.[105]

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[103] The states are California (applies also to savings and loan associations), Connecticut (applies also to credit unions), Georgia, Illinois, Kentucky, Louisiana, Massachusetts, Michigan, North Carolina, Pennsylvania, Texas, and Washington.

[104] U.S. Department of the Treasury, "National Treatment Study," Nov. 1998, pp. 89–90. Comparable numbers are not available for the securities sector.

[105] Representative of the National Association of Insurance Commissioners, telephone interview with USITC staff, Jan. 29, 1999.

CHAPTER 6
Significant Tariff Restraints

Introduction

This chapter identifies a set of industries with tariff spikes and examines the economic impact of the removal of these significantly higher tariff rates. Tariff spikes can cause effects not easily recognized, as the impact may be most noticeable in upstream and downstream sectors. In particular, upstream sectors will likely contract and downstream sectors will likely expand when tariff spikes are eliminated and a more uniform tariff level established.

Although this analysis will focus on tariff levels in 1996, it is worth noting that, U.S. tariff rates generally have been falling over time. Table 6–1 shows effective,[1] c.i.f.–based tariff rates by single–digit Standard Industrial Trade Classification (SITC) sectors. The average tariff rate declined by 37.3 percent, from 3.30 percent ad valorem in 1989 to 2.07 percent in 1997. During this 9–year period, only one annual increase occurred in effective tariff rates, from 3.19 percent ad valorem in 1990 to 3.22 percent in 1991. Since 1993, all sectors showed rates declining consistently on an annual basis.

The method used to choose sectors with tariff spikes in this second update differs from that used in previous investigations.[2] Specifically, average duties applied to these sectors are one standard deviation higher than the mean duty on U. S. imports, averaged over all four–digit sectors.[3] Applying this standard yields a duty threshold of about 6.2 percent ad valorem. In addition, only

[1] Effective tariff rates are average ad valorem rates for a broadly defined sector. These rates are calculated as the sum of tariff duties collected, divided by c.i.f. or customs value imports.

[2] The changes in the selection criterion are an attempt to refine the methods used in selecting high tariffs. Specifically, the selection criterion (one standard deviation above the mean) used in the current report defines a benchmark that can be extended to future studies. A consistent criterion based on the observed distribution of tariffs allows flexibility in identifying high tariffs, especially in an environment in which levels of protection change considerably over time.

[3] The average tariff rates were calculated for each 4–digit SIC sectors. The mean and standard deviation of all the 4–digit SICs were calculated. If the tariff rate for a specific SIC is greater than the mean plus the standard deviation, the sector is selected for analysis.

Table 6-1
Effective U.S. tariff rates by 1-digit Standard Industrial Trade Classification (SITC) sectors, 1989-97

Description	1989	1990	1991	1992	1993	1994	1995	1996	1997
Food and live animals	1.35	1.37	1.33	1.19	1.22	0.90	0.83	0.83	0.69
Beverages and tobacco	2.08	1.93	1.91	1.78	1.61	1.50	1.24	1.00	0.95
Crude materials, inedible, except fuels	1.62	1.31	1.32	1.38	1.56	1.54	0.98	0.85	0.83
Mineral fuels, lubricants and related materials	3.96	3.93	3.83	3.65	3.56	3.49	2.63	2.36	2.12
Animal and vegetable oils, fats and waxes	2.38	2.43	2.42	2.35	2.20	2.16	1.88	1.86	1.88
Chemicals and related products, n.e.s.	9.31	9.25	9.27	9.08	8.90	8.52	7.78	7.02	6.94
Manufactured goods classified chiefly by material	14.58	14.11	13.94	13.11	12.25	12.12	11.62	11.20	10.85
Machinery and transport equipment	2.56	2.60	2.50	2.50	2.39	2.37	2.02	1.88	1.66
Miscellaneous manufactured articles	2.26	2.22	2.17	2.05	2.05	1.88	1.57	1.38	1.18
Commodities and transactions not classified elsewhere in the SITC	2.87	2.81	2.87	2.79	2.68	2.57	1.65	1.42	1.17
Total	3.30	3.19	3.22	3.15	3.07	2.91	2.43	2.20	2.07

Source: U.S. Department of Commerce.

sectors that have at least $100 million in imports were considered. Sectors covered elsewhere in the report are not reanalyzed in the significant tariff section. There are 10 4–digit SIC industry sectors remaining. These sectors are shown in table 6–2.[4]

With the exception of pressed and blown glass, the industry sectors correspond directly to sectors in the USITC CGE model's database and are analyzed using the CGE model. The analysis of the pressed and blown glass sector is conducted using a partial equilibrium model. Table 6–2 also shows the effective tariff rates for each sector, calculated on both a c.i.f. and customs value basis, and the tariff revenue collected for U.S. imports of these products in 1996. Tariff revenue ranges from a high of $249 million for footwear to a low of $29.3 million for china tableware.

Economic Effects of Removing Significant Tariff Restraints

As in previous chapters, the analysis in this chapter examines what impact trade liberalization would have had on each of these sectors and the overall economy if tariffs had been eliminated in 1996. In order to isolate the sectoral effects of tariff removal, the analysis was conducted on a sector–by–sector basis.

Table 6–3 shows the estimated net economic welfare gains that would have been realized in 1996.[5] The removal of tariffs applied to imports of footwear, pressed and blown glass, and ball and roller bearings generated the largest gains ($501, $34, and $49 million, respectively). Tariff removal resulted in the smallest gain for cutlery ($4 million).

A number of factors affect the impact of tariff removal on the overall economy, as well as the targeted industry sectors. Notably, the level of the tariff, the share of the U.S. market accounted for by imports, and the size of the commodity sector in relationship to the overall economy all tend to be positively related to the size of the estimated effects. In addition, the degree to which imports substitute for domestic production and the price responsiveness of supply and demand have an effect.

The remainder of this chapter discusses the effects of tariff elimination on a sectoral basis. Each section provides summary information on the goods included in the sector as well as industry trends during 1994–1996.

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[4] Nine of the industry sectors shown in table 6–2 were also examined in ch. 6 of USITC, *Significant U.S. Import Restraints*, 1995. These sectors are: ball and roller bearings, and parts; ceramic wall and floor tile; costume jewelry; cutlery; footwear; frozen fruit, fruit juices, and vegetables; leather gloves and mittens; personal leather goods; and china tableware.

[5] For an explanation of the changes in the estimated net welfare effects, see Chapter 1 of this report.

Table 6-2
Sectors with the Highest Effective Tariff Rates

SIC No.	Description	Average Column 1 tariff rate based on C.i.f. value[1]	Customs value [2]	Tariff revenue
				($ millions)
2037	Frozen fruits, fruit juices and vegetables	8.3	8.9	119.4
([3])	Footwear	9.3	9.7	249.7
3151	Leather gloves and mittens	12.9	13.3	39.3
3172	Personal leather goods	8.2	8.5	40.1
3229	Pressed and blown glass	7.4	7.8	34.0
3253	Ceramic tile	14.0	16.3	102.7
3262	China tableware	9.8	10.4	29.3
3421	Cutlery	6.2	6.4	42.0
3562	Ball and roller bearings	7.4	7.6	105.3
3961	Costume jewelry	6.3	6.7	37.0

[1] Duties collected divided by c.i.f. imports.
[2] Duties collected divided by "customs value" imports.
[3] The following sectors are included: men's footwear (SIC 3143); women's (nonathletic) footwear (SIC 3144), nonrubber footwear, n.e.c. (SIC 3149); and rubber footwear (SIC 3021).

Source: U.S. Department of Commerce.

Table 6-3
Estimated economy-wide results of tariff and quota elimination

SIC No.	Description	Tariff Revenue	Wage-to-rental Ratio	Exchange Rate	Equivalent Variation
			Percentage change		*Million dollars*
2037	Frozen fruits, fruit juices and vegetables	-0.6	(2)	(2)	28
(1)	Footwear	-7.0	(2)	0.1	501
3151	Leather gloves and mittens	-0.2	(2)	(2)	16
3172	Personal leather goods	-0.2	(2)	(2)	14
3229	Pressed and blown glass	(3)	(3)	(3)	434
3253	Ceramic tile	-0.5	-8.1	(2)	9
3262	China tableware	-0.2	(2)	(2)	12
3421	Cutlery	-0.2	(2)	(2)	4
3562	Ball and roller bearings	-0.6	(2)	(2)	49
3961	Costume jewelry	-0.2	(2)	(2)	19

[1] The following sectors are included: Men's footwear (SIC 3143); women's (nonathletic) footwear (SIC 3144); nonrubber footwear, n.e.c. (SIC 3149); and rubber footwear (SIC 3021).
[2] Change less than 0.05 percent
[3] Not calculated, since a partial-equilibrium model was used.
[4] Represents a net gain in consumer surplus, accounting for terms of trade effects.

Source: USITC staff estimates.

The discussion then focuses on the estimated economic effects of removing the tariffs, with the effects on employment, output, imports, exports, and prices shown for the target sector, important upstream and downstream sectors, and the remainder of the U.S. economy.

Frozen fruits, fruit juices and vegetables

The frozen fruits, fruit juices and vegetables industry produces fruit juice concentrates, dried citrus pulp, and quick–frozen and cold–pack fruits and vegetables. Although import penetration varied significantly (ranging from a low of about 5 percent to a high of 60 percent),[6] the overall sector average was about 14 percent in 1996. The 1996 effective tariff rates on a c.i.f. and a customs basis for frozen fruits, fruit juices and vegetables were 8.3 and 8.9 percent ad valorem, respectively. Summary data for the sector are presented in table 6–4.

Economic Effects of Tariff Removal

Removal of the tariff on fruits and vegetables generates an estimated net welfare gain of $28 million in 1996. A large contribution to this net welfare gain is the expected 1.3 percent fall in the composite price of frozen fruits, fruit juices, and vegetables paid by consumers.

Table 6–5 presents detailed economic effects of tariff removal in the frozen fruit and vegetable industry. Direct effects on this industry from tariff removal are a reduction in output of $56 million and a loss of around 270 FTE jobs. Both reductions represent a decline of less than 1 percent from the original 1996 levels. Imports of frozen fruit, fruit juices, and vegetables rise by $87 million, a 7.1 percent increase, whereas exports decrease by $7 million, a decline of less than 1 percent.

Tariff removal on imports of fruits and vegetables also results in a reduction in output and employment for the major upstream industries. The combined losses to these sectors amount to $13 million in output and 100 FTE jobs. The impact on the downstream sectors is small, as is the impact on the

Table 6–4
Frozen fruits, fruit juices and vegetables: Summary data, 1994–96

Item	1994	1995	1996
Shipments (*million dollars*)	8,295.3	9,093.9	9,230.0
Employment (*1,000 workers*)	47.7	49.2	48.2
Imports (*million dollars*)	1,024	1,014	1,347
Exports (*million dollars*)	964	1,137	1,152

Source: Compiled from official statistics of the U.S. Department of Commerce.

[6] USITC staff estimates based on data from U.S. Department of Commerce.

Table 6-5
Frozen fruits, fruit juices and vegetables: Economic effects of tariff removal, changes in FTE, value and percent, 1996

Sector	Employment		Output		Imports		Exports		Composite Price
	FTE[1]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Percent*
Liberalized sector	-270	-0.7	-56	-0.7	87	7.1	-7	-0.6	-1.3
Upstream sectors:									
Fruits	-30	([3])	-3	([3])	-2	([3])	-0.6	([3])	([3])
Vegetables	-40	([3])	-5	([3])	-0.9	([3])	([4])	([3])	([3])
Metal foil and leaf	-10	-0.1	-3	-0.1	([4])	-0.1	([4])	-0.1	([3])
Trucking & courier services excluding air	-20	([3])	-2	([3])	([4])	([3])	([5])	([5])	([3])
Downstream sectors:									
Eating and drinking places	50	([3])	20	([3])	-0.6	([3])	5	([3])	([3])
Frozen specialities	([6])	([3])	-0.7	([3])	([7])	([7])	([7])	([7])	([3])
Canned fruits, vegetables, jams, jellies, preservatives	-10	([3])	-2	([3])	([4])	([3])	([4])	([3])	([3])
Rest of the U.S. economy:									
Agriculture, forestry, and fisheries	50	([3])	9	([3])	([4])	([3])	6	([3])	([3])
Mining	10	([3])	3	([3])	([4])	([3])	0.9	([3])	([3])
Construction	([6])	([3])	([4])	([3])	([7])	([7])	([7])	([7])	([3])
Nondurable manufacturing	70	([3])	17	([3])	-12	([3])	6	([3])	([3])
Durable manufacturing	320	([3])	59	([3])	-22	([3])	24	([3])	([3])
Transportation, communications and utilities	30	([3])	5	([3])	-3	([3])	4	([3])	([3])
Wholesale trade	-130	([3])	-7	([3])	([7])	([7])	([7])	([7])	([3])
Finance, insurance, and real estate	-20	([3])	-5	([3])	-0.8	([3])	2	([3])	([3])
Other services	-20	([3])	-3	([3])	-2	([3])	3	([3])	([3])

[1] Full-time equivalents.
[2] In millions of dollars in base year prices.
[3] Change less than 0.05 percent.
[4] Change less than $500,000.
[5] No exports were reported for this sector.
[6] Less than 5 full-time equivalents (FTE).
[7] Nontraded sector.

Source: USITC staff estimates.

remainder of the U.S. economy. The trade effects for these sectors are also minimal.

Footwear

The following 4 SIC industry numbers were included under this industry heading: men's nonathletic footwear (SIC 3143); women's nonathletic footwear (SIC 3144), nonrubber footwear, n.e.c. (SIC 3149); and rubber and plastic footwear (SIC 3021). The first two categories include dress, casual, and work shoes and boots. The third category includes mainly miscellaneous types of footwear worn by youths. The rubber and plastic footwear industry manufactures mainly footwear made of rubber or rubber–soled fabric, boots, galoshes, overshoes, and sandals.

In 1996, imports dominated the U.S. market, with the overall footwear import penetration ratio amounting to 82 percent.[7] In terms of quantity, the 1996 ratio of imports to domestic consumption was approximately 89 percent for men's footwear, about 92 percent for women's footwear, and about 98 percent of all nonrubber athletic footwear.[8] The maximum ad valorem rate remains 48.0 percent, even after the implementation of the URA. The effective average tariff rates on a c.i.f. and a customs value basis for rubber and plastic footwear were 11.8 and 12.4 percent ad valorem, respectively, in 1996. The effective tariff rates on a c.i.f. and a customs value basis for nonrubber footwear were 9.3 and 9.7 percent ad valorem, respectively. Summary data for the footwear sectors are presented in table 6–6.

Table 6–6
Footwear: Summary data, 1994–96

Item	1994	1995	1996
Shipments (*million dollars*)			
Men's footwear	2,040.1	1,926.1	1,923.7
Women's footwear	1,190.3	959.4	735.1
Rubber Footwear	839.5	122.0	115.8
Nonrubber Footwear	300.8	394.1	353.6
Employment (*1,000 workers*)			
Men's footwear	24.0	23.1	19.2
Women's footwear	14.4	13.5	9.9
Rubber Footwear	11.4	9.8	8.2
Nonrubber Footwear	5.2	5.8	5.6
Imports (*million dollars*)			
Men's footwear	1,948	2,018	2,056
Women's footwear	3,724	3,842	4,050
Rubber Footwear	3,012	3,232	3,430
Nonrubber Footwear	2,382	2,428	2,568
Exports (*million dollars*)			
Men's footwear	149	133	137
Women's footwear	52	52	49
Rubber Footwear	127	126	106
Nonrubber Footwear	141	151	165

Source: Compiled from official statistics of the U.S. Department of Commerce.

[7] USITC staff estimates based on data from U.S. Department of Commerce.

[8] Ibid.

Economic Effects of Tariff Removal

The removal of tariffs applied to U.S. imports of footwear would have generated an estimated net welfare gain of $501 million in 1996. This is largely due to the 7.5 percent decline in the composite price of footwear paid by consumers.

Table 6–7 presents detailed economic effects of tariff removal in this industry. Direct effects on footwear from tariff removal are a reduction in output of $162 million and a loss of approximately 1,610 FTE jobs. Both figures represent a 3.7 percent decline from original 1996 levels. Removal of the tariff also boosts footwear imports by $980 million, a 6.6–percent increase, whereas exports decrease by $15 million, a fall of 2.5 percent. The upstream composite sector is also negatively affected by the removal of tariffs applied to footwear, with declines in output and employment amounting to $39 million and 330 FTEs, respectively. Although broadwoven fabric mills are a significant supplier of imports to the footwear industry, the broadwoven fabric sector only accounts for a small share of broadwoven fabric output. As a result, the impact on the footwear sector is small but positive, resulting from overall increases in expenditures on products that incorporate braodwoven fabrics.

Leather Gloves and Mittens

The industry is composed of two major product lines: work gloves and mittens (more than 90 percent of domestic production), and dress gloves. In 1996, imports amounted to approximately 70 percent of total U.S. apparent consumption. The effective tariff rates on a c.i.f. and a customs value basis for leather gloves in 1996 were 12.9 and 13.3 percent, respectively. Summary data for the sector are presented in table 6–8.

Economic Effects of Tariff Removal

Removal of the tariff on imports of leather gloves and mittens generates an estimated net welfare gain of $16 million in 1996. This gain is largely due to the 9.7 percent fall in the composite price paid by consumers for leather gloves. Table 6–9 presents detailed economic effects of tariff removal on this sector and the remainder of the U.S. economy. Removal of the tariff leads to an increase in U.S. imports of $28 million, or 8.4 percent. Employment falls by approximately 40 FTE jobs and output falls by $3 million. Both figures represent a 2.4 percent decline from original 1996 levels. Tariff removal has a small effect on exports of these goods. The impact on the rest of the U.S. economy is negligible.

Personal Leather Goods

Firms within this sector produce a variety of goods including wallets, billfolds, French purses, and cases for eyeglasses, cigarettes, keys, and credit

Table 6-7
Footwear: Economic effects of tariff removal, changes in FTE, values and percent, 1996

Sector	Employment		Output		Imports		Exports		Composite Price
	FTE[1]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Percent*
Liberalized sector	-1,610	-3.7	-162	-3.7	980	6.6	-15	-2.5	-7.5
Upstream sectors:									
Broadwoven fabric mills	10	(3)	2	(3)	-2	-0.1	(4)	(3)	(3)
Upstream composite[5]	-330	-1.2	-39	-1.2	-18	-1.3	-18	-1.2	(3)
Rest of the U.S. economy:									
Agriculture, forestry, and fisheries	790	(3)	129	(3)	-3	(3)	90	0.2	(3)
Mining	90	(3)	28	(3)	-1	(3)	9	0.1	(3)
Construction	-10	(3)	1	(3)	(6)	(6)	(6)	(6)	(3)
Nondurable manufacturing	490	(3)	123	(3)	-116	-0.1	54	(3)	(3)
Durable manufacturing	3,120	(3)	580	(3)	-229	(3)	237	0.1	(3)
Transportation, communications and utilities	240	(3)	47	(3)	-33	(3)	43	0.1	(3)
Wholesale trade	-1,320	(3)	-71	(3)	(6)	(6)	(6)	(6)	(3)
Finance, insurance, and real estate	-430	(3)	-115	(3)	-8	(3)	22	(3)	(3)
Other services	-1,050	(3)	-134	(3)	-26	(3)	34	(3)	(3)

[1] Full-time equivalents.
[2] In millions of dollars in base year prices.
[3] Change less than 0.05 percent.
[4] Change less than $500,000.
[5] Includes boot and shoe cut stock and findings (SIC 313) and leather tanning and finishings (SIC 311).
[6] Nontraded sector.

Source: USITC staff estimates.

Table 6–8
Leather gloves and mittens: Summary data, 1994–96

Item	1994	1995	1996
Shipments (*million dollars*)	114.7	93.5	125.1
Employment (*1,000 workers*)	2.8	2.6	2.3
Imports (*million dollars*)	261	291	295
Exports (*million dollars*)	14	13	10

Source: Compiled from official statistics of the U.S. Department of Commerce.

cards. Import penetration in the sector amounted to 57 percent in 1996.[9] In 1996, the effective tariff rates on a c.i.f. and a customs value basis for personal leather goods were 8.2 and 8.5 percent ad valorem, respectively. Summary data for the sector are presented in table 6–10.

Economic Effects of Tariff Removal

Removal of the tariff on personal leather goods generates an estimated net welfare gain of $14 in 1996. This gain is largely due to the 3.9 percent fall in the composite price paid by consumers for these goods.

The estimated sectoral effects of tariff removal on imports of personal leather goods are shown in table 6–11. The personal leather goods industry experiences a reduction in output of $5 million and a loss of around 70 FTE jobs. Both figures represent a 1.2 percent decline from original 1996 levels. Removal of the tariff is expected to boost personal leather goods imports by $30 million, a 5.1 percent increase, whereas exports decrease by $0.4 million, a fall of 1.1 percent. In the upstream sector of leather tanning and finishing, output falls by $0.7 million and employment falls by approximately 10 FTE jobs. Import and export effects for the remainder of the U.S. economy are negligible.

Pressed and Blown Glass

This industry includes glass and glassware, not elsewhere classified, pressed, blown or shaped from glass. Ashtrays, bulbs for electric lights, frying pans, refrigerator dishes, and jars are some of the industry's better known products. Import penetration was 26 percent in 1996.[10] The same year, effective tariff rates on a c.i.f. and a customs value basis for pressed and blown glass were 7.4 and 7.8 percent ad valorem, respectively. Summary data for the sector are presented in table 6–12.

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[9] Ibid.

[10] Ibid.

Table 6-9
Leather gloves and mittens: Economic effects of tariff removal, changes in FTE, values and percent, 1996

Sector	Employment		Output		Imports		Exports		Composite Price
	FTE[1]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Percent*
Liberalized sector	-40	-2.4	-3	-2.4	2.8	8.4	([3])	-2.3	-9.7
Upstream sectors:									
Leather tanning and finishing	-10	([4])	-1	([4])	([3])	([4])	([3])	([4])	1
Rest of the U.S. economy:									
Agriculture, forestry, and fisheries	20	([4])	3	([4])	([3])	([4])	2	([4])	([4])
Mining	([5])	([4])	0.7	([4])	([3])	([4])	([3])	([4])	([4])
Construction	([5])	([4])	([3])	([4])	([6])	([5])	([6])	([6])	([4])
Nondurable manufacturing	10	([4])	3	([4])	-3	([4])	1	([4])	([4])
Durable manufacturing	90	([4])	17	([4])	-6	([4])	7	([4])	([4])
Transportation, communications and utilities	10	([4])	1	([4])	-0.9	([4])	1	([4])	([4])
Wholesale trade	-35	([4])	-2	([4])	([6])	([5])	([6])	([6])	([4])
Finance, insurance, and real estate	-15	([4])	-4	([4])	([3])	([4])	0.6	([4])	([4])
Other services	-30	([4])	-4	([4])	-0.7	([4])	0.9	([4])	([4])

[1] Full-time equivalents.
[2] In millions of dollars in base year prices.
[3] Change less than $500,000.
[4] Change less than 0.05 percent.
[5] Less than 5 full-time equivalents (FTE).
[6] Nontraded sector.

Source: Estimated by the staff of the USITC.

Table 6–10
Personal leather goods: Summary data, 1994–96

Item	1994	1995	1996
Shipments (*million dollars*)	504.7	138.3	384.4
Employment (*1,000 workers*)	5.2	5.3	4.9
Imports (*million dollars*)	401	453	470
Exports (*million dollars*)	24	27	29

Source: Compiled from official statistics of the U.S. Department of Commerce.

Economic Effects of Tariff Removal

The elimination of tariffs applied to U.S. imports of pressed and blown glass would have generated an estimated net welfare gain of $34 million in 1996.[11] This is largely due to a 2.2 percent decline in the composite price of pressed and blown glass.

As shown in table 6–13, tariff removal brings about significant economic effects in this industry. Note that since a partial equilibrium model was used for this sectoral analysis, upstream and downstream sectors are not part of the framework. Hence, estimated effects on other sectors of the economy are not reported either. Further, estimated effects on exports for the pressed and blown glass are also not calculated. Direct effects on pressed and blown glass from tariff removal are a reduction in output of $83 million and a loss of around 660 FTE jobs. Removal of the tariff also reduces imports by $298 million.

Ceramic Tile

Products produced by this industry sector include ceramic wall and floor tiles, glazed and unglazed mosaic and non–mosaic tiles. U.S. imports accounted for approximately 44 percent of the U.S. apparent consumption in 1996.[12] The effective tariff rates in 1996 on a c.i.f. and a customs value basis for ceramic tile were 6.3 and 6.7 percent ad valorem, respectively. Summary data for the sector are presented in table 6–14.

Economic Effects of Tariff Removal

Removal of the tariff on ceramic tile generates an estimated net welfare gain of $9 million in 1996. This gain is largely due to the 6.6 percent fall in the composite price paid by consumers for ceramic tile. The estimated sector

[11] A partial equilibrium model of the economic effects of tariff removal for pressed and blown glass was used because this SIC category is part of a much larger sector in the CGE model's database.

[12] USITC staff estimates based on data from U.S. Department of Commerce.

Table 6-11
Personal leather goods: Economic effects of tariff removal, changes in FTE, values and percent, 1996

Sector	Employment		Output		Imports		Exports		Composite Price
	FTE[1]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Percent*
Liberalized sector	-70	-1.2	-5	1.2	30	5.1	([3])	-1.1	-3.9
Upstream sector:									
Leather tanning and finishing	-10	([4])	-0.7	([4])	([3])	([4])	([3])	([4])	([4])
Rest of the U.S. economy:									
Agriculture, forestry, and fisheries	20	([4])	4	([4])	([3])	([4])	3	([4])	([4])
Mining	([5])	([4])	0.8	([4])	([3])	([4])	([3])	([4])	([4])
Construction	([5])	([4])	([3])	([4])	([6])	([6])	([6])	([6])	([4])
Nondurable manufacturing	10	([4])	3	([4])	-4	([4])	2	([4])	([4])
Durable manufacturing	100	([4])	18	([4])	-7	([4])	7	([4])	([4])
Transportation, communications and utilities	10	([4])	2	([4])	-1	([4])	1	([4])	([4])
Wholesale trade	-30	([4])	-2	([4])	([6])	([6])	([6])	([6])	([4])
Finance, insurance, and real estate	-10	([4])	-3	([4])	([3])	([4])	0.7	([4])	([4])
Other services	-30	([4])	-3	([4])	-0.8	([4])	1	([4])	([4])

[1] Full-time equivalents.
[2] In millions of dollars in base year prices.
[3] Change less than $500,000.
[4] Change less than 0.05 percent.
[5] Less than 5 full-time equivalents (FTE).
[6] Nontraded sector.

Source: USITC staff estimates.

Table 6–12
Pressed and blown glass: Summary data, 1994–96

Item	1994	1995	1996
Shipments (*million dollars*)	4,746.2	5,154.5	5,468.9
Employment (*1,000 workers*)	34.3	35.4	35.4
Imports (*million dollars*)	1,276	1,444	1,581
Exports (*million dollars*)	788	959	1,025

Source: Compiled from official statistics of the U.S. Department of Commerce.

effects stemming from tariff removal on U.S. imports of ceramic tile are shown in table 6–15. The ceramic tile industry experiences a $72 million reduction in output and a loss of around 690 jobs. Both losses represent an 8.8 percent decline from original 1996 levels. Imports of ceramic wall and floor tile rise by $75 million, a 10.3 percent increase, whereas exports fall by $3 million, for a decline of 8.7 percent. Tariff removal on both the significant upstream and downstream sectors,[13] as well as the rest of the U.S. economy, are negligible.

China Tableware

China tableware includes household and commercial chinaware. Import penetration for 1996 was 49 percent.[14] The effective tariff rates on a c.i.f. and a customs value basis for this sector in 1996 were 9.8 and 10.4 percent ad valorem, respectively. Summary data for the sector are presented in table 6–16.

Economic Effects of Tariff Removal

Removal of the tariff on china tableware generates an estimated net welfare gain of $12 million in 1996. This gain is largely due to the 4.5 percent fall in the composite price paid by consumers for personal leather goods.

The estimated sectoral effects generated by tariff removal in imports of china tableware are presented in table 6–17. The china tableware sector experiences a decline in output of $24 million and a decline of around 290 FTE jobs. Both figures represent a 5.7 percent decline from original 1996 levels. Removal of the tariff also results in an increase in china tableware imports of $24 million, a 5.7 percent increase, whereas exports decrease by $3 million, a 5 percent decline.

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[13] According to the Input–Output Table of the U.S. Bureau of Economic Analysis, motor freight (one of the industries included in the "upstream" sector) is a significant upstream and downstream industry to ceramic tile because of the requirements to haul material inputs and the final product.

[14] USITC staff estimates based on data from U.S. Department of Commerce.

Table 6-13
Pressed and blown glass: Economic effects of tariff removal, changes in FTE, values and percent, 1996

Sector	Employment	Output	Imports	Composite Price
	FTE [1]	*Value* [2]	*Value* [2]	*Percent*
Liberalized sector	-660	-83	298	-2.2

[1] Full-time equivalents.
[2] In millions of dollars in base year prices.

Source: USITC staff estimates.

Table 6–14
Ceramic tile: Summary data, 1994–96

Item	1994	1995	1996
Shipments (*million dollars*)	734.6	790.3	839.2
Employment (*1,000 workers*)	8.6	9.4	9.2
Imports (*million dollars*)	519	562	628
Exports (*million dollars*)	24	26	25

Source: Compiled from official statistics of the U.S. Department of Commerce.

Both significant downstream industries—eating and drinking establishments, and nursing/personal care facilities—show small gains in output and employment. The impact on the remainder of the U.S. economy is negligible. The combined downstream sector experiences an estimated $14 million gain in output and 70 additional FTE jobs. The impact on the remainder of the U.S. economy is negligible.

Cutlery

The cutlery industry primarily produces manufacturing files and other hand and edges tools for metalworking, woodworking, and general maintenance. A wide variety of products—ranging from blow torches, woodworking tools, and oyster tongs, to tools and equipment for use with sporting arms—are included. Cutlery imports accounted for approximately 28 percent of U.S. apparent consumption in 1996.[15] The effective tariff rates on a c.i.f. and a customs basis in 1996 were 6.2 and 6.4 percent ad valorem, respectively. Summary data for the sector are presented in table 6–18.

Economic effects of tariff removal

Removal of the tariff in cutlery generates an estimated net welfare gain of $4 million in 1996, the smallest of the high tariff sectors. This gain results largely from the 2 percent reduction in the composite price paid by consumers for cutlery.

Table 6–19 presents the estimated sectoral effects generated by tariff removal on imports of cutlery. The cutlery sector experiences a reduction in output of $18 million and a loss of approximately 110 FTE jobs. Both figures represent a decline of less than 1 percent from original 1996 levels. Imports increase by $30 million, or 5 percent. Exports fall by $5 million, a drop of 1 percent. Upstream and downstream industries are only marginally affected by tariff liberalization.

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[15] Ibid.

Table 6-15
Ceramic tile: Economic effects of tariff removal, changes in FTE, values and percent, 1996

Sector	Employment		Output		Imports		Exports		Composite Price
	FTE[1]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Percent*
Liberalized sector	-690	-8.8	-72	-8.8	75	10.3	-3	-8.7	-6.6
Upstream sector:									
Trucking & courier services except air	-60	(3)	-8	(3)	(4)	(3)	(5)	(5)	(3)
Downstream sector:									
New construction structure/ nonfarm	10	(3)	(4)	(3)	(6)	(6)	(6)	(6)	(3)
Rest of the U.S. economy:									
Agriculture, forestry, and fisheries	70	(3)	11	(3)	(4)	(3)	7	(3)	(3)
Mining	(7)	(3)	(4)	(3)	-1	(3)	(4)	(3)	(3)
Construction	(7)	(3)	(4)	(3)	(6)	(6)	(6)	(6)	(3)
Nondurable manufacturing	100	(3)	17	(3)	-8	(3)	5	(3)	(3)
Durable manufacturing	280	(3)	47	(3)	-16	(3)	19	(3)	(3)
Transportation, communications and utilities	30	(3)	3	(3)	-3	(3)	3	(3)	(3)
Wholesale trade	70	(3)	1	(3)	(6)	(6)	(6)	(6)	(3)
Finance, insurance, and real estate	60	(3)	7	(3)	-0.5	(3)	2	(3)	(3)
Other services	120	(3)	9	(3)	-2	(3)	3	(3)	(3)

1 Full-time equivalents.
2 In millions of dollars in base year prices.
3 Change less than 0.05 percent.
4 Change less than $500,000.
5 Exports were not reported for this sector.
6 Nontraded sector.
7 Less than 10 full-time equivalents (FTE).

Source: USITC staff estimates.

Table 6–16
China tableware: Summary data, 1994–96

Item	1994	1995	1996
Shipments (*million dollars*)	337.9	339.8	330.6
Employment (*1,000 workers*)	5.2	5.2	5.1
Imports (*million dollars*)	337	350	281
Exports (*million dollars*)	38	35	35

Source: Compiled from official statistics of the U.S. Department of Commerce.

Ball and Roller Bearings

Ball and roller bearings (including parts) are used to reduce friction between moving and fixed parts in machinery, such as motor vehicles, farm implements, material–handling equipment, motors, pumps, compressors, home appliances, and aircraft engines. In 1996, the effective tariff rates on a c.i.f. and a customs value basis for ball and roller bearings were 7.4 and 7.6 percent ad valorem, respectively. Import penetration for this sector is 14 percent for 1996.[16] Summary data for the sector are presented in table 6–20.

Economic Effects of Tariff Removal

Removal of the tariff on ball and roller bearings generates an estimated net welfare gain of $49 million. A large contribution to this net welfare gain stems from the 2.2 percent fall in the composite price of these goods.

Table 6–21 presents detailed economic effects of tariff removal in this industry. Direct effects on ball and roller bearings and parts from tariff removal are a reduction in output of $88 million and a loss of approximately 850 FTE jobs. Both represent less than 1.6 percent declines from the original 1996 levels. Removal of the tariff also boosts imports of ball and roller bearings by $67 million, a 3.9 percent increase, whereas exports decease by $18 million, a reduction of 1.5 percent.

Upstream, the iron and steel forgings sector is affected, but estimated output and employment declines are small. The impact on the other significant upstream sectors is negligible. All downstream industries benefit from the tariff removal, with the automotive industry experiencing the largest estimated gain in output of $25 million and approximately 120 additional FTE jobs. The transit industry also shows gains, with output increasing by $15 million and employment by approximately 260 FTEs.

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[16] Ibid.

Table 6-17
China tableware: Economic effects of tariff removal, changes in FTE, values and percent, 1996

Sector	Employment		Output		Imports		Exports		Composite Price
	FTE[1]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Percent*
Liberalized sector	-290	-5.7	-24	-5.7	24	6.3	-3	-5.6	-4.5
Downstream sectors:									
Eating and drinking places	30	(3)	12	(3)	(4)	(3)	3	(3)	(3)
Nursing/Personal care facilities	30	(3)	2	(3)	(5)	(5)	(5)	(5)	(3)
Rest of the U.S. economy:									
Agriculture, forestry, and fisheries	30	(3)	4	(3)	(4)	(3)	2	(3)	(3)
Mining	(6)	(3)	(4)	(3)	(4)	(3)	(4)	(3)	(3)
Construction	(6)	(3)	-0.5	(3)	(5)	(5)	(5)	(5)	(3)
Nondurable manufacturing	50	(3)	9	(3)	-2	(3)	2	(3)	(3)
Durable manufacturing	80	(3)	15	(3)	-5	(3)	6	(3)	(3)
Transportation, communications and utilities	10	(3)	-0.7	(3)	-0.8	(3)	1	(3)	(3)
Wholesale trade	30	(3)	1	(3)	(5)	(5)	(5)	(5)	(3)
Finance, insurance, and real estate	10	(3)	(4)	(3)	(4)	(3)	(4)	(3)	(3)
Other services	20	(3)	2	(3)	-0.5	(3)	0.6	(3)	(3)

[1] Full-time equivalents.
[2] In millions of dollars in base year prices.
[3] Change less than 0.05 percent.
[4] Change less than $500,000.
[5] Nontraded sector.
[6] Less than 5 full-time equivalents (FTE).

Source: Estimated by the staff of the USITC.

Table 6–18
Cutlery: Summary data, 1994–96

Item	1994	1995	1996
Shipments (*million dollars*)	1,801.3	1,887.8	2,086.3
Employment (*1,000 workers*)	11.2	11.2	10.8
Imports (*million dollars*)	552	627	656
Exports (*million dollars*)	314	337	384

Source: Compiled from official statistics of the U.S. Department of Commerce.

Costume Jewelry

This sector includes rings, bracelets, earrings, pendants, necklaces, and other articles of personal adornment of nonprecious materials, such as plastics or base metals including copper, brass, steel, and aluminum. U.S. imports have grown significantly during the past two decades, but declined during 1994–96. In 1996, imports of these goods accounted for around 26 percent of U.S. apparent consumption. The 1996 effective ad valorem tariff rates on a c.i.f. and a customs basis were 6.3 percent and 6.7 percent, respectively. Summary data for the sector are presented in table 6–22.

Economic effects of tariff removal

Removal of the tariff in costume jewelry generates an estimated net welfare gain of $19 million in 1996. This gain occurs largely because of the 1.6 percent reduction in the composite price paid by consumers for these goods.

The estimated sectoral effects of tariff removal on imports of costume jewelry are shown in table 6–23. The costume jewelry industry experiences a decline in output of $5 million and a loss of 20 FTE jobs. Both figures represent a decline of less than 1 percent from original levels. Imports increase by $35 million or 4.8 percent. Upstream and downstream industries are not significantly affected by tariff liberalization.

Table 6-19
Cutlery: Economic effects of tariff removal, changes in FTE, value and percent, 1996

Sector	Employment		Output		Imports		Exports		Composite Price
	FTE[1]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Percent*
Liberalized sector	-110	-0.9	-18	-0.9	30	3.6	-5	-1.0	-2.0
Upstream sectors:									
Mics. plastic products necs	(3)	(4)	(5)	(4)	(3)	(4)	(5)	(4)	(4)
Blast furnaces and steel mills	(3)	(4)	(5)	(4)	-0.5	(4)	(5)	(4)	(4)
Downstream sectors:									
Beauty and barber shops	30	(4)	2	(4)	(6)	(6)	(6)	(6)	(4)
Retail trade	-30	(4)	-0.7	(4)	(6)	(6)	(6)	(6)	(4)
Rest of the U.S. economy:									
Agriculture, forestry, and fisheries	30	(4)	5	(4)	(5)	(4)	4	(4)	(4)
Mining	(3)	(4)	1	(4)	(5)	(4)	(5)	(4)	(4)
Construction	(3)	(4)	(5)	(4)	(6)	(6)	(6)	(6)	(4)
Nondurable manufacturing	20	(4)	6	(4)	-4	(4)	2	(4)	(4)
Durable manufacturing	80	(4)	15	(4)	-8	(4)	7	(4)	(4)
Transportation, communications and utilities	10	(4)	2	(4)	-1	(4)	2	(4)	(4)
Wholesale trade	(3)	(4)	0.5	(4)	(6)	(6)	(6)	(6)	(4)
Finance, insurance, and real estate	-10	(4)	-1	(4)	(5)	(6)	0.9	(6)	(4)
Other services	-30	(4)	-2	(4)	-0.8	(4)	1	(4)	(4)

[1] Full-time equivalents.
[2] In millions of dollars in base year prices.
[3] Less than 5 full-time equivalents (FTE).
[4] Change less than 0.05 percent.
[5] Change less than $500,000.
[6] Nontraded sector.

Source: USITC staff estimates.

Table 6–20
Ball and roller bearings: Summary data, 1994–96

Item	1994	1995	1996
Shipments (*million dollars*)	8,295.3	9,093.9	9,230.0
Employment (*1,000 workers*)	47.7	49.2	48.2
Imports (*million dollars*)	1,171	1,381	1,389
Exports (*million dollars*)	773	889	912

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 6-21
Ball and roller bearings: Economic effects of tariff removal, changes in FTE, values and percent, 1996

Sector	Employment		Output		Imports		Exports		Composite Price
	FTE[1]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Percent*
Liberalized sector	-850	-1.6	-88	-1.6	67	3.9	-18	-1.5	-2.2
Upstream sectors:									
Blast Furnaces	10	(3)	2	(3)	-5	(3)	0.5	(3)	(3)
Iron and Steel forgings	-20	-0.1	-3	-0.1	(4)	(4)	(4)	(4)	(3)
Industrial and commercial machinery	-30	(3)	-2	(3)	-0.6	(3)	(5)	(3)	(3)
Mechanical power transmission equipment	-20	(3)	-2	(3)	-0.8	(3)	(5)	(3)	(3)
Downstream sectors:									
Motor vehicles parts & accessories	120	(3)	25	(3)	-4	(3)	16	0.1	(3)
Telephone/graph and other communication services	20	(3)	4	(3)	(5)	(3)	(5)	(3)	(3)
Local and suburban transit and interurban	260	0.1	15	0.1	-2	(3)	16	0.1	(3)
Rest of the U.S. economy:									
Agriculture, forestry, and fisheries	-20	(3)	-3	(3)	(5)	(3)	-3	(3)	(3)
Mining	10	(3)	2	(3)	(5)	(3)	0.7	(3)	(3)
Construction	(6)	(3)	(5)	(3)	(4)	(4)	(4)	(4)	(3)
Nondurable manufacturing	20	(3)	3	(3)	4	(3)	-0.6	(3)	(3)
Durable manufacturing	400	(3)	74	(3)	-11	(3)	26	(3)	(3)
Transportation, communications and utilities	30	(3)	6	(3)	(5)	(3)	1	(3)	(3)
Wholesale trade	20	(3)	1	(3)	(4)	(4)	(4)	(4)	(3)
Finance, insurance, and real estate	-10	(3)	-4	(3)	(5)	(3)	-1	(3)	(3)
Other services	50	(3)	5	(3)	0.8	(3)	-1	(3)	(3)

[1] Full-time equivalents.
[2] In millions of dollars in base year prices.
[3] Change less than 0.05 percent.
[4] Nontraded sector.
[5] Change less than $500,000.
[6] Less than 5 full-time equivalents (FTE).

Source: USITC staff estimates.

Table 6–22
Costume jewelry: Summary data, 1994–96

Item	1994	1995	1996
Shipments (*million dollars*)	1,679.0	1,769.9	1,665.8
Employment (*1,000 workers*)	18.8	16.1	16.2
Import (*million dollars*)	651	592	556
Exports (*million dollars*)	130	128	119

Source: Compiled from official statistics of the U.S. Department of Commerce.

Table 6-23
Costume jewelry: Economic effect of tariff removal, changes in FTE, value and percent, 1996

Sector	Employment		Output		Imports		Exports		Composite Price
	FTE[1]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Value*[2]	*Percent*	*Percent*
Liberalized sector	-20	-0.3	-5	-0.3	35	4.8	([3])	-0.2	-1.6
Upstream sectors:									
Jeweler's materials and lapidary work	([4])	([5])	([3])	([5])	-0.6	([5])	([3])	([5])	([5])
Primary nonferrous metals	([6])	([5])	([3])	([5])	([3])	([5])	([3])	([5])	([5])
Rest of the U.S. economy:									
Agriculture, forestry, and fisheries	30	([5])	5	([5])	([3])	([5])	3	([5])	([5])
Mining	([6])	([5])	1	([5])	([3])	([5])	([3])	([5])	([5])
Construction	([6])	([5])	([3])	([5])	([5])	([6])	([6])	([6])	([5])
Nondurable manufacturing	20	([5])	6	([5])	-4	([5])	2	([5])	([5])
Durable manufacturing	100	([5])	19	([5])	-9	([5])	8	([5])	([5])
Transportation, communications and utilities	10	([5])	2	([5])	-1	([5])	2	([5])	([5])
Wholesale trade	-60	([5])	-3	([5])	([5])	([6])	([6])	([6])	([5])
Finance, insurance, and real estate	-20	([5])	-5	([5])	([3])	([5])	0.8	([5])	([5])
Other services	-50	([5])	-6	([5])	-1	([5])	1	([5])	([5])

[1] Full-time equivalents.
[2] In millions of dollars in base year prices.
[3] Change less than $500,000.
[4] Less than 5 full-time equivalents (FTE).
[5] Change less than 0.05 percent.
[6] Nontraded sector.

Source: USITC staff estimates.

APPENDIX A
Request Letters and *Federal Register* Notice

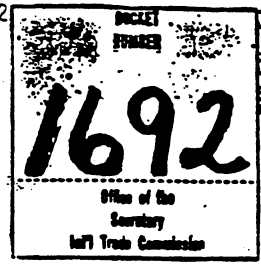
Chairman's Office HB

THE UNITED STATES TRADE REPRESENTATIVE
Executive Office of the President
Washington, D.C. 20506

'92 MAY 19 A9:08

RECEIVED
OFC OF THE SECRETARY
U.S. INTERNATIONAL TRADE COMMISSION

MAY 15 1992



The Honorable Donald E. Newquist
Chairman
U.S. International Trade Commission
500 E Street, S.W.
Washington, D.C. 20436

Dear Mr. Chairman,

The Commission's recent series of reports on the economic effects of significant U.S. import restraints (USITC publication 2222, dated October 1989; publication 2314, dated September 1990; and publication 2422, dated September 1991), prepared pursuant to a request from the Senate Committee on Finance dated September 12, 1988, has been an excellent source of objective, balanced information for the entire trade policy community. An understanding and appreciation of the economic implications of restraints imposed on trade are critical to any informed assessment of the trade policy options that confront the President and the Congress.

We would find it useful to have periodic updates of the types of assessments that the Commission has provided in its reports for the Finance Committee. Therefore, under authority delegated by the President and pursuant to section 332(g) of the Tariff Act of 1930, as amended, I request that the Commission periodically provide an updated assessment of the economic effects of significant U.S. import restraints. Each updating report should include quantitative assessments of the restraints' effects on U.S. consumers, on the activities of U.S. firms, on the income and employment of U.S. workers, and on the net economic welfare of the United States. The reports also should continue the broad analytical frameworks used in the original reports, namely partial equilibrium frameworks for the analysis of liberalization in individual sectors and a general equilibrium framework for assessment of the economy-wide effects of the simultaneous liberalization of all sectors covered.

With the exceptions noted below, the reports should consider the effects of all significant restraints on U.S. imports of goods and services whether they result from an act of Congress, an action taken under the fair trade laws of the United States (such as section 201 investigations), an international agreement, or voluntary export restraints by foreign nations. The reports should not include import restraints resulting from final

antidumping or countervailing duty investigations, section 337 or 406 investigations, or section 301 actions.

I would appreciate receiving the first updating report 18 months after receipt of this request. Subsequent reports should be provided thereafter at intervals of approximately two years until otherwise instructed.

In view of the outstanding instruction to the Commission on the security classification of reports prepared by the Commission at the request of the U.S. Trade Representative, I request that all reports on this investigation be made available to the public at the same time they are submitted to my office.

The Commission's assistance in this matter is greatly appreciated.

Sincerely,

Carla A. Hills

EXECUTIVE OFFICE OF THE PRESIDENT
OFFICE OF THE UNITED STATES TRADE REPRESENTATIVE
WASHINGTON, D.C. 20508

MAR 10 1997

97 MAR 11 P12:22

The Honorable Marcia Miller
Chairman
U.S. International Trade Commission
500 E Street, S.W.
Washington D.C. 20436

Dear Madam Chairman:

The Commission's ongoing series of biennial reports on the economic effects of significant U.S. import restraints (prepared as part of inv. No. 332-325) has provided a valuable source of objective, balanced information for the President, the Congress and the entire trade community. In view of the need to continue providing the most current and comprehensive analysis possible, and because certain of the data required for analysis in these reports will be substantially revised at a point very near the currently scheduled delivery date, I request that the Commission delay the delivery of its next report for an additional year, until February 1999. Subsequent reports should be provided at intervals of approximately two years until otherwise instructed.

The Commission's assistance in this matter is greatly appreciated.

Sincerely,

Charlene Barshefsky
United State Trade Representative-Designate

CHAIRMAN

UNITED STATES INTERNATIONAL TRADE COMMISSION

WASHINGTON, DC 20436

January 7, 1999

The Honorable Charlene Barshefsky
United States Trade Representative
Washington, DC 20508

Dear Madam Ambassador:

Pursuant to discussions with USTR staff, the Commission has extended the delivery date for the second biennial update of Investigation No. 332-325: *The Economic Effects of Significant U.S. Import Restraints* by 90 days. Consequently, the Commission will transmit its updated report on May 27, 1999.

This extension is required due to the loss of key members of the project team, the highly technical nature of the work, and conflicting project priorities of staff being reassigned to this study. The 90-day extension will allow the Commission to complete this study without compromising the quality of our analysis.

Please continue to call on us whenever we can be of assistance to you.

Sincerely,

Lynn M. Bragg

Lynn M. Bragg
Chairman

Sec. 13, lot 1;
Sec. 14, lots 1, 2, and 3, SW¼NE¼, and SE¼SE¼;
Sec. 23, E½NE¼ and NE¼SE¼;
Sec. 24, lots 1, 2, 3, and 4;
Sec. 25, lots 1, 2, 3, and 4;
Sec. 26, E½E½.
T. 4 N., R. 50 E., (unsurveyed),
Secs. 31, 32, and 33, all unsurveyed lands lying within ¼ mile of the Snake River.
T. 1 N., R. 51 E., (unsurveyed),
Secs. 4, 5, 8, 17, 18, and 19, all unsurveyed lands lying within ¼ mile of the Snake River.
T. 2 N., R. 51 E.,
Secs. 7, 17, and 18, all unsurveyed lands lying within ¼ mile of the Snake River;
Sec. 20, lots 1, 2, 3, and 4, and NE¼SW¼;
Sec. 29, lot 3, and W½NW¼NE¼ (formerly known as lot 1);
Sec. 33, lots 1, 2, 3, and 4, and E½SW¼.
T. 2 S., R. 49 E., (unsurveyed),
Protraction block nos. 48, 49, and 52 (formerly identified as secs. 24, 25, and 35).
Secs. 26 and 36, all unsurveyed lands lying within ¼ mile of the Snake River.
T. 3 S., R. 49 E., (unsurveyed),
Secs. 2, 3, 10, 11, 14, 15, 22, 23, 26, 27, 33, and 34, all unsurveyed lands lying within ¼ mile of the Snake River.
T. 4 S., R. 49 E., (unsurveyed),
Protraction block nos. 37, 40, 41, 44, 45, and 48 (formerly identified as secs. 4, 9, 16, 21, 28, 29, and 32), all unsurveyed lands lying within ¼ mile of the Snake River.
T. 5 S., R. 49 E., (unsurveyed)
Protraction blocks nos. 37, 40 to 44, inclusive, (formerly identified as secs. 4, 8, 9, 17, 19, and 20), all unsurveyed lands lying within ¼ mile of the Snake River.
T. 1 S., R. 50 E., (unsurveyed),
Secs. 2, 3, 10, 11, 15, 21, 22, 28, and 33, all unsurveyed lands lying within ¼ mile of the Snake River.
T. 2 S., R. 50 E., (unsurveyed),
Secs. 4, 5, 7, 8, 18, and 19, all unsurveyed lands lying within ¼ mile of the Snake River.

The areas described aggregate approximately 16,305 acres in Wallowa County.

2. The public lands in T. 5 S., R. 49 E., is included in the Hells Canyon National Recreation Area and Power Project No. 1971, and will not be restored to operation of the public land laws, including the mining and mineral leasing laws.

3. The lands described in paragraph 1, except as provided by paragraph 2, are included in the Hells Canyon National Recreation Area, the Middle Snake Wild and Scenic River, and Power Project No. 1971, and will remain clod to such forms of disposition as may by law be made of National Forest System lands, including the mining laws. The lands lying outside the national recreation area and wild and scenic river boundaries have been and will remain open to applications and offers under the mineral leasing laws.

Dated: November 26, 1997.

Bob Armstrong,

Assistant Secretary of the Interior.

[FR Doc. 97-32317 Filed 12-9-97; 8:45 am]

BILLING CODE 4310-33-P

INTERNATIONAL TRADE COMMISSION

Agency Form Submitted for OMB Review

AGENCY: United States International Trade Commission.

ACTION: In accordance with the provisions of the Paperwork Reduction Act of 1995 (44 U.S.C. Chapter 35), the Commission has submitted a request for approval of questionnaires to the Office of Management and Budget for review.

PURPOSE OF INFORMATION COLLECTION: The forms are for use by the Commission in connection with investigation No. 332-386, Macadamia Nuts: Economic and Competitive Conditions Affecting the U.S. Industry, instituted under the authority of section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)). This investigation was requested by Committee on Finance, U.S. Senate. The Commission expects to deliver the results of its investigation to the Committee on Finance by September 30, 1998.

PROPOSAL:

(1) Number of forms submitted: three
(2) Title of forms: Importer Questionnaire, Grower Questionnaire, and Grower/Processor Questionnaire
(3) Type of request: new
(4) Frequency of use: Importer, Grower, and Grower/Processor questionnaire, single data gathering, scheduled for February 1998
(5) Description of respondents: U.S. firms which produce, process, and or import macadamia nuts
(6) Estimated number of respondents:
100 (Grower questionnaire)
9 (Importer questionnaire)
6 (Grower/Processor questionnaire)
115 Total
(7) Estimated total number of hours to complete the forms: 4,510
(8) Information obtained from the form that qualifies as confidential business information will be so treated by the Commission and not disclosed in a manner that would reveal the individual operations of a firm

ADDITIONAL INFORMATION OR COMMENT: Copies of the forms and supporting documents may be obtained from Stephen Burket (USITC, telephone no. (202) 205-3318). Comments about the proposals should be directed to the Office of Management and Budget, Office of Information and Regulatory Affairs, Room 10102 (Docket Library), Washington, DC 20503, ATTENTION: Docket Librarian. All comments should be specific, indicating which part of the questionnaire is objectionable, describing the concern in detail, and including specific suggested revisions or language changes. Copies of any comments should be provided to Robert Rogowsky, Director, Office of Operations, U.S. International Trade Commission, 500 E Street S.W., Washington, D.C. 20436, who is the Commission's designated Senior Official under the Paperwork Reduction Act.

Hearing impaired individuals are advised that information on this matter can be obtained by contacting our TDD terminal (telephone no. 202-205-1810). General information concerning the Commission may also be obtained by accessing its Internet server (http://www.usitc.gov).

Issued: December 3, 1997.

By order of the Commission.

Donna R. Koehnke,

Secretary.

[FR Doc. 97-32334 Filed 12-9-97; 8:45 am]

BILLING CODE 7020-02-P

INTERNATIONAL TRADE COMMISSION

[Investigation No. 332-325]

The Economic Effects of Significant U.S. Import Restraints: Second Biennial Update

AGENCY: United States International Trade Commission.

ACTION: Notice of hearing and opportunity to submit written comments for biennial update report.

EFFECTIVE DATE: December 3, 1997.

SUMMARY: The Commission has scheduled a hearing in connection with the second biennial report in this investigation for May 12, 1998, and has established deadlines for the submission of requests to appear at the hearing and for the filing of written submissions as set forth below.

FOR FURTHER INFORMATION CONTACT: Michael Gallaway at (202) 205-3247, Office of Economics, U.S. International Trade Commission. Hearing impaired persons are advised that information on this investigation can be obtained by contacting the Commission's TDD terminal on (202) 205-1810.

SUPPLEMENTARY INFORMATION: In a letter dated May 15, 1992, the United States Trade Representative (USTR) requested that the United States International Trade Commission conduct an investigation assessing the quantitative economic effects of significant U.S. import restraint programs operating in the U.S. economy. The request also asked the Commission to prepare reports updating the analysis, with delivery of those reports to be made on 2-year intervals following the submission of the first report. The first report was delivered to the USTR in November 1993 and the first update was transmitted in December 1995. A letter from USTR sent March 10, 1997 requested that the second update be delayed to February 1999 to allow the analysis to incorporate important information due to be released very near the previously scheduled December 1997 due date.

In this second biennial update report, the Commission will, as was done in the first two reports, assess the economic effects of significant U.S. import restraints on U.S. consumers, on the activities of U.S. firms, on the income and employment of U.S. workers, and on the net economic welfare of the United States. The investigation will not include import restraints resulting from final antidumping or countervailing duty investigations, section 337 or 406 investigations, or section 301 actions.

The initial notice of institution of this investigation was published in the Federal Register of June 17, 1992 (57 FR 27063).

PUBLIC HEARING: A public hearing in connection with this investigation will be held on May 12, 1998, beginning at 9:30 a.m. It will be held in the Commission's hearing room at 500 E Street, SW., Washington, D.C. 20436. All persons will 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, D.C., not later than the close of business, 5:15 p.m., on May 5, 1998. Hearing statements should be filed not later than May 8, 1998. Any posthearing submissions must be filed not later than COB June 12, 1998. In the event that, as of the close of business on May 5, 1998, 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 to the Commission (202-205-1816) after May 7, 1998, to determine whether the hearing will be held.

WRITTEN SUBMISSIONS: Interested persons are invited to submit written statements concerning the matters to be addressed in the report. Commercial or financial information that a party desires the Commission to treat as confidential must be submitted on separate sheets of paper, each clearly marked "Confidential Business Information" at the top. (Generally, submission of separate confidential and public versions of the submission would be appropriate.) All submissions requesting confidential treatment must conform with the requirements of § 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 persons. To be assured of consideration, written submissions must be filed by June 12, 1998.

Issued: December 4, 1997.

By order of the Commission.

Donna R. Koehnke,

Secretary.

[FR Doc. 97-32336 Filed 12-9-97; 8:45 am]

BILLING CODE 7020-02-P

INTERNATIONAL TRADE COMMISSION

[Inv. No. 337-TA-383]

Certain Hardware Logic Emulation Systems and Components Thereof; Notice of Issuance of a Permanent Limited Exclusion Order and a Permanent Cease and Desist Order

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the Commission has issued a permanent limited exclusion order and a permanent cease and desist order in the above-captioned investigation.

FOR FURTHER INFORMATION CONTACT: Jay H. Reiziss, Esq., Office of the General Counsel, U.S. International Trade Commission, telephone 202-205-3116. General information concerning the Commission may also be obtained by accessing the Commission's Internet server (http://www.usitc.gov or ftp://ftp.usitc.gov).

SUPPLEMENTARY INFORMATION: This action is taken under the authority of section 337 of the Tariff Act of 1930, 19 U.S.C. 1337, and Commission rule 210.50, 19 CFR 210.50.

This investigation and temporary relief proceedings were instituted on March 8, 1996, based upon a complaint and motion for temporary relief filed on January 26, 1996, by Quickturn Design Systems, Inc ("Quickturn"). The respondents are Mentor Graphics Corporation ("Mentor") of Wilsonville, Oregon and Meta Systems ("Meta") of Saclay, France (collectively "respondents"). Meta is a wholly owned subsidiary of Mentor. The products at issue are hardware logic emulation systems, subassemblies thereof, and components thereof, including hardware logic emulation software, that are used in the semiconductor manufacturing industry to design and test the electronic circuits of semiconductor devices.

After an 11-day evidentiary hearing in April-May 1996, the presiding administrative law judge ("ALJ") issued an initial determination ("ID") granting complainant Quickturn's motion for temporary relief. On August 5, 1996, the Commission determined not to modify or vacate the ID and issued a temporary limited exclusion order against Mentor and Meta and a temporary cease and desist order against Mentor, and determined that the amount of respondents' bond during the pendency of temporary relief should be forty-three (43) percent of the entered value of imported hardware logic emulation systems and components thereof.

After a 14-day evidentiary hearing and two days of closing arguments, the ALJ, on July 31, 1997, issued a final ID finding that respondents had violated section 337 by infringing claims of all five of Quickturn's asserted patents. On that same date, the ALJ issued a recommended determination ("RD") recommending the issuance of a permanent exclusion order and a cease and desist order. On October 2, 1997, the Commission issued its notice of the decision not to review the ALJ's final ID, thereby finding that respondents are in violation of section 337. The Commission also requested briefs on the issues of remedy, the public interest, and bonding. On October 16, 1997, Quickturn, respondents, and the Commission investigative attorneys submitted comments on those issues, and on October 23, 1997, all parties submitted reply comments.

The Commission, having determined that a violation of section 337 has occurred in the importation, sale for importation, or sale in the United States of the accused hardware logic emulation systems and components thereof, including software, considered the issues of the appropriate form of such relief, whether the public interest precludes issuance of such relief, and respondents' bond during the 60-day Presidential review period.

APPENDIX B
List of Submissions and List of Hearing Participants

USITC Docket Report as of 3-1-99
332-TA-325 (Final)

03-11-1997	Letter Filed by Charlene Barshefsky, United States Trade Representative, on behalf of United States Trade Representative (ITC-Seq# 199703110008 - Public)
12-05-1997	Notice Filed by Donna R Koehnke, Secretary, on behalf of Commission (ITC-Seq# 199712050020 - Public)
12-10-1997	Federal Register Notice Filed by Donna R Koehnke, Secretary, on behalf of Commission (ITC-Seq# 199712100027 - Public)
04-16-1998	Appearance Filed by J Stephen Lucas, Louis Dreyfus, on behalf of Louis Dreyfus (ITC-Seq# 199804160021 - Public)
04-23-1998	Appearance Filed by Thomas Hammer, Sweetener Users Association, on behalf of Sweetener Users Association (ITC-Seq# 199804230007 - Public)
04-27-1998	Appearance Filed by Mario Castillo, the Dairy Trade Coalition, on behalf of the Dairy Trade Coalition (ITC-Seq# 199804270013 - Public)
05-01-1998	Appearance Filed by Michael G Roberts, Crowley Maritime Corporation, on behalf of Crowley Maritime Corporation (ITC-Seq# 199805010016 - Public)
05-04-1998	Appearance Filed by George J Ryan, Lake Carriers Association, on behalf of Lake Carriers Association (ITC-Seq# 199805040018 - Public)
05-04-1998	Appearance Filed by Doreen L Brown, Consumers for World Trade, on behalf of Consumers for World Trade (ITC-Seq# 199805040022 - Public)
05-04-1998	Appearance Filed by Leonard W Condon, American Meat Institute, on behalf of American Meat Institute (ITC-Seq# 199805040023 - Public)

05-04-1998	Appearance Filed by Roger Berliner, Brady and Berliner, on behalf of Governor of Guam (ITC-Seq# 199805040032 - Public)
05-04-1998	Appearance Filed by Brenda Jacobs, Powell Goldstein Frazer and Murphy, on behalf of U S Association of Importers of Textiles and Apparel (ITC-Seq# 199805040037 - Public)
05-05-1998	Appearance Filed by Philip Grill, Maritime Cabotage Task Force, on behalf of Maritime Cabotage Task Force (ITC-Seq# 199805050007 - Public)
05-05-1998	Appearance Filed by Rob Quartel, the Jones Act Reform Coalition, on behalf of the Jones Act Reform Coalition (ITC-Seq# 199805050008 - Public)
05-05-1998	Appearance Filed by George J Ryan, Lake Carriers Association, on behalf of Lake Carriers Association (ITC-Seq# 199805050015 - Public)
05-05-1998	Appearance Filed by Graham Cooper, Canadian Trucking Alliance, on behalf of Canadian Trucking Alliance (ITC-Seq# 199805050027 - Public)
05-05-1998	Appearance Filed by Richard Pasco, American Peanut Coalition, on behalf of American Peanut Coalition (ITC-Seq# 199805050029 - Public)
05-05-1998	Appearance Filed by William Gillon, National Cotton Council of America, on behalf of National Cotton Council of America (ITC-Seq# 199805050031 - Public)
05-06-1998	Appearance Filed by William Gillon, National Cotton Council of America, on behalf of National Cotton Council of America (ITC-Seq# 199805060022 - Public)
05-07-1998	Statement Filed by Doreen L Brown, Consumers for World Trade, on behalf of Consumers for World Trade (ITC-Seq# 199805070015 - Public)

05-08-1998	Appearance Filed by Graham Cooper, Canadian Trucking Alliance, on behalf of Canadian Trucking Alliance (ITC-Seq# 199805080005 - Public)
05-08-1998	Statement Filed by Graham Cooper, Canadian Trucking Alliance, on behalf of Canadian Trucking Alliance (ITC-Seq# 199805080013 - Public)
05-08-1998	Statement Filed by Brenda Jacobs, Powell Goldstein Frazer and Murphy, on behalf of U S Association of Importers of Textiles and Apparel (ITC-Seq# 199805080018 - Public)
05-08-1998	Statement Filed by George J Ryan, Lake Carriers Association, on behalf of Lake Carriers Association (ITC-Seq# 199805080021 - Public)
05-08-1998	Appearance Filed by John E Graykowski, Maritime Administration, on behalf of United States Department of Transportation (ITC-Seq# 199805080024 - Public)
05-08-1998	Statement Filed by Leonard W Condon, American Meat Institute, on behalf of American Meat Institute (ITC-Seq# 199805080027 - Public)
05-08-1998	Statement Filed by John Schnittker, American Peanut Coalition, on behalf of American Peanut Coalition (ITC-Seq# 199805080033 - Public)
05-08-1998	Statement Filed by Michael G Roberts, Crowley Maritime Corporation, on behalf of Crowley Maritime Corporation (ITC-Seq# 199805080034 - Public)
05-08-1998	Statement Filed by Philip Grill, Maritime Cabotage Task Force, on behalf of Maritime Cabotage Task Force (ITC-Seq# 199805080036 - Public)
05-11-1998	Testimony Filed by John M Schnittker, Coalition for Sugar Reform, on behalf of Coalition for Sugar Reform (ITC-Seq# 199805110003 - Public)

05-11-1998	Statement Filed by Thomas Hammer, Sweetener Users Association, on behalf of Sweetener Users Association (ITC-Seq# 199805110011 - Public)
05-11-1998	List of Witnesses Filed by Mario Castillo, the Dairy Trade Coalition, on behalf of the Dairy Trade Coalition (ITC-Seq# 199805110013 - Public)
05-11-1998	Statement Filed by Kent Lanclos, National Cotton Council of America, on behalf of National Cotton Council of America (ITC-Seq# 199805110032 - Public)
05-11-1998	Letter Filed by Thomas Hammer, Sweetener Users Association, on behalf of Sweetener Users Association (ITC-Seq# 199805110049 - Public)
05-11-1998	List of Witnesses Filed by William Gillon, National Cotton Council, on behalf of National Cotton Council (ITC-Seq# 199805110072 - Public)
05-13-1998	Hearing Material Filed by Keith Hipp, Office of the Secretary, on behalf of Commission (ITC-Seq# 199805130009 - Public)
05-13-1998	Transcript Filed by Donna R Koehnke Hearing, Secretary, on behalf of Commission (ITC-Seq# 199805130018 - Public)
05-21-1998	Letter Filed by Paulette Honeygosky to Koehnke, Council of European and Japanese National Shipowners Associations, on behalf of Council of European and Japanese National Shipowners Associations (ITC-Seq# 199805210022 - Public)
05-22-1998	Letter Filed by Paulette Honeygosky to Koehnke, Council of European and Japanese National Shipowners Associations, on behalf of Council of European and Japanese National Shipowners Associations (ITC-Seq# 199805220011 - Public)
05-22-1998	Letter Filed by George J Ryan to Miller, Lake Carriers Association, on behalf of Lake Carriers Association (ITC-Seq# 199805220012 - Public)

06-11-1998	Submission Filed by Edward J Farrell, Blank Rome Comisky and Mccauley, on behalf of New Zealand Dairy Board (ITC-Seq# 199806110010 - Public)
06-12-1998	Letter Filed by Michael D Mason to Koehnke, American Maritime Congress, on behalf of American Maritime Congress (ITC-Seq# 199806120017 - Public)
06-12-1998	Response Filed by Nicholas Kominus, United States Cane Sugar Refiners Association, on behalf of United States Cane Sugar Refiners Association (ITC-Seq# 199806120021 - Public)
06-12-1998	Comments Filed by John Wood, New Zealand Embassy, on behalf of New Zealand Embassy (ITC-Seq# 199806120024 - Public)
06-12-1998	Statement Filed by Katherine D Mcmanus, Howrey and Simon, on behalf of Australian Meat and Live Stock Corporation (ITC-Seq# 199806120025 - Public)
06-12-1998	Submission Filed by Jack Roney, American Sugar Alliance, on behalf of American Sugar Alliance (ITC-Seq# 199806120027 - Public)
06-12-1998	Post-hearing Statement Filed by Michael G Roberts, Crowley Maritime Corporation, on behalf of Crowley Maritime Corporation (ITC-Seq# 199806120040 - Public)
06-12-1998	Submission Filed by Paul Morris, Embassy of Australia, on behalf of Embassy of Australia (ITC-Seq# 199806120043 - Public)
06-12-1998	Statement Filed by Rufus E Jarman Jr, Barnes Richardson and Colburn, on behalf of Meat Importers Council of America (ITC-Seq# 199806120044 - Public)

06-12-1998	Statement Filed by Bobby F Mc Kown, Barnes Richardson and Colburn, on behalf of Florida Citrus Mutual (ITC-Seq# 199806120046 - Public)
06-12-1998	Statement Filed by Donald J Unger Cbi 98-123, Barnes Richardson and Colburn, on behalf of N T N Bearing Corporation of America N C B a (ITC-Seq# 199806120049 - Public)
06-12-1998	Comments Filed by Terence P Stewart, Stewart and Stewart, on behalf of Libbey Inc (ITC-Seq# 199806120050 - Public)
06-12-1998	Post-hearing Brief Filed by Rolf Marshal Cbi 98-124, Maritime Cabotage Task Force, on behalf of Maritime Cabotage Task Force (ITC-Seq# 199806120059 - Public)
06-12-1998	Comments Filed by Linda Bauer Darr, American Trucking Associations, on behalf of American Trucking Associations (ITC-Seq# 199806120084 - Public)
06-12-1998	Letter Filed by Rolf Marshall, Maritime Cabotage Task Force, on behalf of Maritime Cabotage Task Force (ITC-Seq# 199806120087 - Public)
06-15-1998	Submission Filed by Edward J Farrell, Blank Rome Comisky and Mccauley, on behalf of Meat New Zealand (ITC-Seq# 199806150012 - Public)
06-15-1998	Statement Filed by Frank Pecquex, Maritime Trades Department, on behalf of Maritime Trades Department (ITC-Seq# 199806150088 - Public)
06-16-1998	Withdrawal Filed by Rolf Marshall re Cbi 98-124, Maritime Cabotage Task Force, on behalf of Maritime Cabotage Task Force (ITC-Seq# 199806160015 - Public)
06-17-1998	Submission Filed by Richard Berkowitz, Transportation Institute, on behalf of Transportation Institute (ITC-Seq# 199806170003 - Public)

06-17-1998	Letter Filed by Donna R Koehnke to Unger re Cbi 98-123, Secretary, on behalf of Commission(ITC-Seq# 199806170036 - Public)
06-18-1998	Action Request Filed by Terence P Stewart 98-14, Stewart and Stewart, on behalf of Libby Inc (ITC-Seq# 199806180004 - Public)
06-18-1998	Letter Filed by Donna R Koehnke to Marshall Cbi 98-124, Secretary, on behalf of Commission (ITC-Seq# 199806180005 - Public)
06-19-1998	Certified List Filed by , , on behalf of (ITC-Seq# 199806190008 - Public)
06-19-1998	Statement Filed by Robert T Bishop, Council of European and Japanese National Shipowners Association, (ITC-Seq# 199806190020 - Public)
06-19-1998	Submission Filed by Gloria Cataneo Tosi, American Maritime Congress, on behalf of American Maritime Congress (ITC-Seq# 199806190029 - Public)
06-24-1998	Corrections to Transcript Filed by Rolf Marshall, Maritime Cabotage Task Force, on behalf of Maritime Cabotage Task Force (ITC-Seq# 199806240007 - Public)
07-06-1998	Submission Filed by John E Graykowski, Maritime Administration, on behalf of United States Department of Transportation (ITC-Seq# 199807060020 - Public)
08-17-1998	Transcript-corrected Filed by Marcia E Miller, Chairman, on behalf of Commission (ITC-Seq# 199808170006 - Public)
12-23-1998	Supplement Filed by Rufus E Jarman, Barnes Richardson and Colburn, on behalf of Meat Importers Council of America Inc (ITC-Seq# 199812230031 - Public)

CALENDAR OF PUBLIC HEARINGS

Those listed below appeared as witnesses at the United States International Trade Commission's hearing:

Subject:	THE ECONOMIC EFFECT OF SIGNIFICANT U.S. IMPORT RESTRAINTS: SECOND BIENNIAL UPDATE
Inv. No.:	332-325
Date and Time:	May 12, 1998 - 9:30 A.M.

Sessions were held in connection with the investigation in the Main Hearing room 101, United States International Trade Commission, 500 E Street, S.W., Washington, D.C.

Organization and Witness

Panel 1

Consumers for World Trade, Washington, D.C.

Doreen L. Brown, President

Panel 2

Powell, Goldstein, Frazer & Murphy LLP
Washington, D.C.
on behalf of

U.S. Association of Importers of Textiles and Apparel ("USA-ITA")

Francis X. Kelly, Chairman of the Board,
USA-ITA and Vice President, International
Trade Compliance and Government Relations,
Liz Claiborne Incorporated

Brenda A. Jacobs–OF COUNSEL

Panel 3

Maritime Cabotage, Washington, D.C.

Philip Grill, Chairman

Rolf Marshall, Council for Maritime

Lake Carriers' Association, Cleveland, Ohio

George J. Ryan, President

Crowley Maritime Corporation ("Crowley"), Washington, D.C.

Michael G. Roberts, Vice President, Governmental Relations

Panel 4

The Jones Act Reform Coalition, Washington, D.C.

Rob Quartel, President

Louis Dreyfus Corporation, Wilton, Connecticut

J. Stephen Lucas, Vice President

Brady & Berliner
Washington, D.C.
on behalf of

Governor of Guam

Roger A. Berliner—OF COUNSEL

Panel 5

Canadian Trucking Alliance, Ottawa, Canada

Graham Cooper, Senior Vice President

Panel 6

National Cotton Council of America, Memphis, Tennessee

Dr. Kent Lanclos, Agriculture Economist

American Meat Institute ("AMI"), Washington, D.C.

Leonard W. Condon, Vice President, International Trade American Peanut Coalition ("APC") and Coalition For Sugar Reform ("CSR"), Washington, D.C.

John Schnittker, Senior Economist and Director, Center for Agricultural Policy Reform, Public Voice for Food and Health Policy

APPENDIX C
Financial Services

Table C-1
Import restraints on the U.S. insurance sector (Life and Non-Life)

Import Restriction	Where Applicable
Primary Insurance:	
U.S. or foreign government-owned or government-controlled insurance companies, are not authorized to conduct business, either within the United States or from outside the country.	Alabama, Alaska, Arkansas, California, Colorado, Connecticut, Delaware, Georgia, Hawaii, Idaho, Kansas, Kentucky, Maine, Maryland, Montana, Nevada, New Jersey, New York, North Carolina, North Dakota, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Tennessee, Washington, West Virginia, Wyoming.
A federal excise tax of 1 percent on life insurance premiums and 4 percent on non-life premiums is imposed on cross-border supply of insurance from foreign companies covering U.S. risks.	Nationwide (a federal regulation).
For maritime vessels built under federally guaranteed mortgage funds and insured by a foreign company, the insured must demonstrate that the risk was first offered in the U.S. market.	Nationwide (a federal regulation).
Branches are not permitted to provide surety bonds for U.S. federal government contracts.	Nationwide (a federal regulation).
These states have no mechanism for licensing the initial entry of a non-U.S. insurance company as a subsidiary, unless the company is already licensed in some other U.S. state.	Minnesota, Mississippi, Tennessee.

Table continues on next page.

Table C-1—*Continued*
Import restraints on the U.S. insurance sector (Life and Non-Life)

These states have no mechanism for licensing the initial entry of a non-U.S. insurance company as a branch, unless the company is already licensed in some other U.S. state.	Arkansas, Arizona, Connecticut, Georgia, Hawaii, Kansas, Maryland, Minnesota, Nebraska, New Jersey, North Carolina, Pennsylvania, Tennessee, Utah, Vermont, Wyoming, West Virginia.
U.S. citizenship is required for some percentage of the board of directors of an insurance company.	California, Florida, Georgia, Idaho, Illinois, Indiana, Kentucky, Louisiana, Mississippi, Missouri, New York, Ohio, Oklahoma, Oregon, Pennsylvania, South Dakota, Tennessee, Washington, Wyoming.
U.S. citizenship is required for some percentage of the incorporators of an insurance company.	Alaska, Arizona, Arkansas, Florida, Georgia, Hawaii, Idaho, Indiana, Kansas, Kentucky, Maine, Missouri, Montana, South Dakota, Texas, Washington, Wyoming.
State residency is required for the organizing members of some types of mutual insurance companies.	Arkansas, California, Idaho, Kansas, Minnesota, Mississippi, Montana, North Dakota, Vermont, Wyoming.
Seven or more U.S. citizens—a majority of whom are state residents—may organize a fraternal benefit society.	Alaska, Arizona, Arkansas, California, Delaware, Florida, Hawaii, Idaho, Illinois, Indiana, Iowa, Kansas, Kentucky, Maine, Maryland, Michigan, Minnesota, Mississippi, Missouri, Montana, Nebraska, New Jersey, North Dakota, Oklahoma, Oregon, Pennsylvania, South Dakota, Virginia, Vermont, Washington, West Virginia, Wyoming.
Twenty-five or more persons domiciled in the state may organize a domestic reciprocal insurer.	Arizona, Arkansas, California, Delaware, Georgia, Idaho, Indiana, Kentucky, Maine, Maryland, Mississippi, Montana, Pennsylvania, South Dakota, Tennessee, Vermont, Virginia, Washington, Wyoming.

Table continues on next page.

Table C-1—*Continued*
Import restraints on the U.S. insurance sector (Life and Non-Life)

The United States reserves the right to impose restrictions on the entry and temporary stay of foreign persons.	Nationwide (a federal regulation).
Reinsurance:	
U.S. or foreign government-owned or government-controlled insurance companies are not authorized to conduct business.	Alabama, Alaska, Arkansas, Colorado, Connecticut, Delaware, Georgia, Hawaii, Idaho, Kansas, Kentucky, Maine, Maryland, Montana, Nevada, New York, North Carolina, North Dakota, Oklahoma, Oregon, Pennsylvania, Rhode Island, South Dakota, Tennessee, Washington, West Virginia, Wyoming.
Insurance companies incorporated in these states are limited to purchasing some or all types of reinsurance from reinsurers admitted to the same state.	Maine, Minnesota, Nevada.
A federal excise tax of 1 percent on insurance premiums is imposed on cross-border supply of insurance from foreign companies covering U.S. risks.	Nationwide (a federal regulation).
Mutual life insurance companies may not enter into total direct reinsurance with non-U.S. companies.	Texas.
These states have no mechanism for licensing the initial entry of a non-U.S. insurance company as a subsidiary, unless the company is already licensed in some other U.S. state.	Maryland, Minnesota, Mississippi, Tennessee.

Table continues on next page.

Table C-1—*Continued*
Import restraints on the U.S. insurance sector (Life and Non-Life)

These states have no mechanism for licensing the initial entry of a non-U.S. insurance company as a branch, unless the company is already licensed in some other U.S. state.	Arkansas, Arizona, Connecticut, Georgia, Kansas, Maryland, Minnesota, Nebraska, New Jersey, North Carolina, Pennsylvania, Tennessee, Utah, Vermont, Wyoming, West Virginia.
Services Auxiliary to Insurance:	
Individuals must be licensed in another U.S. state to receive a nonresident license in one or more areas of insurance services.	Arkansas, California, Colorado, Connecticut, Delaware, Florida, Georgia, Hawaii, Illinois, Indiana, Kansas, Kentucky, Louisiana, Maine, Maryland, Mississippi, Missouri, Montana, Nebraska, Nevada, New Jersey, New Mexico, New York, North Carolina, North Dakota, Oregon, Pennsylvania, South Dakota, Texas, Virginia, Washington, West Virginia.
Brokerage licenses are not issued to non-residents.	South Dakota, Wyoming.
Brokerage licenses are only issued to non-residents for certain lines of insurance. All states require in-state residency for surplus lines brokers.	Alabama, Arkansas, California, Louisiana, New Mexico.
Higher brokerage license fees may be charged for non-residents.	Alaska, Arizona, Arkansas, California, Colorado, Georgia, Indiana, Louisiana, Maine, Massachusetts, Montana, Nebraska, Nevada, New Hampshire, New Mexico, North Carolina, North Dakota, Ohio, Oklahoma, Pennsylvania, Rhode Island, South Carolina, Utah, Vermont.

Table continues on next page.

Table C-1—*Continued*
Import restraints on the U.S. insurance sector (Life and Non-Life)

Agency licenses are issued to non-state residents for all or only certain lines of insurance.	California, Florida, Kansas, Kentucky, Louisiana, New Mexico, Ohio, Oregon, Rhode Island, Texas.
Higher agency license fees may be charged for non-residents.	Alaska, Arkansas, California, Colorado, Florida, Indiana, Iowa, Kansas, Kentucky, Louisiana, Maine, Massachusetts, Mississippi, Montana, Nebraska, Nevada, New Hampshire, New Jersey, New Mexico, North Dakota, Oklahoma, Pennsylvania, Rhode Island, South Carolina, South Dakota, Tennessee, Utah, Vermont, Wisconsin, Wyoming.
Some consultancy, actuarial, risk assessment, and claim settlement licenses are not issued to nonresidents.	Alabama, California, Florida, Georgia, Hawaii, Idaho, Indiana, Kentucky, Maryland, Michigan, Montana, Nevada, New Mexico, North Carolina, Oklahoma, Oregon, Pennsylvania, Washington, West Virginia, Wyoming.
In-state residency is required for some consultancy, actuarial, risk assessment, and claim settlement licenses.	California, Georgia, Illinois, Maryland, Mississippi, Nevada.
U.S. citizenship is required for some consultancy, actuarial, risk assessment, and claim settlement licenses.	Alabama, Idaho, Missouri, Nebraska, New Mexico, Ohio, Oklahoma.

Source: WTO, GATS, United States: Schedule of Specific Commitments, supplement 3 (GATS/SC/90/Suppl.3), Feb. 26, 1998.

Table C-2
Import restraints on the U.S. banking and securities sectors

Import Restriction	Where Applicable
Banking Sector:	
Banks in which corporate credit unions may place deposits are limited according to the country of their home charters.	Michigan.
All directors of a national bank must be U.S. citizens, unless a national bank is an affiliate or subsidiary of a foreign bank. In this case, a majority of the directors must be U.S. citizens.	Nationwide (a federal regulation).
Foreign ownership of Edge corporations[1] is limited to foreign banks and U.S. subsidiaries of foreign banks, but not foreign non-bank firms.	Nationwide (a federal regulation).
Branches of corporations organized under a foreign country's law are prohibited from providing a credit union, savings bank, home loan or thrift business in the United States.	Nationwide (a federal regulation).
Foreign banks must establish an insured banking subsidiary in order to accept domestic retail deposits of less than $100,000, unless the foreign bank branch was engaged in insured deposit-taking activities on December 19, 1991.	Nationwide (a federal regulation).

Table continues on next page.

Table C-2—*Continued*
Import restraints on the U.S. banking and securities sectors

Foreign banks are required to register, pay a fee, and submit reports under the Investment Advisers Act of 1940 in order to engage in securities advisory and investment management services in the United States.	Nationwide (a federal regulation).
Foreign banks cannot be members of the Federal Reserve system and thus may not vote for directors of a Federal Reserve Bank. Foreign-owned bank subsidiaries are not subject to this measure.	Nationwide (a federal regulation).
The United States reserves the right to impose restrictions on the expansion of foreign banks beyond their "home states" via the establishment or acquisition of branches in another state.	Nationwide (a federal regulation).
Interstate expansion into another state by a foreign bank through the establishment of branches by merger is prohibited where these states are the home state of the foreign bank or the state into which the foreign bank is expanding.	Montana, Texas.
These states reserve the right to limit foreign banks from initial entry into the United States by establishment or acquisition of state chartered or licensed banks.	California, Connecticut, Georgia, Illinois, Kentucky, Louisiana, Massachusetts, Michigan, North Carolina, Pennsylvania, Washington.

Table continues on next page.

Table C-2—*Continued*
Import restraints on the U.S. banking and securities sectors

These states reserve the right to limit foreign banks in several specific areas of banking practice.	Indiana, Iowa.
These states prohibit or otherwise limit foreign banks from initial entry or expansion by establishment or acquisition of state-chartered commercial bank subsidiaries.	Alabama, Arizona, Arkansas, California, Colorado, Delaware, Indiana, Kansas, Louisiana, Maryland, Michigan, Minnesota, Mississippi, Montana, Nebraska, Nevada, North Carolina, North Dakota, Oklahoma, Oregon, Pennsylvania, South Carolina, Tennessee, Vermont, Virginia, Washington, West Virginia, Wisconsin, Wyoming.
These states limit foreign banks from initial entry or expansion by establishment or acquisition of several types of financial institutions.	Delaware, Ohio, Tennessee, Washington.
The boards of directors of depository financial institutions are subject to U.S. citizenship requirements in proportions specified by each state.	Alabama, Colorado, District of Columbia, Florida, Georgia, Indiana, Iowa, Kentucky, Louisiana, Massachusetts, Mississippi, Missouri, New Hampshire, New Jersey, New Mexico, New York, North Carolina, North Dakota, Pennsylvania, South Dakota, Tennessee, Vermont, West Virginia, Wisconsin.
Citizenship is required to engage in specified activities.	Arizona, Indiana, Illinois, Nevada.
There are specified limits on licenses for the establishment of a branch or agency by a foreign bank.	California, Hawaii, Idaho, Illinois, Massachusetts, Oregon, Pennsylvania, Utah, Washington.
State branch licenses are not available, but state agency licenses are available.	Idaho, West Virginia.

Table continues on next page.

Table C-2—*Continued*
Import restraints on the U.S. banking and securities sectors

No state branch or agency licenses are available.	Arizona, Arkansas, Colorado, Indiana, Iowa, Minnesota, Montana, Nebraska, New Mexico, North Dakota, Oklahoma, Rhode Island, South Carolina, South Dakota, Tennessee, Vermont, Virginia, Wisconsin.
Branch licenses are not available but agency licenses are available, subject to specified limitations.	Delaware, Florida, Georgia, Louisiana, Mississippi, Missouri, Oklahoma, Texas.
No branch or state agency license are available.	Wyoming.
No branch or agency license are available.	Alabama, Kansas, Maryland, North Dakota.
Pre-judgement seizure remedies and civil discovery requests may be applied against foreign bank agencies, but subsidiaries are exempt.	Texas.
Direct branches or agencies of foreign banks are required to register under securities broker-dealer or investment adviser measures, but bank subsidiaries of foreign banks are exempt from such requirements.	Alabama, Arizona, Arkansas, California, Connecticut, Delaware, District of Columbia, Georgia, Idaho, Iowa, Kansas, Louisiana, Maryland, Mississippi, Missouri, Nebraska, New Hampshire, New Jersey, New Mexico, New York, North Carolina, Ohio, Oklahoma, Pennsylvania, South Dakota, Tennessee, Texas, Vermont, Washington.
Direct branches or agencies of foreign banks (but not bank subsidiaries) are required to register or obtain licenses in order to engage in specified activities.	Arkansas, California, Delaware, Georgia, Indiana, Kansas, Maryland, Massachusetts, North Carolina, Oklahoma, Pennsylvania, Tennessee, Texas, Virginia, Wisconsin.

Table continues on next page.

Table C-2—*Continued*
Import restraints on the U.S. banking and securities sectors

These states restrict various commodities transactions by foreign bank branches and agencies, but not by other depository financial institutions.	Arizona, California, Idaho, Iowa, Indiana, Mississippi, Missouri, Nebraska, New Hampshire, Washington.
Offers and sales of securities to foreign bank branches and agencies are subject to registration/disclosure requirements that do not apply if the transaction involves other financial institutions.	Illinois, Indiana, Louisiana, Montana, Nebraska, New Jersey, North Dakota, Tennessee, Texas.
Representative offices of foreign banks are not permitted in these states, or are limited as specified.	Arizona, Arkansas, Colorado, Kansas, Kentucky, Michigan, Mississippi, Montana, North Dakota, Oklahoma, Oregon, Rhode Island, South Carolina, South Dakota, Tennessee, Vermont, Virginia, Wisconsin, Wyoming.
Securities Sector:	
Federal law prohibits the offer or sale of futures contracts on onions, options contracts on onions, and options on futures contracts on onions in the United States, and services related thereto.	Nationwide (a federal regulation).
The United States reserves the right to impose restrictions on the authority to act as a sole trustee of an indenture for a bond offering in the United States.	Nationwide (a federal regulation).

Table continues on next page.

Table C-2—*Continued*
Import restraints on the U.S. banking and securities sectors

The United States reserves the right to impose restrictions on the use of simplified registration and periodic reporting forms for securities issued by small business corporations.	Nationwide (a federal regulation).
The United States reserves the right to impose limitations on the granting or continuation of Federal Reserve designation as a primary dealer in U.S. government debt.	Nationwide (a federal regulation).

[1] An Edge or Edge Act corporation is a banking corporation chartered by the Federal Reserve Board, rather than by a state, to engage in international banking. Edge Act corporations may be owned by either domestic or foreign banks and may operate interstate branches, accept deposits outside the United States, and invest in non-U.S. firms. See, for example, Michael Fitch, *Dictionary of Banking* (New York: John Wiley & Sons, 1993), p. 212.

Source: WTO, GATS, United States: Schedule of Specific Commitments, supplement 3 (GATS/SC/90/Suppl.3), Feb. 26, 1998.

APPENDIX D
The USITC CGE Model

THE USITC CGE MODEL

This appendix provides a technical description of the USITC CGE model, including an overview of how it works, the current model specification, and a discussion of how it is used in the analysis of significant import restraints.

Overview of How the USITC CGE Model Works

Computable general equilibrium models, such as the USITC CGE model, simulate interactions among producers and consumers within an economy in markets for goods, services, labor, and physical capital. The distinguishing feature of a CGE model is its economy-wide coverage and multisectoral nature. A CGE model explicitly accounts for upstream and downstream production linkages, intersectoral competition for labor and capital, and exchange rate changes. A growing body of evidence suggests that these indirect effects of import restraints can be significant.

The USITC CGE model has three main components: (1) a social accounting matrix (SAM), (2) a behavioral parameter data set, and (3) a system of equations that constitute the model specification. The SAM is the empirical data base for the CGE that specifies the transactions among the various economic units involved in the U.S. economy for 1996, the base year in this study. The largest part of the SAM is composed of the estimated input-output accounts for 497 sectors[1] in agriculture, mining, manufacturing, and services. These accounts detail the transactions that occur between industrial sectors, such as the purchase of steel by the automotive sector. In addition to input-output accounts that capture interindustry linkages, other information such as trade data, government transactions, and household transactions are incorporated into the SAM and are reconciled with the 1996 national income and product accounts (NIPA). By this process, a consistent set of detailed transactions between firms, households, government, and other domestic and foreign institutions are generated for the 1996 base year.

While the SAM provides information on the initial equilibrium of the U.S. economy, the behavioral parameters help the model determine how the economy moves from this equilibrium to a new equilibrium in response to changes in policy parameters. The behavioral parameters are elasticities that specify the percentage change that occurs in an economic variable in response to a one percent change in another economic variable. For example, an income

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[1] This 497 sector classification is based on 6–digit Bureau of Economic Analysis sectors.

elasticity of demand for a good is the percentage change in demand for that good that occurs in response to a one percent change in household income. The following types of behavioral parameters are used by the model:

1. Elasticities of substitution between imported and domestic goods;
2. Elasticities of transformation between domestic and export goods;
3. Elasticities of import supply;
4. Elasticities of export demand;
5. Elasticities of substitution between labor and capital;
6. Elasticities of labor supply; and
7. Income elasticities.

These parameters have been estimated by the staff of the USITC using time series data, where possible. In other cases, the staff have relied on published studies for estimates. The parameters are included in a behavioral parameter data set that is continually improved and updated.[2]

The final component of the USITC CGE model is the system of equations that compose the model of the U.S. economy. These equations characterize production technology, labor market supply and demand, trade interactions, and domestic supply and demand of final and intermediate goods as functions of prices and quantities. They make use of the behavioral elasticities and the economic relationships defined in the social accounting matrix. As a final step, equations specifying the accounting identities that tie these interactions together are included to ensure model closure. A more detailed description of this important part of the CGE model is given in the next section.

Current Specification of the USITC CGE Model

The equations of the USITC CGE model specification are divided into eight components: final demand behavior, production technology, factor supplies and demands, treatment of traded goods, domestic prices, domestic

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[2] This data set is described in more detail in Reinert and Roland–Holst, "Parameter estimates for U.S. Trade Policy," working paper, 1991. The most recent update to the parameters consists of newly estimated elasticities of substitution between imports and domestic products, made by USITC staff in 1998 and reported in a forthcoming paper by Gallaway, Rivera, Flynn, and McDaniel. The estimated substitution elasticities used in the current analysis are shown at then end of this appendix, in table D–1.

market equilibrium, the foreign sector, and income and government revenue. The following section describes the specification of these eight components needed to model a simple one-sector version of the USITC CGE model. The model views each sector as consisting of three goods: imported goods, goods for export, and goods for domestic consumption. Imports and exports in each sector are imperfect substitutes for their domestic counterparts. Imports combine with the domestic substitute to form a composite good for the domestic market. Domestic output is also supplied to the export market.

Final Demand Behavior

The USITC CGE model considers three separate components of domestic final demand: household consumption, government demand, and investment demand. The consumption behavior of households is given in equation 1:

$$c = LES(p_q, (1-s^*)Y; \eta) \tag{1}$$

where c denotes real personal consumption, p_q denotes the domestic price of the composite good, s^* is the fixed savings rate, Y is domestic income, and η is the income elasticity of demand. The functional form is that of the linear expenditure system (LES).[3] The LES is a generalization of the Cobb-Douglas utility function in which the origin is translated to a point in the positive quadrant. While the income expansion paths are linear, the displaced origin allows preferences to be nonhomothetic. That is to say, income elasticities of demand can differ from unity. This is an important feature of the model.

In the specification of government demand, real government spending is fixed exogenously:

$$g = g^* \tag{2}$$

where g^* is the exogenously specified, real government spending.

For investment demand, we assume that real investment is held constant as in:

$$i = i^* \tag{3}$$

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[3] For an introduction to the LES, see ch. 5 of P. R. G. Layard and A. A. Walters, *Microeconomic Theory* (New York: McGraw–Hill, 1978), ch. 3 of A. Deaton and J. Muellbauer, *Economics and Consumer Behavior* (Cambridge, England: Cambridge University Press, 1980), app. A.5 of K. Dervis, J. de Melo, and S. Robinson, *General Equilibrium Models for Development Policy* (Cambridge, England: Cambridge University Press, 1982), ch. 11 of E. Silberberg, *The Structure of Economics* (New York: McGraw–Hill, 1990), and ch. 2 of J. W. Chung, *Utility and Production Functions: Theory and Applications* (Cambridge, MA: Blackwell Publishers, 1994).

where i is real investment and i^* is its exogenously-specified level. Holding investment constant in the specification avoids questions concerning the substitution between present and future consumption, which would make static welfare comparisons difficult.

Production Technology

Production technology is modeled using a constant elasticity of substitution (CES) value added function specified as:[4]

$$x = CES(l_d, k_d; \phi) \tag{4}$$

where x denotes gross domestic industry output, l_d is labor demand, k_d is capital demand, and ϕ is the elasticity of substitution between labor and capital. The parameter ϕ is exogenous and is estimated outside of the model. A Leontief (fixed coefficients) function is assumed between value added and intermediate products as well as between various intermediates. Intermediate use is given by:

$$v = a\,x \tag{5}$$

where v is total intermediate use and a is the fixed proportion intermediate-use coefficient. The coefficient a is determined by calibration to the social accounting matrix. The current version of the ITC model distinguishes the production of specific products or commodities and the production by specific industries. An industry activity may produce more than one product, and a product may be produced by more than one industry. The relation between commodity output and industry output is given by

$$x = b\,xc \tag{6}$$

where x is the industry output defined in equation (4), xc is the vector of commodities produced within the industry, and b is a vector of (fixed proportion) make coefficients.

Factor Supplies and Demands

As generally is the case in CGE models, the factors of production, labor and capital, are often assumed to be in fixed supply. This assumption is specified in the following two equations:

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[4] For an introduction to CES production functions, see ch. 9 of P. R. G. Layard and A. A. Walters, *Microeconomic Theory* (New York: McGraw–Hill, 1978), and ch. 9 of E. Silberberg, *The Structure of Economics* (New York: McGraw–Hill, 1990), and ch. 9 of J. W. Chung, *Utility and Production Functions: Theory and Applications* (Cambridge, MA: Blackwell Publishers, 1994).

$$l_s = l^* \quad (7)$$

$$k_s = k^* \quad (8)$$

where l_s is the labor supply set equal to the exogenous level l^* and k_s is capital supply set equal to the exogenous level k^*.

Factor demands are derived from the CES production function and specify labor-capital shares which depend on relative factor prices and the elasticity of substitution as in:

$$l_d / k_d = CES(r, w; \phi) \quad (9)$$

where r is the rental rate on capital and w is the wage.

Treatment of Traded Goods

The treatment of traded goods is the most important component of the model specification. As mentioned in the introduction to this section, the model views each sector as consisting of three goods, where imports and exports in each industry category are imperfect substitutes for their domestic counterparts.[5] On the import side, the model treats foreign and domestic commodities as imperfect substitutes in domestic use. Therefore, the import composition of domestic demand is influenced by the ratio of domestic and import prices, as well as by any administrative quantity restrictions. The model aggregates imports and their domestic counterparts into an aggregate good q using a CES aggregation:

$$q = CES(d_d, m; \sigma) \quad (10)$$

$$d_d / m = CES(p_d, p_m; \sigma) \quad (11)$$

Equation 10 is the aggregation relation in which q denotes the composite good for domestic consumption, d_d denotes domestic demand for domestic goods, m denotes imports, and σ is the elasticity of substitution between imports and domestic goods within the sector.[6] Equation 11 is the tangency condition in which p_d is the price of domestic goods and p_m is the domestic price of imports.

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[5] The treatment of traded goods follows J. de Melo and S. Robinson, "Product Differentiation and the Treatment of Foreign Trade in Computable General Equilibrium Models of Small Economies," *Journal of International Economics*, vol. 27 (Aug. 1989), pp. 489–97.

[6] This σ is often referred to as the "Armington" elasticity, see P. S. Armington, "A Theory of Demand for Products Distinguished by Place of Production," *IMF Staff Papers*, vol. 16 (Mar. 1969), pp. 159–76.

The use of the CES functional form for aggregation implies that preferences with respect to imports and domestic goods within a sector are homothetic, while preferences between sectors are not. For a given level of demand for a product category, determined by the specification of the three components of final demand, the shares of imports and domestic goods are determined in response to relative prices.

On the export side, the model assumes that domestic firms allocate their commodity output between domestic and foreign markets according to a transformation function which depends on the ratio of domestic and foreign prices. Therefore, the export composition of domestic supply is influenced by the ratio of domestic and export prices. The functional form used is a constant elasticity of transformation (CET) as indicated in the following equations:[7]

$$x = CET(d_s, e; \tau) \tag{12}$$

$$d_s / e = CET(p_d, p_e; \tau) \tag{13}$$

Equation 12 is the allocation relation in which d_s is domestic supply, e is exports, and τ is the elasticity of transformation between domestic supply and exports. Equation 13 is the tangency condition in which p_e is the domestic price of exports. The shares of domestic supply and exports are determined in response to relative prices.

Domestic Prices

We next turn to the equations for domestic prices, including those of import and export goods. These are given in the following five equations:

$$p_x = (b\ p_{xc}\ xc)/x \tag{14}$$

$$p_{xc}x = p_d d_s + p_e e \tag{15}$$

$$p_q q = p_d d_s + p_m m \tag{16}$$

$$p_m = (1 + t_m)(1 + \rho_m)\ n\ \pi_m \tag{17}$$

$$p_e = n\ \pi_e \tag{18}$$

where t_m is the tariff rate, ρ_m is the quota premium rate, π_m is the world price of the import good, π_e is the world price of the export good, and n is the exchange rate (U.S. dollars per unit of foreign currency).

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[7] The original reference to this functional form is A. A. Powell and F. Gruen, "The Constant Elasticity of Transformation Production Frontier and Linear Supply System," *International Economic Review,* vol. 9 (Oct. 1968), pp. 315–28.

Domestic Market Equilibrium

Three equations are required for domestic market equilibrium, one for the commodity market and two others for the factor markets:

$$q = v + c + i + g \tag{19}$$

$$l_s = l_d \tag{20}$$

$$k_s = k_d \tag{21}$$

The Foreign Sector

We next need to characterize the foreign sector. We do so with the following three equations:

$$B^* = \pi_m m - \pi_e e \tag{22}$$

$$m = s_m(\pi_m; \sigma_f) \tag{23}$$

$$e = d_e(\pi_e; \tau_f) \tag{24}$$

where B^* is the exogenously-specified balance of payments or foreign saving, σ_f is the elasticity of import supply, and τ_f is the elasticity of export demand.

Income and Government Revenue

The national income identity is given as follows:

$$Y = wl_d + rk_d + nt_m p_m m + nB^* \tag{25}$$

The income of the representative consumer includes wages, rental income, government revenue, plus foreign savings.

In the actual model, private households, enterprises, and government are disaggregated into separate income and expenditure specifications, and a wider variety of fiscal instruments (e.g. income taxes and indirect business taxes) is included.

Import Restraint Analysis with the USITC CGE Model

In the application of the CGE methodology to import restraint removal, the following question is asked: What would happen to the economy if the import restraints were removed and all other U.S. policies (fiscal and monetary) as well as foreign conditions (economic behavior in foreign countries) remained

the same? Specifically, the analysis considers what *would have happened* to the U.S. economy in the base year (1996), if the import restraints had been removed. The analysis thus emphasizes the effects of import restraints in isolation from other factors that effect the economy. Since the analysis does not incorporate expected future changes in these other factors, it is not a forecast. That is, the analysis does not tell what actually will happen if import restraints are removed. Rather, the analysis provides an assessment of the specific contributions of a policy change such as the removal of tariffs and quotas.

More technically, the model is first calibrated to the base-year data with the import restraints in place.[8] Correct calibration ensures that when the model solves for the equilibrium prices that equate supply and demand in all markets and satisfy the accounting identities governing economic behavior, it reproduces the observed base-year economy. The calibration process ensures that subsequent policy simulations start from an initial position that accurately describes the economy and its accounting identities.

With the calibration process complete, simulation of import restraint removal is accomplished by setting the specific tariff and/or the tariff-equivalent of the quotas to zero in the model, and solving the model for new equilibrium prices and quantities. By comparing these new equilibrium prices and quantities to the base-year solution, the model reports estimates of the economic effects of removing the specified import restraints. Note that import restraints (and the relief of these restraints) are applied to specific commodities. By distinguishing between industry and commodity output, the model can track the effects of a policy shock back to any industry sectors that may be producing a given commodity.

Often the effects on the significant upstream and downstream sectors that are linked with the liberalized sector are of interest as well.[9] Because of the multisectoral nature of the CGE, which explicitly details inter-industry linkages, analysis of the effects of import restraint removal on upstream and downstream sectors is straightforward. Using the matrix representing these linkages, the protected sector's expenditures on goods and services from the other sectors can be determined from the SAM. Large expenditures identify significant upstream sectors. Likewise, the vector of the protected sector's receipts from the other sectors can also be extracted from the SAM. The sectors that generate the largest receipts for the protected sector are significant downstream sectors.

Once the protected sector and its significant upstream and downstream sectors are identified for the policy simulation, the 497-sector SAM and

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[8] Tariffs are taken from official statistics compiled by the U.S. Department of Commerce, and the tariff equivalents of quotas are estimated by USITC staff.

[9] Upstream sectors produce goods and services that serve as inputs into the production of goods and services in the protected sector; downstream sectors use the protected sector's goods and services as inputs.

behavioral parameter data set are adjusted into a more manageable size. This is done by using a flexible aggregation facility to combine the remaining sectors in the economy into nine broad reference sectors:

1. Agriculture, forestry, and fishing;
2. Mining and mineral resources;
3. Construction;
4. Nondurable manufacturing;
5. Durable manufacturing;
6. Transportation, communication, and utilities;
7. Wholesale and retail trade;
8. Finance, insurance, and real estate; and
9. Personal, business and public services.

This procedure of aggregating the USITC SAM and behavioral parameter data set into the protected sector, the significant upstream and downstream sectors, and the nine reference sectors results in a manageable, sector-specific model from which to run policy simulation experiments.

The main outputs of the USITC CGE model are the equilibrium prices and quantities that it computes in solving its system of equations. When a policy simulation is run, such as the removal of a specific import restraint, the model reports changes (both in absolute and in percentage terms) in the equilibrium prices and quantities over those calculated in the base period.

Changes in macroeconomic variables specified in the model are reported as well. Some of the more important macroeconomic variables used in the model include the wage to capital rental ratio in the economy and the exchange rate. Changes in these macroeconomic variables from removing import restraints can have feedback effects on the sectors of interest, as well as the rest of the economy.

Another important output result calculated by the model is the equivalent variation measure of the economic welfare change due to trade liberalization. The equivalent variation is the amount of income that would have to be given to the household sector in the absence of liberalization to reach the level of overall economic welfare achievable under liberalization. For example, a positive equivalent variation measure is the estimated total dollar amount U.S. households gain from removal of the tariff protection in a particular sector. This measure is the model's main indicator of net economic welfare change.[10]

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[10] Even though the equivalent variation measure only evaluates domestic welfare in terms of aggregate private real consumption, it is appropriate for this model since government spending and investment are assumed fixed and thus these generate no welfare changes.

Table D-1
Estimated substitution elasticities between imports and domestically produced products, by sector

Sector	Substitution elasticity
Focus sectors	
Textile and apparel sectors:	
Apparel, includes only apparel made from purchased materials	2.291
Broadwoven fabric mills	1.244
Canvas and related products, pleating, stitching, and embroidery	1.708
Carpets and rugs	0.995
Home furnishings, including curtains and draperies	1.953
Hosiery	0.810
Knitting mills and knit fabric mills	2.916
Miscellaneous textile goods	1.020
Narrow fabric mills	0.139
Thread mills	2.401
Yarn mills and textile finishing	2.634
Other fabricated textile products	0.940
Luggage, handbags, and purses	0.842
Man-made fibers	1.085
Other miscellaneous products	1.085
Agricultural sectors:	
Butter	0.884
Cheese	1.101
Dry/condensed milk products	0.870
Sugar	0.998
Sugar-containing products	0.976
Maritime transportation:	3.501
High MFN tariff sectors:	
Ball and roller bearings	0.863
Ceramic wall and floor tile	1.346
China tableware	1.450
Costume jewelry and costume novelties	0.900
Footwear	0.700
Frozen fruit, fruit juices and vegetables	0.863
Leather gloves and mittens	0.803
Personal leather goods	0.842
Cutlery	0.826
Rest of the economy	
Agriculture, forestry, and fisheries	0.557
Construction	(1)
Durable manufacturing	1.002
Finance, insurance, and real estate	0.900
Mining	0.309
Nondurable manufacturing	1.113
Services, other	0.856
Transportation, communications, and utilities	0.900
Wholesale and retail trade	(1)

[1] Nontraded sector.

Source: Estimated by the staff of the USITC.

APPENDIX E
Partial Equilibrium Methodology Used in the Analysis of the U.S. Peanut Import Quota

Partial Equilibrium Methodology Used in the Analysis of the U.S. Peanut Import Quota

A partial equilibrium model of the economic effects of the peanut import quota is used because peanuts do not constitute a sector in the social accounting matrix of the USITC's computable general equilibrium model.

Partial Equilibrium Model

A simplified model of the U.S. edible peanut market is illustrated in figure E–1. Area A+B+C illustrates the transfer from U.S. producers, import suppliers, and the U.S. treasury to consumers if edible peanuts are sold in the United States at the world price. Area A is the difference between the U.S. support price, P_S (30.50 cents per pound), and the world price, P_W (19.21 cents per pound), multiplied by the quantity of peanuts sold for food use by U.S. producers in the U.S. market, Q_1 (1,902 million pounds, farmers' stock basis). Area B+C illustrates the total value of imports sold in the U.S. market and is equal to the difference between the P_S and P_W multiplied by the quantity of peanuts imported for food use in the U.S. market, Q_2–Q_1 (127 million pounds of peanuts plus 99 million pounds of peanut butter and peanut paste, all on a farmers' stock basis[1]). Area C illustrates the tariff revenue collected on imports of peanuts and peanut butter and peanut paste (calculated duties collected, as reported by the U.S. Department of Commerce).

Area D illustrates the value in excess of the world price of the additional peanuts that would be consumed at the world price compared to what would be consumed at the support price. When the import quota and support price are in force, this area represents what economists call a "deadweight" cost, or social welfare loss, in that it represents a loss to consumers not matched by a gain to producers. To get the area of this "welfare triangle," an estimate of U.S. peanut consumption at the world price was made using a price elasticity of demand of –0.14.[2] This estimate of 142 million pounds higher than actual consumption in crop year 1996/97 was multiplied by the difference between the support and world prices, P_S–P_W, (11.29 cents/lb.), and divided by two, to yield an approximation of the social welfare loss of $8 million.

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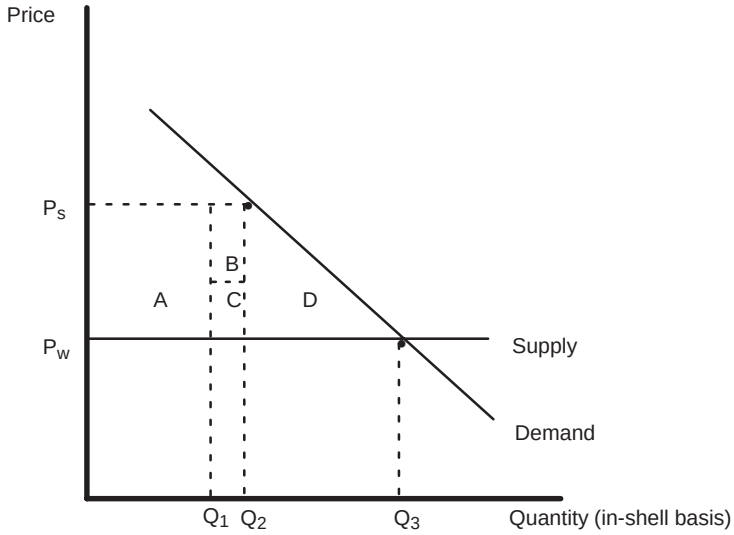
[1] Data on farmers' stock basis are from U.S. Department of Agriculture, Economic Research Service, *Agricultural Outlook*, December 1998, p. 13.

[2] The elasticity estimate of –0.14 is from Randal R. Rucker and Walter N. Thurman, "The Economic Effects of Supply Controls: The Simple Analytics of the U.S. Peanut Program," *Journal of Law and Economics* vol. 33 No. 2 (Oct. 1990), pp. 483–515. James Schaub has used an estimate of –0.20 in "Peanut Demand Estimates and Consumers' Cost of the Peanut Program," a paper presented at the annual meeting of the American Peanut Research and Education Society, Orlando, FL, (July 1987). If the latter is used, additional consumption would be 206 million pounds and the deadweight

Figure E-1
U.S. domestic peanut market: Effects of eliminating the U.S. peanut program on the market; and economic welfare effects of eliminating the program



P_S	=	Support price for edible peanuts
P_W	=	World price of U.S. peanuts
Q_1	=	Quantity of peanuts sold by domestic producers at the edible support price P_S
Q_2	=	Quantity of peanuts demanded at the edible support price P_S
Q_3	=	Quantity of peanuts that would be consumed domestically at the world price P_W
Q_2-Q_1	=	Quantity of peanuts imported under tariff-rate quota
Q_3-Q_2	=	Quantity of peanuts exported at the world price
A	=	Income transfer from U.S. producers to consumers
B	=	Income transfer from import suppliers to consumers
C	=	Loss of tariff revenue to U.S. Treasury
D	=	Deadweight social welfare loss

[2]—*Continued*
loss recovered would be $11.7 million. The choice of demand elasticity does not affect the estimate of the transfer from producers, import suppliers, and the U.S. Treasury to consumers.

The following formula is used in computing the estimate of U.S. consumption at P_W (Q_3):

$$Q_3 = Q_2\left(\frac{P_W}{P_S}\right)^{\epsilon}$$

where ε is the price elasticity of demand in the United States, and the Ps and Qs are as defined in figure F–1. This equation is solved for Q_3 with Q_2 = 2,128 million lbs, P_W = 19.21 cents/lb, P_S = 30.5 cents/lb, and ε = –0.14.

APPENDIX F
Measures Of Nontariff Barriers

Measures of Nontariff Barriers

Surveys of Approaches

This study looks at the most significant U.S. import restraints and identifies these as being largely tariffs or tariff-rate quotas (TRQs). The trade restrictiveness posed by tariffs is routinely measured simply by the size of the tax on imports. However, numerous approaches have been proposed and used to evaluate the trade restrictiveness of quotas and TRQs.

In the case where they are binding, both import quotas and TRQs can be considered to have the same effect as a tariff, but are applied through restrictions on quantity rather than price. In the market depicted in figure F-1, a tariff of amount t raises the effective supply curve for imports from Supply to $Supply_1$. The equilibrium price rises from P to P_1 and reduces the equilibrium quantity of imports from Q to Q_1. As represented in the graph, an import quota that reduces imports from Q to Q_1 has the same effect in this market as the tariff t. Thus, t can also be considered as the tariff equivalent of the quota. The approach of this study has been to evaluate import quotas by their tariff equivalents.

The particular circumstances of specific markets under investigation have raised a number of issues and generated a variety of methods for measuring the degree of trade restrictiveness imposed by quotas. Many of these methods are described in previous ITC studies[1] and most comprehensively in Deardorff and Stern.[2] After surveying a broad array of theoretical and empirical concerns, Deardorff and Stern conclude:

> *The methodologies that appear to have been the most successful have varied across industries and types of NTB, but most have involved some sort of price comparison to infer the tariff equivalent of the NTB. ... Therefore, we conclude from this survey that the most useful direction for future investigation of NTBs across industries and countries should be to aim for a comprehensive set of tariff-equivalent measures of protection (nominal, not effective) derived from the most detailed industry-specific information that can*

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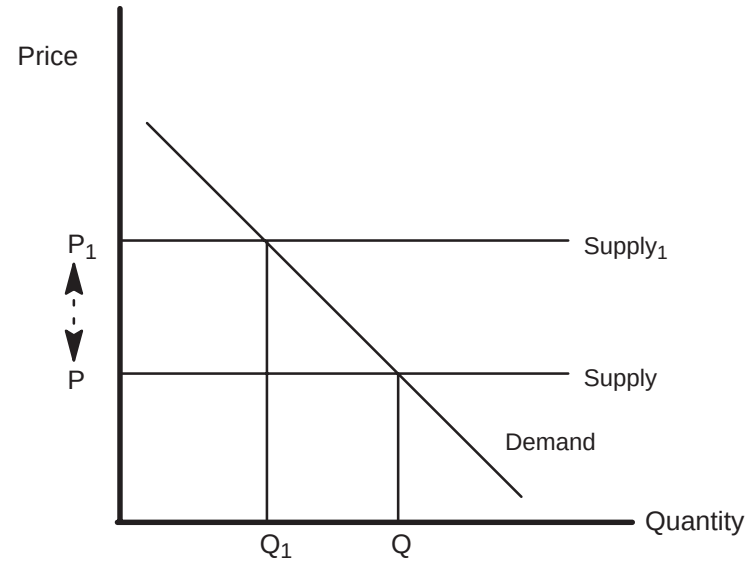
[1] See USITC, *The Economic Effects of Significant U.S. Import Restraints: First Biannual Update*, USITC Publication 2935, Washington DC, Dec. 1995; USITC, *The Economic Implications of Liberalizing APEC Tariff and Nontariff Barriers to Trade*, USITC Publication 3101, Washington DC, Apr. 1998; Linkins, L. and H. Arce, "Estimating Tariff Equivalents of Nontariff Barriers," USITC Working Paper No.94-06-A, June 1994.

[2] Deardorff, A. and R. Stern, "Measurement of Non-Tariff Barriers," OECD/GD(97)129, 1997.

Figure F-1
Supply and demand for imports



P, Q = free-trade price and quantity of imports
P_1, Q_1 = price and quantity of imports under trade restrictions

be obtained and from various different measurement techniques appropriate to the type of NTB and its method of administration.[3]

In an annex to the study, Deardorff and Stern provide an extensive list of detailed formulas and guidelines for calculating tariff equivalents for many types of NTBs, covering a wide variety of cases and numerous different circumstances governing market conditions. The remainder of this appendix will summarize a few of the major issues that arise in estimating tariff equivalents of NTBs.

Price Gap Measurements

The principal approach taken in this study has been to measure tariff equivalents using the gap between protected U.S. domestic prices and benchmark free market, or world, prices. As indicated in figure F-1, the domestic price, as influenced by tariffs or quotas, and the world price are

[3] Ibid., p. 44.

affected by changes in conditions governing domestic and global supply and demand. Thus, even a NTB — such as a quota — that remains constant over time, will generate a different measured impact on the U.S. market as the economy grows and changes over the same time frame, and domestic and foreign supply and demand conditions change. The tariff equivalents estimated in this study therefore reflect the measured price gap only for 1996.

Quality differences

When comparing domestic and world prices for a given commodity, one implicitly assumes the two prices represent substantially the same commodity. Therefore, an important issue arises from quality differences between imported and domestic goods. If the quality of the imported good is substantially higher than that of the domestic good, the measured price gap will underestimate the tariff equivalent of NTBs affecting that market.

An extensive literature has treated the question of quality differences among differentiated products. One way to analyze quality differences is through hedonic pricing models. These models compare a variety of styles of a given product with their prices, to determine the impact of different commodity characteristics on price.[4] The results of such studies have been useful in comparing domestic and benchmark prices of differentiated commodities and services.

Cost-Push Method

In situations where quotas are applied not only to imports of the targeted sector but also to imports of up- or downstream sectors (in order to inhibit quota evasion), it is possible to use the cost-push method, especially when only one tariff equivalent (TE) measure exists. In the case where the price gap associated with an upstream product is available, the TE for a downstream product can be estimated based on the cost share of production of the restricted upstream input. In other words, the cost-push method essentially assumes that the upstream price gap is passed through to the target downstream industry. As discussed in chapter 4, this approach was used to estimate the TE for sugar containing products.

Two potential problems arise when this method is used. First, since the TE of the downstream product is based on a TE estimated for the upstream input,

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[4] For two examples on autos see: Levinsohn, James, "Empirics of Taxes on Differentiated Products: The Case of Tariffs in the U.S. Automobile Industry," Robert E. Baldwin, ed., *Trade Policy and Empirical Analysis*, Chicago: University of Chicago Press, 1988, pp. 11-44, and Fershtman, Chaim and Neil Gandal, "The Effect of the Arab Boycott on Israel: the Automobile Market," *RAND Journal of Economics*, vol 29, No. 1, Spring 1998.

any distortions in the upstream TE would carry over to the TE for the downstream product. Second, if producers of the downstream product have market power, basing the TE on input cost shares will likely understate the price distortion caused by the restriction on imports of the downstream products.[5]

Estimation Approach for Textile and Apparel Quotas

Although the price gap method is conceptually simple, it can be difficult to use under certain circumstances. The approach requires that the products under comparison be homogeneous or that any significant product quality differences be taken into account. In addition, the data required for these calculations may not be available. For the most part, these requirements have deterred researchers from using this approach to estimate the tax equivalents of the textile and apparel quotas.

One alternative to the price gap approach is to use license prices to proxy for the price gap.[6] Estimated export unit values are calculated on a quota category basis by the following:

$$P_x^{cty} = P_m^{cty} - L^{cty} \quad (1)$$

where for a particular restricted country supplier, P_x denotes the estimated export (or supply) price, P_m represents the f.o.b. export price, and L is the license price for the respective quota category.[7] The export tax equivalents for each of these categories were then calculated by:

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[5] See, for example, Andrew R. Moroz with Stephen L. Brown, "Grant Support and Trade Protection for Canadian Industries," Institute for Research on Public Policy, Ottawa, Apr. 1987.

[6] See, for example, Morris E. Morkre, *Import Quotas on Textiles: The Welfare Effects of United States Restrictions on Hong Kong*, Bureau of Economics Staff Report to the Federal Trade Commission (Washington, DC: U.S. Government Printing Office, 1984) and Carl B. Hamilton, "An Assessment of Voluntary Restraints on Hong Kong Exports to Europe and the USA." *Economica* 53 (211) 1986, 339-350. Research by Krishna and Tan, and more recently, by McAfee, Takacs, and Vincent raises the question of whether license prices are good proxies for the price gaps. See, Kala Krishna and Ling Hui Tan, *License Price Paths: I. Theory; II. Evidence from Hong Kong*, Working Paper No. 4237 (Cambridge, MA: National Bureau of Economic Research, Inc., 1992); and R. Preston McAfee, Wendy Takacs, and Daniel R. Vincent, "Tariffying Auctions," *RAND Journal of Economics* 30 (1), Spring 1999, pp. 158-79.

[7] The f.o.b. unit values are calculated from U.S. import data obtained from the U.S. Department of Commerce, Office of Textiles and Apparel (OTEXA). The values and quantities of U.S. imports of textiles and apparel are reported on a "Customs Value" basis. This valuation is the equivalent of the f.o.b. designation for exports. Value data reported for U.S. imports may not include the cost of the quota license under certain

$$ete = \frac{L^{cty}}{P_x^{cty}} \quad (2)$$

Commission staff used this approach to estimate the export tax equivalents for U.S. imports from Hong Kong and China, using license price data from the respective countries.[8] Estimates for U.S. imports from India were based on information reported by Kathuria and Bhardwaj.[9] Comparable data for other restricted supplier countries were not available.[10]

In previous Commission reports[11], the estimates for other countries were calculated following the approach developed by Hamilton and later modified by Trela and Whalley.[12] Using this approach, export tax equivalents can be calculated by the following:

$$\frac{P_x^A(1 + ete^A)(1 + t^A)}{P_x^B(1 + ete^B)(1 + t^B)} = \frac{P_m^A}{P_m^B} \quad (3)$$

where A and B denote two restricted supplier countries, P_x represents the supply price of the restricted goods, ete represents the export tax equivalent, t represents the ad valorem tariff, and P_m represents the price of exports from

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[7]—*Continued*
circumstances (i.e., when the quota rights are held by a third party). However, industry estimates suggest that this applies to less than 10 percent of U.S. imports from Hong Kong. Given data limitations, it is not possible to adjust for this. See discussion in James E. Anderson and J. Peter Neary, "The Trade Restrictiveness of the Multi-Fibre Arrangement." *The World Bank Economic Review*, 8 (2) 1994, pp. 171-189.

[8] Weekly license price data were obtained from the International Business and Economic Research Corporation for both countries.

[9] Sanjay Kathuria and Anjali Bhardwaj, "Export quotas and Policy Constraints in the Indian Textile and Garment Industries," World Bank Working Paper 2012, Nov. 1998. Their reported tax equivalent estimates were based on license pricing data collected from a representative sample of Indian quota brokers and exporters.

[10] Access to license pricing data for other supplier countries has been limited. Although pricing data for Indonesian license prices has been used in research covering the 1980s, data for current years are unavailable. See, for example, Anderson and Neary, "The Trade Restrictiveness of the Multi-Fibre Agreement," and Kala Krishna, Will Martin, and Ling Hui Tan, "Imputing license prices: limitations of a cost-based approach." *Journal of Development Economics*, 52 (2) 1997, pp. 375-393.

[11] See, for example, USITC, *Significant U.S. Import Restraints*, 1993 and 1995.

[12] See, Carl B. Hamilton 1988. "Restrictiveness and International Transmission of the 'New' Protectionism," in *Issues in US-EC Trade Relations*, ed. Robert E. Baldwin, Carl B. Hamilton, and Andre Sapir (Chicago: The University of Chicago Press, 1988) pp. 199-224; and Irene Trela and John Whalley, "Global Effects of Developed Country Restrictions on Textiles and Apparel," *Economic Journal* 100, 1990, pp. 1190-1205.

the respective countries at the border of the importing country, in this case the United States. Assuming that the tariff applied to goods from the two supplier countries is the same, t can be dropped from the equation and U.S. import data reported on a customs value basis can be used to calculate the respective values for P_m. The values for P_x and ete are given by equations (1) and (2) for Hong Kong. Trela and Whalley estimate the values of P_x for the other restricted supplier countries by adjusting the estimated values of P_x for Hong Kong to account for labor and productivity differences.[13] With the estimated values of P_x for the other countries, they then calculate the respective ete's.

The assumption of constant, identical labor shares underlies this approach. Yang suggested that this assumption would likely result in overestimated values for the export tax equivalents of lower wage cost countries.[14] Krishna, Martin, and Tan found that this was the case in subsequent research. They calculated the export tax equivalents for U.S. imports of apparel from Indonesia directly from license price data, and compared these results with estimates developed using the Trela and Whalley approach.[15] For the most part, the license price-based export tax equivalents were lower than the estimated export tax equivalents.[16]

To reduce the potential problems associated with Trela and Whalley's approach, Yang developed indices of the relative price differences for apparel products from Hong Kong and each of the other restricted supplier countries based on import data for an unrestricted country market. These indices were used in lieu of the labor cost/productivity adjustments made by Trela and Whalley. Yang used Japanese import data for this purpose because Japan does not impose quotas on its imports of textiles and apparel.

Commission staff adopted this estimation approach for the current study. Staff calculated similar supply cost indices using U.N. import data reported by Japan to estimate export prices (P_x) for each of the restricted supplier countries. Because Japan reports its import data on a c.i.f. basis, staff made adjustments

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[13] They multiply the values of P_x for Hong Kong by the ration of the other supplier country's unit labor costs to those of Hong Kong to obtain an estimated export price for the other country. They further adjust this value by multiplying it by the supplier country's value of gross output per worker compared to that of Hong Kong.

[14] Yongzheng Yang, 1994. "The Impact of MFA Phasing Out on World Clothing and Textile Markets." *The Journal of Development Studies*, 30 (4) 1994, pp. 892-915.

[15] Kala Krishna, Will Martin, and Ling Hui Tan, "Imputing license prices: limitations of a cost-based approach." *Journal of Development Economics* 52 (2) 1997, pp. 375-393.

[16] In addition to questioning the assumption of constant labor shares, Krishna, Martin, and Tan point to three other possible shortcomings of the Trela and Whalley approach that lead to this divergence: quality or compositional differences across countries, cost differences related to the administrative procedures followed by different exporting countries; and market imperfections.

to net out charges, insurance, and freight costs.[17] The data were aggregated by fiber type and product types. Estimated export tax equivalents were then calculated on a country-pair basis using:

$$\frac{(P_m^A - P_x^A)}{P_x^A} \qquad (4)$$

for each group.[18] Staff then compared the resulting export tax equivalents with the corresponding license price based estimates calculated for India and China. Although there was less divergence between the estimates calculated using Yang's approach and the corresponding license-based estimates than similar comparisons between estimates calculated using the Trela and Whalley approach and the license based estimates, the divergence was substantial. For both India and China, the estimates derived from Japanese import data were roughly double the license-based estimates. Therefore, staff scaled down the estimates calculated for the other restricted supplier countries by 50 percent in order to avoid overstating the price effects generated by the quotas imposed on these countries' exports. Although uniformly scaling down the estimates is clearly not an optimal approach (inasmuch as the potential divergence for the other supplier countries is likely to vary), there was no alternative given the existing data limitations. Consequently, the estimates shown in chapter 3 (table 3-3) should be considered rough estimates.

Allocation of rents

As indicated above, import restraints that operate on either the price or quantity side of the market can generate an increase in the domestic market price over the benchmark world price. The rents associated with quantitative trade restrictions are the extra amount consumers pay for products that are thus rendered artificially scarce. Whether the rents derived from trade restrictions are captured by the domestic or foreign economy can affect the impact of trade restrictions on the domestic economy as well as the trade liberalization consequences for welfare. For example, tariff revenues are collected by the domestic government, and the amount of tariff revenues collected affects the impact of the government on the rest of the economy.

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[17] These adjustments were based on estimates of the c.i.f. margins that were provided by Mark Gehlhar, Economic Research Service, U.S. Department of Agriculture. The estimates were calculated from the same data set used to estimate margins for the GTAP database. See, Mark Gehlhar, "Transport Margins," in *Global Trade Assistance and Protection: The GTAP 4 Data Base*, ed. R.A. McDougall, A. Elbehri, and T.P. Truong, Center for Global Trade Analysis, Purdue University, 1998, pp. 11.C-1 - 11.C-6.

[18] Similar indices were calculated using Australian import data. In instances where the volume of imports was more than negligible, the resulting values were similar to those calculated for Japan.

Market power

Imperfect competition, where producers of differentiated products can influence supply and price in their respective markets, has a well-recognized effect on the measurement of price gaps and on the allocation of rents from trade restrictions. The market power that arises from imperfect competition can be used to add a premium to either the domestic or world price, affecting measurement of the benchmark price as well as the share of the measured price gap that is attributable to trade restrictions. The presence of imperfect competition also has implications for the welfare effects of trade liberalization. Removing import barriers can reduce the extent to which imperfectly competitive producers exercise market power, triggering greater scale economies and other efficiency gains in addition to the traditional welfare gains of trade liberalization.

Market power also affects the distribution of quota rents described above. Even when import quota rights are allocated within the domestic economy, if foreign suppliers exercise market power, they can restrict supply and raise price to the domestic economy, thus capturing some or all of the quota rents. The influence of market power on the measurement of tariff equivalents is discussed in USITC (1995), Deardorff and Stern (1997), Bosworth et al. (1998), and Dixit and Josling (1998).[19] All of these sources provide guidelines and practical formulas for estimating the tariff equivalent of various types of NTBs under conditions of imperfect competition.

Other Types of Trade Barriers

Tariff Rate Quotas

In the course of the Uruguay Round, many import quotas on agricultural goods were converted to TRQs.[20] The TRQ system allows a fixed quantity of imports at a zero or low tariff rate; imports beyond the specified quota are permitted, but they face a substantially higher tariff rate. If the quantity of imports is within the quota, then the tariff equivalent can be evaluated in the

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[19] USITC, *The Economic Effects of Significant U.S. Import Restraints: First Biannual Update*, USITC Publication 2935, Washington DC, Dec. 1995; Deardorff, A. and R. Stern, "Measurement of Non-Tariff Barriers," OECD/GD(97)129, 1997; Bosworth, M, C. Findlay, R. Trewin, and T. Warren, "Measuring Trade Impediments to Services within APEC," and Dixit, P and T. Josling, "State Trading in Agriculture: An Analytical Framework," both in USITC, *The Economic Implications of Liberalizing APEC Tariff and Nontariff Barriers to Trade*, USITC Publication 3101, Washington DC, Apr. 1998.

[20] Tariff rate quotas are defined and discussed in chapter 1.

same manner as other quotas. If imports exceed the quota, then the relevant constraint affecting the marginal import is the higher tariff applied to imports above quota. This higher tariff represents the maximum tariff equivalent of the tariff rate quota, where the tariff equivalent of the quota applies when imports are within quota.

Other domestic measures

Many other types of trade barriers beside tariffs and quotas are described and analyzed in the sources cited above. These largely involve various taxes and subsidies affecting domestic producers and consumers, as well as regulations governing markets in general or imports in particular, and the means of enforcing those regulations. Any of these measures may affect the choices of consumers among imported and domestic commodities. Nevertheless, this study identifies the tariffs and non-tariff barriers analyzed in the preceding chapters as representing the most significant U.S. import restraints.

APPENDIX G
Concordance of USITC's Textile and Apparel Sectors

Table G–1
Concordance of USITC textile and apparel sectors, BEA input–output categories, and SIC industries

USITC Sector	BEA classification	SIC classification
Sectors directly affected by quotas[1]:		
Broadwoven fabric mills	160100	221–3, 2261–2
Narrow fabric mills	160200	224
Yarn mills and textile finishing	160300	2269, 2281–2
Thread mills	160400	2284
Carpets and rugs	170100	227
Miscellaneous textile goods	170600, 170700, 170900, 171001, 171100	2295, 2296, 2297, 2298, 2299
Knitting mills and knit fabric mills	180201, 180202, 180203, 180300	2253, 2254, 2257–9
Hosiery	180101, 180102	2251, 2252
Apparel	180400	231–8
Home furnishings, including curtains and draperies	190100, 190200	2391, 2392
Canvas and related products and pleating, stitching, and Schiffli machine embroideries	190302, 190303, 190305	2394, 2395, 2397
Other fabricated textile products	190301, 190304, 190306	2393, 2396, 2399
Luggage and women's handbags and purses	340302, 340303	316, 3171
Man–made organic fibers	280300, 280400	2823, 2824
Other miscellaneous products[2]	320300, 340100	306, 313
Upstream and downstream sectors:		
Cotton	020100	0131, 019[1], 0219[1], 0259[1], 029[1]
Composite downstream sector:[3]	220200, 320100, 590301, 620500, 690100, 770200	2512, 301, 3714, 3842, 50–1, 806

[1] Partial category.
[2] Includes fabricated rubber products, n.e.c. and boot and shoe cut stock and findings.
[3] Includes upholstered household furniture; tires and inner tubes; motor vehicles and passenger car bodies; surgical appliances and supplies; wholesale trade; and hospitals.

Source: U.S. Department of Commerce, Bureau of Economic Analysis.

ITC READER SATISFACTION SURVEY

The Economic Effects of Significant U.S. Import Restraints: Second Update 1999

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Please evaluate the ***quality*** of this report (answer below by circling all that apply): **SA**—Strongly Agree; **A**—Agree; **N**—No Opinion/Not Applicable; **D**—Disagree; **SD**—Strongly Disagree

▶ Written in clear and understandable manner	SA	A	N	D	SD
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Please provide further comment on any of the above performance measures, as appropriate:

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