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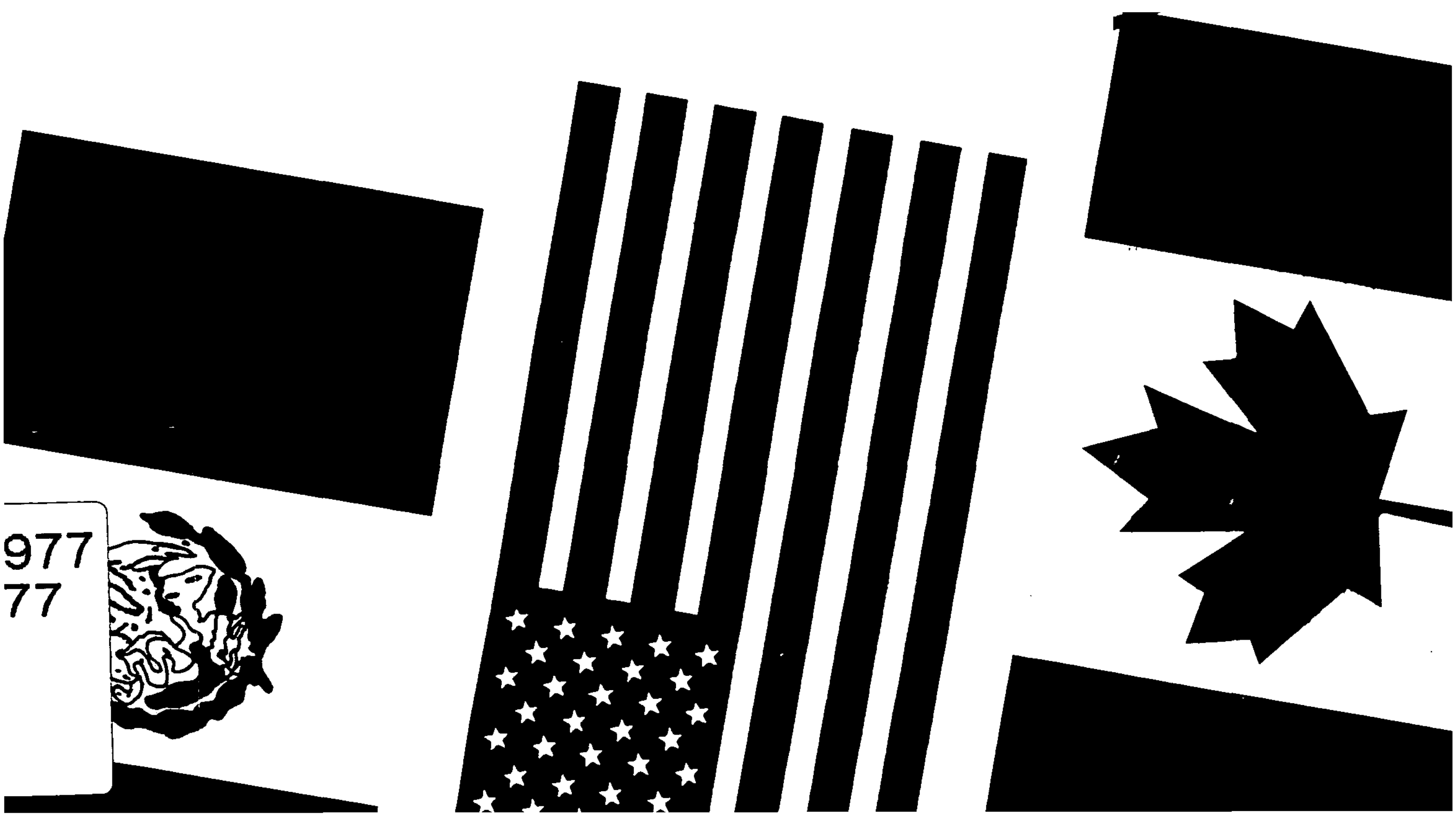
Potential Impact on the U.S. Economy and Selected Industries of the North American Free-Trade Agreement

Report to the Committee on Ways and Means of the United States House of Representatives and the Committee on Finance of the United States Senate on Investigation No. 332-337 Under Section 332 of the Tariff Act of 1930



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POTENTIAL IMPACT ON THE U.S. ECONOMY AND SELECTED INDUSTRIES OF THE NORTH AMERICAN FREE-TRADE AGREEMENT

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PREFACE

Following receipt on September 23, 1992, of a request from the House Committee on Ways and Means and the Senate Committee on Finance (appendix A), the U.S. International Trade Commission instituted investigation No. 332-337 under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)) on October 23, 1992. The purpose of this report is to analyze the short- and long-term costs and benefits of the North American Free-Trade Agreement (NAFTA) for the U.S. economy, focusing on important industrial, energy, agricultural, and service sectors.

Copies of the notice of the investigation were posted in the Office of the Secretary, U.S. International Trade Commission, Washington, DC 20436, and the notice was published in the *Federal Register* (57 F.R. 49192) on October 30, 1992. An amendment to the scope of the investigation was published in the *Federal Register* (57 F.R. 54856) on November 20, 1992. The Commission held a public hearing in connection with the investigation on November 17-19, 1992. All persons were allowed to appear by counsel or in person, to present information, and to be heard. In addition, interested parties were invited to submit written statements concerning the investigation.

The information and analysis in this report are for the purpose of this report only. Nothing in this report should be construed to indicate how the Commission would find in an investigation conducted under other statutory authority covering the same or similar matter.

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EXECUTIVE SUMMARY

This report examines (1) the overall economic effects of the North American Free-Trade Agreement (NAFTA) on the economies of the United States, Mexico, and Canada; (2) the key NAFTA provisions and related legal changes for the United States, Mexico, and Canada that may significantly affect individual sectors; and (3) the short- and long-term impact of NAFTA on important industrial, energy, agricultural, and service sectors of the U.S. economy. The report also summarizes recent economic developments in Mexico that, in conjunction with NAFTA, are likely to affect the potential for U.S. investment and market access in Mexico.

Since the mid-1980s, Mexico has been opening its economy to foreign competition by liberalizing its trade and investment policies, privatizing many state-owned or -controlled economic sectors, and reducing subsidies. NAFTA will remove many remaining barriers to trade and investment and will help to ensure that Mexico's recent economic reforms remain in place, thus paving the way for greater economic integration among the three countries.

Under NAFTA, the United States and Canada will gain greater access to the Mexican market, which currently is the fastest growing major export market for U.S. goods and services. Second, NAFTA will create investment opportunities that will facilitate trade among the member countries in many sectors and that may reduce impediments to future trade growth. Third, NAFTA will lead to a more predictable business environment, reducing risks associated with investment and other business decisions. Fourth, NAFTA will improve the competitive position of certain U.S. sectors in North American and global markets. Finally, NAFTA is an important step towards free trade throughout the hemisphere. However, as noted below, NAFTA is also likely to affect certain U.S. sectors adversely.

NAFTA incorporates on a trilateral basis most of the provisions of the existing United States-Canada Free-Trade Agreement (CFTA) and in many instances expands upon those provisions. Because both the United States and Canada already have implemented CFTA, the principal effects of NAFTA on U.S. economic sectors will result from changes in United States-Mexico trade and investment. Mexico will be required to make many more legal changes than either the United States or Canada to implement NAFTA.

Trade and investment within North America are important to all these nations. The United States and Canada are each other's major trading partner and Mexico is the United States' third-largest partner after Canada and Japan. In 1991, Canada accounted for 19 percent of U.S. merchandise trade, Japan 15 percent, and Mexico 7 percent. The United States is Mexico's largest trading partner and source of foreign direct investment (FDI), accounting for almost 70 percent of total Mexican trade in 1991 and 61 percent of Mexico's cumulative FDI by value as of June 1992. Mexico is likely to benefit substantially more from NAFTA than either the United States or Canada because its gross domestic product (GDP) is only 5 percent of U.S. GDP, its economy historically has been closed, and trade with the United States is relatively more important to its economy.

Economic Trends in Mexico

- Mexico's ongoing market-oriented reforms have spurred foreign investment and trade, leading to higher growth for the nation's economy overall. Austerity measures have reduced inflation from triple-digit levels as recently as 1987 to an estimated 11 percent in 1992. Following economic stagnation during 1982-88, the Mexican economy grew by an annual average rate of nearly 4 percent during 1989-91. In 1992, however, economic growth in Mexico is expected to slow to 2.7 percent. FDI in Mexico in 1991 rose by 81 percent over the 1990 level, and foreign portfolio investment roughly quadrupled in both 1990 and 1991. During the first half of 1992, FDI rose by 13 percent over the 1991 period, whereas foreign portfolio investment fell by 3 percent.

- Mexican exports grew by 19 percent during 1989-91, and imports rose by 50 percent. During January-July 1992, Mexican exports rose only 1 percent over the 1991 period, whereas imports accelerated 29 percent. The growth in Mexican imports is largely due to increased purchases of capital goods to support Mexico's modernization of its manufacturing base and infrastructure. The United States supplies two-thirds of Mexico's total imports, and capital goods are a leading U.S. export to Mexico. Since 1989 the Mexican trade deficit has widened and reached $11.4 billion in January-July 1992, surpassing the deficit for all of 1991.

- Remaining economic challenges for Mexico include financing its growing trade deficit, alleviating the shortage of highly skilled workers, and expediting improvement of the highway system, electricity, and telecommunications. The Government has recently launched efforts to modernize infrastructure in conjunction with private participation, as well as to improve education, productivity, and product quality.

- Mexico's regulatory reforms have been accompanied by efforts to address environmental issues. While Mexican environmental laws and regulations are in many instances comparable to those in the United States, concern remains about Mexico's enforcement of such laws and regulations. The Mexican Government has stated its commitment to stricter enforcement and has recently taken additional actions toward this end.

Likely Impact of NAFTA on Member Economies

- Empirical evaluations generally conclude that NAFTA is likely to produce net aggregate gains for each of the member countries in both the short term (within 1 year) and long term (after complete phase-in of NAFTA). Estimated long-term gains in U.S. and Canadian real GDP are 0.5 percent or less. Projected long-term gains in Mexican real GDP range from 0.1 to 11.4 percent.

- Projected long-term gains in aggregate employment are less than 1 percent for the United States and Canada but up to almost 7 percent for Mexico. Expected increases in average real wages are 0.3 percent or less for the United States, 0.5 percent or less for Canada, and 0.7 to 16.2 percent for Mexico. Although the evidence on the direction of real wage effects for low-skilled and high-skilled U.S. workers is mixed, the preponderance of evidence indicates an almost indiscernible effect on U.S. wage rates for both low-skilled and high-skilled workers.

- NAFTA is expected to expand U.S.-Mexican trade substantially. Estimated gains in U.S. exports to Mexico range from 5.2 to 27.1 percent. Projected increases in U.S. imports from Mexico range from 3.4 to 15.4 percent.

- NAFTA is expected to provide further impetus for increased FDI in Mexico. Analysts disagree over the likely origin and magnitude of the expected increase in FDI, but generally agree that such investment flows will provide Mexico with greater benefits than will the reduction in trade barriers.

- NAFTA is expected to have minimal additional effects on trade and investment between the United States and Canada, because the majority of NAFTA's provisions have already been implemented under CFTA. Canadian gains under NAFTA are expected to be small, reflecting the existing CFTA and the low level of trade and investment flows between Mexico and Canada.

- Mexico's improved access to advanced technology could lead to a long-term increase in Mexico's rate of economic growth (i.e., dynamic gains). The United States and Canada, as longstanding participants in a global open trading regime, may not realize substantial dynamic gains from NAFTA, but will most likely benefit from market opportunities created by economic growth in Mexico.

- NAFTA's impact on the United States will vary from region to region. Various economic studies suggest that the border region will benefit substantially under NAFTA. The sector analyses in this report suggest that the effects on U.S. industries in other regions will range from beneficial to adverse.

- Based on the sectors covered in this report where regional effects were identified, regions more likely to be affected by long-term production and employment changes as a result of NAFTA are the Midwest, the South, and the West. Industries in these regions likely to experience gains are machine tools, bearings, industrial machinery, steel mill products, pharmaceuticals, textiles, grains and oilseeds, cotton, lumber and wood products, and automotive parts. Industries in these regions likely to experience losses are automobiles, apparel, flat glass, certain household glassware, major household appliances, shrimp, peanuts, certain fresh and frozen vegetables, citrus juice, and fresh-cut roses. Likely production and employment effects for U.S. industries in other regions are noted in chapter 2 of this report.

Key NAFTA Provisions Affecting U.S. Trade and Investment

- The key NAFTA provisions affecting U.S.-Mexican investment and trade include the removal of tariffs and quotas, the imposition of strict and transparent rules of origin, and the limitation on duty drawback. NAFTA also will require changes in Mexican law or the maintenance of recent Mexican reforms to ensure removal of many restrictions on FDI, stronger intellectual property protection, and a more open services market and government procurement process for U.S. firms.

- NAFTA prohibits the adoption of new customs duties on qualifying goods and contains a schedule of staged duty reductions for each party, divided into four general staging categories plus a category for goods remaining free of duty. The staged duty reductions affecting U.S. trade with Mexico are approximately as follows (based on a percentage distribution of 1990 trade):

Category		U.S. imports from Mexico	U.S. exports to Mexico
A	(free on implementation)	53.8	31.0
B	(free within 5 years)	8.5	17.4
C	(free within 10 years)	23.1	31.8
C+	(free within 15 years)	.7	1.4
D	(currently free)	13.9	17.9

Note.—U.S. imports from Mexico in category D are principally those imports entered under duty-free most-favored-nation rates. It should be noted that there are duty-free imports from Mexico under other tariff provisions, such as the Generalized System of Preferences and those relating to production sharing programs. In total, about 45 percent of U.S. imports from Mexico enter duty-free. For further discussion of the data, see appendix F of this report.

- NAFTA rules of origin are intended to ensure that the benefits of tariff reductions will accrue principally to the NAFTA parties and to provide incentives for North American production and sourcing. Comparing CFTA to NAFTA, to qualify as a North American product under NAFTA a number of industrial sectors would be subject to stricter and more detailed change in tariff classification rules, higher and more stringent value-content requirements, and rules requiring that certain subassemblies be produced in North America. These sectors include automotive goods, computers and other electronic equipment, machine tools, steel mill products, textiles and apparel, major household appliances, industrial machinery, and bearings.

- The limitation on duty drawback will contribute to the establishment of an integrated North American market by discouraging the creation of "export platforms" in one NAFTA country to serve markets in another NAFTA country. The NAFTA limitation is intended to ensure that when non-North American components and raw materials are imported into North America, they will be subject to ordinary customs duties without regard to whether such imports are consumed in the country of importation or shipped to another NAFTA country.

- In most cases NAFTA will require that each country's federal government procurement process for covered goods be opened further on a nondiscriminatory basis to suppliers from the other NAFTA nations. The elimination of most domestic procurement preferences and the requirement for transparent procedures represent the first legal obligations for open competition in the Mexican Government's procurement market, since Mexico, unlike the United States and Canada, is not a signatory to the General Agreement on Tariffs and Trade (GATT) Agreement on Government Procurement.

Likely Impact on U.S. Industrial Sectors

- The United States in 1991 recorded a favorable balance of trade with Mexico in the industrial sectors covered in this report, with U.S. exports to Mexico of $16.8 billion exceeding U.S. imports from Mexico by $1.1 billion. U.S. tariffs on Mexican goods average 3 percent in nominal terms, whereas Mexican tariffs on U.S. products average 10 percent. However, the effective tariffs for bilateral trade are lower because of the maquiladora arrangement and other special customs programs. In addition to tariffs, restrictions such as U.S. quotas on textiles and apparel and Mexican domestic content and investment requirements have acted as barriers to trade and investment.

- The United States in 1991 posted a trade surplus with Canada in the covered industrial sectors, with U.S. exports to Canada of $46.8 billion exceeding U.S. imports from Canada by $2.8 billion. Tariffs on all products except selected agricultural goods traded between the United States and Canada are already being phased out under CFTA, and no major nontariff restrictions remain.

- The United States accounts for a large portion of total FDI in Mexico's industrial sectors, primarily under the maquiladora program (which involves the processing or assembly of U.S. components in Mexico for export to the United States). Under NAFTA, U.S. investment in Mexico is expected to increase between 6 and 15 percent in major household appliances, and computers, computer components, and electronics in the short term, and in bearings and pharmaceuticals in the long term. Long-term increases in U.S. investment to Mexico of 16 percent or more are anticipated for autos and automotive parts; computers, computer components, and electronics; major household appliances; and apparel. Some of the expected growth in U.S. investment in sectors such as apparel and computers, computer components, and electronic equipment is likely to represent a shift in investment from East Asia and other developing countries to Mexico.

- NAFTA is likely to result in short- and long-term increases in U.S. trade with Mexico in all industrial sectors covered. Long-term increases of between 6 and 15 percent are expected in U.S. trade in the following sectors (in some broad sectors both imports and exports are expected to increase):

U.S. exports	U.S. imports
bearings	bearings
machine tools	household glassware
steel mill products	steel mill products
pharmaceuticals	
industrial machinery	
chemicals	
major household appliances	

- Long-term increases of 16 percent or more are likely as a result of NAFTA in the following sectors:

U.S. exports	U.S. imports
autos and automotive parts	autos and automotive parts
computers, computer components, and electronics	computers, computer components, and electronics
textiles and apparel	textiles and apparel
ceramic tile	ceramic tile
household glassware	major household appliances

- Many sectors of U.S. industry are much larger and more technologically advanced than their Mexican counterparts, giving U.S. producers a competitive advantage. However, U.S. producers are at a substantial disadvantage with Mexican firms in terms of wage rates, although this disparity is offset in part by lower productivity and rising costs in Mexico associated with financing, transportation, and infrastructure.

- U.S. production and employment gains of between 1 and 5 percent in the long term are likely in industrial machinery, and in computers, computer components, and electronics; gains of less than 1 percent are likely in machine tools, bearings, textiles, pharmaceuticals, steel mill products, and chemicals. The automotive parts industry is expected to gain 6 to 15 percent in production and less than 5 percent in employment in the long term.

- U.S. production and employment losses of less than 5 percent are likely in apparel in both the short and long term. Losses between 6 and 15 percent in the long term could occur in major household appliances, flat glass, and certain segments of household glassware and ceramic tile. Although the automotive products sector is likely to be virtually unaffected by NAFTA in the short term, automobile production and employment likely will decline in the long term by less than 5 percent.

- NAFTA is expected to have a small but positive effect on the ability of many U.S. industrial sectors to compete in both North American and global markets. In particular, the agreement is expected to boost the ability of the U.S. bearings and textile industries to compete in North America, and to benefit certain major U.S. apparel firms in competing with East Asian products in the United States and Mexico. For the majority of U.S. apparel firms, however, and for the household glassware industry, the elimination of quotas and/or duties is likely to generate added competition in the U.S. market by Mexican producers.

Likely Impact on U.S. Energy Sectors

- U.S. trade with Mexico in energy products covered in this report was marked by a deficit of $4.6 billion in 1991. Currently, the opportunities for U.S. trade and investment in Mexican energy sectors are very limited. Virtually all aspects of investment, production, and distribution are reserved to the State. Although U.S. companies provide a significant amount of the services procured by the Mexican parastatals—Petroleos Mexicanos (PEMEX) and Comision Federal de Electricidad (CFE)—current procurement procedures tend to favor Mexican suppliers.

- The U.S. trade deficit with Canada in energy products covered in this report was $8.6 billion in 1991. The Canadian energy sectors are relatively open to U.S. trade and investment. The energy provisions of NAFTA are virtually identical to those of CFTA and, thus, are not likely to have any added effect on U.S.-Canadian energy trade and investment.

- NAFTA recognizes Mexico's constitutional reservation of State ownership and control of most of its energy industry, including ownership of subsoil resources, investment in exploration and production, control of services related to energy products, and distribution of these products in Mexico. Because Mexico is not bound by most of the energy provisions in NAFTA, there is only minimal potential for increased energy trade and investment between the United States and Mexico as a result of NAFTA. Little or no increase in U.S. production and employment is likely.

- NAFTA does provide, however, some increased opportunities for U.S. service providers to contract with PEMEX and CFE. The agreement's government procurement provisions will permit foreign firms to bid on 50 percent of PEMEX and CFE contracts immediately on a non-discriminatory basis and the percentage will increase to 100 percent of such contracts after 9 years, subject to some specific exceptions.

- NAFTA will also permit private U.S. and Canadian investment in the production of most petrochemicals and in certain electricity generating facilities (self-generation, cogeneration, and independent power plants), although public sale of electricity remains prohibited.

Likely Impact on U.S. Agricultural Sectors

- In the agricultural sectors, U.S. trade with Mexico generated a surplus of $53 million in 1991. Currently, about 40 percent of Mexican agricultural goods enter the United States duty-free and the remaining products are dutiable at an average rate of 8 percent ad valorem. U.S. agricultural exports to Mexico are subject to year-round and seasonal tariffs of 10 percent or more. In addition to tariffs, the United States maintains quotas on certain agricultural imports from Mexico, and Mexico requires import licenses for U.S. agricultural products. U.S. health and sanitary requirements reportedly have slowed the trade flow from Mexico in certain products.

- Canada is the only significant agricultural trading partner with which the United States has a trade deficit in the sector. In 1991 the U.S. trade deficit with Canada in the agricultural sector totaled $239 million; in addition, in lumber and wood products the United States posted a much greater trade deficit with Canada of $2.4 billion.

- The most significant NAFTA provisions affecting trade in agriculture relate to market access. In part, these provisions provide for tariffication of nontariff barriers and the subsequent elimination of these and existing tariffs. The agreement provides different arrangements for the treatment of agricultural trade between the United States and Mexico and between Canada and Mexico. Because of these differences and the existence of CFTA, NAFTA has no practical effect on tariffs and on most nontariff barriers applicable to U.S.-Canadian trade in agricultural products.

- U.S. investment in Mexican agriculture is small compared with investment in manufacturing and services. However, it is expected to increase in the long term by 6 to 15 percent for poultry and fish processing; investment is likely to increase between 6 and 15 percent in the short term and by 16 percent or more in the long term for citrus products, grains and oilseeds, and alcoholic beverages. U.S. investment in domestic fresh-cut roses is expected to decline between 6 and 15 percent in both the short and long term as a result of added Mexican investment in its domestic industry and anticipated increases in U.S. imports from Mexico.

- NAFTA's effect on U.S. agricultural trade is likely to be relatively small compared with current sector production. NAFTA is likely to result in long-term increases of 6 to 15 percent in U.S. exports to Mexico of alcoholic beverages and canned sardines and in U.S. imports of Mexican citrus juices (especially frozen concentrated orange juice) and fresh-cut roses. Long-term increases of 16 percent or more are likely in U.S. exports to Mexico of grains and oilseeds, deciduous fruits, poultry, swine and pork, beef offals, fresh citrus, and certain cut flowers (including high-quality roses).

- NAFTA is likely to have little or no impact on most agricultural sectors examined in this report. Sectors likely to experience production and employment gains of 1 to 5 percent in the long term include fisheries and grains and oilseeds. Production and employment losses of less than 5 percent in the short or long term are expected in citrus juice, shrimp, certain fresh and frozen vegetables, peanuts, and fresh-cut flowers (including fresh-cut roses).

- NAFTA is not likely to affect the overall ability of U.S. agriculture to compete globally. Certain U.S. agricultural sectors are likely to be more cost competitive in the North American market over time, including grains and oilseeds, deciduous fruit, poultry, certain livestock and meat, alcoholic beverages, cotton, and dairy products. Removal of U.S. tariffs under NAFTA is expected to result in a slight decline in the U.S. share of the North American market for citrus juice, certain frozen vegetables, noncitrus fruits (e.g., grapes, melons, and strawberries), and fresh-cut roses.

- NAFTA's impact on trade in agricultural goods subject to U.S. quotas will likely vary. U.S. sugar imports from Mexico and sugar exports to Mexico will depend on whether or not Mexico eventually becomes a net surplus producer of sugar. For goods subject to section 22 quotas (cotton, dairy products, peanuts, and sugar-containing articles), NAFTA will likely have little or no effect on the level of U.S. imports from Mexico. For U.S. exports to Mexico, NAFTA will likely result in little or no increase in sugar-containing articles and in long-term gains of 16 percent or more in cotton and dairy products (especially nonfat dry milk), and less than 5 percent in peanuts.

Likely Impact on U.S. Service Sectors

- U.S. services sales to Mexico of approximately $8 billion represent a very small fraction of the industries' $257 billion in worldwide sales. Restrictions prevented U.S. companies in most service sectors from providing services to Mexico directly through a local establishment and in many cases from providing services on a cross-border basis.

- CFTA enabled U.S. service providers to increase their already significant investment and participation in the Canadian services market. U.S.-Canadian services trade and investment are not expected to change appreciably under NAFTA. The principal exception is in construction and related services, for which Canada has agreed to go beyond CFTA obligations to open its federal government procurement of these services to U.S. providers over a 10-year period.

- The benefits and obligations provided to Mexico under NAFTA are similar to those contained in CFTA. NAFTA is expected to create opportunities in Mexico for U.S. service providers, either through increasing cross-border trade or by investing in or establishing Mexican enterprises. U.S. investment is expected to increase by 6 to 15 percent in Mexico's telecommunications and banking services sectors in the long term. A similar increase is expected in U.S. investment in Mexican transportation services in the short term and is likely to exceed 16 percent in the long term. Mexican investment in the transportation services industry is anticipated to increase between 6 and 15 percent, concentrated in the U.S. border States.

- Removal of Mexico's restrictions on foreign equity ownership in the insurance market is likely to result in an expansion of U.S. investment in this market by 16 percent or more in both the short and long term. However, cross-border trade in insurance services will remain small and largely unaffected by NAFTA because of different regulatory practices in each country (at the state or province level) requiring that insurance transactions be conducted only by formally licensed companies or subsidiaries (not branches) within a given jurisdiction.

- U.S. receipts from sales to Mexico of telecommunication, transportation, construction and engineering, and banking services are likely to increase in the long term between 6 and 15 percent as a result of NAFTA. Specialized environmental engineering services will offer potential growth opportunities for U.S. firms. U.S. payments to Mexico for transportation, engineering, and construction services are expected to rise by 5 percent or less in both the short and long term, with the increases accruing primarily to border areas.

- U.S. operations and employment in most services sectors covered in this report are expected to increase relatively little in the short term and by less than 5 percent in the long term as a result of NAFTA. The principal exception is transportation services where U.S. firms are currently unable to provide cross-border services with Mexico. The U.S. sector is expected to show gains of 6 to 15 percent from the opening of Mexico's market for trucking and rail services under NAFTA, expected infrastructure improvements, and an overall increased demand for transportation services generated by NAFTA.

- Greater access to Mexican markets is expected to result in a small but positive increase in the ability of most U.S. services to compete in North America and globally as the result of the experience gained in a developing market and the potential gateway to further trade in Latin America. In addition, the increase in U.S. investment and trade in services in Mexico under NAFTA will benefit other sectors, as better trucking and rail services and increased efficiency of Mexican banks facilitate merchandise trade flows between the United States and Mexico. Such indirect benefits from NAFTA may affect service sectors in the United States more than will direct benefits from tariff removal only.

Part I. ECONOMIC DEVELOPMENTS IN MEXICO AND LIKELY IMPACT OF NAFTA ON MEMBER ECONOMIES

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CHAPTER 1
Introduction

Purpose and Scope of Study

Negotiations between the U.S. Government and the Governments of Canada and Mexico on a North American Free-Trade Agreement (NAFTA) were concluded on August 12, 1992, and the President notified Congress on September 18, 1992, of his intention to enter into this agreement. NAFTA was signed by President George Bush, Canadian Prime Minister Brian Mulroney, and Mexican President Carlos Salinas de Gortari on December 17, 1992. Implementing legislation must be prepared and approved in each country before NAFTA goes into effect.

On September 22, 1992, the House Committee on Ways and Means and the Senate Committee on Finance requested that the Commission conduct a study to provide Congress with an understanding of the potential impact of the agreement on the U.S. economy and selected industries and of related significant changes in U.S., Canadian, and Mexican law that the agreement may require (appendix A). Specifically, the Committees asked that the Commission (1) assess the overall impact of NAFTA on the economies of the United States, Mexico, and Canada and summarize recent economic developments in Mexico, and (2) analyze key NAFTA provisions and related legal changes that may significantly affect 36 specified U.S. sectors and the likely economic impact on these sectors (appendix B). The Commission later amended the list to include three additional sectors that have been identified in numerous studies as key sectors likely to be affected by NAFTA (appendix C). The 39 sectors accounted for about 70 percent of U.S. trade with Mexico and 68 percent with Canada in 1991.

This report is based on information drawn from both primary and secondary sources. The Commission heard testimony or received submissions from almost 150 organizations representing government, labor, consulting firms, industry, Academia, and trade groups (see appendix D for a list of submissions and hearing participants). One Commissioner traveled to Mexico City, Ciudad Juarez, and Monterrey, Mexico, to meet with Mexican Government officials and U.S. and Mexican private sector industry officials. Commission staff also traveled to Mexico to conduct meetings in Mexico City, Guadalajara, and Irapuato. In addition, extensive telephone interviews were conducted with U.S. industry officials in examining the likely impact of NAFTA on U.S. industrial, energy, agriculture, and service sectors.

Overview of the Agreement[1]

NAFTA creates a free-trade area comprising the United States, Canada, and Mexico. The agreement eliminates all tariffs on trade between the United States and Mexico. In addition, NAFTA addresses areas such as investment restrictions and intellectual property rights protection. Most of the 22 chapters in the agreement reflect trilateral agreements among the United States, Canada, and Mexico; however, several chapters reflect separate arrangements between the United States and Mexico and between Canada and Mexico.

NAFTA has been described as "CFTA-plus," because it incorporates most of the provisions of the existing United States-Canada Free-Trade Agreement (CFTA) and in many instances expands upon those provisions.[2] NAFTA includes CFTA's exemptions for Canadian cultural industries and agricultural commodities governed by supply-management policies. The CFTA timetable for the mutual elimination of duties between the United States and Canada remains unchanged. The United States and Canada already have made most of the changes in their laws necessitated by CFTA; thus, further changes to comply with the parallel provisions of NAFTA are in most cases unnecessary. Furthermore, both the United States and Canada have relatively open markets, with slightly more than 70 percent of merchandise trade between the United States and Canada already entering duty free. Thus any additional changes required by NAFTA are not likely to affect significantly U.S.-Canadian trade.

In contrast, more changes in Mexican law than in U.S. or Canadian law will likely be required to implement the provisions of NAFTA. Moreover, given Mexico's recent emergence from a more closed economy, most of the impact on U.S. sectors is likely to be the result of changes in U.S.-Mexico economic relations. As a result, much of this report focuses on

[1] *North American Free Trade Agreement Between the Government of the United States of America, the Government of Canada and the Government of the United Mexican States* (Washington, DC: U.S. Government Printing Office, 1992), (provided by the Office of the United States Trade Representative).

[2] *United States-Canada Free-Trade Agreement: Final Text*, Dec. 9, 1987 (provided by the Office of the United States Trade Representative).

changes in Mexican law and the impact of NAFTA on U.S.-Mexico investment, trade, and related economic developments.

Procedures for implementing NAFTA differ in each country. U.S. procedures for implementing NAFTA are set forth in the Omnibus Trade and Competitiveness Act of 1988, which also authorized the President to enter into the negotiations that culminated in NAFTA.[3] The 1988 act authorized the President to enter into bilateral tariff and nontariff agreements with foreign countries, subject to certain Congressional consultation requirements and special "fast track" procedures for approval of implementing legislation. Bilateral agreements entered into under such authority cannot enter into force for the United States and become binding as a matter of domestic law unless and until the President complies with specific requirements for consultation with Congress, and implementing legislation approving the agreement and any changes in U.S. law are enacted into law. For a more detailed discussion of the implementation process in each country, see appendix E.

Under NAFTA, signatories may not increase existing customs duties or adopt new duties on qualifying goods, except as otherwise provided in the agreement.[4] NAFTA calls for signatories to eliminate progressively their respective duties.[5] NAFTA incorporates a schedule of staged tariff rate reductions on qualifying goods for each NAFTA signatory.[6] These categories are detailed in the following tabulation:

Category	*Date becomes duty-free*
A	On effective date of the agreement
B	5 years after effective date
C	10 years after effective date
C+	15 years after effective date
D	Goods duty-free prior to the agreement remain so after the effective date.

[3] 19 U.S.C. 2902 et seq.

[4] NAFTA, art. 302(1). NAFTA signatories may nevertheless modify their non-NAFTA tariffs (e.g., most-favored-nation rates of duty) and may maintain or increase customs duties, if such duties are authorized by any dispute-settlement provision of the General Agreement on Tariffs and Trade (GATT) or any agreement negotiated under the GATT. NAFTA, notes 2 and 3, p. N-1.

[5] NAFTA, art. 302(2).

[6] NAFTA, annex 302.2. Special rules are provided for textile and apparel goods in annex 300-B. Article 310 of the agreement also provides that no party may adopt any customs user fee of the type referred to in annex 310.1 for originating goods. Annex 310.1 provides that existing customs processing and users fees, and merchandise processing fees may not be increased and must be eliminated. In order to eliminate the customs user fee on originating goods from Mexico, the United States will need to amend section 13031 of the Consolidated Omnibus Budget Reconciliation Act of 1985. Similarly, Mexico would need to amend its customs processing fee law to provide that originating goods from the United States and Canada are no longer subject to such fee after June 30, 1999. CFTA eliminates custom user fees after December 31, 1993.

Each signatory's schedule of duty reductions under NAFTA sets forth the relevant base rate of customs duty and a staging category for each tariff item in a NAFTA signatory's import tariff. The base rates generally reflect the rate of duty in effect on July 1, 1991, including the preferential rates granted under the U.S. Generalized System of Preferences (GSP) and the General Preferential Tariff of Canada. A summary of the staging of duty reductions affecting U.S. trade with Mexico is shown in table 1-1. A more detailed summary by specified sectors is contained in appendix F.

Canada and NAFTA

Representatives of the Government of Canada have stated that Canada's primary reasons for participating in the agreement are to safeguard, improve, and clarify certain provisions of CFTA and to preserve Canadian commercial interests in the U.S. market and Canada's ability to attract investment. As a lower priority, Canadian officials said they hoped to gain access to the fast-growing Mexican market. In their view Canada's participation was specifically calculated to avoid a separate U.S.-Mexico Free-Trade Agreement and the emergence of a so-called hub-and-spoke system. Under such an arrangement the United States would have been at the hub of separate agreements with Canada and Mexico. Canadian officials were concerned that this arrangement could make the United States the preferred place for investment to service the entire North American market and could divert U.S. import demand from Canada to Mexico.[7]

In terms of trade and investment the United States is significantly more important to Canada than Mexico is. The United States purchased 89 percent of Canadian finished goods exports in 1991 and accounted for 64 percent of Canada's stock of foreign-owned capital in 1990. Canada's foreign investment in Mexico is small compared with its investment in the United States: $486 million in 1990 versus $53.1 billion.[8] Canadian-Mexican trade is also small. Canada exported $389 million to Mexico and imported $2.2 billion from Mexico in 1991, making total Canadian trade with Mexico in that year only 3.6 percent of U.S.-Mexican trade and 1.5 percent of U.S.-Canadian trade.[9]

[7] Government of Canada, *North American Free Trade Agreement: An Overview and Description*, Aug. 1992, p. iv.

[8] Government of Canada, Department of Finance, *The North American Free Trade Agreement: An Economic Assessment From a Canadian Perspective*, Nov. 1992.

[9] Office of the United States Trade Representative, *The North American Free Trade Agreement Source Book*, Aug. 14, 1992.

Table 1-1
Staged tariff reductions under NAFTA for trade between the United States and Mexico

Category	U.S. imports from Mexico[1]	Mexican imports from the United States[2]
Total trade (million dollars)	28,892.9	14,245.5
Category A (percent)	53.8	31.0
Category B (percent)	8.5	17.4
Category C (percent)	23.1	31.8
Category C+ (percent)	.7	1.4
Category D (percent)	13.9	17.9
Other (percent)	(3)	.5

[1] Includes U.S. imports from Mexico under the maquiladora program.
[2] Excludes Mexican imports from the United States into the maquiladora sector.
[3] Less than 0.05 percent.

Note.—See appendix F of this report for further discussion of the data and for data on staged tariff reductions by specified sectors.

Source: Based on data of the U.S. Department of Agriculture and the Office of the United States Trade Representative.

Organization of the Report

This report is divided into five major parts, each of which contains chapters that deal with specific issues or individual economic sectors. The remainder of chapter 1 summarizes the methodologies used in this report and recent economic trends in Mexico. The overview for Mexico covers recent government regulatory reform; foreign trade and investment patterns; and major developments in infrastructure, labor force productivity, product quality, and education. Chapter 2 analyzes the costs and benefits of NAFTA for the U.S. economy as a whole, as specified in the methodology for the economywide assessment.

The remainder of this report contains the analyses of the likely impact of NAFTA on the 39 selected U.S. sectors. Industrial sectors are covered in part II (chapters 3-16); energy sectors,[10] in part III (chapters 17-20); agricultural sectors, in part IV (chapters 21-37); and services, in part V (chapters 38-43). The first chapter in each of these parts (chapters 3, 17, 21, and 38) discusses key NAFTA provisions and their general impact on each of the four sector groups and reviews related legal changes in U.S., Mexican, and Canadian law. Sector-specific NAFTA provisions are examined in individual sector chapters.

Methodologies

This section briefly describes the methodologies used in the economywide assessment of NAFTA in part I and in the sector-specific assessments in parts II through V. The methodology used in the economywide assessment is based on multisector economywide models of the North American economy, whereas the sector-level assessments focus on individual sectors. Multisectoral models are generally preferable to partial-equilibrium models in examining impacts on the U.S. economy as a whole because they capture economywide resource constraints as well as resource reallocations among sectors. They also better reflect the interactions inherent in broad, economywide trade-liberalizing actions. Partial-equilibrium models are used with the sector-level assessments because the analysis could be based on the most recent available data and because the multisector models are based on broad industry categories, whereas the specific sectors identified for the study are more narrowly defined. Nevertheless, the results of the different methodologies used in this study tended to complement one another with respect to anticipated NAFTA-related effects on U.S. trade flows, production, and employment.[11]

Economywide Assessment

The Commission's assessment in chapter 2 of the likely impact of NAFTA on the U.S., Mexican, and Canadian economies is based on both the Commission's economywide modeling of a NAFTA and on available studies using economywide models that meet recognized professional standards. A major portion of this analysis relies on an earlier Commission study of a select group of computable general

[10] The analyses of the petroleum (including oilfield services), natural gas, and oil/natural gas pipeline sectors are consolidated into one chapter because of their close interrelationships and the common effect of NAFTA on them.

[11] Chairman Newquist notes that the economic modeling used to measure the effect of the North American Free Trade Agreement on the overall North American economy and on particular industrial sectors provides only estimates regarding the likely economic impact of the Agreement. Such models rely on a number of assumptions and variables, and by their nature will differ according to the information sought and the judgment of the economist performing the modeling exercise. The Chairman notes that the model is a staff

equilibrium and macroeconometric models.[12] Other existing studies conducted by researchers with a wide spectrum of viewpoints and methods of analysis were also considered.

This empirical work is evaluated in light of the provisions of the actual agreement. It should be recognized that NAFTA's provisions are very detailed; whereas many of these studies are based on very broad sectoring schemes and comparatively simple theoretical structures. This relative simplicity limits the applicability of prior research to the actual agreement. For example, some barriers to trade among the NAFTA partners will not be completely eliminated even after the agreement is implemented. Also, a number of features of the actual agreement are hard to quantify and have been omitted by most economic studies based on mathematical models. Examples of omitted factors include intellectual property protection and rules of origin. This assessment surveys the findings of existing studies and supplements them by considering provisions of the actual agreement that have been omitted from existing economic studies of NAFTA.

Although most available economywide studies are static rather than dynamic in nature, the assessment in chapter 2 provides insights on short- and long-term effects for the United States on (1) overall employment and wage rates, (2) skilled versus unskilled wages, (3) national income and production, and (4) the impact on trade with Mexico, Canada, and the rest of the world. In addition, the study examines the likely impact of NAFTA on Canada and Mexico and assesses regional effects in the United States.

Sector-Level Assessments

The Commission's analysis of the 39 selected sectors focuses on the likely impact of NAFTA on U.S. investment, trade, production, employment, and global competitiveness. In conducting this analysis of NAFTA, the Commission examined the entire agreement and identified a number of provisions that will require a significant change in existing laws in the United States, Canada, and Mexico and that will likely have a significant economic impact on U.S. sectors. Only these provisions are discussed in detail in this report.

NAFTA provisions that apply to a number of sectors are discussed mainly in the introductory chapters of parts II-V of this report as they pertain to the industrial, energy, agricultural, and services sectors. These provisions include NAFTA chapter 3, "National Treatment and Market Access for Goods"; chapter 4, "Rules of Origin"; chapter 6, "Energy and Basic Petrochemicals"; chapter 7A, "Agriculture"; chapter 10, "Government Procurement"; and chapter 11, "Investment". NAFTA provisions whose likely impact is limited to specific sectors are discussed in this report within the relevant sector analysis. These provisions include NAFTA annex 300-A, "Trade and Investment in the Automotive Sector"; annex 300-B, "Textile and Apparel Goods"; chapter 12, "Cross-Border Trade in Services"; chapter 13, "Telecommunications"; chapter 14, "Financial Services"; and chapter 17, "Intellectual Property".

In assessing the impact of NAFTA at the sector level, the Commission used both quantitative and qualitative analyses. The quantitative analysis is based on a partial equilibrium framework in which U.S. and Mexican products are treated as imperfect substitutes in both the U.S. and Mexican markets.[13] The effect of NAFTA is analyzed in two separate simulations. First, U.S. tariffs and tariff equivalents for U.S. nontariff barriers (NTBs) facing Mexico are removed while holding all other factors constant, including Mexican tariffs and NTBs. This simulation provides estimates of the decline in U.S. production and employment and the increase in U.S. imports from Mexico that might occur in the U.S. market. Second, Mexican tariffs and NTB tariff equivalents are removed while holding all other factors constant, including U.S. tariffs and NTBs, to provide estimates for the increase in U.S. production and employment and U.S. exports to the Mexican market. Short- and long-run estimates of NAFTA are provided for both scenarios. Short-run adjustments are those that would occur within 1 year, and long-run adjustments are those that would occur after the complete phase-in of NAFTA. A more detailed explanation of the sector-specific methodology is contained in appendix G.

The Commission used this two-step method instead of a single integrated model that simultaneously removes all barriers because of the high degree of differentiation between imports and exports in U.S.-Mexico trade. The use of a single integrated partial equilibrium model would have been appropriate only in the case where U.S. and Mexican imports and exports within a given product category were identical.

11—*Continued*
model and research aid, and has not been formally adopted as a "Commission model." (For example, a model used in the Commission's study, *The Likely Impact on the United States of a Free Trade Agreement with Mexico* (investigation No. 332-297), was referred to as a "Commission staff model.") Economic modeling is only one of several means the Commission staff uses in providing assessments of the Agreement's impact for the Commission's consideration in adopting its final reports.

12 The Commission prepared an overview, summary, and critique of studies presented at a Commission-sponsored public symposium by qualified outside economists in U.S. International Trade Commission, *Economy-Wide Modeling of the Economic Implications of a FTA With Mexico and a NAFTA With Canada and Mexico* (investigation No. 332-317), USITC publication 2516, May 1992 and addendum, USITC publication 2508, May 1992.

13 The imperfect-substitutes assumption is common in applied research in international trade. For further discussion of this assumption and its implications, see P.S. Armington, "A Theory of Demand for Products Distinguished by Place of Production," *IMF Staff Papers*, Mar. 1969, and USITC, *The Economic Effects of Significant U.S. Import Restraints: Phase I: Manufacturing*, (investigation No. 332-262), USITC publication 2222, Oct. 1989.

In conducting the analysis, the Commission used the effective rate of duty on U.S. imports from Mexico rather than the nominal rate, to account for the significant amount of trade that enters duty free under the GSP and at reduced duties under the maquiladora program. Under this program U.S. components enter Mexico duty-free for processing or assembly and the processed or otherwise manufactured products enter the United States on a preferential basis with only the value added in Mexico subject to duty.[14] To analyze the effects of NAFTA, estimates were made of the increase in the value-added portion of these imports from Mexico.

The reader should keep in mind that the sector-level model has certain limitations. First, certain elements of the NAFTA, such as the elimination of the trade-balancing requirement in the automotive sector, and rules-of-origin requirements in the computer, automotive, and textiles sectors, cannot be captured by the sector-level model. Second, important market factors unique to some of the industrial and agricultural sectors cannot be captured adequately by the partial equilibrium model. The sugar sector, for example, cannot be analyzed using the Commission sector-level model because of special factors such as changes in government price-support programs in both the Mexican and U.S. sectors as well as liberalization under NAFTA of quotas on imports of downstream products in the sugar-containing products sector. Third, the model does not incorporate potential increases in Mexican investment resulting from NAFTA. Therefore, a qualitative assessment, described below, was made in addition to or in lieu of the quantitative model estimates in those sectors where such special factors were deemed important.

Another limitation to be considered is that the sector-level models do not capture many of the likely indirect effects of NAFTA, such as changes in income in both the United States and Mexico that would lead to changes in trade. Incidentally, these and many other indirect effects are incorporated into the CGE and macroeconometric models reviewed in chapter 2 of this report. Finally, the reader should be aware of a limitation pertaining to the empirical estimates of the extent of substitution (the elasticity of substitution) among U.S., Mexican, and rest-of-world products that were applied to the sector-level model. These empirical estimates showed that Mexican imports substituted equally with both U.S. products and imports from the rest-of-world. This equality resulted from the assumptions and broad data categories that were employed by the staff to empirically estimate the elasticity of substitution.[15] Therefore, for certain products such as frozen orange juice and electronic equipment, it is likely that Mexican imports would be better substitutes with imports from the rest-of-world than with U.S. production. For these products, the model will tend to overstate the displacement of U.S. production and employment caused by NAFTA.

The Commission estimated the effects of NAFTA on U.S. trade, production, and employment for U.S. industrial and agricultural sectors where reliable data were available. The qualitative analysis discussed above was based on extensive interviews with experts in trade, industry, government, and academia; oral testimony and written submissions to the Commission; and Commission staff expertise. In cases when Commission estimates were based on or supplemented by qualitative analysis, the indicators "minor," "modest," and "considerable" were used to portray the likely impact of NAFTA on investment, trade, production, and employment. These indicators are defined below:[16]

minor	a change of 5 percent or less
modest	a change of 6 to 15 percent
considerable ...	a change of 16 percent or more

Qualitative analysis was also conducted for the energy and services sectors. Because of the extensive reservations taken by Mexico in the energy sectors and the existing obligations of the United States and Canada embodied in CFTA, opportunities created under NAFTA for the U.S. energy sectors are likely to be limited and the benefits, somewhat speculative. For services sectors (e.g., banking), the lack of necessary data precludes the use of the model to estimate the impact of NAFTA. Instead, the analysis among other things examines the relative size of the services markets in the United States, Mexico, and Canada; the level of U.S. investment and participation in Mexican and Canadian services sectors; and the infrastructure in place to support Mexican and Canadian demand for services. Because services are traded through establishments in foreign markets, the analysis examines the impact of changes under NAFTA in foreign investment laws.

Qualitative assessments were also made of NAFTA's impact on the U.S. sectors' ability to compete, both within North America and globally. These analyses seek to evaluate the effect of various provisions of NAFTA on a sector's market performance, market share, financial position, and production costs. The analyses consider how tariff eliminations and investment regulation changes will affect rationalization of production and international price competitiveness; how joint ventures, technology transfers, and improvements in intellectual property rights protection will affect future improvements in

[14] U.S. imports from Mexico under the maquiladora program are dutiable under headings 9802.00.60 and 9802.00.80 of the Harmonized Tariff Schedule of the United States, formerly known as the 806.30 and 807.00 provisions.

[15] For further discussion of the methods used to estimate the elasticities of substitution, see USITC, Office of Economics, *Estimated Elasticities of Substitution for Analysis of a North American Free Trade Area*, by Kenneth A. Reinert and Clinton R. Shiells, staff research study 19, 1992.

[16] It should be noted that these indicators are based on qualitative assessments and not on quantitative analysis and therefore should be used merely as benchmarks rather than as precise measures of the likely impact of NAFTA on the individual sectors.

quality; and how infrastructure improvements will affect market opportunities. The relative importance of these factors varies widely from sector to sector, and the factors with the greatest perceived impact have been noted for each sector.

Overview of Recent Economic Developments in Mexico

Characterized by policies of import-substitution and state intervention during most of the 20th century, the Mexican economy has undergone a striking metamorphosis in recent years (figure 1-1). Austerity programs requested by the International Monetary Fund in the early 1980s in the wake of Mexico's 1982 debt crisis and the progressive dismantling of many trade and investment restrictions by Presidents de la Madrid (1982-88) and Salinas de Gortari (1988-present) have transformed Mexico into one of the world's faster growing markets and have paved the way for closer economic relations with the United States. NAFTA is widely perceived as a capstone to these reform efforts, which have already resulted in a surge of foreign investment, a return of flight capital, and a multifold expansion in bilateral trade flows.

Privatizing State Enterprises and Deregulating Economic Activity

An important feature of the structural changes implemented was the dismantling of most of Mexico's large, unproductive, heavily subsidized, state-owned or state-controlled (parastatal) sector. In 1982 Mexico had 1,155 parastatal enterprises. As of September 30, 1992, this number had dropped to 221. Most notable among the firms privatized are Mexico's telephone company (Telmex); 18 commercial banks; the airlines (Aeromexico and Mexicana); two large copper mines (Cananea and Mexicana de Cobre); and two large steel companies (Sicartsa and Ahmsa). Foreign firms have also participated in the privatization process. For example, Southwestern Bell and France Telecom purchased significant shares in the 1990 stage of Telmex's privatization.[17] The May 1992 international equity offering of Telmex's shares raised $1.2 billion for the Mexican Government.

Privatizations have produced large one-time revenues for the Government of Mexico, totaling some $18 billion by May 1992,[18] most of which has been used to retire internal and external debt.[19] This debt reduction, in turn, has helped stabilize the Mexican budget and has allowed the Government to spend more on infrastructure and social programs.[20]

Deregulation was another major instrument of the economy's recent structural transformation[21] and also had the effect of easing restrictions on foreign trade and investment in certain sectors. Decrees providing for sector-specific areas of deregulations were issued for land transportation in July 1989;[22] the fishing, automotive, and telecommunications industries in December 1989;[23] financial services in January 1990;[24] several rounds of reclassifications of petrochemicals (the last one in August 1992);[25] and mining.[26] Some of the remaining restrictions in these sectors will be liberalized under NAFTA.

Environmental Conditions

Recent regulatory reforms under the Salinas administration are accompanied by improved environmental regulation. Environmental problems in several areas of Mexico are considered to be serious and may slow future industrial development in those areas, particularly in Mexico City and other major cities. These problems include air pollution and inadequate facilities for water supply and the treatment of wastewater. Mexican officials assert they are serious about environmental regulation and enforcement, and are being stricter with new firms that could affect the environment.[27] Mexico's environmental laws and regulations are in most cases comparable to standards in the United States.[28]

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[17] U.S. Embassy, Mexico City, *Economic Trends Report*, Aug. 1992, p. 33.

[18] Ibid.

[19] In 1989 Mexico's foreign debt was 47 percent of gross domestic product (GDP). With debt-reducing measures and GDP growth, this ratio dropped to 36 percent in 1991, and it was projected to decline to 32 percent in 1992. U.S. Embassy, Mexico City, *Economic Trends Report*, Aug. 1992, p. 4.

[20] Mexican Under Secretary for International Affairs, Jose Angel Gurria, speech to the World Bank's Annual Conference on Development Economics, Washington, DC, Apr. 30-May 1, 1992.

[21] The deregulation program was enacted by Presidential decree "Regulation for the Secretary of Commerce and Industrial Development to Revise the Regulation of National Economic Activity," *Diario Oficial*, Feb. 1989.

[22] *Diario Oficial*, July 7, 1989.

[23] For detailed information on deregulation and privatization before 1990, see USITC, *Review of Trade and Investment Liberalization Measures by Mexico and Prospects for Future United States-Mexican Relations: Phase I* (investigation No. 332-282), USITC publication 2275, Apr. 1990.

[24] *Diario Oficial*, Dec. 27, 1989.

[25] *Diario Oficial*, Aug. 17, 1992.

[26] *Diario Oficial*, June 26, 1992.

[27] Government and industry officials, interviews by USITC staff, Mexico, Nov. 1992.

[28] William Reilly, Administrator, Environmental Protection Agency, testimony before the House Ways and Means Committee, Sept. 15, 1992.

Figure 1-1
Key events in Mexico's economic transformation

Aug. 1982	With the collapse of oil prices and resultant drop in export revenues, Mexico is unable to service its $86 billion foreign debt. International Monetary Fund loans are extended in exchange for strong austerity measures, and the Mexican economy stagnates from 1982 to 1988.
Aug. 1986	Mexico joins the General Agreement on Tariffs and Trade as part of President de La Madrid's plan to reform the Mexican economy and open it to outside trade and investment. The step is consistent with the far-reaching changes demanded by Mexico's creditors in new agreements reached in 1986.
Nov. 1987	U.S. and Mexico reach landmark accord improving economic relations. The so-called "framework understanding" creates a consultative mechanism and affirms the need to work together to eliminate barriers to goods and services.
Dec. 1987	With inflation running at 160 percent, the Pact of Economic Solidarity is reached among Government, business, and unions. Tight fiscal and monetary policies are coupled with wage, price, and exchange-rate controls in an effort to stabilize the Mexican economy.
Feb. 1989	The Secretary of Commerce and Industrial Development is charged with deregulating Mexico's economy and dismantling state ownership or control over key activities.
May 1989	Mexico issues regulations substantially liberalizing foreign investment rules, and foreign direct and portfolio investment surges.
July 1989	Mexico becomes the first country to reach a new debt agreement with its commercial creditors under the Brady plan, opening the door for provision of new loans and for reductions in principal and interest on existing ones.
June 1990	President Bush and Mexican President Salinas endorse a comprehensive free trade agreement as the best vehicle to strengthen bilateral relations and meet international competitive challenges.
June 1991	Legislation improving Mexican protection of intellectual property rights signed.
Jan. 1992	Mexico amends its Constitution in an effort to reform the agricultural sector. The action promises to change Mexico's inefficient "ejido" system (rural lands reserved for communal use).

Mexico has had difficulties complying with and enforcing environmental regulations in part because of lack of funding, technical equipment, and trained personnel.[29] Whereas the money is not available to correct all the environmental problems in the country, funds from both Mexican and international sources reportedly are financing as many projects as Mexico has the ability to effectively plan, construct, and manage in the near term.[30] Mexico also has programs in place to upgrade equipment and improve the skills of enforcement personnel. Environmental inspections are reportedly becoming more frequent and more professional, and Mexico is encouraging firms to contract with private engineering and consulting firms for environmental audits to ensure compliance with requirements. Officials of several U.S. firms with facilities in Mexico said that it is more efficient to use the same environmental protection procedures in Mexico as their operations in the United States do.[31]

[29] Government and industry officials, interviews by USITC staff, Mexico.
[30] Industry environmental analyst, interview by USITC staff, Mexico, Nov. 1992.
[31] Government and industry officials, interviews by USITC staff, Mexico.

Liberalizing Foreign Trade

A major turning point for Mexico occurred in August 1986, when it joined the General Agreement on Tariffs and Trade (GATT). Pursuant to its accession agreement, starting in December 1987 Mexico reduced the highest tariffs, which still had been 100 percent in early 1986, to 20 percent; eliminated a 5-percent tax on imports; significantly reduced the number of products subject to prior import licensing;[32] and discontinued the use of official prices for customs valuation purposes.[33]

In the summer of 1990, the Salinas administration expressed an interest in a free-trade accord with the United States. Mexican officials have stated that one of Mexico's major interests in NAFTA is to secure better

[32] For a discussion of import licensing, see chapter 3 of this report.
[33] For detailed information on this process, see the following USITC reports: *Review of Trade and Investment Liberalization Measures by Mexico: Phase I*, USITC publication 2275; *Review of Trade and Investment Measures: Phase II*, USITC publication 2326, Oct. 1990; and the section on Mexico in *The Year in Trade: The Operation of the Trade Agreements Program*, 43rd report, USITC publication 2554, Aug. 1992.

access for its exports to North American markets, particularly in areas where there have been quotas or other NTBs.[34] The United States, meanwhile, wanted to pursue liberalization of Mexico's remaining import and investment barriers, such as lowering Mexico's average trade-weighted tariff of roughly 10 percent (compared with the United States' 3 percent), eliminating import license requirements for agricultural goods, reducing Mexico's trade and production restrictions for autos,[35] and easing limits on foreign investment in areas such as energy and transportation.

The annual trade surpluses Mexico was able to register in the years following the debt crisis have been replaced by growing deficits (table 1-2). Although Mexican exports continued to increase, the removal of import barriers and structural changes in Mexico since the mid-1980s sparked pent-up import demand. Other causes included the peso's continued appreciation in real terms; slower economic growth in the United States, which is Mexico's dominant market; and depressed world prices of oil, which is still an important source of foreign exchange for Mexico. In his recent "Informe," President Salinas stated that intermediate and capital goods, which account for 85 percent of Mexican imports, are now needed to strengthen production capacity and increase competitiveness. In fact, massive inflows of foreign funds in the capital account of the balance of payments have compensated for deficits in the current account, permitting a buildup of Mexico's foreign exchange reserves.

The United States is Mexico's major trading partner (70 percent of exports and 67 percent of imports in 1991).[36] More open Mexican markets and the vigor of the Mexican economy have enabled the United States to regain in 1991 its traditional surplus in U.S.-Mexican trade lost in 1982, and Mexico was the world's fastest growing market for U.S. exports for the fifth consecutive year.[37]

[34] Government and industry officials, interviews by USITC staff, Mexico.

[35] For further discussion of the auto restrictions, see the "Automotive Products" sector analysis in chapter 4 of this report.

[36] Bank of Mexico balance-of-payments data.

[37] Based on U.S. Bureau of the Census data (with imports on customs value basis), the 1991 U.S. surplus with Mexico amounted to $1.8 billion.

Easing Rules on Foreign Investment and Improving Intellectual Property Rights Protection

Mexico's foreign investment policy has also changed substantially. Foreign investment had played a relatively small role in the Mexican economy, principally because of highly restrictive provisions in the Constitution of 1917 and the 1973 Law to Promote Mexican Investment and Regulate Foreign Investment (LFI).[38] However, in the mid-1980s authorities began to interpret Mexico's restrictive laws more liberally to encourage foreign investment, which quickly began to rise in 1986-88. In May 1989 authorities issued regulations governing the 1973 foreign investment law. The regulations greatly expanded the number of economic areas wherein majority foreign ownership was accepted and facilitated the process of approval for foreign investment.[39]

The pursuit of foreign capital and technology is generally acknowledged to be a major factor in Mexico's interest in NAFTA. The investment provisions of NAFTA, including Mexican commitments in various NAFTA annexes, will supersede much of existing Mexican foreign investment legislation and regulations and make continuation of Mexico's liberalized foreign investment climate more certain.[40] In anticipation of NAFTA's taking effect, the Salinas administration is already preparing a new foreign investment law, which, among other things, would implement the results of NAFTA's investment provisions. The timing of the proposed legislation's submission to the Mexican Congress has not yet been determined.[41]

[38] *Diario Oficial*, Mar. 9, 1973.

[39] *Diario Oficial*, May 16, 1989. For more information on these regulations, see USITC, *Review of Trade and Investment Liberalization Measures by Mexico: Phase I*, USITC publication 2275, pp. 5-7 to 5-11.

[40] See NAFTA, ch. 11 on investment provisions.

[41] Mexican Ministry of Trade and Industrial Development (SECOFI) official, interview by USITC staff, Mexico City, Nov. 1992.

Table 1-2
Mexico's trade and trade balance, 1987 through Jan.-July 1992
(In billions of dollars)

Item	1987	1988	1989	1990	1991	Jan.-July 1991	Jan.-July 1992
Merchandise exports	20.5	20.5	22.8	26.8	27.1	15.7	15.9
Oil products exports only	8.6	6.7	7.8	10.1	8.7	4.7	4.6
Merchandise imports	13.3	20.3	25.4	31.3	38.2	21.1	27.3
Trade balance	7.2	.2	-2.6	-4.5	-11.1	-5.4	-11.4

Note.—Data are from the Mexican balance of payments. Data do not include the transactions of units under the maquiladora program.

Source: Bank of Mexico, *Economic Indicators*, July and Sept. 1992.

New intellectual property rights (IPR) legislation promulgated in Mexico in 1991 set the stage for improvements in the IPR portion of NAFTA. For many years U.S. business interests expressed considerable concern over the lack of effective IPR protection in Mexico. In particular, concern was expressed by U.S. pharmaceutical manufacturers over inadequate patent and trademark protection and by software producers and the recording and movie industries over weak copyright protection.[42]

The new "Law for the Promotion and Protection of Industrial Property," a patent and trademark legislation, was signed by President Salinas on June 26, 1991.[43] Among other things the new law extended patent protection from a 14-year period to 20 years and made patentable chemical and pharmaceutical products, some biotechnological inventions, and many other previously unprotected products. Trademarks may now be registered for a period of 10 years instead of 5, with renewable 10-year terms. Additional provisions of the new law introduced Mexican protection for proprietary trade secrets.

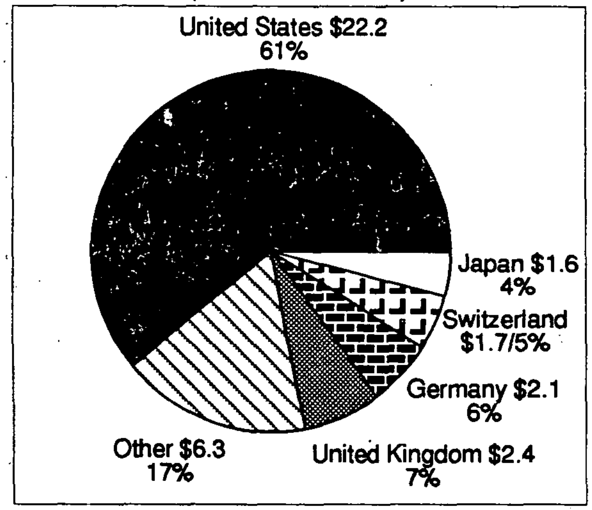
The Federal Copyright Law of 1963 was amended and now provides specific protection for computer software and sound recording in Mexico for the first time.[44] Mexico protects computer software for 50 years. The new IPR measures also significantly enhance existing sanctions and penalties for infringement, including criminal penalties.

Although the LFI of 1973 has never been formally repealed, the 1989 regulations, improved IPR, and the strong belief that NAFTA will become reality seems to have reassured foreign investors already. Total foreign investment has surged from $4.6 billion in 1990 to $12.3 billion in 1991 (table 1-3), including significant repatriation of domestic "flight capital," which left the country in prior years. Mexico had obtained in the first 4 years of the Salinas administration more than the $24 billion foreign investment targeted to be acquired in all 6 years.

In 1991, foreign direct investment (FDI) in Mexico increased by 81 percent. Data of the Mexican Foreign Investment Commission (MFIC) show that the United States is the principal source of FDI in Mexico (figure 1-2).[45] Foreign portfolio investment quadrupled in 1990 and almost quadrupled again in 1991.[46] In addition to the rebirth of international confidence in the Mexican economy, such massive portfolio inflows also

Figure 1-2
Accumulated foreign direct investment in Mexico, by countries of origin, as of June 1992

(In billions of dollars)



Source: U.S. Embassy, Mexico City, Foreign Investment Report, 1992, annex J, table 3.

[42] In May 1989 the U.S. Government placed Mexico, along with seven other countries, on a "priority watch list" under the "special 301" provision of the Omnibus Trade and Competitiveness Act of 1988 for its failure to protect IPR. In January 1990 Mexico was removed from this list in response to the Mexican Government's commitment to pass effective IPR legislation.

[43] *Diario Oficial*, June 27, 1991. The new law abrogated the 1976 Law on Inventions and Marks, the 1987 Law for the Control and Registration of Technology Transfer, and the 1990 Law on the Use and Exploitation of Patents and Trade Marks.

[44] *Diario Oficial*, June 27, 1991.

[45] MFIC data are based on approvals of foreign investment projects, whereas the data of the Bank of Mexico shown in table 1-3 reflect actual investment flows. Due to this difference and a lag time between approvals and actual investments, MFIC data differ from those issued by the Bank.

[46] Of the $7.5 billion total portfolio investment in 1991, $6.3 billion was invested in equity and $1.2 billion in debt. U.S. Embassy, Mexico City, *Economic Trends Report*, p. 67.

Table 1-3
Foreign investment in Mexico, 1989 through Jan.-June 1992

(In millions of dollars)

				Jan.-June	
Type	1989	1990	1991	1991	1992
Total	3,530	4,628	12,302	9,149	9,289
Direct	3,037	2,633	4,762	2,682	3,044
Portfolio	493	1,995	7,540	6,467	6,244

Source: Bank of Mexico, *Economic Indicators*, July 1992. For Jan.-June 1991 and 1992, data are from U.S. Department of State, message reference No. 25764, prepared by U.S. Embassy, Mexico City, Oct. 1992.

reflect a dramatically rising volume in international issues of Mexican securities and the privatization of several large government enterprises. This was accompanied by new regulations facilitating the purchase by foreigners of Mexican debt and equity instruments.[47] During the first 6 months of 1992, FDI grew at the much slower pace of 13.5 percent and foreign portfolio investment dropped by 3.5 percent, compared with the first 6 months of 1991.

Stabilizing the Economy by Reducing Inflation

Another key objective of Mexico was to reduce inflation. In 1987 Mexico's inflation rate, as measured by the national consumer price index, was 159.2 percent, sapping purchasing power and thwarting long-term planning. Since December 1987, Mexico's domestic economic policy has been incorporated in comprehensive "economic pacts" developed with the consent of business and labor. These pacts, including the current fifth extension of the "The Pact for Stability, Competitiveness and Employment" (PECE), have combined traditional austerity measures (tight fiscal and monetary policies) with wage, price, and exchange-rate controls. As a result, inflation was reduced to an estimated 11.2 percent in 1992. The target rate for 1993 is single-digit. Inflation control remains at the center of the Salinas administration's macroeconomic policy. This high priority was manifested in the tight money supply and the rise of interest rates after the first quarter of 1992.[48]

Since 1990, the peso has appreciated against the dollar in real terms, which has moderated inflation in Mexico. In real terms the peso appreciated by 9.9 percent against the dollar in 1990, by 9.3 percent in 1991, and by another 4.1 percent during the first 7 months of 1992.[49] Rigid exchange controls were abandoned in November 1991 in favor of a "floating rate" subject to market forces. The economic program the Salinas administration announced on October 20, 1992, continued some controls on wages, prices, and exchange rates, but the government slowed the peso's real-term appreciation by accelerating the rate of the peso's nominal devaluation from 20 centavos to 40 centavos daily. With this measure the Government responded to a widespread concern that the peso is now overvalued to the detriment of Mexican export-competitiveness.[50]

The reforms of the PECE and massive foreign capital inflows created favorable conditions for economic growth in Mexico, as shown below (in percent):[51]

Period	GDP
1988	1.2
1989	3.3
1990	4.4
1991[1]	3.6
1992:[2]	
Original	4.0
Revised	2.7
Jan.-July 1992[3]	2.6

[1] Estimated.
[2] Official projection.
[3] Actual growth.

The economy began to show signs of slowing down in the third quarter of 1992, however, and the Government adjusted downward the 4-percent growth originally projected for 1992 to 2.7 percent. Growth for 1993 is expected to be 2.5 to 3.0 percent.[52] The declining growth rate is attributed to ongoing recessions in the United States and other industrial countries and to certain weaker aspects of the Mexican economy itself. These include the renewed climb in foreign debt,[53] inflation, and rising interest rates.[54]

Reforming Agriculture

Probably the most notable departure from Mexico's economic tradition was the Salinas administration's free market reform proposal for Mexican agriculture, adopted by the Mexican Congress in January 1992.[55] The package includes an amendment to article 27 of the Constitution of 1917, which was responsible for

[47] Bank of Mexico, *Economic Indicators*, Jan. 1992.
[48] Mexican Finance Minister Pedro Aspe, statement, as reported in the *Wall Street Journal*, Aug. 26, 1992, and the *LDC Debt Report*, American Banker, New York, NY, Sept. 28, 1992.
[49] U.S. Embassy, Mexico City, *Economic Trends Report*, Aug. 1992, p. 60, and Mexican officials, interview by USITC staff, Nov. 1992.
[50] *Mexican Forecast*, Expansion S.A., Mexico City, July 10, 1992, p. 4.
[51] In early 1992, GDP data from 1987 forward were revised. The revisions are important since they change the trend of GDP growth from the continuous annual increases in the rate of growth shown in prerevision figures to one where the growth rate peaked in 1990 and slowed in 1991. Bank of Mexico, *Economic Indicators*, June 1992 for 1988-91. Projections for 1992 are from the Presidencia de la Republica, *Criterios Generales de Politica Economica Para 1992*, Nov. 1991, and U.S. Embassy officials, interview by USITC staff, Mexico City, Nov. 1992.
[52] U.S. Embassy officials, interview by USITC staff, Mexico City.
[53] At its peak in 1987, Mexico's foreign debt amounted to $107.4 billion, and at the end of December 1991 was estimated at $104.1 billion. Because foreign debt was climbing again since its lowest point in 1989 ($95.1 billion), the Salinas Government limited foreign borrowing by Mexican commercial banks to 10 percent of total liabilities in April 1992. Probably in response to this measure, Standard and Poor's assigned a BB rating to Mexico's sovereign foreign-currency debt in July 1992, reflecting a one-step implicit improvement over the BA2 rating Moody provided in December 1990.
[54] U.S. Embassy officials, interview by USITC staff, Mexico City.
[55] *Diario Oficial*, Jan. 4, 1992.

creating Mexico's regime of communal land tenure known as the "ejido" system.[56]

Over time the ejido system has come to be regarded as being less than effective. By prohibiting farmers from selling or mortgaging land, it prevented them from obtaining private credit and deprived them of the incentive to improve the land they cultivated,[57] thus severely hampering the modernization of Mexican farming. In addition, the ongoing redistribution of land by the Government could not keep pace with the farming population's rapid growth. As a result ejido farms were frequently subdivided in ever-smaller plots, depressing their income and productivity. In 1990 5.5 million farmers, or approximately 21 percent of Mexico's labor force, were engaged in agriculture.

Recognizing the need for fundamental reforms to boost farming productivity, the Salinas administration began in 1990 to allow ejido plots to be leased to private farmers on a limited basis. A 1992 reform gave individual ejido farmers title to their land, allowing them to lease, sell, or rent and use the land as collateral for loans. The new law also relaxed earlier limits on acreage, so corporations and associations could achieve greater economies of scale from operating large parcels of land. Some analysts express concern that farmers from ejido lands may be displaced or choose to leave farming in such large numbers that their absorption into the rest of the Mexican economy will pose difficulty.[58]

Forging Closer Ties with Major Trading Partners

The Salinas government has also taken steps to forge closer economic relations with nations other than the United States and Canada, especially in the Central American and South American region. Probably the most notable of Mexico's regional moves thus far is the free-trade agreement (FTA) it signed with Chile in September 1991. The accord provides for a staged reduction of tariffs on most goods by 1996, with some extensions on "sensitive" items to be negotiated later.[59] The agreement also provides for elimination of nontariff barriers, a dispute-resolution mechanism, and national content rules for the two countries' trade. On August 20, 1992, Mexico and five Central American countries (Guatemala, Honduras, El Salvador, Nicaragua, and Costa Rica) signed a treaty setting up a framework for a future free-trade zone, which is not expected to be in place until 1997. The Salinas government also held formal free-trade discussions with Venezuela and Colombia and trade consultations with Argentina, Brazil, and Bolivia.

Mexico has pursued closer economic ties with other regions of the world as well. In April 1991 Mexico signed a cooperation agreement with the European Community, identifying a wide range of areas—economic, financial, and scientific—for cooperation. The Salinas Government also has shown interest in joining the 15-nation Asia-Pacific Economic Cooperation (APEC) group.[60]

Addressing Other Factors Affecting Trade, Investment, and Competition

The extensive regulatory reforms undertaken by Mexico in many ways are as significant as NAFTA is likely to be in easing U.S. market access in Mexico. In addition, the country's infrastructure, labor force productivity, technology, and education determine Mexico's ability to compete with U.S. firms within the North American market as well as the United States' ability to exploit newly created export and investment opportunities in Mexico. Further, differences in national policies, such as tax policies, can affect the competitiveness of firms. Mexico, for example, imposes a 10 percent value added tax (VAT) (the Mexican term is Impuestos Sobre El Valor Agregado (IVA)) on certain goods and services, but the United States does not. (Canada recently imposed a national 7 percent Goods and Services Tax (GST), which is similar to a VAT.) VAT is imposed domestically on producers during the production process on the basis of the value added to a good; generally, in the case of exports VAT is rebated at the border (i.e., exports are "zero-rated"), but the full applicable VAT rate is imposed at the border on imported goods. These taxes will not be affected by NAFTA and will continue to be rebated/imposed at the border, as the case may be, after import duties have been eliminated. While there is some disagreement among economists and industrialists as to the effect that a VAT has on trade between countries with and without a national VAT, differences in taxation systems are viewed by some as significantly affecting the price competitiveness of goods traded.[61]

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[56] The ejido system was established to protect rural farmers. Prior to the Mexican Revolution, lands used for subsistence farming were converted to production of commercial crops that could be exported to help Mexico's balance of trade. The farmers were often dispossessed of land with little or no compensation. The Constitution protected communal land (ejidos) from outside developers by forbidding communities or individuals from selling their land to outsiders (Mexican or foreign).

[57] Although ejido farms are held in common, in most cases the ejido farmers are allotted individual parcels that are held in the family.

[58] Government and industry officials, interviews by USITC staff, Mexico.

[59] For further discussion, see USITC, *The Year in Trade*, USITC publication 2554, p. 117.

[60] U.S. Embassy, Mexico City, *Economic Trends Report*, p. 77.

[61] See, e.g., J. Bryant, vice-president and director of corporate taxes, J.C. Penney Co., "Value-Added Tax: Not the Tax We Need," *Financial Executive*, Sept./Oct. 1991, pp. 24-25; and M. Weidenbaum, "The Case for Taxing Consumption," *Contemporary Issues, Series 54*, Center for the Study of American Business, July 1992.

The following sections summarize the state of Mexico's progress in the important areas of infrastructure and human resource capabilities.

Infrastructure

Despite the recent surge in foreign investment and the acceleration of foreign trade in Mexico, the nation's transportation, energy, and communications infrastructure remains in many respects underdeveloped or inadequate (table 1-4). In this regard it appears to remain a constraint to economic growth and a hindrance to expanded flows of trade and capital.

Under the aegis of a National Development Plan (NDP) targeting the years 1989-94 and through related programs, the Mexican Government has launched major new efforts to improve the national infrastructure—in many cases through privatizing industries and service functions. Government figures indicate that between 1988 and 1992, total investment in Mexico's basic infrastructure rose by 74 percent, and that the private sector's share of such investment increased from 1 percent to nearly 50 percent. Despite such cooperation between the Government and the private sector, however, it is uncertain whether all of Mexico's infrastructure goals associated with the NDP can be met, due to the sheer scope of the projects at hand, their extraordinary cost, and the reluctance of foreign investors to provide financial support.

Roads and highways

Although Mexico has a land area approximately one-fifth that of the United States, its paved road and highway system is comparable in length to only about 2.4 percent of the U.S. system.[62] Much of the national highway system has been characterized by President Salinas himself as "severely damaged,"[63] and roads running east and west are often poor.[64] Electronics firms note that equipment risks being damaged in transit on Mexico's rougher roads.[65] An additional complaint is that privately developed toll roads can be expensive to use: for a five-axle vehicle, for example, tolls from Mexico City to the border town of Nuevo Laredo can cost more than $50.[66] On the other hand, several U.S. manufacturers in Mexico have indicated that improved roads are well worth the additional cost.

Under President Salinas, Mexico has constructed new roads and repaved many older ones. In 1992 the Government spent $300 million of its own money on national highway construction and maintenance.[67] The Government has also been offering toll road concessions to the private sector. Through these private arrangements, the Government seeks to compete about 3,700 miles in new roads form 1989 to 1994.[68] As of late 1992, a total of 40 projects, including 5 bridges and some 2,400 miles of highway, had been concessioned to private domestic concerns.[69]

Seaports

Although it is now being improved, Mexico's national port system—which includes major facilities at Acapulco, Guaymas, Mazatlan, Tampico, and Veracruz—has in recent years suffered from obsolete equipment and low productivity, as well as (in certain cases) reported theft, bribery, charging for nonexistent services, and union corruption. At Veracruz, which became the focus of a highly publicized cleanup in 1991, the Salinas government terminated all labor contracts and put the port under the management of two private companies.[70] Privatization efforts will also be directed at other ports in the port system. In total, the private sector has already invested more than $48 million in 17 port projects aimed at constructing marinas freight terminals, and docks for cruise ships.[71]

62 Only about 55,800 miles, or 37 percent, of Mexico's roads are paved. Figures from Secretariat of Communications and Transport (SCT).
63 Salinas, *State of the Nation Report*, Nov. 1, 1992, p. 29.
64 A.T. Kearney, *Mexico — Opening for Growth*, Chicago, 1992, p. 8.
65 Hewlett-Packard of Mexico official, interview by USITC staff, Guadalajara, Nov. 12, 1992.
66 Statistics from Mexican Secretariat for Infrastructure.
67 This figure was augmented by a $100 million contribution from a Mexican trucking association. SCT official, interview by USITC staff, Mexico City, Nov. 12, 1992.
68 "Program for the Construction, Use and Maintenance of Toll Highways Through Private Sector Concessions," Mexico City, Oct. 1992, p. 3.
69 Concessionaires may charge tolls on the highways they build for a specified number of years. The highways will then revert to the state. The Mexican Government has been attempting to attract foreign investors with toll concessions and with so-called infrastructure bank bonds but has so far met with little success.
70 "Salinas Takes On the Port Problem," *Latin American Weekly Report*, June 20, 1991, p. 8.
71 Salinas, *State of the Nation Report*, p. 30.

Table 1-4
Mexico's transport infrastructure

Type of infrastructure	Size of network	Freight handled (1992)	Passengers (1992)
Roads	150,976 miles	339.0 million tons	2.2 billion
Seaports	76 ports	175.1 million tons	4.0 million
Airports	82 airports	188,000 tons	24.7 million
Railroads	16,327 miles	49.9 million tons	13.4 million

Source: Salinas, *State of the Nation Report*, Nov. 1, 1992 (est. figures).

According to Puertos Mexicanos, the nation's port authority, four major port-expansion projects are currently under way: an 80,000-ton-capacity grain terminal in Lazaro Cardenas, a container facility at Manzanillo, various infrastructure improvements at Veracruz, and a docking berth with vertical cranes at Altamira. Three new ports (Progreso on the Gulf, and Pichilingue and Topolobampo on the Pacific) are in differing stages of construction.[72]

Railroads

President Salinas stated in his 1992 state of the nation address that Ferrocarriles Nacionales de Mexico (Mexican National Railways, or FNM) "is in no condition to provide support for the Mexican economy's competitiveness."[73] According to the chairman of Union Pacific, the problems of Mexico's Government-run railway system include "technology that is 40 years behind U.S. railroads, deferred maintenance of some $3 billion, overlapping government ministries...low traffic density, and a bloated labor force."[74] Although there has apparently been improvement of late,[75] delays in returns of U.S. rolling stock from points south remain a concern.[76]

One of the major efforts made to address these problems has been FNM's recent Structural Change Program, which is aimed at restructuring Mexico's railway system[77] and at updating management and operating technologies. FNM has also encouraged private participation in the rehabilitation of locomotives and cars, operation of unit trains, and the operation and construction of intermodal terminals. FNM has been working with U.S. companies on some of these projects. Southern Pacific, for example, is a partner in Ferropuertos, a new organization that will construct distribution terminals at Torreon, Monterrey, and Celaya.[78] Another intermodal terminal, at Huehuetoca, is to be constructed through a partnership with Union Pacific.[79] FNM also has signed a technical service agreement with Union Pacific Technologies to implement new information systems for such activities as yard control, crew control, and providing shipment information to customers.[80]

[72] Office of the Press Secretary to the President, *The Mexican Agenda* (Mexico City: July 1992), 13th ed., p. 121.

[73] Salinas, *State of the Nation Report*, p. 29.

[74] Dick Davidson, chairman and CEO, Union Pacific, cited in *Railway Age*, Oct. 1992, p. 83.

[75] Luther Miller, "Mexico: A Growth Market," *Railway Age*, Apr. 1992, p. 48.

[76] Gil Carmichael, Federal railroad administrator, cited in *Railway Age*, Oct. 1992, p. 63.

[77] One of FNM's most recent goals was to trim its payroll of 82,000 employees to 62,000 by the end of 1992.

[78] Mike Mohan, president, Southern Pacific, cited in *Railway Age*, Oct. 1992, p. 74D.

[79] Miller, "Mexico: A Growth Market," p. 48.

[80] Jorge Tamayo, director general, FNM, cited in *Railway Age*, Oct. 1992, p. 70.

Airports

Mexico's air transport system includes Latin America's busiest airport (Benito Juarez Airport, in Mexico City) and two major airlines (Aeromexico and Mexicana), both of which have recently been privatized. As a whole, the system is currently suffering from strained capacity. The Government has estimated that Benito Juarez Airport will reach capacity within about 5 years; air cargo traffic in particular is expected to expand dramatically.[81] Obsolete radar and other electronic systems, as well as lack of properly trained personnel, are among the other concerns cited.[82]

Although it has had difficulty coming up with sufficient funding, the Mexican Government has attempted to institute a Metropolitan Airport System that would steer some of Mexico City's air traffic to other nearby airports. Reportedly, however, some aviators have resisted being moved to certain other airports, at least one of which (Toluca) is said to lack basic facilities such as adequate hangar space. There are also efforts to promote private investment and growth at Benito Juarez, as well as at airports serving Guadalajara, Puerto Vallarta, Cancun, and other locations.[83]

Telecommunications

Controlling interest in Mexico's national telephone company, Telmex,[84] was sold in 1990 to a private consortium composed of Mexico's Grupo Carso, the U.S. company Southwestern Bell, and France Telecom. The consortium currently operates a system composed of about 11 million telephones. There are about 6 million telephone lines in total, or 1 line for roughly every 14 persons (in contrast with the United States' ratio of about 1 line for every 2 persons).[85]

Telcel, a subsidiary of Telmex, handles Mexico's cellular telephone operations, along with private,

[81] Mexicana, which provides air cargo services to both national and international destinations, reports that such services, which currently account for 4.8 percent of its income, will increase substantially in the next few years, accounting for 15 percent of its income by 1995. Chris Aspin, "A Status Quo Maintained," *Business Mexico*, June 1992, p. 21.

[82] Javier Velez, Avemex Airlines, quoted in Patrick McCurry, "Congestion in the Air," *Business Mexico*, June 1992, p. 19.

[83] Ibid., pp. 18-19.

[84] Foreign manufacturers play a larger role in the Mexican telecommunications network equipment market than they do in the Canadian market. Ericsson, a Swedish firm, and Alcatel, a French firm, produce the vast majority of network equipment used by Telmex. In contrast, Canadian producers such as Northern Telecom supply the vast majority of network equipment used by Canadian telecommunication carriers.

[85] Telefonos de Mexico, S.A. de C.V., prospectus, Goldman, Sachs & Co., May 11, 1992.

[86] Telmex officials, interview by USITC staff, Mexico City, Nov. 10, 1992. U.S. firms participating in these private consortia are McCaw, Contel, Motorola, Centel, Millicom, and Bell South. In addition, Motorola sells equipment to several of the consortia.

Mexican-led cellular service consortia.[86] Eighty cities are now covered by cellular systems, with a subscriber rate above 250,000.[87]

By its own admission Telmex has formidable obstacles to surmount. The current backlog of requests for telephone line installation exceeds 1 million.[88] A new plant must wait 3 months for a telephone, and complaints are registered on the order of 20,000 per day.[89] A persistent concern is deteriorating equipment.

Under the terms of the Telmex monopoly concession, the company's new owners must meet a variety of performance requirements related to the problems enumerated. Among other things Telmex is obligated to increase the number of lines in service by 12 percent per year until 1994 and connect all towns with populations of more than 500 persons to the national network.[90] Telmex also is constructing a 8,370 mile fiber optic network among Mexico's metropolitan areas.[91] The company plans to invest a total of $12 to $14 billion in its projects by the end of 1996.[92] A related boost for Telmex, and for Mexican telecommunications in general, will come with the addition in 1993-94 of two Solidarity telecommunications satellites to the country's current Morelos I and Morelos II satellites.

Electricity

The state-owned Comision Federal de Electricidad (CFE) is Mexico's chief source of electrical energy generation and distribution. However, the electricity system—which is in harmony with the electrical standard throughout North America[93]—has been limited by insufficient generation capacity, inadequate distribution channels, and aging power plants.[94] Blackouts in many regions of Mexico are commonplace, and refrigeration capacity (which would be needed on a large scale to support an advanced agricultural and food distribution chain) is significantly limited by energy deficiencies.[95]

Under the Electric Sector Works and Investment Plan, CFE is aiming to spend more than $34 billion to provide 19,513 megawatts of additional capacity between 1989 and 1999 by building new plants, retrofitting older ones, and increasing transmission and distribution. It is projected that one-quarter of the planned investment in electricity must come from the private sector—for example, through schemes that permit the private sector to build, lease, and then transfer power plants back to the Government.[96]

Ongoing major power projects include the construction of three major hydroelectric plants (Aguaprieta, Aguamilpa, and Zimapan) and upgrading of existing plants. In addition, eight thermoelectric plants have been built. As of November 1992, an average of 9,122 people were being connected to the electricity supply each day and Mexico had increased its electrical generation by 2.6 percent in the course of the year.[97]

Labor Force

Mexico's work force of more than 27 million[98] is characterized by a high literacy rate,[99] an abundance of low-skilled labor, and a relative scarcity of high-skilled labor and middle management.[100] Although unemployment and underemployment remain pressing problems, salaries have been growing in recent years. Average salaries increased in real terms by 4.5 percent in 1989, 1 percent in 1990, 6.7 percent in 1991, and 6.8 percent in the first 10 months of 1991. Average hourly wage rates range from $1 to $5 for laborers, clerical, and semiskilled workers, but rise to nearly $23 for professional and managerial positions.[101] The average hourly compensation in 1991 for Mexican production workers in manufacturing was $2.17; such compensation was $1.25 in 1990 for Mexico's maquiladora export industries. (These figures include Government-mandated benefits such as paid vacations and bonuses.) Such compensation rose significantly in

[87] Salinas, *State of the Nation Report*, p. 30.
[88] U.S. Department of Commerce, U.S. and Foreign Commercial Service, "Industry Sector Analysis Mexico: Telecommunications Services, Data Transmission, and Customer Premises Equipment," Mexico City, Apr. 1992, p. 2.
[89] This figure represents a decline from the 50,000 complaints per day recorded in 1989. Telmex officials, interview by USITC staff, Mexico City, Nov. 10, 1992.
[90] Ibid.
[91] AT&T is handling the majority of this contract.
[92] USITC, *The Likely Impact on the United States of a Free Trade Agreement With Mexico* (investigation No. 332-297), USITC publication 2353, Feb. 1991, p. 4-46, and U.S. Department of Commerce, "Industry Sector Analysis - Mexico," p. 7.
[93] Mexican Investment Board, *Economic and Business Overview*, July 1991, p. 5.
[94] About 17 percent of existing power plants are more than 30 years old, 16 percent are between 20 and 30 years old, and about 43 percent are between 10 and 20 years old. U.S. Agency for International Development (AID), *Energy and Environment Market Conditions in Mexico*, 1992, p. 31.
[95] Industry officials, interviews by USITC staff, Irapuato, Mexico, Nov. 1992.
[96] Multinational companies involved in negotiating or constructing such projects (usually with a Mexican partner) include Foster Wheeler, Alsthom, and Mitsubishi. U.S. AID, *Energy and Environment Market Conditions in Mexico*, pp. 32-35.
[97] Salinas, *State of the Nation Report*, p. 28.
[98] U.S. Department of State, message reference No. 298632, prepared by U.S. Embassy, Mexico City, Nov. 1992.
[99] The literacy rate for Mexico's adult population was 87 percent in 1991. U.S. Department of Labor, Bureau of International Labor Affairs, *Foreign Labor Trends: Mexico*, prepared by U.S. Embassy, Mexico City, 1991-92, pp. 1-2.
[100] Kearney, *Mexico — Opening for Growth*, p. 9.
[101] U.S. Department of Labor, Bureau of International Labor Affairs, *Foreign Labor Trends: Mexico*, prepared by U.S. Embassy, Mexico City, 1991-92, p. 2.

1992.[102] The average hourly compensation rate for U.S. production workers in manufacturing is \$15.45.[103]

The relative productivity of U.S. and Mexican workers has been the subject of various economic studies. Chief among them is a 1989 study by Blomstrom and Wolff, which found that Mexican productivity rates appear to be "converging" on U.S. productivity rates in several key industries. The productivity of Mexican workers producing electric equipment, for example, was found to be 83 percent that of their U.S. counterparts; in transportation equipment, the figure was 57 percent; in machinery (excluding electrical machinery), it was 84 percent.[104] These findings appear to match assessments by sources in the electronics and automobile industries, who have noted that given proper management, training, and capital, Mexican workers' productivity in certain areas may rival that of U.S. workers.[105] The quality of products from certain electronics and automobile plants in Mexico's maquiladora industry is reportedly competitive with that of analogous U.S. plants.[106]

The Mexican Government has sought to enhance the capabilities of its labor force through a number of initiatives aimed at improving education, productivity rates, and product quality. On May 25, 1992, for example, the Mexican Government joined with business and labor leaders to sign the National Accord for Raising Productivity and Quality. In this agreement the Mexican Government pledged to spend more on enhancing workers' skills and employers promised to reward workers for achieving higher standards. Organized labor, for its part, pledged to work with management on improving productivity through workplace "understandings."

The Salinas government also sought to increase real funding for education by 26 percent in 1992[107] and committed itself to upgrading the country's educational system through the National Agreement for the Modernization of Basic Education, signed on May 18, 1992. The agreement decentralizes the administration of public education, makes secondary school mandatory, extends the school year, and seeks increased teacher wages.[108] Other measures have been taken as well, among them training and extension programs to help Mexican workers and businesses adjust to international competition.

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[102] Donald A. Michie, director, Institute for Manufacturing and Materials Management, The University of Texas at El Paso, interview by USITC staff, Jan. 1993.

[103] U.S. Bureau of Labor Statistics data for 1991 (maquiladora statistics for 1990).

[104] Magnus Blomstrom and Edward N. Wolff, "Multinational Corporations and Productivity Convergence in Mexico," National Bureau of Economic Research Working Paper No. 3141, Oct. 1989 (figures as of 1984). According to another recent study, five foreign-owned Mexican plants in three industries (autos, computers, and consumer electronics) had comparable or better productivity levels than analogous U.S. plants operated by the same parent company. Harley Shaiken, *Going Global: High Technology in Mexican Export Industry*, study funded by U.S. Department of Labor, Office of International Economic Affairs, pp. iii-iv.

[105] Industry officials, interviews by USITC staff, Mexico, Nov. 1992. Productivity at Ford's Hermosillo stamping and assembly operation, for example, is acknowledged to be almost as high as at a comparable U.S. plant.

[106] Shaiken, *Going Global*, pp. iii-iv.

[107] Ernesto Zedillo, "Mexico's Economic and Investment Climate" in *Investing in Mexico*, Report No. 999, The Conference Board, 1992. Recent figures suggest that in real terms, this increase is actually 15.1 percent.

[108] Previously, attendance was required only through grade six.

CHAPTER 2
Likely Impact of NAFTA on Member Economies

This chapter discusses the likely overall effect of NAFTA on the U.S., Mexican, and Canadian economies, primarily using available modeling studies. While these studies generally do a good job of quantifying the aggregate, long-run effects of free trade within North America, they have some significant limitations. First, they do not incorporate foreign direct investment (FDI) flows or dynamic effects in a fully satisfactory manner. These issues are discussed in the review of existing studies that follows. The chapter then provides a quantitative assessment of NAFTA's effects on U.S. aggregate output, employment, wages, and trade, based primarily on available modeling studies. Similar effects of NAFTA for Mexico and Canada are also discussed. The second main limitation of existing modeling studies of NAFTA is that they were conducted prior to the conclusion of NAFTA negotiations and omit many potentially important components of the actual agreement. Accordingly, this chapter concludes with a discussion of some key aspects of the actual NAFTA agreement that are not addressed in the previous modeling studies.

Review of Existing Studies of NAFTA

NAFTA has been the focus of numerous economic studies,[1] most of which have concluded that the agreement will result in net aggregate gains for all three countries. Empirical evaluations of NAFTA have been based on both computable general equilibrium (CGE) models, which are microeconomic in nature, and macroeconometric models.[2] CGE models of NAFTA are based on international trade theory and an extensive set of data and parameter estimates that reflect the actual structure of the U.S., Mexican, and Canadian economies. Macroeconometric models emphasize the effects of changes in trade on aggregated output, unemployment, and the aggregate price level. Estimates based on CGE models include gains from trade that take into consideration comparative advantage, i.e., the relative labor abundance in Mexico, increased scale of production, and changes in labor productivity due to transfer of physical capital to Mexico. Estimates based on macroeconometric models include the effects that changes in trade barriers and capital flows may have on aggregate demand, exchange rates, interest rates, and unemployment.

A key question concerning the potential impact of NAFTA is the magnitude and source of the increase in FDI into Mexico. Recent trade and investment reforms in Mexico, taken unilaterally, have created a favorable climate for FDI. The prospect of NAFTA has provided further impetus for business optimism. According to some analysts, FDI into Mexico will range from $25 billion to $53 billion over the 1992-2000 period; however, there is little theoretical or empirical basis for such estimates.[3] In addition, there is sharp disagreement among analysts on the likely source of increased FDI into Mexico. Even if it is assumed that the United States is the source of all the new FDI in Mexico, some analysts point out that this increased U.S. investment in Mexico is relatively insignificant compared with total U.S. physical investment (domestic plus foreign).[4]

NAFTA may also lead to an increase in Mexico's growth rate. It is important, however, to distinguish policy changes that will influence the level of economic activity, or a temporary increase in the rate of growth, from policy changes that will influence the rate of long-term economic growth. Unlike effects on the level of economic activity, an increase in a

[1] For reviews of this literature, see Drusilla K. Brown, "The Impact of a North American Free Trade Area: Applied General Equilibrium Models," in N. Lustig, B.P. Bosworth, and R.Z. Lawrence, eds., *North American Free Trade: Assessing the Impact* (Washington, DC: Brookings, 1992); Raul Hinojosa-Ojeda and Sherman Robinson, "Labor Issues in a North American Free Trade Area," ibid.; and U.S. International Trade Commission, *Economy-Wide Modeling of the Economic Implications of a FTA With Mexico and a NAFTA With Canada and Mexico* (investigation No. 332-317), USITC publication 2516, May 1992. The Commission's economy-wide modeling study included a wide variety of CGE and macroeconometric models of NAFTA.

[2] For a detailed discussion of these models, see USITC, *Economy-Wide Modeling*, USITC publication 2516.

[3] Timothy Koechlin et al., "Effect of the North American Free Trade Agreement on Investment, Employment, and Wages in Mexico and the U.S.," unpublished paper, U. MA., Amherst, Feb. 1992; Paul A. London, "Investment, Trade, and U.S. Gains in the NAFTA," prepared by the Stern Group, Inc., for the U.S. Council of the Mexico-U.S. Business Committee, Washington, DC, 1992.

[4] Hinojosa-Ojeda and Robinson, "Labor Issues," p. 85.

country's growth rate is compounded over time, thereby leading to the potential for overall gains from trade that dwarf gains obtained from level effects.

Gains from trade due to differences between countries in their relative abundance of labor (comparative advantage) and due to economies of scale affect the level of a country's gross domestic product (GDP) but not its rate of growth. Preliminary research suggests that additional capital flows into Mexico will also lead to an increase in the level of Mexican GDP but not to permanent changes in its growth rate.[5] Recent studies suggest that Mexico may experience an increase in the rate of growth from NAFTA due to movement up the "learning curve" or increased access to high-technology intermediate goods.[6] These increase the productivity of labor and capital. On the other hand, because of their larger size and longstanding participation in the global open trade regime, the United States and Canada are unlikely to experience substantial dynamic gains from NAFTA.

Most studies on NAFTA find that the agreement will likely result in net aggregate gains for each of the three member nations, although Mexico is expected to benefit most owing to its relatively small and historically protected economy. In particular, most researchers find that investment flows will substantially increase benefits of NAFTA to Mexico, compared with trade liberalization alone, but will not substantially affect the U.S. or Canadian economies.[7]

Both CGE and macroeconometric models yield similar conclusions regarding the overall effects of NAFTA on the three member economies. As shown in table 2-1, the expected gains in average wages, aggregate employment, real GDP, and real national income are much greater for Mexico. For example, estimated gains in Mexican real gross domestic product (GDP) range from 0.1 to 11.4 percent, compared with estimated gains of 0.02 to 0.50 percent for the United States and 0.1 to 0.4 percent for Canada.

These modeling studies have some limitations. For example, macroeconometric models ignore traditional gains from trade due to specialization in accordance with comparative advantage,[8] while static CGE models capture these gains and economies of scale but do not address the dynamic gains. In addition, both types of models do not obtain estimated changes in capital flows from a rigorously specified economic mechanism. Also, while these models clearly indicate that average wages and aggregate job opportunities are expected to increase, they provide ambiguous results regarding the effects of NAFTA on low- versus high-skilled workers. Finally, since these macroeconometric and CGE models were developed before the conclusion of NAFTA negotiations, they do not incorporate many provisions of the agreement, focusing only on tariffs and, to a limited extent, nontariff barriers (NTBs) and capital flows. Notwithstanding these limitations, the consensus in the existing body of research on NAFTA is that each member nation, particularly Mexico, will experience net gains from NAFTA.

Likely Effect of NAFTA on the United States

This section applies the studies reviewed above to the actual agreement to assess NAFTA's overall effects on key variables in the U.S. economy, such as average real wage rates, aggregate employment, real GDP, and real national income. This section also assesses the effect of NAFTA on wages of skilled and unskilled U.S. workers.[9]

Average U.S. Real Wages

All of the existing CGE and macroeconometric studies find that NAFTA is likely to result in an insignificant increase in aggregate demand for U.S. labor in both the short and long term and, consequently, in only a marginal increase in the average real wage rate. Most CGE studies (and not macroeconometric studies) assume that the aggregate supply of U.S. labor is fixed. Given this assumption, the increase in aggregate demand for U.S. labor results in an increase in the average U.S. real wage rate while aggregate U.S. employment remains constant. In such studies, NAFTA changes relative prices and this induces labor and capital to move from contracting to expanding industries. Estimated increases in the

[5] This idea is discussed in USITC, *The Dynamic Effects of Trade Liberalization: A Survey* (investigation No. 332-324), forthcoming.

[6] Timothy J. Kehoe, "Modeling the Dynamic Impact of North American Free Trade," paper 6 in USITC, *Economy-Wide Modeling of the Economic Implications of a FTA With Mexico and a NAFTA With Canada and Mexico* (addendum to the report on investigation No. 332-317), USITC publication 2508, May 1992.

[7] USITC, *Economy-Wide Modeling*, USITC publication 2516, p. 14; and Brown, "The Impact of a North American Free Trade Area," pp. 35-37 and 49. For a different view, see Koechlin et al., "Effect of NAFTA in Mexico and the U.S." The study by Koechlin and others simply applies the capital-labor ratio in U.S. manufacturing to an assumed $31 to $53 billion in U.S. physical investment to arrive at an estimated U.S. manufacturing employment decrease of 290,000 to 490,000 jobs by the year 2000. Hinojosa-Ojeda and Robinson, "Labor Issues," find that the U.S. job losses computed by Koechlin and others are "theoretically and empirically unsustainable."

[8] F. Gerald Adams, Mario Alanis, and Abel Beltran del Rio, "The Mexico-United States Free Trade and Investment Area Proposal: A Macroeconometric Evaluation of Impacts on Mexico," *Journal of Policy Modeling*, vol. 14, No. 1, Feb. 1992, pp. 99-119.

[9] This issue has been of great interest to the policy community. Jeff Faux and William Spriggs, "U.S. Jobs and the Mexico Trade Proposal," briefing paper, Economic Policy Institute, Washington, DC, May 1991.

Table 2-1
Likely overall long-run effects of NAFTA on member economies
(In percent changes)

Item	United States	Mexico	Canada
Average wages	0.1 to 0.3	0.7 to 16.2	0.04 to 0.50
Aggregate employment	0.03 to 0.08	0.1 to 6.6	0.6
Real GDP	0.02 to 0.50	0.1 to 11.4	0.1 to 0.4
Real national income	0.07 to 0.30	0.1 to 5.0	0.03 to 0.70

Source: U.S. International Trade Commission, *Economy-Wide Modeling of the Economic Implications of a FTA with Mexico and a NAFTA with Canada and Mexico* (investigation No. 332-317), USITC publication 2516, May 1992, tables 2a, 2b, and 2c.

aggregate U.S. real wage rate ranged from less than 0.1 to 0.3 percent. Given average U.S. earnings in private nonagricultural industries in 1991 of $10.34 per hour,[10] this would imply an increase due to NAFTA of $0.01 to $0.03 per hour.

Aggregate U.S. Employment

Macroeconometric and some CGE studies assess changes in U.S. employment resulting from NAFTA. These studies all find that aggregate U.S. employment rises as a result of NAFTA.[11] Estimates of aggregate U.S. employment increases by various studies range from 0.03 to 0.05 percent in Almon and others, 0.04 to 0.05 percent in Bachrach and Mizrahi, and 0.08 to 2.5 percent in Roland-Holst et al. Differences in results among the models depend on whether economies of scale, NTBs, and capital flows are incorporated.[12] Taking 1991 U.S. civilian noninstitutional employment of 116,877,000 workers as a base,[13] these studies imply that, on net, NAFTA would increase U.S. employment by 35,063 to 93,502 workers.[14] By way of comparisons Hufbauer and Schott's examination of similar episodes in the past argues that NAFTA would create about 316,000 new U.S. jobs by 1995 and displace about 145,000 existing U.S. workers, leading to a net increase of 171,000 U.S. jobs.[15]

Low-Skilled and High-Skilled U.S. Workers

Although NAFTA is expected to increase real wages and employment marginally in the United States, its effect on low-skilled U.S. workers has led to considerable concern among labor interests. These interests claim that NAFTA will benefit highly skilled, white-collar professionals at the expense of blue-collar workers.[16] Existing research provides inconclusive results on this issue. Although the evidence on the direction of wage effects for low-skilled and high-skilled U.S. workers is mixed, the preponderance of evidence indicates an almost indiscernible effect on U.S. wage rates for both low-skilled and high-skilled groups.

There are four modeling studies of NAFTA that analyze wages for U.S. workers in different skill categories. Hinojosa-Ojeda and Robinson[17] show real

[10] President, *Economic Report of the President* (Washington, DC: GPO, 1992), table B-42, p. 346.

[11] For contrary views, see Koechlin et al., "Effects of NAFTA," and Clyde V. Prestowitz, Jr. and Robert B. Cohen, *The New North American Order: A Win-Win Strategy for U.S.-Mexican Trade* (Washington, DC: Economic Strategy Institute and Lanham, MD: University Press of America, Inc., Oct. 1991). Hinojosa-Ojeda and Robinson, "Labor Issues," review these studies and point out that they do not employ rigorously specified economic models.

[12] Interindustry Economic Research Fund, Inc., *Industrial Effects of a Free Trade Agreement Between Mexico and the U.S.A.*, by Clopper Almon, Jr. et al., final report, contract J-9-K-9-0077, U.S. Department of Labor, Bureau of International Labor Affairs, Washington, DC, Sept. 15, 1990; Carlos Bachrach and Lorris Mizrahi, "The Economic Impact of a Free Trade Agreement Between the United States and Mexico: A CGE Analysis," paper 2 in USITC, *Economy-Wide Modeling* (addendum), USITC publication 2508; and David Roland-Holst, Kenneth A. Reinert, and Clinton R. Shiells, "North American Trade Liberalization and the Role of Nontariff Barriers," paper 10, ibid. Results in Roland-Holst et al. demonstrate that NTB liberalization in NAFTA could generate substantial U.S. job gains. The authors acknowledge, however, that their measures of NTBs are subject to substantial uncertainty. It would therefore be inappropriate to place great emphasis on the upper-bound U.S. employment effects from this study.

[13] President, *Economic Report of the President*, table B-30, p. 332.

[14] The high end of the range reported by Roland-Holst et al. has been omitted for the reasons given in footnote 12.

[15] Gary Clyde Hufbauer and Jeffrey J. Schott, *NAFTA: An Assessment*, draft (Washington, DC: Institute for International Economics, Jan. 1993). They do not use a formal economic model but rely instead on a comparison with past episodes of trade and investment liberalization in other developing countries.

[16] Faux and Spriggs, "U.S. Jobs and the Mexico Trade Proposal," and U.S. Congress, Office of Technology Assessment, "U.S.-Mexico Trade: Pulling Together or Pulling Apart?" ITE 545 (Washington, DC: GPO, Oct. 1992).

[17] Raul Hinojosa-Ojeda and Sherman Robinson, "Alternative Scenarios of U.S.-Mexico Integration: A Computable General Equilibrium Analysis," Working Paper No. 609, U. CA, Berkeley, Department of Agricultural and Resource Economics, Apr. 1991.

wage increases for rural and urban unskilled workers in at least two of their four scenarios. They also find that real wages of union workers and white collar workers are expected to increase at most by 0.3 percent. A study by Robinson et al.[18] finds that real wages of rural and urban unskilled workers would generally fall (though by less than 2 percent) because of increased migration to the United States. This study also finds that real wages of urban skilled and professional workers are expected to rise by 0.1 percent. McCleery's[19] results indicate that the income stream of U.S. low-wage workers would rise, although these workers would suffer initial earnings losses. In addition, he finds that high-wage manufacturing workers will experience a slower growth in their earnings as a result of NAFTA (though less than 2 percent). Finally, Leamer finds that earnings of low-skilled U.S. workers would fall by approximately $1,000 per year.[20]

Aggregate U.S. Output and National Income

Effects of NAFTA on U.S. real GDP and national income are likely to be small but positive. With the exception of Roland-Holst et al., models presented in the Commission's earlier study estimate that NAFTA would cause U.S. real GDP and national income to expand by 0.5 percent or less.[21] This is to be expected due to the vast difference in size between the Mexican and U.S. economies as well as the initial low level of U.S. trade barriers.

U.S. Trade Flows

Models show that NAFTA will primarily influence U.S. trade flows with Mexico, with little effect on third-country trade. It is difficult to compare estimated trade flows across models, because of differences in model structure and consequent differences in methods of reporting results. Nevertheless, the Commission has attempted to assess implications for U.S. trade with Mexico, Canada, and the rest of the world.[22] Estimated increases in U.S. exports to Mexico range from 5.2 to 27.1 percent. U.S. imports from Mexico are estimated to increase by 3.4 to 15.4 percent.

Most studies find that U.S. trade with Canada and nations outside North America will not be greatly affected by NAFTA. However, it should be noted that, even though these studies find that percent changes in U.S. trade flows with nonmember countries will be small, the changes may be large as a share of a small country's trade. More importantly, none of the models incorporate rules of origin under NAFTA, thus making existing estimates of overall trade diversion incomplete.[23]

Regional Effects in the United States

Some studies have attempted to examine regional effects of NAFTA. The studies by Almon et al., KPMG Peat Marwick, and Stern et al. have apportioned national-level model results for the purpose of obtaining State-by-State effects.[24] The State-by-State results of these different models vary widely in terms of direction (i.e., gain or loss) and magnitude of change. For example, the study by Almon et al. shows that employment in California will likely increase by 2,607 persons as a result of NAFTA, whereas the studies by Peat Marwick and Stern et al. show that such employment will likely decrease by 268 and 906, respectively. These differences are not unexpected given that these models were not specifically constructed to examine regional issues.

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[18] Sherman Robinson et al., "Agricultural Policies and Migration in a U.S.-Mexico Free Trade Area: A Computable General Equilibrium Analysis," paper 9 in USITC, *Economy-Wide Modeling* (addendum), USITC publication 2508.

[19] Robert K. McCleery, "An Intertemporal, Linked, Macroeconomic CGE Model of the United States and Mexico Focusing on Demographic Change and Factor Flows," paper 8 in USITC, *Economy-Wide Modeling* (addendum), USITC publication 2508.

[20] Edward E. Leamer, "Wage Effects of a U.S.-Mexican Free Trade Agreement," paper presented at the Conference on the Mexico-U.S. Free Trade Agreement, Brown U., Providence, RI, Oct. 17-19, 1991. This estimate is derived under the extreme assumption that Mexico develops sufficiently in size and efficiency of resource use to become comparable with Italy.

[21] USITC, *Economy-Wide Modeling*, USITC publication 2516 and *Economy-Wide Modeling* (addendum), USITC publication 2508.

[22] Ibid. Studies compared include Bachrach and Mizrahi, "The Economic Impact of Free Trade Agreement Between the United States and Mexico;" Hinojosa-Ojeda and Robinson, "Alternative Scenarios;" Robinson et al., "Agricultural Policies;" Roland-Holst et al., "North American Trade Liberalization;" and Almon et al., "Industrial Effects."

[23] Florencio Lopez-de-Silanes, James R. Markusen, and Thomas F. Rutherford, "The Auto Industry and the North American Free-Trade Agreement: Employment, Production, and Welfare Effects," mimeo, U. CO, Boulder, Department of Economics, Sept. 1992. This paper models the NAFTA rules of origin for the automotive sector. However, the nonautomotive portion of the North American economy is stylized in this model. Accordingly, the estimates of trade diversion in this paper do not capture the overall effects of the NAFTA rules of origin.

[24] Clinton R. Shiells and Robert C. Shelburne, "Industrial Effects of a Free Trade Agreement Between Mexico and the U.S.A.: Research Summary," paper 1 in USITC, *Economy-Wide Modeling* (addendum), USITC publication 2508, table 6; KPMG Peat Marwick, Policy Economics Group, "The Effects of a Free Trade Agreement Between the U.S. and Mexico," prepared for the U.S. Council of the Mexico-U.S. Business Committee, Washington, DC, May 1, 1991; and Robert M. Stern, Alan V. Deardorff, and Drusilla K. Brown, "A U.S.-Mexico-Canada Free Trade Agreement: Sectoral Employment Effects and Regional/Occupational Employment Realignments in the United States," draft

The U.S. Council of the Mexico-U.S. Business Committee also sponsored a series of reports on NAFTA's effects by State, based primarily on a literature review of 31 States. In summarizing these reports in testimony before the Commission, the council stated that the likely benefits of NAFTA will be most noticeable in the South and Southwest, along the U.S.-Mexican border.[25]

The Commission staff evaluated the likely effects of NAFTA on regional production and employment in selected U.S. industrial, energy, agricultural, and service sectors using qualitative criteria. The staff determined that for those sectors included in this study where regional effects were identified, 17 were likely to have some production and employment gains and 11 were likely to have losses in the long term as a result of NAFTA.[26] The regions having the greatest number of industries likely to experience these changes are the Midwest, the South, and the West. In the Midwest gains are likely to occur in the automotive parts, machine tools, bearings, industrial machinery, and grains and oilseeds industries; losses are likely for the automobile, certain household glassware, and major home appliances industries. In the South, textiles and cotton are likely to gain production and employment whereas apparel, flat glass, shrimp, peanuts, certain fresh or frozen vegetables, and citrus juice are likely to lose production and employment. Within this region, the citrus juice and vegetable products industries affected are concentrated in Florida. In the West, those industries producing steel mill products, lumber and wood products, machine tools, cotton, and pharmaceuticals are likely to experience gains and those producing apparel, flat glass, and fresh cut roses are likely to experience losses. A number of producers of machine tools, pharmaceuticals, cotton, apparel, and fresh cut roses are located in California.

[24]—*Continued*
final report, National Commission for Employment Policy, Washington, DC, Feb. 4, 1992.

Note that Shiells and Shelburne contains a tabulation taken from Almon et al. Also, the national-level model results in Bachrach and Mizrahi are identical to those in KPMG Peat Marwick. Finally, the national-level model results in Drusilla K. Brown, Alan V. Deardorff, and Robert M. Stern, "A North American Free Trade Agreement: Analytical Issues and a Computational Assessment," *World Economy*, vol. 15, No. 1, Jan. 1992, pp. 11-29, are identical to those in Stern et al.

[25] Colleen S. Morton, executive director, U.S. Council of the Mexico-U.S. Business Committee, transcript of hearing, Nov. 18, 1992, pp. 599-600. Morton summarized the sectors likely to benefit in each U.S. region. Potential losses by region were not addressed in her testimony.

[26] The long-term gains or losses in total production and employment for 23 industries in all regions identified were likely to be minor, or less than 5 percent. For five industries, auto parts (gain), flat glass (loss), certain household glassware (loss), certain ceramic tile (loss), and major household appliances (loss), the employment changes are likely to be modest, or equivalent to 6 to 15 percent of the industry's total employment. The staff analysis was not able to quantify the absolute changes in employment.

The Northeast, including New England, has five industries that are likely to experience production and employment gains and one a loss. Gains are likely for the bearings, pharmaceuticals, industrial machinery, machine tools, and Maine fishery industries and losses are likely for the apparel industry in this region. In the Mid-Atlantic region, the machine tool industry is likely to experience production and employment gains and the household glassware and shrimp industries are likely to experience losses. In the South-Central region, the cotton, poultry, chemicals, pharmaceuticals, and transportation industries are likely to experience gains. In the Southwest, the steel mill products and cotton industries should gain in production and employment; losses are likely for the industries producing ceramic floor and wall tiles, fresh cut roses, and peanuts. The overall increase in business and trade activity in the border region, coupled with NAFTA, is expected to benefit the U.S. transportation services sector as well.

For several industries, likely production and employment effects noted in the sector analyses could not be attributed to particular regions. For example, relative gains for certain service industries are likely to be distributed throughout the country. Gains for the insurance industry are likely to be concentrated in major urban areas, particularly New York City; Hartford, CT; Philadelphia; Chicago; and Los Angeles. Additionally, NAFTA is likely to affect production and employment in the Northern Mariana Islands and Puerto Rico where the apparel industry is a major employer and employment losses are likely to occur. The Virgin Islands also is likely to lose production and employment in its rum industry as a result of the effects of NAFTA.

Short-Run and Long-Run Effects in the United States

These studies do not provide much insight into the likely timing of the effects of NAFTA. As has been stated earlier, most of the CGE models are static in nature. They indicate what the U.S. economy would have looked like in a fixed base year, commonly 1989, if everything had remained the same but NAFTA had been fully implemented (no phase-in period). Moreover, these models are limited in distinguishing between the short- and long-term effects of NAFTA.[27] However, it is expected that the timing of changes in U.S. employment, wages, GDP, and national income will probably be similar to the time path of phased-in reductions in Mexican tariff and other trade and investment restrictions.

[27] Macroeconometric models provide a time path of estimates but dynamic specifications are rudimentary in these models. As a consequence the estimated time paths obtained from macroeconometric models primarily reflect the assumed paths of trade barriers, capital flows, the exchange rate, and money supplies.

Likely Effect of NAFTA on Mexico

Existing models of NAFTA find that of the three countries, Mexico has the most to gain. Such gains reflect Mexico's smaller, relatively more closed economy. Recent Mexican economic reforms have been dramatic, and it is difficult to separate possible effects of NAFTA on Mexico from effects of the larger set of reforms already enacted. Studies based on CGE and macroeconometric models attempt to distinguish effects of NAFTA from other reforms by modeling changes in trade barriers by sector. However, such models do not address potentially important aspects of the actual NAFTA and do not incorporate the dynamic effects of trade liberalization. These limitations notwithstanding, the estimated effects of NAFTA on Mexico are reported in table 2-1.[28]

As shown in table 2-1, average real Mexican wage increases range from 0.7 to 16.2 percent. Aggregate Mexican employment increases by 0.1 to 6.6 percent.[29] Estimated increases in real Mexican GDP range from less than 0.1 to 11.4 percent for the CGE models.[30] Under liberalization of tariffs alone, estimated increases in real Mexican GDP range from negligible to 1.9 percent. If NTBs are also liberalized, estimated gains for Mexico range from 0.3 to 3.4 percent of real GDP. In studies that assumed additional capital flows for Mexico, increases in real GDP ranged from 3.1 to 8.1 percent. Preliminary calculations of the dynamic gains from free trade for Mexico by Kehoe,[31] which do not specifically model NAFTA, show that such gains may be on the order of 50 percent of Mexican real GDP over a period of 25 years.

[28] USITC, *Economy-Wide Modeling*, USITC publication 2516 and *Economy-Wide Modeling* (addendum), USITC publication 2508. Ranges for NAFTA's effects on Mexican aggregate wages, employment, output, and aggregate income are taken from USITC publication 2516.

[29] Almon et al. find that aggregate Mexican employment would fall as a result of NAFTA. Hinojosa-Ojeda and Robinson, "Alternative Scenarios," also find that Mexican employment would fall under one of their four scenarios.

The model presented in Almon et al. is a macroeconometric one. Average Mexican tariffs are initially higher than average U.S. tariffs, so that NAFTA leads to an initial decrease in Mexican net exports. Apparently the Keynesian multiplier effects of a decrease in Mexican net exports dominates the usual gains from trade. The reason for this counter-intuitive result would appear to be that this model does not address much of the gains from trade emphasized by trade theory.

[30] Almon et al. estimate that Mexican GDP decreases by 0.4 percent. As noted in the last footnote, this model does not appear to capture the gains from trade emphasized by trade theory.

[31] Kehoe, "Modeling the Dynamic Impact of North American Free Trade," paper 6 in USITC, *Economy-Wide Modeling* (addendum), USITC publication 2508.

Likely Effect of NAFTA on Canada

Models of NAFTA predict only small gains for Canada, given the existing U.S.-Canada Free-Trade Agreement and the low level of trade between Canada and Mexico.[32] Increases in Canadian real GDP and national income are estimated to be less than 1 percent. Increases in average Canadian real wages range between negligible and 0.5 percent, and increases in aggregate Canadian employment are estimated to be 0.6 percent.[33]

Omitted Aspects of NAFTA

Although nearly all modeling studies of NAFTA account for reductions in tariffs and NTBs, Lawrence argues that since CGE models do not address several aspects of NAFTA, they may tend to understate the overall benefits of the agreement.[34] First, enactment of NAFTA would make past unilateral Mexican policy reforms harder to undo. Second, there are broader issues of economic integration among countries at vastly different levels of economic development and with very different legal and institutional regimes. Such issues include harmonization of labor and environmental standards and enforcement, and protection of intellectual property.[35] Third, North American rules of origin, especially in the automotive and textiles sectors, have potentially important implications for trade and investment diversion. High North-American-content provisions may divert imports or foreign investment from third countries to

[32] Brown et al., "A North American Free Trade Agreement," pp. 11-29; and David Cox and Richard G. Harris, "North American Free Trade and Its Implications for Canada: Results From a CGE Model of North American Trade," paper 4 in USITC, *Economy-Wide Modeling* (addendum), USITC publication 2508.

[33] Roland-Holst et al. find that NAFTA has larger effects on Canada than do the other two studies cited in footnote 32. This finding stems from the use of trade coverage ratios as measures of NTBs. These measures are meant to capture the variation of NTBs across sectors rather than give a precise measure of the price effects of NTBs. For this reason it is unwise to place great emphasis on the aggregate results for Canada from this study.

[34] See Robert Z. Lawrence's comment on "The Impact of a North American Free Trade Area: Applied General Equilibrium Models," by Drusilla K. Brown, in Lustig, Bosworth, and Lawrence, eds., *North American Free Trade Agreement: Assessing the Impact*.

[35] For a discussion of labor standards and worker safety in the context of NAFTA, see U.S. Congress, Office of Technology Assessment, "U.S. Jobs and the Mexico Trade Proposal."

For analysis of NAFTA and environmental issues, see Gene M. Grossman and Alan B. Krueger, "Environmental Impacts of a North American Free Trade Agreement," Working Paper No. 3914, National Bureau of Economic Research, Inc., Cambridge, MA, Nov. 1991.

North America.[36] Finally, NAFTA may make administration of trade and investment rules more predictable. Increased predictability would lower risk, thereby increasing trade and investment flows. Although these factors are potentially of great importance, they are not easily quantified.

Conclusion

All three countries are expected to gain from NAFTA, with the benefits for Mexico generally expected to exceed those for its North American neighbors. Aggregate employment and average real wages are also expected to rise in each country, especially in Mexico. In addition, the impact of removing NTBs significantly increases the expected benefit from NAFTA. Further, capital flows into Mexico relative to the removal of trade barriers are expected to provide greater benefits to the Mexican economy. Capital flows from the United States into Mexico are not expected to have much impact on the U.S. economy, given the size of the Mexican capital market relative to that of the United States. Finally, evidence concerning the effect of NAFTA on real wages for low-skilled U.S. workers is inconclusive, with some studies showing slight decreases and others showing slight increases.

[36] For an attempt to model NAFTA rules of origin for the automotive sector, see Lopez-de-Silanes et al.

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Tables

CHAPTER 3
Key NAFTA Provisions Affecting Industrial Sectors

This chapter describes key NAFTA provisions having broad applicability to all industrial sectors and identifies changes likely to be required in U.S. law and, to the extent feasible, in Mexican and Canadian law. The chapter also discusses the significance of these changes and indicates whether the legal changes would likely have a significant impact on U.S. trade and investment. Sector-specific NAFTA provisions are addressed in the appropriate sector chapters of this report (chapters 4-16). U.S.-Mexican and U.S.-Canadian trade in the industrial sectors is summarized before addressing the most significant NAFTA provisions.

U.S. exports to Mexico in the 13 industrial sectors included in this report were $16.8 billion in 1991, 10 percent of total U.S. exports of $174.1 billion in these sectors. Mexico accounted for a much larger share of U.S. exports in auto parts (20 percent of total sector exports) and steel mill products (22 percent). Auto parts and computers and related components together accounted for 52 percent of total U.S. exports to Mexico in the 13 industrial sectors. U.S. exports to Canada in these industrial sectors were $47 million, 27 percent of total U.S. exports in these sectors.

U.S. imports from Mexico in the 13 selected industrial sectors ($15.7 billion) were 7 percent of total U.S. imports of $237.2 billion in these sectors in 1991. Mexico supplied a significantly larger share of total U.S. imports in auto parts (15 percent of total sector imports), flat glass (21 percent), and major household appliances (22 percent). Autos, auto parts, and computers and related components together accounted for 79 percent of total U.S. imports from Mexico in the industrial sectors covered. U.S. imports from Canada in the 13 industrial sectors were $44 billion, 19 percent of total U.S. imports in these sectors.

The most significant NAFTA provisions affecting the industrial sectors overall include tariff elimination (article 302), duty drawback (article 303), rules of origin (chapter 4), investment (chapter 11), intellectual property (chapter 17), and government procurement (chapter 10). The rules of origin will determine which products traded among the United States, Canada, and Mexico qualify for preferential tariff treatment under NAFTA. These rules were negotiated with a view toward ensuring that the benefits of the NAFTA tariff reductions accrue principally to the NAFTA signatories. The duty drawback provisions establish limitations on the use of "drawback" and similar programs that currently provide for the refund or waiver of customs duties on non-North American materials used in the production of goods subsequently exported to another NAFTA country. The provisions governing intellectual property require all three NAFTA parties to strengthen protection and enforcement and will lock in recent Mexican reforms.

Several key provisions will require changes in Mexican law, regulation, or practice and will convert recent Mexican reforms into international obligations, thus helping ensure that they are not reversed. For example, NAFTA (chapter 11) requires Mexico to remove many of the Mexican restrictions on investment by foreign companies in the industrial sector. NAFTA (chapter 10) will open much of the Federal government procurement market in each NAFTA country on a nondiscriminatory basis to suppliers from the other NAFTA countries for covered procurement. Because Mexico, unlike Canada and the United States, is not a signatory to the General Agreement on Tariffs and Trade (GATT) Agreement on Government Procurement, this partial elimination of domestic procurement preferences, together with the requirements for transparent procedures, will provide the first rules for opening competition in the government procurement market in Mexico.

Certain other provisions of NAFTA, such as the national treatment provisions in article 301, and many of the technical standards provisions in chapter 9, set forth principles that, although important in understanding patterns of trade in industrial goods among the NAFTA parties, are reaffirmations of obligations that already govern all three parties under the GATT.

National Treatment

As GATT signatories, each NAFTA country has undertaken to grant national treatment to trade in goods. National treatment requires that imported products be treated no less favorably than like, domestic products.[1] Article 301 of NAFTA incorporates the national treatment obligations set forth in the GATT.[2] Whereas the GATT provides that

[1] GATT art. III. The GATT generally provides that internal taxes, laws, and regulations should not be applied to imported or domestic products so as to afford protection to domestic production.

[2] NAFTA, art. 301. Article 301(3) provides that the national treatment obligations do not apply to various measures set out in annex 301.3.

contracting parties shall take "reasonable measures" to ensure that regional and local governments abide by GATT obligations,[3] NAFTA provides that such national treatment obligations are binding on States and Provinces. NAFTA explicitly requires state, provincial or local[4] authorities to grant nondiscriminatory treatment.[5] This requirement follows the approach taken in the United States-Canada Free-Trade Agreement (CFTA).[6] Although the principle of national treatment is fundamental, the national treatment provision in NAFTA likely will not significantly affect trade or investment because each NAFTA signatory already grants national treatment to trade in goods.

Rules of Origin

The rules of origin in NAFTA are significant because they determine whether products traded among the United States, Mexico, and Canada qualify for preferential tariff treatment under NAFTA.[7] The origin rules were negotiated with a view toward ensuring that the benefits of NAFTA tariff reductions will accrue principally to producers and production in North America. In general, the rules establish that imports from non-NAFTA countries must be processed significantly, or substantial value must be added, in North America before the goods into which they are incorporated can qualify for NAFTA benefits.

NAFTA grants preferential tariff treatment to so-called "originating goods"; i.e., goods that satisfy the NAFTA rules of origin are deemed to be "originating goods" and, as such, qualify for NAFTA treatment.[8] There are four ways to qualify for such preferential treatment. First, a product will qualify for NAFTA benefits as an originating good if it is wholly obtained or produced entirely in North America.[9] Such products include animals, minerals, vegetables, and marine life from North America and products made in North America exclusively from such products.[10]

Second, a product that incorporates materials imported from a non-NAFTA country may qualify for NAFTA benefits if the imported materials are sufficiently processed in North America to undergo a change in tariff classification (CTC).[11] The CTC rule will require that each of the nonoriginating materials,[12] which are used to make a product claiming NAFTA preference, must satisfy the specific CTC through production occurring entirely in North America.[13] Some products are subject to a dual requirement: they will have to satisfy a minimum value-content requirement as well as the CTC rule.

Third, a product will qualify for NAFTA benefits if it is produced entirely in North America exclusively from originating materials.[14] This rule applies when goods or materials that qualify for NAFTA treatment as "originating goods" are used to produce another product. Such products would qualify for NAFTA treatment, without regard to whether there is an enumerated change in tariff classification or whether there is a minimum amount of North American content.

Fourth, NAFTA article 401(d) provides that in cases where no change in tariff classification occurs either because a tariff category covers a finished good and its parts or because an imported assembly is classified as a finished good, a product may nevertheless qualify for NAFTA treatment provided that a minimum value-content rule is satisfied.

The NAFTA value requirements, which apply to certain products subject to the CTC rule and to products subject to article 401(d), are set forth in article 402. This article establishes two alternative methods for calculating regional value content (RVC): a transaction value test and a net cost test. In cases when an RVC is required, the minimum North American content will have to be 60 percent of the transaction value under the first method or 50 percent of the net cost under the second method. In most cases, either test may be used at the option of the exporter or producer of the good. If a producer processes a nonoriginating material into an intermediate material and the processing at that stage is sufficient to qualify the material as originating, the full value of the intermediate material will be treated as originating when calculating the RVC of the downstream good by that (or another) producer. This rule will permit the "rollup" of foreign content into domestically made goods and will have the effect of equalizing the treatment of integrated and nonintegrated producers. This rule will not apply to most automotive sector goods.[15]

[3] GATT art. XXIV(12).

[4] NAFTA article 201(2) provides that a reference to a State or Province includes local governments of that State or Province.

[5] NAFTA, art. 301(2). See also art. 105.

[6] CFTA, art. 502. NAFTA omits the requirement in CFTA that the national treatment provisions of CFTA be applied "in accordance with existing interpretations adopted by the Contracting Parties to the GATT." Compare NAFTA article 301(1) with CFTA article 501(2).

[7] NAFTA, ch. 4.

[8] Ibid., art. 302(2) and annex 302.2.

[9] Ibid., art. 401(a).

[10] Ibid., art. 415.

[11] Ibid., art. 401(b).

[12] NAFTA article 415 defines "nonoriginating material" as material that does not meet the NAFTA rule of origin.

[13] NAFTA, annex 401. Annex 401 consists of general interpretative notes and specific rules of origin set forth in terms of the Harmonized System (HS). For each category of merchandise, the rules indicate which specific changes in tariff classification will or will not confer NAFTA origin. Tariff heading changes that are omitted would indicate that no NAFTA preference could be claimed for changes to such headings. These rules are similar to those in CFTA.

[14] Ibid., art. 401(c).

[15] The RVC rules applicable to automotive goods differ significantly from those applicable to other goods and are discussed in the "Automotive Products" sector analysis in chapter 4 of this report.

Other issues addressed in chapter 4 of NAFTA include "accumulation" of costs or value in the case of a good produced in the territory of one or more of the parties by one or more producers; the treatment to be accorded fungible goods, accessories and packing materials; and methods of guaranteeing uniform and consistent application of the provisions of the chapter. One provision establishes a de minimis rule for many goods, permitting up to 7 percent of the value of a good or the goods to contain nonqualifying materials without losing originating status.

Although the proposed NAFTA rules of origin are modeled after the origin rules in CFTA, there are a few significant differences. The regional content standard in CFTA is based on the direct cost of processing or assembly, the calculation of which is more complex than the net cost formula in NAFTA. Also, the CTC rules in NAFTA are considerably more refined than those in CFTA, and CFTA does not include a de minimis rule enabling origin to be conferred for some otherwise-covered goods containing only a minimal amount of nonqualifying foreign materials.

Implementation of the NAFTA rules of origin will require no change to existing origin rules,[16] because NAFTA tariff treatment is an alternative to—rather than a replacement of—existing tariff treatment.[17] In the United States, country-of-origin determinations for marking, tariff, and other customs purposes are generally based on the principle of "substantial transformation," a legal concept that has been developed in customs regulations, administrative rulings, and judicial decisions.[18] If a product does not meet the NAFTA rule of origin or if NAFTA treatment is not claimed, the product may nevertheless qualify for preferential tariff treatment under another preference program, or it generally will qualify for most-favored-nation (MFN) rates of duty.

In particular, U.S. imports from Canada will continue to be eligible for preferential tariff treatment under CFTA's rule of origin, or they will be subject to MFN tariffs. U.S. exports to Canada will be subject to preferential treatment under NAFTA or the rules of origin under the Agreement Concerning Automotive Products Between the Government of Canada and the Government of the United States of America (Auto Pact). U.S. imports from Mexico presently may qualify for preferential tariff treatment under the Generalized System of Preferences (GSP) if the imports are eligible for GSP treatment and satisfy the GSP rule of origin.[19] U.S. exports to Mexico that do not qualify for NAFTA treatment will be subject to Mexico's existing MFN tariffs and origin evaluation.[20]

Many products would be subject to the same CTC rules under both NAFTA and CFTA. A number of industrial sectors, however, would be subject to stricter and more detailed CTC rules in NAFTA, higher and more stringent value-content requirements, or rules requiring that certain subassemblies be produced in North America. These sectors include textiles, electronics, home appliances, automotive goods, and measuring and testing equipment. The NAFTA origin rules would generally require greater use of North American materials and production and greater processing of non-NAFTA materials and components than the CFTA rules do.

Drawback and Duty Deferral Programs

NAFTA signatories have various customs programs that generally enable companies to avoid customs duties on goods that are imported, processed, and subsequently exported. Such programs tend to encourage export-oriented production of goods that contain imported materials, parts, or components. These programs include duty drawback, foreign trade zones (FTZs), and "maquiladoras."

Article 303 of NAFTA limits the extent to which signatories can exempt from customs duties third-country imports on condition that they subsequently be exported to another NAFTA signatory.[21] Without this limitation, third-country goods could benefit from NAFTA by being imported conditionally free of duty, processed, and subsequently exported to another NAFTA signatory free of duty. The NAFTA limitation ensures that third-country imports will be subject to ordinary customs duties when imported into North America, without regard to whether such imports are ultimately consumed in the

[16] The country of origin of an imported product must be determined for numerous purposes and under varying tests. Origin determinations are necessary, for example, to enforce marking laws, to grant preferential tariff treatment, to enforce bilateral quotas, to collect countervailing and antidumping duties, to administer government procurement agreements, and to collect trade statistics.

[17] As noted in the "Automotive Products" sector analysis in chapter 4 of this report, however, the NAFTA rules of origin would replace the CFTA rules of origin for U.S. exports of automotive products under CFTA (i.e., non-Auto Pact exports).

[18] The U.S marking laws and regulations, for example, are provided for in section 304 of the Tariff Act of 1930 (19 U.S.C. 1304) and 19 CFR 134.

[19] The Commission notes that the GSP program expires on July 4, 1993. *Trade Act of 1974,* sec. 505 (19 U.S.C. 2465).

[20] Mexico maintains no codified rule for MFN trade, relying instead on licensing rules and case-by-case evaluations when it is necessary to ascribe origin, although more formal rules apply to Mexico's preference and special trade programs. U.S. Department of Treasury officials, conversations with USITC staff, Nov. 1992.

[21] The limitation on conditional duty exemptions applies to all North American trade, not simply to trade that receives NAFTA benefits. The Commission notes that NAFTA also prohibits NAFTA signatories from adopting any new customs duty waivers that are conditioned on the fulfillment of a performance requirement. Art. 304 and annex 304. See also article 1106, which prohibits investment-related performance requirements.

country of importation or are subsequently shipped to another NAFTA signatory. This limitation is designed to remove an incentive to establish so-called "export platforms" in one NAFTA signatory to serve markets in another NAFTA signatory. This, therefore, reinforces the goal of establishing an integrated North American market.

Specifically, NAFTA provides that a duty waiver, reduction, or refund that is contingent on exportation may not exceed the smaller of the following two amounts: (1) the total amount of the duties paid or owed on the initial importation of the third-country goods into North America or (2) the total amount of the duties paid on the goods' subsequent shipment to another NAFTA signatory.[22] Thus third-country goods would be eligible for a limited duty exemption, effectively being subject to the higher of the two possible customs duties.[23] The limitation on drawback and duty deferral programs will take effect after a transition period of 7 years for U.S.-Mexican trade and 2 years for U.S.-Canadian trade.[24]

NAFTA similarly limits conditional duty exemptions offered by duty deferral programs.[25] Such programs include FTZs, temporary importations under bond, bonded warehouses, maquiladoras, and inward processing programs.[26]

[22] To illustrate, assume a company imports $100 of non-NAFTA components that are dutiable at 15 percent. The company would pay $15 in duties at the time of importation. The company uses the components to manufacture a finished product valued at $200 and the finished product is exported to another NAFTA signatory. Assume further that the finished produced is dutiable at 5 percent by the other NAFTA signatory, either because the product fails to satisfy the NAFTA rule of origin or because the NAFTA staged rate reductions are still being phased in. The importer of the finished product would pay a duty of 5 percent of $200, or $10. Under NAFTA's limited duty exemption provisions, the company that originally imported the components would be eligible for a refund of $10, which is the lesser of the two duty amounts, and the total net tariffs paid on these transactions would be $15. Under current U.S. law, the company would eligible for a refund of $15.

[23] Although NAFTA provides a limited exemption from ordinary customs duties for third-country imports that are subsequently shipped to another NAFTA country, it prohibits entirely any refund, waiver, or reduction of (1) antidumping or countervailing duties; (2) certain premiums; (3) import fees collected by the United States under section 22 of the Agricultural Adjustment Act (7 U.S.C. 624); or (4) customs duties paid or owed on an imported good that is not itself exported to another NAFTA signatory but is substituted by an identical or similar good. NAFTA, art. 303(2).

[24] Ibid., art. 303(7) and annex 303.7. The Commission notes that article 404 of CFTA provided for the total elimination of conditional duty exemptions for U.S.-Canadian trade as of January 1, 1994. NAFTA's partial limitation on duty avoidance schemes replaces CFTA's total elimination of such schemes and extends the effective date for 2 years until January 1, 1996.

[25] NAFTA, art. 303(3).

[26] Ibid., art. 318.

The limitations on conditional duty exemptions for North American trade under NAFTA do not apply to certain products and in various circumstances. Exempt goods include those entered under bond for transportation, goods exported from one NAFTA signatory to another in the same condition as originally imported from a third country, and raw sugar imported into the United States for refining and reexport to Mexico or Canada.[27] Also, the limitations do not apply to U.S.-Canadian trade in citrus products and specified textile and apparel articles.

Each NAFTA signatory will need to amend its existing duty exemption programs to implement NAFTA restrictions on conditional duty exemptions. In the United States, existing drawback provisions enable companies that export products made with imported material to obtain a refund of 99 percent of the duties paid on the imported material.[28] Similar duty avoidance programs for material that is imported and later exported are also available—for example, in certain bonded warehouses[29] and in FTZs.[30] The United States will need to modify each of these programs, as they apply to North American trade that incorporates third-country imports. Canada provides duty remissions[31] and drawback and operates an inward processing program providing relief from duties. Canada also will need to modify each of these programs, for the same reason.

In Mexico the three principal drawback programs, known as "in-bond operations," offer options for reducing duties to companies using imported materials or parts in Mexican manufacturing for export. Two of the programs, Pitex[32] and Altex,[33] afford differing benefits to exporters based on the percentage of total sales exported. The third program is the maquiladora system,[34] which allows manufacturing with little or no duty liability on imported inputs (so that all duties are ultimately collected by the country importing the resulting finished export) and on imported machinery

[27] Ibid., art. 303(6) and annex 303.6.

[28] *Tariff Act of 1930* (19 U.S.C. 1313), sec. 313, and 19 CFR 191.

[29] *Tariff Act of 1930* (19 U.S.C. 1311 and 1312), secs. 311 and 312.

[30] *Act of June 18, 1934* (19 U.S.C. 81c), sec. 3(a).

[31] See secs. 23-25 of the Financial Administration Act, 1991, ch. 24, sec. 7(2)-10(1), for provisions on duty remissions and forgiveness of debts. Remissions can be granted for customs duties and excises in many instances, but not when the goods are lost or destroyed. Canada's program of duty deferrals generally covers materials or goods imported for use in Canadian manufacturing operations; however, there appears to be some discretion to afford other waivers.

[32] 1990 Decree, *Diario Oficial*, May 3, 1990. The program's 10-percent-of-output or $500,000-export/90-percent local sale provision makes it very attractive to firms wanting to market their products in Mexico. If 30 percent of the output is exported, the production equipment can be imported duty-free on a temporary basis.

[33] 1990 Decree, *Diario Oficial*, Apr. 30, 1990.

[34] 1989 Decree, *Diario Oficial*, Dec. 20, 1989.

and parts used in the manufacturing operation.[35] Mexico will need to modify each of these programs, as they apply to North American trade that incorporates third-country imports.

The impact on trade and investment in North America of NAFTA's limitation on conditional duty exemption programs is difficult to assess. After a transition period, companies will no longer be eligible for a full refund of customs duties paid or owed on third-country imports that are subsequently exported to another NAFTA signatory. The limitation on such programs may tend to encourage a relative increase in North American sourcing by companies that currently import third-country parts and components free of duty for assembly and export to another NAFTA signatory. The limitation also could encourage companies to assemble such parts and components entirely in third countries, depending on the relative duty rate differentials and a host of other factors.

There has generally been considerable support in the business community for the NAFTA provisions that limit conditional duty exemption programs.[36] Some organizations, however, have urged that such programs be maintained without modification.[37] They argue that the NAFTA limitation on existing duty exemption programs will affect U.S. competitiveness by increasing costs. Costs would increase, they argue, because customs duties, which are presently paid on third-country goods and are refunded when such goods are later exported, will no longer be refunded on North American shipments under NAFTA.[38] During the transition period, however, companies will likely alter their sourcing and production patterns to minimize the impact of this change. Moreover, the NAFTA tariff reductions will likely offer duty savings for North American trade that could offset additional duties that are not mitigated by changed sourcing and production patterns.

Customs Administration

Chapter 5 of NAFTA sets forth the parties' basic legal obligations pertaining to specific customs procedures. NAFTA will require parties to exchange information to effectively administer the agreement; participants in NAFTA transactions (rather than government entities) will be required to keep records for 5 years. The NAFTA rules and mechanisms are designed to permit each of the parties to verify that any NAFTA-related activity within its territory complies with the agreement's obligations and with private sector commitments to customs authorities. The rules and mechanisms also are intended to facilitate uniform interpretations by and regular consultation among the three Governments.

The agreement will permit signatories to adopt or maintain penalties for failure to comply. In addition, signatories will be required to provide in advance binding written rulings to interested parties, upon request to the signatories' customs authorities, on subjects relating to the origin, valuation, cost allocation, or general eligibility of particular goods. Review and appeal procedures will be provided to all parties to a transaction. The agreement provides for the establishment of institutions and mechanisms designed to permit effective and uniform administration and allow resolution of any disputes thereunder. Other matters including the customs forms to be used, detailed provisions on certificates of origin, and the time for filing such certificates will be covered in uniform regulations adopted later by the signatories. Small noncommercial shipments will be subject to less burdensome rules. The signatories will be required to establish procedures for verifying origin claims by using written surveys, plant/facility inspections or other means, and for dealing with noncomplying shipments, with appropriate protection of confidential information.

The proposed NAFTA customs procedures represent significant changes from the most-favored-nation standards currently employed by the three parties and, to a lesser extent, variations from the CFTA rules on corresponding subjects.[39] In most cases chapter 5 contains significantly more detailed provisions than the customs procedures articles of CFTA. Nonetheless, although NAFTA will cover a much larger volume of trade than CFTA, the economic effect on many public and private parties is likely to be minimized because of the experience of these parties and the high percentage of transactions being handled electronically. Business and government interests in Mexico, however, face compliance costs and administrative problems as they adapt procedures to meet NAFTA criteria. It is impossible to identify the different impacts of these procedures on particular sectors in the three countries that might result over a period of time.

[35] Gary Clyde Hufbauer and Jeffrey J. Schott, *North American Free Trade: Issues and Recommendations* (Washington, DC, 1992), ch. 5.

[36] See, e.g., Advisory Committee for Trade Policy Negotiations, *A Report to the President, the Congress, and the United States Trade Representative Concerning the North American Free Trade Agreement*, Sept. 1992, and *Report of the Industry Functional Advisory Committee for Trade in Customs Matters on the North American Free Trade Agreement*, Sept. 1992.

[37] See, e.g., American Association of Exporters and Importers, written submission to the Commission, Nov. 11, 1992, various submissions to the Commission by the National Customs Brokers and Forwarders Association of America (NCBFAA) and the International Trade Facilitation Council.

[38] In particular, NCBFAA estimated that eliminating drawback in NAFTA would cost U.S. companies $350 million annually.

[39] Although it is possible to examine U.S. customs laws and regulations and to compare them with similar (but often more detailed) Canadian measures, it is not possible to do so at this time with respect to their Mexican counterparts, in the absence of English-language authentic texts and a perspective on their legal effects and applications.

Investment

Chapter 11 of NAFTA provides comprehensive protection for tangible and intangible investments[40] in the industrial, service, and energy sectors in all three countries. For the first time U.S. and Canadian investments in Mexico will generally obtain the same treatment provided foreign investments in the United States and Canada under CFTA and Canadian and U.S. law: i.e., the right of national treatment;[41] MFN;[42] the right to transfer profits, dividends, royalties, and fees without restriction;[43] the customary international protections from expropriation;[44] and the right to operate without burdensome performance requirements.[45] NAFTA will go beyond CFTA by providing U.S., Canadian, and Mexican investors the right to third-party countries.[46] NAFTA will codify the reforms that Mexico has recently achieved and will obligate Mexico to further liberalize its investment regime. Neither the United States nor Canada agreed to further liberalize their already open investment regimes.[47]

Currently, Mexican law provides no right to U.S. and Canadian investors to be treated in the same manner as Mexican investors.[48] In contrast to U.S. and Canadian law, Mexican law subjects U.S. and Canadian investors to significant performance requirements, including geographic location restrictions, financial and foreign-currency-balancing requirements, and the requirement to generate permanent employment and use adequate technology.[49] U.S. and Canadian investors have no right to third-party arbitration in disputes with Mexican state enterprises or the Mexican Government and are required to obtain relief through Mexican courts.[50] Finally, the Mexican laws regarding expropriation do not clearly provide for the right of U.S. and Canadian investors to the prompt receipt of market value for their investments in the event of expropriation.[51] Mexico's agreement in NAFTA to largely eliminate these restrictions on U.S. and Canadian investments will require these existing laws and regulations to be amended.[52]

Mexico also agreed in NAFTA to remove either immediately or following a phase-in period existing Mexican restrictions on U.S. and Canadian majority ownership in, among other things, autoparts producers.[53] In addition, Mexico will be required to liberalize its present scheme of 100 percent screening by the Mexican Foreign Investment Commission for all foreign investment by screening only those investments of $25 million or more, increasing to $150 million after a decade.[54] [55] Canada will continue to

[40] The chapter starts with a broad definition of "investment" that covers wholly or partly owned business enterprises in all types of sectors, minority equity shares, investments by way of bonds, real estate, other intangible property used in business, intangible properties such as goodwill and intellectual property, and loans made by nonfinancial institutes. NAFTA, arts. 1101, 1139.

[41] Ibid., art. 1102.

[42] Ibid., art. 1103.

[43] Ibid., art. 1109.

[44] Ibid., art. 1110.

[45] Ibid., art. 1106.

[46] Ibid., art. 1117.

[47] Canada did not commit to further liberalize its investment regime as a result of NAFTA, reserving all of the current provisions of the Investment Canada Act in annex I of NAFTA. Thus, it does not appear that the investment chapter will require any legislative changes in Canada.

[48] See, e.g., 1973 *Law to Promote Mexican Investment and to Regulate Foreign Investment* (1973 Foreign Investment Law), arts. 8-9.

[49] See, e.g., 1989 Regulations of the Law to Promote Mexican Investment and to Regulate Foreign Investment (1989 Regulations), arts. 5 and 28.

[50] *Constitution of the United Mexican States*, art. 27, sec. 1; *1973 Foreign Investment Law*, art. 3; 1989 Regulations, arts. 30-31. For example, the 1989 Regulations provide that foreign investors—

[50]—*Continued*

> shall be considered as Mexicans with respect to the shares of such companies that they acquire or hold as well as the property, rights, concessions, participations, or interests owned by such companies or to the rights and obligations derived from the agreements to which such companies are parties with Mexican authorities and not to invoke the protection of their Governments, under the penalty for failure to comply with same of forfeiting the capital interests they have acquired in favor of the Mexican nation.

[51] *Constitution of the United Mexican States*, art. 27, par. 2. For example, art. 27, sec. VI, par. 2 states that—

> the amount fixed as compensation for the expropriated property shall be based on the value recorded in assessment or tax offices for tax purposes, whether this value had been declared by the owner or tacitly accepted by him by having paid taxes on that basis. The increased or decreased value of such private property due to improvements or depreciation which occurred after such assessment is the only portion of the value that shall be subject to the decision of experts and judicial proceedings.

[52] The Mexican 1973 Foreign Investment law, as well as the 1989 Regulations, will have to be amended to be consistent with the investment chapter and Mexican agreements to liberalize investment in a number of different sectors as set forth in annex I of NAFTA. A number of specific sectoral laws, which are discussed below, will also have to be amended.

[53] NAFTA, annex I, Reservations for Existing Measures and Liberalization Commitments, Schedule of Mexico.

[54] Ibid.

[55] Annex I also contains an agreement by Mexico to liberalize its present scheme of 100-percent screening by the Mexican Foreign Investment Commission for all foreign investment by eliminating screening in a number of different sectors including agriculture, livestock and game, forestry and lumber, coke production, construction (within 5 years), accounting, magazines and daily newspapers, coastal fishing, firearms and explosives, air transportation, and cable television (annex I, Schedule of Mexico, p. I-M-4-6). Some of these sectors are addressed elsewhere in this report.

screen U.S. and Mexican direct investments exceeding $150 million and indirect investments exceeding $450 million as well as any investments in existing or new Canadian companies related to "Canada's cultural heritage or national identity."[56]

The investment protections afforded by the NAFTA investment chapter are expected to enhance the ability of U.S. and Canadian investors to increase investments in Mexico. The agreement should considerably lessen investment uncertainties and risks from Mexican Governmental interference in many sectors. To the extent that U.S. and Canadian investors previously were inhibited by irregular Mexican judicial enforcement, lack of permanency and inconsistencies in Mexican law, limitations on transfers of profits, and potential expropriation, the reduction in or even the elimination of such concerns will make it more likely that U.S. and perhaps Canadian investment will shift to Mexico.

Intellectual Property

There is general agreement that the provisions on patent and trade secrets in NAFTA will provide the highest standards of protection and enforcement so far achieved in any trade negotiations. The provisions include strong national treatment obligations[57] and strict limitations on the use of compulsory patent licenses.[58] NAFTA also sets forth detailed obligations to provide judicial procedures for the enforcement of intellectual property rights (IPR), including provisions on damages, injunctive relief, and general due process protections.[59] NAFTA will obligate the parties to effectively enforce IPR against infringement, both internally and at the border.[60]

The intellectual property chapter of NAFTA will also establish a new international norm for the protection of trademarks and copyrights. Its provisions most importantly will establish the countries' recently modernized laws in these areas as a baseline.[61] Thus, the agreement will make into international obligations many of the changes in Mexico's trademark and copyright law enacted in 1991. These provisions also incorporate into the agreement conventions on copyright, phonogram protection, and trademarks of which the parties were previously signatories or were in substantial compliance.[62]

No significant changes in U.S. intellectual property laws will be mandated by NAFTA. Under article 1703, however, it will be necessary for the United States to amend its patent laws to provide that, for purposes of establishing a date of invention, inventive activity in Canada or Mexico is treated the same as inventive activity in the United States. Article 1717 will require that U.S. courts be authorized to order forfeiture and destruction of goods that infringe patents and materials predominately used in the creation of the infringing goods. The changes in U.S. law are not expected to significantly affect any sector.

The principal changes in Canadian patent law will involve the elimination of compulsory licenses for patented pharmaceuticals.[63] Although compulsory licenses are legal under NAFTA, the restrictions that article 1709 places on compulsory licenses should effectively dismantle the Canadian compulsory licensing system, which is restricted to pharmaceuticals. In addition, the provisions for rental rights in computer programs and phonograms appear to be innovations in Canadian copyright law.

Because Mexico upgraded its patent protection in 1991 to a level found in the major industrial countries,[64] NAFTA will not significantly change Mexican substantive patent law. NAFTA, however, will have the important effect of locking in Mexico's updated laws governing protection of intellectual property and enforcement of IPR. The agreement will also mandate that Mexico put into effect new provisions to protect rights in mask works and to prohibit making available encrypted program-carrying satellite signals,[65] subjects on which Canada and the United States have recently enacted statutory protection. Under article 1718 Mexico also will be required to enforce IPR at the border and to refine Mexico's current enforcement procedures. Under article 1709, it will be necessary for Mexico to amend its law to reverse the burden of proving infringement of process patents, placing the burden on the accused infringer.

The establishment of a common baseline for protection of trademark, copyright, and similar IPR that is an enhancement of existing international norms will also encourage marketing of goods and services across borders. In particular, the agreement provides for the protection of some symbols as trademarks that previously had not been separately registrable under Mexican law.[66] By barring compulsory licensing of trademarks, the agreement may encourage international use of trademarks and service marks that might have been discouraged by existing terms of Mexican law.

The enforcement guarantees provided by NAFTA are expected to increase trade and diminish losses from piracy and counterfeiting. NAFTA will take significant steps to cause Mexico and Canada to maintain adequate border controls to limit the importation of "pirate products." By reducing the threat of piracy and

[56] NAFTA, annex I, Schedule of Canada, p. I-C-5-6 (citing CFTA annex 1603.3(d)), I-C-3.
[57] Ibid., art. 1703.
[58] Ibid., art. 1709.
[59] Ibid., art. 1714.
[60] Ibid., art. 1718.
[61] Ibid., arts. 1705 and 1708.
[62] Ibid., arts. 1705, 1706, and 1708.

[63] The current Canadian compulsory licensing system for pharmaceuticals is discussed in the "Pharmaceuticals" sector analysis in chapter 9 of this report.
[64] *Law for the Promotion and Protection of Industrial Property, Diario Oficial*, June 27, 1991 (the law came into effect the day after its publication).
[65] NAFTA, art. 1707.
[66] Ibid., art. 1708.

establishing higher levels of protection overall, NAFTA provides additional incentives for U.S., Mexican, and Canadian inventors and authors to develop new technologies and products, thereby creating jobs and wealth. The higher levels of protection also will be expected to lead to increased expenditures on research and development in the sectors affected. U.S. companies, however, are likely to remain concerned about the effectiveness of Mexican enforcement practice both at the border and in the domestic court system.

Government Procurement

Chapter 10 of NAFTA will require that the Federal government procurement market in each NAFTA country be open on a nondiscriminatory basis to suppliers from the other NAFTA countries for covered goods and services, including construction services.[67] Procurement by state and local entities will not be covered. The government procurement provisions will apply to procurement by specified Federal government departments and agencies of goods and services of $50,000 or over ($25,000 for purchases of goods covered by CFTA) and $6.5 million or over for construction services.[68] For specified "government enterprises," NAFTA will apply to procurement of $250,000 or over for goods and services and $8 million or over for construction services. These amounts are to be adjusted for inflation biannually beginning January 1, 1996, based on the U.S. Producer Price Index.[69] Each country will reserve the right to favor national suppliers for procurement excluded from the agreement (e.g., for contracts valued below the dollar threshold; small and minority business set-asides;[70] procurement subject to phaseout intervals;[71] national security procurement;[72] and government-sponsored research and development).[73] Chapter 10 of NAFTA will require that each country provide rules for technical specifications,[74] qualifications of suppliers,[75] and time limits,[76] and will prohibit offset practices[77] and discriminatory buy-national requirements.[78] Finally, each country will be required to establish a bid protest system that allows suppliers to challenge procurement procedures or contract awards.[79]

[67] Ibid., art. 1003.
[68] Ibid., art. 1001.
[69] Ibid., annex 1001.1c, Indexation and Conversion Thresholds.
[70] Ibid., annex 1001.2b, Schedule of the United States.
[71] Ibid., annex 1001-2a, Transitional Provisions for Mexico; annex 1001.2b, Schedule of Mexico.
[72] Ibid., art. 1018; annex 1001.2b, Schedules of Canada, Mexico, and the United States; art. 2102.
[73] Ibid., annex 1001.1b-2, sec. B, Schedules of Canada, Mexico, and the United States.
[74] Ibid., art. 1007.
[75] Ibid., art. 1009.
[76] Ibid., art. 1012.
[77] Ibid., art. 1006.
[78] Ibid., art. 1003.
[79] Ibid., art. 1017.

U.S. national treatment obligations under NAFTA will likely be implemented through legislation or administratively by the President through a waiver of the Buy American Act with respect to Canada and Mexico for covered procurement. Title III of the Trade Agreements Act of 1979, 19 U.S.C. 2511, allows the President to waive or modify discriminatory purchasing requirements, such as those that exist under the Buy American Act, for eligible countries. Although discriminatory purchasing requirements for procurement by specified U.S. agencies and entities have already been lifted or modified under CFTA, NAFTA expands the number of U.S. agencies and entities which must accord national treatment to suppliers of goods and services from Canada. These U.S. agencies also must accord such treatment to Mexican suppliers of covered goods and services. U.S. procurement practices and procedures are regarded as already conforming with both CFTA and the GATT Agreement on Government Procurement, and should not require amendment to satisfy procedural requirements under NAFTA.

Canada is a signatory to the GATT Agreement on Government Procurement and CFTA and thus maintains procurement procedures that likely satisfy all procedural obligations under NAFTA. Changes to Canadian law or policy will likely be required to assure that Mexico is a beneficiary of the procedures and free-trade coverage for goods and to expand substantive free-trade coverage for services and construction for both the United States and Mexico. Canada also will be required to expand the number of Canadian agencies and entities that will be subject to the national treatment purchasing requirements under NAFTA. Canada expects NAFTA to triple its access to the U.S. Government procurement market.[80]

Canada's legal framework for government procurement relies more on general policies than on comprehensive statutes or detailed regulations.[81] Thus, the implementation of government procurement obligations under NAFTA is likely to require waiver of domestic preferences relative to the United States and Mexico, for procurement not already covered by the GATT and CFTA. These policies are reflected in the Canadian Department of Supply and Services Policy Manual, the Treasury Board Contracting Manual, and possibly in certain Cabinet directives. Changes may also be required to the Financial Administration Act, which contains the Canadian Government Contracting Regulations and Directives, the Department of Supply and Services Act, the Defense Production Act, and the Department of Public Works Act, all of which briefly cover aspects of government procurement.[82]

[80] Ambassador Jean-Paul Hubert, Permanent Representative of Canada to the Organization of American States, remarks given at a luncheon on NAFTA, Inter-American Development Bank, Washington, DC, Nov. 18, 1992.
[81] Eleonor Lewicki, director of supply services, Canadian Embassy, Washington, DC, and Mike Jolicoeur, senior counsel, Department of Supply and Services, Canada, conversations with USITC staff.
[82] Ibid.

Mexico, which is not a signatory to the GATT Agreement on Government Procurement,[83] will be required under NAFTA to establish procurement procedures to provide public notice (which will be available to U.S. and Canadian suppliers) of procurement opportunities, to allow U.S. and Canadian firms to compete on equal footing with domestic bidders on covered contracts, and to provide for challenges to tenders and awards on covered contracts.[84] A large but declining portion of Mexico's economy is run by state owned or controlled enterprises that buy their supplies solely from Mexican companies. Currently, even when the bidding process is open to U.S. suppliers, these bids are often subject to in-country performance and other requirements, thereby limiting competitive opportunities.[85] U.S. suppliers reportedly have little, if any, access to presolicitation information and no guarantee that a superior U.S. bid will be chosen over a Mexican supplier.[86] Under NAFTA, however, Mexico will be required to open covered procurement to U.S. and Canadian suppliers by the end of a 10-year period, subject to a set-aside limitation of $1.5 billion out of total Mexican procurement.[87]

Substantially limiting domestic procurement preferences regarding covered goods, services, and construction is expected to have a general impact on the procurement markets and economies of all three NAFTA countries. The government procurement provisions of NAFTA go beyond those in CFTA, thus imposing new substantive requirements on the United States and Canada. Mexico has agreed to provide access to and fair competition in its procurement market for the first time. Manufacturers of oilfield and other heavy equipment (and derivatively steel and steel pipes and tubes), computers and electronics, pharmaceuticals, providers of construction and other services, among others, will likely find increased opportunities in the government procurement markets of all three NAFTA signatories.

Technical Standards

The standards provisions in chapter 9 of NAFTA do not require the parties to adopt specific standards or technical regulations. Rather, the provisions set forth general principles regarding the process that the parties are required to follow for adopting standards and certifying and testing products. NAFTA sets forth requirements for transparency, equal treatment, cooperation among the parties' standards-making bodies, and mutual recognition of conformity assessment (i.e., testing and certification of products). Article 905 requires the parties to use international standards when appropriate, and article 906 requires them to work towards compatibility with their respective standards. These provisions, however, will not necessitate a change in the laws of Canada and the United States, as these countries generally follow these principles already. Mexico, on the other hand, reportedly does not currently satisfy many of the proposed NAFTA requirements (such as transparency both in issuing standards and in the procedures for conformity assessment).[88] Thus, Mexico likely will have to make the most significant changes in its standards-related measures as a result of NAFTA.

The NAFTA technical standards provisions are modeled primarily on the GATT Agreement on Technical Barriers to Trade (GATT Standards Code).[89] The United States, Mexico, and Canada are each signatories to the Standards Code.[90] Consequently, the NAFTA provisions in large part reaffirm the parties' existing obligations.[91] However, NAFTA goes beyond the requirements of the existing GATT Standards Code provisions in several areas including transparency, harmonization, and conformity-assessment procedures. Many of the new provisions are modeled after the proposed Uruguay Round ("Dunkel Draft") standards provisions. Some of these changes are derived from chapter 6 of CFTA.

Canada and the United States already regard themselves as being in full compliance with the general principles established under the GATT Standards Code. Most of the additional requirements imposed by the NAFTA standards chapter will necessitate only administrative reforms, which it is believed can be accomplished at the agency or private sector level without any new legislation. It appears that Mexico will be required to change some of its current practices to meet existing GATT Standards Code requirements. Further, Mexico may be required to enact legislation or issue regulations to provide transparency in standards-making, including notice of proposed actions and an opportunity for comment, and to ensure that application and acceptance of conformity-assessment procedures are consistent.[92]

[83] Mexican procurement law is covered under, among other things, the Law of Procurement, Leasing, and Provision of Services and Movable Property. The implementing regulations therefor were published in the *Diario Oficial* on Feb. 13, 1990.

[84] NAFTA, arts. 1008-1017.

[85] *Report of the Advisory Committee for Trade Policy and Negotiations on the North American Free Trade Agreement*, Sept. 1992, p. 36.

[86] Ibid.

[87] NAFTA, annex 1001.2b, Schedule of Mexico, par. 3(a) and (c).

[88] Official at the U.S. Department of Commerce, Office of Multilateral Affairs, telephone conversation with USITC staff, Oct. 22, 1992.

[89] 31 UST 405, 1186 UNTS 276 (Apr. 12, 1979).

[90] The United States implemented the GATT Standards Code in title IV of the Trade Agreements Act of 1979, 19 U.S.C. 2531 et seq. Mexico implemented the GATT Standards Code in the Federal Law on Metrology and Standardization. *Diario Oficial*, Jan. 26, 1988, and amendments published on July 1, 1992. Canada did not enact national legislation to implement the GATT Standards Code. Official at the Standards Council of Canada, telephone conversation with USITC staff, Dec. 23, 1992.

[91] NAFTA, art. 903.

[92] Official at the U.S. Department of Commerce, Office of Multilateral Affairs.

Industry and government officials alike agree that achieving compatible standards, regulations, test methods, and certification systems will greatly facilitate trade in industrial products.[93] Technical standards affect a broad range of products, including gas products, consumer electrical products, telecommunications, construction, plastics, textiles, medical technology, and toys. The products that will likely be most affected by the NAFTA standards provisions are those that are subject to the most technical regulations (e.g., heavy electrical equipment, small appliances, medical devices, automobiles, and tires).

Any sectoral impact will depend on how closely the parties conform their standards-related activities and how much Mexico actually enforces the standards provisions. Generally, any U.S. sectors exporting products subject to Mexican technical standards requirements will be expected to benefit from the NAFTA standards provisions because Mexico will be required to make its standards process more transparent,[94] whereas the U.S. and Canadian standards processes for the most part are already open and give equal treatment to national and foreign interests.

Competition Policies

Chapter 15 of NAFTA includes provisions governing anticompetitive government and private business practices. Article 1501 of NAFTA requires each country to adopt or maintain measures against anticompetitive business practices and to cooperate on issues of competition law enforcement and other competition issues. Article 1503 also specifically requires any enterprise owned or controlled by the Government of a NAFTA party (i.e., a state enterprise)[95] to act in a manner consistent with that country's NAFTA obligations under the investment chapter of the agreement when exercising regulatory, administrative, or other governmental authority, such as the granting of licenses. State enterprises in NAFTA countries also must accord nondiscriminatory treatment to investments of other NAFTA parties in the sale of goods or services pursuant to article 1502.

With respect to monopolies, chapter 15 will impose certain additional disciplines on current and future government-owned monopolies and on any privately owned monopoly that a NAFTA country may designate in the future. At the time a party designates a monopoly that may affect the interests of another NAFTA party, article 1503 will compel that party to provide, whenever possible, prior written notification of the designation and to try to ensure that the operation of the monopoly will not result in nullification or impairment of benefits under the agreement. In addition, when buying or selling a monopoly good or service, the monopoly will be required to follow commercial considerations, consistent with the terms of its designation mandate and will not be permitted to discriminate against goods or businesses of the other NAFTA countries.[96] Article 1502(4) also requires that each country ensure that such monopolies do not use their monopoly positions to engage in anticompetitive practices in nonmonopoly markets in that country's territory.

Article 1505 defines "monopoly" as an entity "designated as the sole provider or purchaser of a good or service." "Government monopoly" is limited to a monopoly owned or controlled by the Federal Government. Thus, NAFTA chapter 15 does not appear to apply to the Tennessee Valley Authority as it is not designated as the sole provider of electricity in its marketing area. Nor does it appear to apply to Canadian provincial monopolies, as they are not controlled by the Canadian Federal Government. Article 1503 appears to apply to certain Mexican state enterprises, however, such as Petroleos Mexicanos (PEMEX) and Comision Federal de Electricidad (CFE).

The U.S. and Canadian legal regimes governing competition policy are similar to each other in a number of respects and would not appear to require specific legal changes to comply with this chapter of the agreement. Mexico is the only party that does not have a well-developed legal regime in the form of laws proscribing anticompetitive business conduct. Thus, the requirement in article 1501 that NAFTA countries adopt or maintain measures against anticompetitive business practices will likely have its most significant impact on Mexico and is likely to result in Mexico promulgating antitrust laws similar to those currently in force in the United States and Canada. This provision, however, has no enforcement mechanism to ensure that Mexico adopts such legislation.[97]

Mexican implementation of the provisions of chapter 15 of NAFTA should facilitate entry into and expansion in the Mexican market by U.S. and Canadian companies. The results of any legal changes by Mexico will most likely be felt in industrial sectors generally rather than in any particular sector because the provisions restrict the ability of covered entities to discriminate against the investments of another

[93] U.S. Chamber of Commerce, International Division, *A Guide to the North American Free Trade Agreement: What It Means for U.S. Business*, 1992, p. 54. Over one-half of the European Community's 1992 program concentrates on harmonizing standards and testing and certification processes, and two chapters of CFTA are devoted to standards.

[94] Mexico provides almost no public notification of standards-making, and its mechanisms for private sector participation are regarded as weak.

[95] NAFTA annex 1505.1 defines the term "state enterprise" as applied to Canada.

[96] NAFTA article 1502(4), however, provides that chapter 15 does not apply to procurement by government agencies.

[97] Indeed, article 1501(3) specifically provides that "[n]o party may have recourse to dispute settlement under this Agreement for any matter arising under this Article."

NAFTA party in goods and services. Thus, PEMEX and CFE would be obliged by article 1503 to provide petroleum feedstocks and electricity on a nondiscriminatory basis to any U.S.-or Canadian-owned facility.

Temporary Entry for Business Persons

Chapter 16 of NAFTA sets forth criteria and procedures for facilitating the temporary entry of business persons on a reciprocal basis. The chapter provides procedures for temporary entry of four types of business persons: business visitors; traders and investors; intracompany transferees; and professionals.

The legal changes that will have to be made to U.S. and Canadian law will be minor in that the provisions in chapter 16 closely mirror the temporary entry provisions in CFTA which are already reflected in U.S. and Canadian laws.[98] The most noteworthy addition for U.S. law will be the establishment of an annual numerical limit on the temporary entry of professionals from Mexico to the United States as required by appendix 1603.D.4.[99] This number will be in addition to a similar category in U.S. law that is subject to a global limitation of 65,000 professionals.[100]

Mexican law currently provides for temporary and permanent entry of business persons, under chapter III of the Ley General de Poblacion, 1974, as amended. The NAFTA provisions will likely require changes to Mexican law so as to lessen certain procedural requirements and reduce the discretionary authority involved in the approval of entry, if the specified criteria are met. In particular, it is thought likely that Mexico will change its current law[101] to more closely parallel U.S. and Canadian law, which permits business visitors to enter at any point of entry rather than requiring such visitors to obtain a visa prior to departure from the Mexican Consul. Pursuant to annex 1603.A, temporary entry for technicians whose services are urgently needed and for members of boards of directors could be granted under the Business Visitor category, which would eliminate the current need in Mexican law for special permits. Mexican law probably will be changed regarding approval of permits if an applicant meets the requirements for NAFTA annex 1603.C, Intra-Company Transferees, or for the categories of Professionals provided for in annex 1603.D and appendix 1603.D.1. Further, the requirement that technical visitors must provide training may have to be deleted.[102] Finally, a provision for the temporary entry for traders and investors will have to be added to Mexican law.[103]

The temporary entry provisions establish uniform criteria that apply to a broad range of business activities and professions, including every sector specifically covered in this study. The impact of the temporary entry provisions on each sector in this study will vary depending on the travel among the NAFTA countries required for business personnel in each sector and even by individual company within a sector. The impact of this chapter on investment patterns or trade patterns in individual sectors will vary widely. In some situations, investment in another party will be forgone and existing trade will remain, or even increase, because business persons in one party will be able to provide service and assistance for goods traded to those in another party. Conversely, in other cases, investment in another party may be undertaken and trade decreased, since business persons from the parent enterprise in one party will be able to more easily enter the other country to provide assistance and specialized expertise to the new subsidiary. Overall, these provisions will probably benefit sales, efficiency, and investment and trade opportunities by making it easier for business persons to travel temporarily among the NAFTA countries.[104]

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98 In the case of Canada, the *Immigration Act*, R.S.C. 1985 ch. I-2, as amended, and subsecs. 19(1), 20(5), and 25 of the Immigration Regulations, 1978, SOR/78-172, as amended. In the case of the United States, sec. 101(a)(15) of the *Immigration and Nationality Act, 1952*, 8 U.S.C. 1101 et seq.

99 NAFTA, app. 1603.D.4.

100 Ibid., app. 1603.D.4.2.(c) and *Immigration and Nationality Act, 1952*, sec. 214(g)(1)(A), 8 U.S.C. 1184(g)(1)(A).

101 *Ley General de Poblacion*, art. 42, clause III.

102 Ibid.

103 NAFTA, annex 1603.B.

104 The record indicates that the similar CFTA provisions have resulted in increased temporary entries of business persons in all categories, with no major problems or disputes reported. *The United States-Canada Free Trade Agreement - Biennial Report: A Report From the President to the Congress*, Jan. 1991.

CHAPTER 4
Automotive Products

Michael Hagey, Robin Turner, Lawrence DiRicco

Table 4-1
Automobiles/trucks: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	428	384	371	-3
Trade data (million dollars):				
Shipments	210,800	203,100	185,800	-9
Exports:				
Total	12,898	13,264	15,403	16
To Mexico	90	306	314	3
To Canada	8,653	8,156	8,803	8
Imports:				
Total	58,760	59,504	58,084	-2
From Mexico	1,856	2,931	3,333	14
From Canada	19,712	20,184	20,225	0
Trade balance:				
Total	-45,862	-46,240	-42,681	8
With Mexico	-1,766	-2,625	-3,019	-15
With Canada	-11,059	-12,028	-11,422	5
Consumption	256,662	249,340	228,481	-11
Import market share (percent):				
Total	23	24	25	(1)
Mexico	1	1	1	(1)
Canada	8	8	9	(1)

[1] Not meaningful for purposes of comparison.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

Source: Compiled from official statistics of the U.S. Departments of Commerce and Labor, and published data of the Motor Vehicle Manufacturers Association.

Table 4-2
Automotive parts: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	630	602	565	-6
Trade data (million dollars):				
Shipments	95,073	86,937	79,961	-8
Exports:				
Total	13,586	17,675	22,346	26
To Mexico	2,509	2,884	4,530	57
To Canada	7,171	10,676	12,169	14
Imports:				
Total	29,582	29,421	27,271	-7
From Mexico	3,570	3,633	4,051	12
From Canada	10,025	9,522	8,214	-14
Trade balance:				
Total	-15,996	-11,764	-4,925	58
With Mexico	-1,061	-749	479	([1])
With Canada	-2,854	1,154	3,955	243
Consumption	111,069	98,683	84,886	-14
Import market share (percent):				
Total	27	30	32	([1])
Mexico	3	4	5	([1])
Canada	9	10	10	([1])

[1] Not meaningful for purposes of comparison.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

Source: Compiled from official statistics of the U.S. Departments of Commerce and Labor, and published data of the Motor Vehicle Manufacturers Association.

Summary of Sector Analysis

The U.S. and Canadian automotive industries (automobiles/trucks and automotive parts) are highly integrated and are dominated by U.S.-owned automobile companies. Canada is the largest U.S. trading partner with respect to automotive products. The Mexican automotive industry, which is experiencing rapid production and market growth, is much smaller and less modern than the U.S. and Canadian industries. Although there is substantial U.S.-Mexican automotive trade, and U.S. automotive firms have invested heavily in Mexico, integration between the U.S. and Mexican automotive industries is limited by extensive Mexican regulations on investment and trade. Mexico exports vehicles and parts primarily to the United States and is a market for U.S. exports of automotive parts, many of which are returned to the U.S. market in the form of vehicles or high U.S.-content auto parts.

NAFTA likely will have a minor positive short-term impact on investment in North America, but will have a greater positive long-term impact, as automobile and auto parts firms increase investment in Mexico in response to a more liberalized business environment. Trade between the United States and Mexico is likely to increase slightly in the short term but will increase considerably over the long run. Both short-term and long-term trade flows between the United States and Canada are likely to decrease at least slightly.

NAFTA is likely to have a minor negative impact on U.S. production of automobiles over the long term. In the U.S. automotive parts industry, U.S. production is likely to increase modestly in the long run. Because changes in U.S. employment may be less pronounced than changes in U.S. production, the employment level in the automotive sector overall is not expected to change significantly in the long run. Both industries are mainly located in the Midwest, where any long-term loss of employment in the automobile industry and minor gain in employment in the auto parts industry are most likely to be concentrated. The long-term impact of NAFTA on U.S. global competitiveness in the automotive industry appears to be relatively insignificant for the U.S. automobile industry and slightly beneficial for the U.S. parts industry.

Key NAFTA Provisions Affecting Sector

Trade in automotive goods accounts for a significant portion of the total trilateral trade among the NAFTA parties.[1] Most trade between the United

[1] In 1991, U.S. two-way automotive trade with Canada and Mexico amounted to $49.4 billion and $12.2 billion, respectively. See tables 4-1 and 4-2, above.

States and Canada in the automotive sector is duty-free, and most Mexican automotive products enter the United States and Canada either duty-free or at low rates. Thus the only aspects of trilateral trade in the automotive sector subject to significant duties are imports into Mexico from Canada and the United States. NAFTA gradually eliminates these remaining tariff barriers. Furthermore, changes to U.S., Canadian, and, primarily, Mexican laws would reduce many of the nontariff trade and investment barriers and eventually could result in the integration of the NAFTA region's automotive industry. Specific NAFTA provisions that have a direct relationship to this sector include chapter 3, National Treatment and Market Access for Goods, which among other things sets out the schedule for tariff elimination and includes annex 300-A, Trade and Investment in the Automotive Sector; chapter 4, Rules of Origin; and chapter 11, Investment.

National Treatment and Market Access

The general NAFTA provisions in chapter 3 regarding national treatment and market access will apply directly to the automotive sector when the specific transitional market access provisions in annex 300-A end, presumably after 10 years.[2] Article 304 prohibits performance requirements as conditions for duty waivers.[3] A gradual phaseout of existing conditional waivers is set forth in annex 304.2.[4] Pursuant to annex 304.2(d), Canada's phaseout will follow the schedule set forth in the U.S.-Canada Free-Trade Agreement (CFTA).

Tariff Provisions

U.S.-Canadian automotive trade is largely duty-free, and U.S. imports from Mexico generally enter duty-free or at low rates. U.S. nominal tariffs are 2.5 percent ad valorem on automobiles, 25 percent on light-duty trucks, and a trade-weighted average of 3.1 percent for automotive parts from Mexico. However, because much of the U.S. automotive imports from Mexico enter under headings 9802.00.60 and 9802.00.80 of the Haromonized Tariff Schedule of the United States, the effective rates of duty are lower (2.2 percent for automobiles and light-duty trucks, and 0.4 percent for auto parts). Mexico's tariffs on automobiles and light trucks are 20 percent ad valorem, and tariffs on automotive parts range between 10 and 20 percent (trade-weighted average of 13.1 percent, based on 1990 Mexican data).

U.S. tariffs on automobiles will be eliminated immediately upon NAFTA's implementation, and U.S. tariffs on light-duty trucks will be reduced immediately to 10 percent and will be phased out over 5 years. U.S. tariffs on some automotive parts will be eliminated immediately, and others, over 5 or 10 years. Mexican tariffs on automobiles and light-duty trucks will be reduced by 50 percent immediately upon NAFTA's implementation and will be phased out over 5 years for light-duty trucks and 10 years for automobiles. Mexico's tariffs on 75 percent (by value) of its imports of U.S. automotive parts will be eliminated over 5 years, and the remaining tariffs will be phased out over 10 years.

Trade and Investment in the Automotive Sector

Annex 300-A sets forth the provisions for the transitional period during which restrictions on automotive trade among the parties presently in place would be liberalized. In particular the parties agree to treat existing producers of vehicles no less favorably than they would any new producer[5] and to review the status of the North American automotive sector, including the effectiveness of the measures in this annex, before December 31, 2003 (presumably the end of a 10-year transition period).[6] No provision in chapter 3 or in this annex, however, establishes a specific termination date for this transitional annex. Therefore, the parties may not be precluded from agreeing to continue the transition period for specific provisions in this annex and its appendices after the status review.

Subject to the transitional conditions set out in appendix 300-A.2, Mexico is permitted to maintain the provisions of its Decree for Development and Modernization of the Automotive Industry ("Auto Decree")[7] and its Resolution That Establishes Rules for the Implementation of the Auto Decree ("Auto Decree Implementing Regulations")[8] that would otherwise be inconsistent with NAFTA until January 1, 2004.[9] Under this provision Mexico is not required to terminate the Auto Decree, but, before the year 2004, Mexico must conform any inconsistent provisions of the Auto Decree and Implementing Regulations with the other provisions of this agreement.[10] This provision

2 NAFTA, art. 300(a).

3 NAFTA annex 304.1 provides a limited exception for Mexico with respect to existing Mexican waivers of customs duties.

4 NAFTA annex 304.2 sets forth the following schedule for the phaseout of existing waivers of customs duties conditioned on performance requirements: for trade between Canada and Mexico, Canada must phaseout before January 1, 1998 performance requirements in effect on or before January 1, 1989; for trade between Canada and the United States, the phaseout schedule in article 405 of CFTA is incorporated into this annex; and for trade with Mexico, Mexico must phase out before January 1, 2001, performance requirements in effect on July 1, 1991.

5 NAFTA, annex 300-A(1).

6 Ibid., annex 300-A(2).

7 Decreto para el Fomento y Modernizacion de la Industria Automotriz, Dec. 11, 1989.

8 Acuerdo que Determina Reglas para la Aplicacion para el Fomento y Modernizacion de la Industria Automotriz, Nov. 30, 1990.

9 NAFTA, app. 300-A.2(1).

10 Ibid.

apparently was meant to provide for termination of this appendix after the 10-year transition period. It is possible, however, that the parties may agree based on the status review under NAFTA annex 300-A(2) to extend specific provisions or the entire transition period and to postpone the required amendments to the Auto Decree. This appendix provides very specific schedules until the year 2003, which, for the most part, do not zero out during the transition period. It is unclear whether these gradual reduction schedules would continue after the transition or be abruptly reduced to zero to bring them into conformity with the broad general provisions of chapter 3.

Restrictions under the Auto Decree that Mexico would be required by appendix 300-A.2 to modify include—

- Conditions required to qualify as a "national supplier"[11] or an "enterprise of the autoparts industry";[12]
- National value-added rules for the percentage of parts that must be purchased from national parts producers;
- Trade balancing requirements regarding the level of exports of goods required to import goods; and
- Limitations on imports of vehicles based on sales in the Mexican market.

Under NAFTA appendix 300-A.2(2) Mexico agrees to lower the level of Mexican value added as a percentage of total sales that is required for an "enterprise of the autoparts industry" or for a "national supplier" from 30 percent to 20 percent.[13] Further, NAFTA appendix 300-A.2(4) would require changes to the Auto Decree to permit independent maquiladora plants[14] that meet national supplier criteria to be granted national supplier status.[15] This appendix also would require Mexico to reduce immediately the percentage of national value added from national suppliers required for manufacturers in Mexico from 36 percent to 34 percent.[16] The provision sets forth a schedule for gradual decreases from 34 percent in 1998 to 29 percent in 2003.[17] In addition, existing manufacturers would calculate the required level of local purchases based on the greater of either a reference value[18] or the amount of the manufacturer's total national value added, the only value permitted to be used in the Auto Decree.[19]

Mexico's modification of certain restrictions under the Auto Decree can be expected to significantly affect automotive trade opportunities. Specifically, liberalization of the conditions required to qualify as a national supplier or an enterprise of the autoparts industry should provide manufacturers with more suppliers whose products would count toward the manufacturers' national value-added requirement. However, for the transition period, the manufacturers will still have a substantial national value-added requirement, which will affect their trade balance and ability to import.[20] Furthermore, calculation of national value added using the reference value method actually may tend to increase the manufacturers' value-added requirement since a percentage of imports is included in this methodology. However, it still should favor existing manufacturers over any new manufacturers.

Under NAFTA appendix 300-A.2(12)-(16), Mexico agrees to reduce certain trade balancing requirements which require manufacturers to maintain a net trade balance in each model year of their operation and to have a surplus in their extended trade balance in order to import new vehicles.[21] NAFTA

[11] NAFTA appendix 300-A.2(27) defines national supplier as an enterprise organized and operating in Mexico that: supplies autoparts to manufacturers; is registered with the Mexican Ministry of Trade and Industrial Development (SECOFI); has no majority shareholders that directly or indirectly are manufacturers, or that are also majority shareholders of manufacturers; and complies with the national value-added requirements. See art. 2.VII of the Auto Decree.

[12] NAFTA appendix 300-A.2(27) defines enterprise of the autoparts industry as an enterprise organized and operating in Mexico that: produces autoparts; sells more than 60 percent (by value) of its autoparts to manufacturers for automotive products sold in Mexico; complies with the national value-added requirements; complies with the capital structure requirements in the Investment Law and Regulations; and is registered with SECOFI. See art. 2.V of the Auto Decree.

[13] *Auto Decree*, art. 2.V(b) and VII, and NAFTA, app. 300-A.2(2).

[14] NAFTA appendix 300-A.2(27) defines independent maquiladora as an enterprise registered under the existing Maquiladora Decree that has no majority shareholder in common with any manufacturer, and in which no manufacturer is directly or indirectly a majority shareholder.

[15] NAFTA, app. 300-A.2(4).

[16] NAFTA, app. 300-A.2(6), and *Auto Decree*, art. 7. For an existing manufacturer not at 34 percent, that manufacturer will use its percentage for model year 1992, for so long as that percentage is lower than the applicable percentage in the schedule under NAFTA appendix 300-A.2(7).

[17] There is no provision for termination of the national value-added requirement or for further reductions in the year 2004 and thereafter.

[18] The new reference value method is based on a calculation involving a manufacturer's total sales (Mexican production and imports) rather than the amount of its total national value added. The annual reference value equals the base value for the manufacturer plus 65 percent (1994-97) of the difference between its total sales (local production and imports) in Mexico in that year and its base value. The percentage declines to 60 percent for 1998- 2000 and 50 percent for 2001-03. The base year is defined as the manufacturer's average production for sale in Mexico during the model years 1991 and 1992. NAFTA, apps. 300-A.2(8) and 300-A.2(27).

[19] *Auto Decree*, art. 7, and NAFTA, app. 300-A.2(5). For a new manufacturer the latter value method would be required for its calculation.

[20] See also investment discussion below.

[21] *Auto Decree*, arts. 4, 5, and 12. NAFTA appendix 300-A.2(15) also amends the method for calculating the adjustment factor (penalty for not meeting national value-added requirement) in the extended trade balance equation to correspond to changes in the national value-added requirement.

appendix 300-A.2(12) requires that immediately upon implementation the percentage of direct and indirect imports of automotive parts that a manufacturer must include in its trade balance calculation will be reduced to 80 percent for 1994 and provides a schedule for continued equal annual reductions to 55 percent for 2003.[22] This schedule also will be applied to a manufacturers' surplus in its extended trade balance to determine the value of new vehicles that it may import.[23] NAFTA appendix 300-A.2(16) will allow manufacturers with pre-1991 unused surpluses in their trade balance to carry forward up to $150 million per year so they may import more new vehicles than their current model-year extended trade balance would permit. In addition Mexico will amend the Auto Decree to eliminate any restriction that limits the number of vehicles that a manufacturer may import into Mexico in relation to its vehicle sales in Mexico.[24]

The amendments to the Auto Decree's trade balancing requirements should increase manufacturers' imports into Mexico relative to their exports. First, to maintain a net trade balance, manufacturers will no longer be required to have as many exports as imports of parts. Second, for calculating their extended trade balance, manufacturers will no longer be required to have more exports than imports of vehicles. Further, the elimination of Mexico's restrictions on the number of vehicles imported relative to domestic vehicle sales would have tangible results; manufacturers should be able to import far more vehicles than the Auto Decree's restriction of 15 percent (or 20 percent in 1993 and thereafter) of domestic sales, although the amount that a manufacturer may import still will be limited by the transitional trade balancing requirements.[25]

Mexico also agrees[26] to eliminate the Decree for Development and Modernization of the Autotransportation Vehicle Manufacturing Industry ("Truck Decree")[27] and the Resolution that Establishes Rules for the Implementation of the Autotransportation Decree.[28] Elimination of the Truck Decree frees truck manufacturers in Mexico from the national valued-added requirements under article 2, paragraph III of the Truck Decree and probably will enable them to import more trucks.[29] Further, nonmanufacturers in Mexico would be permitted to import trucks, whereas importation under the Truck Decree was limited to manufacturers.[30] However, Mexico reserves the right to adopt or maintain a 5-year transitional quota for importation of trucks.[31] Under the quota a truck manufacturer will be permitted to import a number of trucks equal to 50 percent of its Mexican truck production in each year; nonmanufacturers will be permitted to import 15 percent of the total Mexican truck production for 1994 and 1995, 20 percent for 1996, and 30 percent for 1997 and 1998.[32]

Under NAFTA the United States would be required to amend the Energy Policy and Conservation Act of 1975 ("the CAFE Act")[33] to permit existing manufacturers beginning in 1997 to count Mexican production/content as U.S. domestic content for the purposes of meeting the domestic fleet definition of 75 percent domestic/North American value added.[34] In contrast to new manufacturers in Mexico, existing manufacturers will be able to make a choice from 1997 to 2004 whether it is more advantageous to include Mexican production in their domestic or foreign fleets for CAFE purposes.[35] If no election is made by 2004, their Mexican content will be considered domestic.[36] The significance of the change to the CAFE Act is that U.S. automotive firms will be allowed one more option in configuring their domestic and foreign fleets and in deciding on appropriate sources for each fleet, so that each fleet meets fuel efficiency requirements under the CAFE Act.

Canada reserves the right to maintain the Agreement Concerning Automotive Products between the Government of Canada and the Government of the United States of America ("Auto Pact")[37] subject to its commitments in chapter 10 of CFTA.[38] Specifically, Canada is permitted to continue its existing programs of waiver of customs duties to those recipients listed in annex 1002.1 of the CFTA subject to the elimination schedules set forth in CFTA.[39] Canada is also

[22] Art. 8 of the Auto Decree requires a manufacturer to have a one-to-one trade balance for its import of automotive parts to its export of automotive products.

[23] Art. 12 of the Auto Decree requires manufacturers to subtract from their trade balance 2.0 times the value of each vehicle imported in 1992 and 1993 and 1.75 times the value of each imported in 1994.

[24] NAFTA, app. 300-A.2(17).

[25] NAFTA does not amend article 23 of the Auto Decree, which would continue to permit only manufacturers to import new vehicles.

[26] NAFTA, app. 300-A.2(20).

[27] Decreto para el Fomento y Modernizacion de la Industria Manufacturera de Vehiculos de Autotransporte, Dec. 1989.

[28] Acuerdo que Establece Reglas de Aplicacion del Decreto para el Fomento y Modernizacion de la Industria Manufacturera de Vehiculos do Autotransporte, Nov. 1990.

[29] Under article 11 of the Truck Decree, truck manufacturers in Mexico are permitted to import trucks at

[29]—*Continued*

a value that is equal to their annual Mexican value-added figure, which must be at least 40 percent. Therefore, truck manufacturers would be able to import about 10 percent more trucks during the NAFTA transition.

[30] *Truck Decree*, art. 6.

[31] NAFTA, app. 300-A.2(21).

[32] NAFTA, app. 300-A.2(22) and (23). Mexico agrees to allocate this quota through a nondiscriminatory auction.

[33] 42 U.S.C. 6201 and following material.

[34] NAFTA, app. 300-A.3(1). Canadian production already may be considered as U.S. domestic content for CAFE purposes.

[35] Ibid., app. 300-A.3(2)(a). New manufacturers in Mexico will be considered domestic content beginning in 1994. NAFTA, app. 300-A.3(2)(b).

[36] Ibid., app. 300-A.3(2)(e).

[37] The bilateral Auto Pact was signed January 16, 1965, and entered into force on September 16, 1966. CFTA maintained the provisions of the Auto Pact subject to specific conditions regarding waiver of customs duties, importation of used vehicles, and rules of origin as set out in chapter 10 of CFTA.

[38] NAFTA, app. 300-A.1(1).

[39] Ibid., app. 300-A.1(1) and (2).

permitted to continue the CFTA schedule for phasing out its import restrictions on used vehicles from the United States.[40] The most significant change made to existing measures is Canada's commitment to apply the rules of origin for automotive goods provided in chapter 4 of NAFTA in place of the rules of origin set forth in CFTA and currently in use for automotive goods.[41]

Finally, 15 years after the effective date of NAFTA, both Canada and Mexico will be required to begin a 10-year phaseout of their restrictions on the importation of used vehicles from Mexico and North America, respectively.[42] Under articles 4 and 23 of the Auto Decree, only manufacturers in Mexico are permitted to import vehicles and are generally only permitted to import new vehicles to supplement sales of their Mexican production.[43] The NAFTA measure should provide new opportunities in Mexico for the U.S. and Canadian used-vehicle industry as access is gained to new markets of consumers who might not be able to afford new vehicles or used Mexican vehicles. It should provide a corresponding increase in trade in auto parts as well, with possibly a slight adverse impact on the new vehicle industry.

Rules of Origin

The impact of NAFTA's rules of origin is limited because existing rules of origin already applicable to trade among the NAFTA parties will continue to cover the bulk of automotive trade.[44] A substantial volume of U.S. exports to Canada will continue to be governed by the Auto Pact rules of origin.[45] [46] The CFTA rules of origin apparently will continue to apply to Canadian exports to the United States. The NAFTA rules of origin will apply to imports into Mexico from both the United States and Canada, as well as U.S. exports to Canada that are not covered by the Auto Pact[47]

NAFTA's more detailed rules of origin can be expected over time to improve consistency of day-to-day application of rules of origin. At the same time, the rules applicable to the automotive sector are sufficiently complex and intertwined so as to preclude quick understanding of their significance. Therefore, at least during the initial implementation of NAFTA, all three customs administrations will be tested when attempting to apply those rules in a uniform and timely manner.

Under NAFTA, automotive goods would be governed by two tiers of rules of origin. The first tier applies to all goods, including automotive goods.[48] The subsidiary second tier consists of comprehensive requirements that are applicable only to the automotive sector and that must be considered in making determinations under the general rules of the first tier.[49]

The majority of automotive origin determinations for NAFTA preference probably would be based on two of the four general NAFTA alternative standards, specifically NAFTA articles 401(b) and 401(c).[50] For the most part the determination will depend on whether the imported good is a fabricated article, such as a crankshaft or body stamping, or an assembled article, such as a motor vehicle or engine. NAFTA article 401(c), which provides the origin standard for goods produced entirely within NAFTA territories exclusively from NAFTA originating materials, likely would apply to automotive goods that have been fabricated from basic materials, that have relatively few parts, that are not merely assembled from purchased parts, or that are produced in a single plant.[51]

Assembled goods, which are more likely to contain materials imported from non-NAFTA countries, will

[40] NAFTA appendix 300-A.1(2) permits the continuation of the schedule set forth in article 1003 of CFTA.

[41] NAFTA, app. 300-A.1(1). As discussed below, the NAFTA rules of origin for automotive goods were designed to correct problems encountered with CFTA rules and, in particular, to require automotive goods to contain a larger share of North American content to be deemed of North American origin.

[42] Ibid., apps. 300-A.1(4) and 300-A.2(24).

[43] Article 14 of the Auto Decree provides a limited exception for importation of new vehicles by border distributors to the border areas.

[44] While there has been considerable interest in the NAFTA rules of origin with regard to automotive trade, much of that interest reflects concerns about potential circumvention of those rules by non-NAFTA parties in order to claim NAFTA preferential treatment.

[45] Under the Auto Pact, Canada permits bonafide original equipment manufacturers to import most motor vehicles and automotive parts free of duty regardless of origin.

[46] CFTA amended the Auto Pact to apply CFTA rules of origin to Canadian exports to the United States, but Auto Pact rules continued to be used for U.S. Auto Pact exports to Canada. Under NAFTA appendix 300-A.1 and NAFTA notes, paragraph 9, Canada explicitly replaces the CFTA rules of origin with the NAFTA rules of origin for U.S exports to Canada governed by CFTA (non-Auto Pact exports). However, there is no parallel provision in NAFTA chapter 4 nor in NAFTA appendix 300-A.3 (United States) which explicitly replaces CFTA rules of

46—*Continued*

origin with NAFTA rules for Canadian exports to the United States.

[47] For example, the three U.S. automotive manufacturers (Chrysler, Ford, and General Motors) may continue to import vehicles into Canada from the United States under the terms of the Auto Pact, whereas all post-Auto Pact entrants (i.e., Toyota, Honda, Mazda, and Isuzu) would have to import vehicles into Canada under the NAFTA origin rules and would thereby be subject to the gradually more stringent regional value content (RVC) requirement schedule.

[48] The general rules for determining whether a good is originating under NAFTA are provided for in NAFTA article 401.

[49] The second-tier rules are set out in NAFTA articles 402(5) and 403.

[50] The other two standards set out in NAFTA articles 401(a) and 401(d) are likely to have little or no applicability to the automotive sector.

[51] Such goods include rubber hoses, window glass, and wheels.

probably be obligated to meet the more complex automotive-specific requirements set out in NAFTA article 403, as well as the change in tariff classification (CTC) required under NAFTA article 401(b). Under article 403 automotive goods generally will be required to meet or exceed a minimum threshold percentage of regional value content (RVC), using the net cost valuation method to determine RVC.[52]

A number of automotive-related exceptions to the general rules[53] have been established, including articles 402(5) and 403 for specific segments of the automotive industry.[54] A majority of these specific rules address the calculation of the RVC and provide alternatives for determining the RVC.[55]

Of particular note is NAFTA article 403(1),[56] which includes an approach that is referred to as "tracing."[57] Tracing appears to have been devised in response to past difficulties under CFTA with regard to "roll-up" of nonoriginating materials in the automotive sector.[58] If article 403(1) is administered as intended, the value of nonoriginating materials that are combined or incorporated into larger and larger assemblies or subassemblies would be "traced" forward from the value at the time of initial importation through each subsequent value-added stage until the point at which the NAFTA preference is claimed and an RVC calculation is necessary. As a consequence, in determining RVC the initial value of a nonoriginating material always would be contained in the final value of a further manufactured or assembled product.[59]

[52] NAFTA, arts. 402(5)(d)(i) and 402(5)(d)(ii); also arts. 402(5)(a) or 402(5)(c) may apply. The other valuation method to calculate RVC is based on transaction value.

[53] These exceptions are set out in NAFTA articles 402(4), 402(5), 402(10), and 403.

[54] The specific ranges of vehicles and parts set out in NAFTA article 403 have been simplified for this discussion as: Group 1 — Motor Vehicles; Group 2 — Trucks; Group 3 — Parts for Group 1; Group 4 — Engines and Parts for Group 2; and Group 5 — Snowmobiles and Golf Carts, Other and All Aftermarket Parts for Motor Vehicles.

[55] NAFTA articles 403(3) and 403(4) permit producers to average the RVC on a fiscal year basis or model line basis with a choice of several averaging options for both motor vehicles and parts.

[56] For goods of groups 1 and 3, NAFTA article 403(1) requires the value of nonoriginating materials listed in NAFTA annex 403.1 and imported from outside NAFTA territories to be the sum of the values of nonoriginating materials used either in the production of the good or in the production of materials used in the good, at the time they are received by the first person in a NAFTA territory to take title to them.

[57] The term "tracing" is not used in the agreement itself and is merely indicative of the practical effect of application of NAFTA article 403(1).

[58] For a discussion of rollup and related topics under CFTA, see U.S. International Trade Commission, *Rules of Origin Issues Related to NAFTA and the North American Automotive Industry* (investigation No. 332-314), USITC publication 2460, Nov. 1991, p. 33.

[59] However, effective coordination among the NAFTA parties for consistent customs valuation will be necessary since any significant variation in methodology could result in "shopping" for the most favorable border or port.

Another noteworthy provision regarding the RVC calculation that appears to be a result of experience with CFTA is the provision for staged increases in the threshold percentage of RVC.[60] The increases would occur in two steps over an 8-year transitional period, from 50 percent at the date of entry into force to 56 percent for motor vehicles and some parts such as engines on January 1, 1998, and to 62.5 percent on January 1, 2002.[61] For trucks and other motor vehicle parts, the 50-percent threshold would increase to 55 percent on January 1, 1998, and to 60 percent on January 1, 2002.[62] NAFTA article 403(6) provides for two exceptions to these staged increases for new classes or sizes of motor vehicles produced in new buildings or produced in a plant following a refit.[63]

Investment

Mexico agrees to liberalize its strict controls on foreign investment in the automotive parts industry for investors of other NAFTA parties. On implementation of the agreement, investors of NAFTA parties will be permitted 100 percent ownership of "national suppliers."[64] NAFTA investors would also be permitted to hold up to 49 percent ownership interests in an "enterprise of the autoparts industry," with the 49-percent restriction phased out over 5 years.[65]

In order to meet these commitments, Mexico would have to amend its 1989 Investment Regulations and its 1973 Investment Law.[66] The 1989 Investment Regulations currently classify the autoparts industry as an activity that is "subject to specific regulation that allows the participation of foreign investors in up to 40% of the capital stock of the companies."

Opening the Mexican autoparts industry to NAFTA foreign investment undoubtedly would have a significant effect on improving the competitiveness and quality of the auto parts imported from Mexico, with a large role played by increased U.S. investment. However, liberalization of investment restrictions probably would increase pressure on U.S. auto parts operations to invest in Mexico to be closer to assembly

[60] NAFTA, art. 403(5).

[61] Ibid., art. 403(5)(a). This schedule is for the motor vehicles of goods of group 1 and the engines and gear boxes for those vehicles.

[62] Ibid., art. 403(5)(b). This schedule is for the vehicles of group 2, the engines and gear boxes for those vehicles, and the goods of group 3.

[63] For vehicles produced in new buildings with substantially new machinery or in a plant following a refit, the RVC threshold will be 50 percent for 5 years or 2 years, respectively, after the date the first prototype is produced or assembled. This exception may permit a manufacturer that refits its plant for a new class of vehicles every two years to maintain its RVC at 50 percent.

[64] NAFTA, annex I, Reservations for Existing Measures and Liberalization Commitments, Schedule of Mexico, p. I-M-32.

[65] Ibid.

[66] Reglamento de la Ley para Promover la Inversion Extranjere, May 16, 1989, and *Ley para Promover la Inversion Extranjera*, Mar. 9, 1973, respectively.

operations and to be counted toward manufacturers' national value-added requirements.[67]

Likely Impact on Investment

NAFTA will likely have a minor positive short-term impact on investment in the Mexican automobile and auto parts sector. Some firms will modify their investment plans, but these changes will require several years to implement. In the long term NAFTA will likely result in a considerable increase in investment in the Mexican automobile and auto parts industries, which will serve to change the structure of the Mexican industry. There will likely be an insignificant impact on investment in the U.S. automobile and auto parts industry.

The Mexican Government regulates trade and foreign investment, limiting the extent to which the expanding Mexican automotive industry[68] is integrated with the U.S. and Canadian industries. The Mexican automobile assembly industry is entirely foreign owned, consisting of eight assembly plants operated by the U.S. Big Three automakers (General Motors, Ford, and Chrysler), Nissan, and Volkswagen. The Mexican automotive parts industry consists of several hundred firms, with U.S.-owned auto parts firms playing a major role in the industry.

Overall, the efficiency of the Mexican automobile industry is relatively low.[69] Most Mexican automobile and light-duty truck assembly plants produce a larger number of models (as many as four or five) than modern, competitive assembly plants, which typically produce only one or two models. Mexican assembly plants produce so many different models because Mexican automakers cannot meet consumer demand for product variety with a significant number of imports, because of Mexican trade restrictions.[70] Inefficiencies caused by making too many models are made worse because the Mexican market is relatively small, thus making it hard to produce enough automobiles to benefit from economies of scale.[71] Similarly, much of the Mexican auto parts industry that has developed primarily to supply Mexican assemblers is also relatively inefficient. Despite this efficiency penalty, the quality of Mexican automotive products is often among the best in the world.[72]

Ideally, U.S. automakers would prefer to fully integrate and rationalize their Mexican assembly plants into their overall North American production system, greatly increasing Mexican assembly plant output and efficiency and reducing the number of models produced in their Mexican plants.[73] However, U.S. Big Three automakers' ability to reorganize their Mexican operations during the NAFTA transition period will be somewhat limited because Mexican value-added and trade-balancing requirements will still be in place; moreover, the severity of these constraints varies by company and is likely to result in different levels of restructuring among U.S.-owned firms.[74] Only one U.S. Big Three automaker is planning to restructure its Mexican assembly operations according to the ideal

[67] Whereas the requirement for national value added from suppliers would be reduced gradually, manufacturers still would have a substantial Mexican value-added requirement for at least the first 10 years of NAFTA. This requirement could affect near term investment patterns in the auto parts industry.

[68] In 1991 Mexico produced 989,373 vehicles, and Mexican car and truck sales totaled 642,981 vehicles, representing an increase of 192 percent and 208 percent, respectively, over 1986 levels. In 1991, Mexican automotive parts production and sales reached approximately $11 billion and $13 billion, respectively, both totals more than doubling 1986 levels. Mexican sales and production are likely to continue to grow rapidly during the 1990s, although U.S. industry executives note that the rate of such growth is likely to decrease after the recessionary declines of the mid-1980s. *Automotive News Market Data Book*, 1992, p. 3; and *Ward's Automotive Yearbook*, 1992, p. 111. USITC staff estimates using data from U.S. Congress, Office of Technology Assessment (OTA), *U.S.-Mexico Trade: Pulling Together or Pulling Apart?*, ITE-545 Washington, DC: GPO, Oct. 1992; Bank of Mexico, *The Autoparts Industry*, undated; USITC, *The Likely Impact on the United States of a Free Trade Agreement with Mexico* (investigation No. 332-297), USITC publication 2353, Feb. 1991. U.S. industry officials, interview by USITC staff, Nov. 1992.

[69] Although certain Mexican assembly plants—for example Ford's Hermosillo plant—are more efficient than others, all Mexican auto plants suffer from reduced efficiency associated with structuring the Mexican industry around Mexican regulations. USITC, *The Likely Impact on the United States of a Free Trade Agreement With Mexico*, USITC publication 2353; James Womack, *Seeking Mutual*

[69]—*Continued*
Gain, May 15, 1990; and U.S. industry officials, interviews by USITC staff, Nov. 1992.

[70] The Mexican automobile market is supplied almost entirely by Mexican producers, as import restrictions are severe. In 1991 Mexico imported less than 15,000 vehicles, mostly from the United States. (Official statistics of the U.S. Department of Commerce and *Ward's Automotive Yearbook*, p. 113.) In contrast, U.S. auto parts producers control approximately one-third of the Mexican parts market, despite high Mexican tariff and nontariff barriers on imported parts. However, much of these U.S. exports of auto parts are used in maquiladora parts plants, a relatively unrestricted segment (with respect to imports) of the Mexican market.

[71] A production level of approximately 240,000 units in an assembly plant is considered to be desirable for economies of scale. On average, Mexican assembly plants produce at approximately 50 percent of this level.

[72] Womack, 1990; "Detroit South," *Business Week*, Mar. 16, 1991, p. 98; and Susan Walsh Sanderson and Robert H. Hayes, "Mexico - Opening Ahead of Eastern Europe," *Harvard Business Review*, Sept.-Oct. 1990. Some U.S. automotive industry executives believe that many Mexican-owned parts plants that serve only the Mexican market have good product quality but are constrained by low capacity. U.S. industry officials, interviews by USITC staff, Nov. 1992.

[73] U.S. industry officials, interviews by USITC staff, Nov. 1992, and USITC, *The likely Impact on the United States of a Free Trade Agreement with Mexico*, USITC publication 2353.

[74] U.S. industry officials, interviews by USITC staff, Nov. 1992.

system of high-volume production and fewer models produced. According to corporate planners, the firm may also build a third assembly plant in Mexico near the end of the transition period, depending on a variety of sales and production considerations.[75] Another U.S. Big Three automaker aims to similarly restructure its Mexican plants, but its plans for Mexican production increases are less extensive, and a certain level of model proliferation will remain in at least one plant during part of the transition.[76] The third U.S. Big Three automaker has no plans to significantly restructure its Mexican operations, because it is seriously constrained by Mexican local-content regulations, and there are no plans for major production increases in those plants.[77]

Although the aforementioned value-added requirement gradually falls from 36 percent (currently) to 29 percent during the transition, a significant portion of the value of vehicles that automakers import into Mexico will be included in the formula used to calculate value added. One U.S. automaker even described the value-added standard as more stringent during the transition than under current regulations.[78] Furthermore, Mexican auto parts firms that will supply the Mexican vehicle assembly plants—and whose sales to Mexican vehicle assemblers will contribute to the value-added requirement—appear to be at or near their production capacity.[79] Since the Mexican parts industry is close to its full capacity, the ability of some Mexican assemblers to restructure their plants will be limited. In addition, U.S. industry executives note that NAFTA allows the Mexican value-added requirement to be renegotiated to remain in effect even after the transition period,[80] possibly affecting the investment decisions of automakers beyond the period encompassed in this assessment.

Despite these obstacles, U.S. automobile industry executives note that the failure of U.S. firms to restructure their Mexican operations would put them at risk of becoming noncompetitive in the Mexican market.[81] Corporate officials for the U.S. automaker that plans the most significant reorganization of its Mexican operations believe that their competitors will develop similar plans for restructuring. This possibility is also supported by U.S. and foreign automakers' estimates of long-term Mexican production levels, which suggest that a more comprehensive restructuring may occur late in the transition. Furthermore, executives from all U.S. automobile firms have, at various times, stated their belief that the ultimate goal under NAFTA will be a full reorganization of their Mexican operations.[82] When the Mexican parts industry has developed further and is more capable of supplying large amounts of price-competitive, high-quality parts, it will be easier for automakers to reorganize their Mexican operations.

The Mexican auto parts industry is also likely to undergo substantial changes during the transition. Reduced Mexican trade barriers are expected to force some Mexican auto parts producers to become more competitive. Foreign investment in the Mexican auto parts industry is likely to increase under NAFTA, causing further changes in the industry. Besides the incentive to invest in Mexico associated with the Mexican value-added standards, parts producers appear to be able to save significantly by producing the more labor-intensive auto parts in Mexico.[83]

An important, but less certain, element of NAFTA involves investment by foreign automobile firms. It seems likely that some foreign auto firms not currently producing vehicles in Mexico will build their first assembly plant in Mexico during the latter half of the transition, when Mexican value-added and trade-balancing requirements are reduced. Mexico is one of the largest and fastest growing developing markets[84] and has the advantage of being close to the U.S. market and automotive production system. Although only one foreign automobile firm (Mercedes-Benz) has announced plans to build a new assembly plant in Mexico, it would be inconsistent with current investment behavior for those firms to ignore the Mexican market.[85] Honda and Toyota of Japan and Kia of Korea appear to be the most likely firms to establish new plants in Mexico.[86]

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[75] Ibid.

[76] Ibid.

[77] However, published reports indicate that Mexican production may increase more than as noted above. For example, one published report indicates that Chrysler's planned Mexican truck plant will be producing 100,000 vehicles by 1994. See "Around the Industry," *Ward's Automotive Reports*, Nov. 16, 1992, p. 5. Another published report indicates that GM has considered building a truck plant with a capacity of 250,000 units in Mexico. See "Mexico May Get Plant," *Ward's Automotive International*, Oct. 1991, p. 2.

[78] U.S. industry officials, interviews by USITC staff, Nov. 1992.

[79] Ibid.

[80] Ibid.

[81] Ibid.

[82] Ibid., and USITC, *The Likely Impact on the United States of a Free Trade Agreement With Mexico*, USITC publication 2353.

[83] OTA, *U.S.-Mexico Trade: Pulling Together or Pulling Apart?*

[84] East Asia and Eastern Europe are important examples of developing markets that are attracting the investment of automakers.

[85] Volkswagen will double its Mexican production to over 300,000 units by the mid-1990s as a result of NAFTA. "Mercedes May Use Mexico as Source of Cars for U.S.," *Automotive News*, July 15, 1991, p. 1.

[86] Industry officials, interviews by USITC staff, Nov. 1992, and "Toyota Studies Mexican Plant," *Automotive News*, Nov. 2, 1992, p. 2. Several European firms may invest in Mexico to improve their generally weak market position in North America. Investment in Mexico by foreign automakers is often dismissed as insignificant for the U.S. industry or even beneficial to North American production/employment because it would largely displace U.S. imports from Asia, and new Mexican assembly plants would source some components from the United States. However, new entrants into the Mexican industry would also increase competition in the Mexican market, possibly reducing the market share of U.S.-owned firms, particularly for smaller or less expensive automobiles, which are likely to make up a large portion of the Mexican market.

Likely Impact on U.S. Trade[87]

In the short term, NAFTA will likely result in a minor increase in U.S. trade in automobiles and auto parts with Mexico. The Commission's sectoral model indicates that in the short term U.S. imports of auto parts from Mexico will not increase, but U.S. exports of auto parts to Mexico will increase by 3 percent. Structural changes in the Mexican industry, which will have a considerable effect on U.S.-Mexican trade, are expected to take several years to implement. Further, the gradual elimination of many of the most significant U.S. and Mexican tariff rates will reduce the short-term impact on trade. In the long term, U.S. automobile imports and exports with Mexico are likely to increase considerably under NAFTA. The aforementioned reductions in Mexican value-added and trade-balancing requirements will allow at least a partial restructuring of the Mexican automobile assembly industry and increased access to the Mexican market.

Increased production of Mexican vehicles, which currently use a high proportion of U.S. parts, combined with reduced Mexican trade barriers will provide a growing market for U.S. parts producers. Increased U.S. exports of auto parts to Mexico are likely to result in a considerable increase in total U.S. auto parts exports. U.S. imports of auto parts from Mexico are also expected to expand considerably in the long term, largely because of increased investment in Mexico by both U.S. and foreign auto parts firms and, to some extent, because the Mexican auto parts industry will become more competitive under a more liberal trade environment.

Estimates of trade flow changes between the United States and Canada cannot be made with confidence, but at least minor reductions are expected. Long-term Mexican production estimates indicate that Mexican assembly plants will probably displace some U.S.-Canadian automobile and auto parts trade. The long-term impact on U.S.-Canadian automobile trade will be influenced by U.S. automakers' future decisions on where to build specific models in North America. Similarly, increased investment in and competitiveness of the Mexican auto parts industry are likely to result in more Mexican auto parts production and exports, resulting in at least minor displacement of U.S.-Canadian auto parts trade. Although the investment plans of Asian and European automotive firms are not known, it is likely that at least a minor portion of those imports will displace some U.S. imports from non-North American countries.

[87] The Commission's sectoral model used elsewhere in this report is not applicable to the automobile sector or to the long-term impact analysis of the auto parts sector. Mexican value-added and trade-balancing requirements that remain during the NAFTA transition period, as well as the restructuring of the Mexican industry, are critical factors in the analysis that cannot be accounted for in the model. The sectoral model is somewhat more applicable to the short-term impact analysis of the auto parts sector.

Likely Impact on U.S. Production and Employment

In the short term, NAFTA will likely have little or no effect on U.S. production and employment for both the U.S. automobile and auto parts industries. The Commission's sectoral model indicates that in the short term, U.S. production and employment in the auto parts industry will increase by less than 1 percent. In the long term, NAFTA could result in a minor reduction of U.S. automobile production and employment. Rather than closing U.S. production plants to transfer production to Mexico, U.S. Big Three automakers are generally planning to undertake at least a partial restructuring of their Mexican operations, although this strategy will vary by firm.[88] Even a partial reorganization of the Mexican automobile industry will add considerably to Mexican production levels, displacing a minor amount of U.S. production.

A minor decrease in U.S. production of autos will generate yet a smaller decrease in U.S. employment in the sector. The U.S. automobile industry is concentrated in the Midwest, and it is there that any job losses are most likely to be concentrated. The impact on U.S. production and employment could be more adverse if the Mexican automobile assembly industry undergoes a more extensive restructuring than is anticipated, which could displace additional U.S. output, or, as discussed, if investment by new entrants[89] in the Mexican automobile assembly industry adds substantially to Mexican production.

In contrast, it is more difficult to construct realistic scenarios in which NAFTA would increase U.S. automobile production. U.S. automakers indicate that they are constrained by the Mexican value-added requirement, and it is questionable whether they could export enough vehicles from U.S. assembly plants to have even a minor positive impact on the U.S. automobile industry. Only if Mexican assembly plants experience production increases that are much lower than, and if Mexican sales are larger than, expectations of automakers[90] will there be even a minor benefit to U.S. production.[91]

[88] For a discussion of the likely costs and benefits associated with shifting U.S. automobile production from the United States to Mexico under NAFTA, see OTA, *U.S. Mexico Trade: Pulling Together or Pulling Apart?*.

[89] New entrants into the Mexican industry might export to the United States and displace U.S. imports from non-NAFTA countries, benefiting any U.S. auto parts producers that supply the new entrants.

[90] U.S. industry officials, interviews by USITC staff.

[91] In practical terms it is questionable whether Mexican vehicle producers could meet the value-added and trade-balancing requirements under such a scenario, which would be characterized by relatively high Mexican imports and low Mexican production. An economist for one U.S. automobile firm noted that Mexican sales are unlikely to greatly exceed expectations, because doing so would probably generate balance of payments problems for Mexico, perhaps resulting in Mexican Government policies that would reduce automotive sales or imports.

In the U.S. auto parts industry NAFTA is likely to generate a modest increase in long-term U.S. production.[92] U.S. parts producers' role as a major supplier to the Mexican market, and the expected strong growth of, and improved U.S. access to that market, suggest that U.S. producers will benefit from NAFTA, although Mexican value-added requirements will limit U.S. export potential. Although much of the Mexican auto parts industry will likely become more competitive with U.S. producers as Mexican trade barriers fall, large segments of the Mexican parts industry, mainly engine plants and maquiladoras, are already highly competitive with U.S. producers, and it is unlikely that those producers will make major new inroads into the U.S. market under NAFTA. The auto parts industry is concentrated in the Midwest, and it is there that a minor U.S. employment gain is likely to be concentrated.

Likely Impact on U.S. Global Competitiveness

U.S. automakers indicate that NAFTA will give them only minor competitive advantages over their foreign competitors.[93] Any limited advantages available to U.S. producers will be only temporary as more non-U.S. automakers eventually increase investments in Mexico and gain access to the Mexican market. New entrants into the Mexican market will have the advantage of being able to structure their initial investments in a more open and predictable business environment. Furthermore, there is no evidence to suggest that U.S. automakers will experience enough of an increase in their Mexican sales, or will derive enough advantages from restructured Mexican assembly operations, to significantly affect their competitive position relative to foreign automakers.

In the parts industry the impact of NAFTA on U.S. global competitiveness may be slightly more positive.[94] NAFTA will stimulate some U.S. investment in the Mexican automotive parts industry, allowing some firms to reduce costs,[95] thereby increasing their competitiveness over non-North American producers. Many U.S. producers will gain some financial advantages from increased sales in the Mexican market, but it is difficult to envision such gains as having more than a minor impact on their global competitiveness.

[92] In contrast, the United Auto Workers (UAW) argues that NAFTA will cause a loss of U.S. jobs in the industry. UAW, written submissions to the Commission, Nov. 17 and 25, 1992.

[93] U.S. industry officials, interviews by USITC staff, Nov. 1992. In contrast to this general view, some industry executives feel that the implementation of NAFTA will be critical in strengthening U.S. competitiveness for both automobiles and auto parts. General Motors Corp., written submission to the Commission, Nov. 25, 1992.

[94] U.S. industry officials, interviews by USITC staff, Nov. 1992.

[95] OTA, *U.S.-Mexico Trade: Pulling Together or Pulling Apart?*, p. 148.

CHAPTER 5
Computers, Computer Components, Electronics[1]

Andrew F. Malison

Table 5-1
Computers and other electronic equipment: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	1,380	1,328	1,281	-4
Trade data (million dollars):				
Shipments	148,655	147,547	144,450	-2
Exports:				
Total	48,260	55,048	57,781	5
To Mexico	3,622	4,065	4,399	8
To Canada	5,730	9,056	8,972	-1
Imports:				
Total	66,760	68,083	72,615	7
From Mexico	4,662	4,778	5,005	5
From Canada	4,211	5,387	6,190	15
Trade balance:				
Total	-18,500	-13,035	-14,834	-14
With Mexico	-1,040	-713	-606	15
With Canada	1,519	3,669	2,782	-24
Consumption	167,155	160,582	159,284	-1
Import market share (percent):				
Total	40	42	46	([1])
Mexico	3	3	3	([1])
Canada	3	3	4	([1])

[1] Not meaningful for purposes of comparison.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Summary of Sector Analysis

The electronics industry in Mexico is relatively small and technologically unsophisticated. U.S. producers dominate this industry, in which they assemble electronic products, especially subassemblies and consumer electronic goods, from U.S. components primarily for export to the United States.[2] These U.S. producers, along with other foreign producers in Mexico, operate principally under the maquiladora or other similar export promotion programs and generate most of Mexico's total electronics production. Mexico generally lacks the technological resources and supplier networks needed for producing sophisticated electronic products.

[1] Includes primarily (1) television (TV) receivers and other consumer electronic products, (2) electronic components, including semiconductors, TV picture tubes, and articles for making and breaking electrical circuits, such as connectors, relays, and switches, (3) office machines, including computers and packaged computer software, and (4) telephone and telegraph apparatus.

[2] Most major U.S. producers of consumer electronic goods are foreign owned. In 1991, 51 percent of total U.S. imports of electronic equipment from Mexico consisted of TVs, radios, and other consumer electronic goods; electronic components accounted for 31 percent, office machines for 14 percent, and telephone and telegraph apparatus for 2 percent.

U.S. producers also account for a large portion of the electronics industry in Canada. However, NAFTA does not alter appreciably the trade and investment regime established by the U.S.-Canada Free-Trade Agreement (CFTA), and the products traded with Canada generally do not compete with those traded with Mexico.[3]

In the short term, NAFTA will likely result in a minor increase in U.S. trade with Mexico and a modest increase in U.S. investment in Mexico. In the long term, however, NAFTA is expected to result in a considerable increase in this investment and trade. It will likely do this by diverting U.S. trade and investment to Mexico from China, Thailand, and other low-wage areas used by U.S. and foreign firms for assembling lower end electronic subassemblies, consumer electronic products, computers, and telephone and telegraph apparatus. In particular, NAFTA's rules of origin and duty drawback provisions and the phaseout of tariffs will likely provide incentives for U.S. companies to increase their assembly operations in Mexico. Increased production in Mexico will provide U.S. companies with less expensive labor-intensive electronic goods and subassemblies and improved access to the expanding Mexican market for electronic equipment and parts. Employment in the U.S. industry is not expected to change appreciably, although some employment of U.S. operators, fabricators, and laborers may shift to Mexico. At the same time, employment of professionals, engineers, and precision workers may increase in the United States.

Key NAFTA Provisions Affecting Sector

Tariff Provisions

Based on 1991 trade, U.S. tariffs on electronic products from Mexico average 4.2 percent ad valorem in nominal terms, but the effective rate is only 2.4 percent. A large portion of U.S. imports from Mexico enter at reduced duties under headings 9802.00.60 and 9802.00.80 of the Harmonized Tariff Schedule of the United States or duty-free under the Generalized System of Preferences (GSP). Based on 1991 trade, Mexican tariffs on U.S. electronic products average 15.8 percent ad valorem in nominal terms, but the average trade-weighted effective duty is only 2.6 percent.[4] About 84 percent of U.S. exports entered Mexico free of duty under the maquiladora program in 1991.

U.S. tariffs on Mexican electronic products will be eliminated immediately upon NAFTA's implementation, with only a few exceptions. Tariffs will be phased out in 5 years for certain switches and some capacitors and in 10 years for the remaining capacitors. In 1991, these switches and capacitors accounted for a negligible portion of U.S. imports from Mexico and Canada.

Under NAFTA, Mexican tariffs on about 40 percent of U.S. dutiable exports of electronic equipment to Mexico will be eliminated immediately, 50 percent will be phased out in 5 years, and the remainder, in 10 years. As a result, the effective Mexican duty on U.S. electronic equipment will decline to about 1.5 percent ad valorem and the nominal rate of duty will decrease to about 9.0 percent ad valorem immediately upon NAFTA's implementation. U.S. dutiable exports whose tariffs will be eliminated immediately consist primarily of computer storage units, recorded magnetic media, and parts of photocopiers; those whose tariffs will be phased out over 5 years consist primarily of TVs, computers, and telephone equipment; and the remainder consists almost exclusively of switches and other apparatus for making and breaking electronic circuits.

The trade-weighted effective duty on trade in electronic products between the United States and Canada averages less than 1 percent. Most remaining bilateral tariffs for electronic products will be eliminated under CFTA on January 1, 1994.

Rules of Origin

Electronics goods produced in North America entirely from originating materials will qualify for NAFTA benefits. If nonoriginating materials are used in the production of the electronics goods, complex origin rules must be satisfied for the goods to qualify for NAFTA benefits.[5] These rules include requirements for specified changes in tariff classification, minimum regional value-content requirements, and prohibitions against the use of certain nonoriginating parts or subassemblies. These prohibitions may prevent origin from being conferred on goods altogether or may require that minimum regional value-content requirements be satisfied as well.

The specified parts or subassemblies subject to these specific rules include: (1) printed-circuit subassemblies (PCAs); (2) color cathode-ray tubes (CRTs), including TV picture tubes; (3) certain parts of

[3] For additional information on the Mexican and U.S. electronics industries, see U.S. International Trade Commission, *The Likely Impact on the United States of a Free Trade Agreement With Mexico* (investigation No. 332-297), USITC publication 2353, Feb. 1991, pp. 4-27 to 4-28.

[4] Estimated by USITC staff on the basis of U.S. and Mexican trade data.

[5] Although the rules of origin are complex, they reportedly reflect the needs and desires of the domestic industry. *Report of the Industry Sector Advisory Committee for Trade in Electronics and Instrumentation on the North American Free Trade Agreement*, Sept. 1992.

facsimile machines, printers for automatic data processing (ADP) machines, electrostatic photocopying machines, and TVs; (4) flat panel displays; (5) integrated circuits for high-definition TVs; (6) front panel assemblies and cones for CRTs; (7) electron guns and radio frequency structures for microwave tubes; and (8) transceiver assemblies, antennas, and display units for radar apparatus.[6] In some instances, the specified parts can be used, but only to a limited extent. For example, some of the rules applicable to PCAs may allow some of the PCAs in a finished good to be nonoriginating, as long as the finished good incorporates some North American PCAs.

The rules range from relatively liberal to very strict. On the one hand, personal computers can be assembled in North America using virtually all nonoriginating components provided that the motherboard[7] is a North American product. On the other hand, facsimile machines, printers for ADP machines, and electrostatic photocopying machines qualify for NAFTA benefits only if most of the major subassemblies used in their construction qualify as originating goods in accordance with very specific rules.[8]

In contrast to NAFTA rules of origin, the CFTA rules of origin are rather simple. Under CFTA a change in classification from one heading to another is usually sufficient to confer origin on the finished good. If goods are produced using nonoriginating components classified in a provision under the Harmonized System that specifically provides for parts and the finished product, origin will be conferred only if a minimum value-content is met.[9]

Drawback

As noted above, NAFTA generally restricts the extent to which NAFTA signatories can exempt third-country imports from customs duty when such imports are subsequently exported to another NAFTA signatory. Under NAFTA, the waiver, reduction, or refund of customs duties (otherwise known as "drawback") is limited to the smaller of the following two amounts: (1) the duty paid or owed on the original importation of the third-country good into North America or (2) the duty paid on the subsequent shipment to another NAFTA signatory. NAFTA similarly restricts duty deferral programs, which include foreign trade zones, temporary importations under bond, bonded warehouses, "maquiladoras," and inward-processing programs.[10] These restrictions will generally take effect after a transition period of 7 years for U.S.-Mexican trade and 2 years for U.S.-Canadian trade. However, during the transition period Mexico may only grant limited duty exemptions to certain large color CRTs because they are subject to immediate and specific staged reductions.[11] This staging provides that Mexico may grant duty exemptions to only 1.2 million third-country tubes that are subsequently exported to the United States in 1994, declining by 200,000 units per year until the year 2000.[12]

NAFTA limits on various duty avoidance or reduction schemes may tend to encourage plants that currently assemble third-country parts and components to obtain more of their source materials in North America, or it could encourage plants to assemble such parts and components entirely in third countries, depending on the relative duty rate differentials and a host of other factors. NAFTA restrictions on duty exemption programs will likely have a significant impact on the electronics sector in general, and television assembly in particular, because the availability of duty exemption programs has, in the past, encouraged significant assembly of third-country electronic parts and components in the maquiladora sector in Mexico.

Intellectual Property

By designating computer programs as literary works within the meaning of the Berne Convention, NAFTA establishes as a minimum the protection recently accorded to computer programs by the laws of the three countries. The intellectual property provisions will enhance this basic protection by further requiring protection of importation, first distribution, and rental rights of these products, a requirement that will lead Canada to change existing law and the United States to make permanent the provisions that were due to expire in several years.[13] For the first time, Mexico will protect layout designs of integrated circuits.[14]

Likely Impact on Investment

NAFTA will have only a minor impact on U.S. investment in Canada's electronics industry because sector investment and trade were already liberalized under CFTA and were not appreciably altered under NAFTA. U.S. investment in Mexico's electronics industry will likely increase modestly in the short term and considerably in the long term as a result of NAFTA. U.S. investment in the Mexican electronics industry has already increased considerably in recent years following Mexico's liberalization of its investment and trade policies for the electronics

[6] NAFTA, annex 401, pp. 67-141 and 151-162.
[7] For the purpose of the NAFTA rules of origin, a motherboard is defined as circuit board with a central processing unit or microprocessor.
[8] NAFTA, annex 401, pp. 99-100, 121-122, and 155.
[9] CFTA, annex 301.2(4).
[10] NAFTA, arts. 303(3) and 318. For further discussion of NAFTA's drawback provisions, see chapter 3 of this report.
[11] Ibid., art. 303(8) and annex 303.8.
[12] Ibid., annex 303.8.
[13] Ibid., art. 1705.2; see Pub. L 101-650, sec. 804 (c) (current U.S. sunset provision for 19 U.S.C. 109 (b) concerning rental of computer programs).
[14] NAFTA, art. 1707.

industry in 1990.[15] NAFTA will encourage investment in Mexico in the long term by contributing to a more favorable investment climate, especially for investors that see Mexico as both a low-cost production base and a market with growth potential.

U.S. and other foreign investment in Mexico is also expected to expand in the long term because the elimination of tariffs for goods produced in North America and NAFTA's rules of origin and duty drawback provisions will likely encourage production in North America. In particular, NAFTA's rules of origin and duty drawback provisions were designed to encourage the assembly of electronic products and the manufacture of key electronic components in North America.[16] These provisions are expected to encourage Mexican and, to a lesser extent, Canadian producers to purchase certain electronic components, subject to high tariffs, from North America suppliers. These components are primarily CRTs and high-definition displays for use in computers and TVs and a number of key electronic components, including PCAs, for use in the construction of telecommunications switching equipment, advanced computer printers, facsimile machines, electrostatic photocopying machines, and electronic automotive parts. Whereas tariffs on most electronic goods are generally low in the United States and Canada, the elimination of Mexico's tariffs under NAFTA could be important given the low profit margins on many final products in the electronics industry.

Mexican and, to a lesser extent, Canadian producers often avoid high U.S. tariffs on certain components by assembling them into products that enter the United States at lower rates of duty. This practice is possible because Mexico and Canada refund or waive duties on imported components that are incorporated into finished products for export under export drawback programs. The limitation on drawback under NAFTA will increase these producers' cost of obtaining source materials (sourcing) from outside North America and thus will encourage sourcing in North America. Moreover, NAFTA rules of origin will promote the use of North American components by restricting the tariff treatment advantages of NAFTA to goods that use certain key components made in North America and that incorporate a relatively high level of North American content. The NAFTA rules of origin and duty drawback provisions of are expected to greatly affect current supply patterns of Mexican TV manufacturers.[17]

Mexico's domestically owned firms generally lack the technological know-how, capital, and international distribution networks needed to compete in the global market. As a result, these Mexican firms must depend on foreign firms. U.S. firms have an advantage in investing in Mexico because they are closer to the market than are other major global competitors in the electronics industry. The main global competitors of U.S. electronics producers are in Japan, other Asian countries, and Europe. Proximity is an advantage for electronics firms in improving control over remote operations and reducing transportation and other communications costs.

Rather than causing disinvestment in the United States, NAFTA will likely encourage U.S. investment in Mexico that would otherwise go to other parts of the world. The electronics sector in Mexico competes for U.S. and other foreign investment primarily with low-wage countries, particularly countries such as Thailand and China. Mexico and these other low-wage countries primarily produce relatively mature electronic components and goods whose manufacture is relatively labor-intensive.[18] Mexico is particularly attractive to U.S. suppliers in producing labor-intensive mature products that are bulky or fragile because these products are subject to high transportation costs. These products include TVs, electronic subassemblies for automobiles, and hard disk drive actuators for computers.

U.S. and Mexican industry sources noted that Mexico's proximity to the U.S. market is viewed as an advantage over competing countries in Asia.[19]

[15] After declining for 4 years, U.S. direct investment in Mexico's electronics industry grew by 38 percent in 1990, to $215 million. A.T. Kearney, Grupo Consultor Ejecutivo, "Opportunities for Foreign Investment in the Electronics Industry," a report to the Mexican Investment Board, Oct. 21, 1992, p. 17. Information on investment trends since 1990 is based on discussions by Commission staff with industry officials during the course of this study.

[16] According to a U.S. Government official engaged in negotiating NAFTA's duty drawback and rules of origin provisions and other sources in the United States and Mexico, the sections of NAFTA directly relating to the electronics industry were negotiated with a strategic view to promote the production of advanced components in North America and the use of North America as an integrated base of production.

[17] TVs accounted for 47 percent of total U.S. dutiable imports of electronic equipment from Mexico in 1991. A large portion of the TVs from Mexico contain Asian-made TV tubes that enter Mexico duty-free or at reduced duties under programs such as the maquiladora program. Under NAFTA these programs will be phased out, giving North American TV tube producers a significant advantage since TV tubes imported from outside North America will face a 15-percent tariff in both Mexico and the United States. Moreover, these producers would have an incentive to obtain these tubes locally under NAFTA because TVs produced with North American tubes will be able to enter the United States free of duty, whereas those with foreign-made TV tubes will be subject to a 5-percent duty. For further discussion of the impact of these provisions on this and other electronics products, see *International Business Transactions Newsletter*, issue No. 35, Washington, DC, Nov. 1992, pp. 3-4.

[18] Mature electronic components compete primarily on a cost basis, and their production does not require sophisticated technological know-how and infrastructure.

[19] W. Edward Steinmuller, "The Electronics Industry and North American Free Trade: Adjustments and Opportunities," Stanford U., Center for Economic Policy Research, Aug. 18, 1991.

However, these Asian countries are often more attractive than Mexico to foreign investors because they have more favorable government investment incentives, trade administration regimes, and networks for supplying components and other production inputs.[20]

Likely Impact on U.S. Trade

Although NAFTA will not affect U.S. trade with Canada, it is expected to result in an increase of no more than 5 percent in electronic equipment trade with Mexico in the short term and in an increase in excess of 15 percent in the long term. Although U.S. tariffs on virtually all Mexican electronic products will be eliminated immediately upon implementation of NAFTA, the short-run increase will be no greater than 5 percent because a large portion of these imports already enter duty-free or at reduced duties. In the long term, the expected growth in investment in assembly operations in Mexico will likely result in a greater than 16-percent increase in U.S. electronics imports from Mexico. However, both the short-term and long-term increase in U.S. imports from Mexico expected under NAFTA will likely result in an increase of 5 percent or less in total U.S. imports because Mexico's electronic products are primarily substitutable with U.S. imports from the Far East and other sources that compete with Mexico in the assembly of labor-intensive electronics products.

U.S. electronics exports to Mexico likely will not be affected by the tariff reductions under NAFTA in the short term, because most of these exports enter Mexico duty-free as inputs of goods manufactured for export.[21] The remainder of these U.S. exports are consumed in Mexico and account for about 57 percent of Mexican consumption of electronic equipment. However, U.S. exports to Mexico are expected to rise by more than 15 percent in the long term because NAFTA provisions on rules of origin and duty drawback will encourage the use of North American components in electronic products for sale in the United States.

NAFTA will likely stimulate U.S. exports of office machines and telephone equipment to Mexico in the long term because it will require Mexico to open part of its government procurement market[22] and to remove restrictions[23] that limit how much business can be conducted via private communications networks and how much of this equipment can be attached to the country's telephone networks.[24] However, U.S. exports of this and all other electronic equipment for Mexican consumption will benefit only as incomes rise in Mexico.

Likely Impact on U.S. Production and Employment

The expected changes in U.S. sector trade under NAFTA will lead to a minor change in U.S. production and employment. Mexico accounts for a relatively small portion of total U.S. trade, and the anticipated increase in U.S. imports of lower end products from Mexico under NAFTA is expected to be offset in part by growth in U.S. exports to Mexico. Moreover, U.S. imports from Mexico will likely displace U.S. imports from low-wage nations in the Far East rather than U.S. production.

Mexico and these other low-wage areas have a competitive advantage in the production of labor-intensive assemblies that primarily employ relatively low-skilled operators, fabricators, and laborers. These types of workers accounted for about 23 percent of the U.S. electronics industry's 1.3 million workers in 1990.[25] However, the number of U.S. workers displaced by NAFTA is expected to be relatively low, well below 5 percent of all workers, because U.S. firms have already moved a large portion of their low-skill operations to Mexico and other low-wage areas. In addition, U.S. firms are expected to retain a certain number of these workers domestically in order to have flexibility in low-volume and quick-turnaround production runs and to produce certain goods that have high transportation costs. On the other hand, NAFTA will likely result in an increase of 5 percent at the most in long-term demand in the United States for professionals, engineers, and precision manufacturing positions in order to support increased U.S. exports to Mexico's market and operations assembling products for export.

Likely Impact on U.S. Global Competitiveness

In the short term, NAFTA is expected to have minimal effect on this U.S. industry and, therefore, likely will not have an effect on the global competitiveness of the U.S. industry. In the long term, however, increased production in Mexico will provide U.S. producers with an expanded market for electronic

[20] See, e.g., Manufacturing Committee of the Guadalajara Branch of the Chamber of Commerce, "Mexico's Competitiveness in the Electronics Industry," unpublished position paper, Sept. 1991.

[21] In addition to the maquiladora program, Mexico provides domestic firms with duty reductions on the importation of capital equipment and inputs for the production of exports through programs such as the Programa de Importacion Temporal para Producir Articulos de Exportacion (PITEX).

[22] For a detailed discussion of government procurement under NAFTA, see chapter 3 of this report.

[23] NAFTA, art. 1302.

[24] Officials of Telecommunications Industry Association, interview by USITC staff, Nov. 5, 1992.

[25] Excludes personnel in the computer software sector.

parts and equipment and an opportunity to become more competitive in the production of labor-intensive electronic goods and subassemblies. A number of countries in the Far East, particularly Japan, Hong Kong, Taiwan, and Singapore, have had a competitive advantage in electronics production in part because of their proximity to China, Thailand, the Philippines, Malaysia, and other low-wage areas that have specialized in the assembly of electronic equipment. According to the Computer and Business Equipment Manufacturers Association (CBEMA), its members gained competitiveness as a result of CFTA and expect additional benefits from NAFTA.[26] Similarly, the Electronics Industries Association (EIA) maintains that NAFTA will improve its members' competitive position in both the North American and global markets.[27]

[26] CBEMA, written submission to the Commission, Nov. 25, 1992.
[27] EIA, written submission to the Commission, Nov. 24, 1992.

CHAPTER 6
Machine Tools[1]

Dennis Fravel, Abigail Shaine, Craig Houser

Table 6-1
Machine tools: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	93	85	78	-8
Trade data (million dollars):				
Shipments	6,793	6,491	6,167	-5
Exports:				
Total	1,896	1,955	1,952	(1)
To Mexico	170	162	185	14
To Canada	335	384	300	-22
Imports:				
Total	3,520	3,324	3,113	-6
From Mexico	3	3	3	0
From Canada	213	181	156	-14
Trade balance:				
Total	-1,623	-1,369	-1,161	15
With Mexico	167	159	182	14
With Canada	122	203	144	-29
Consumption	8,417	7,860	7,328	-7
Import market share (percent):				
Total	42	42	42	(2)
Mexico	(1)	(1)	(1)	(2)
Canada	3	2	2	(2)

[1] Less than 0.5 percent.
[2] Not meaningful for purposes of comparison.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

Source: Estimated by the staff of the U.S. International Trade Commission, based on official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Summary of Sector Analysis

The U.S. machine tool industry has limited production facilities in Canada, and none in Mexico. Canada and Mexico are relatively important export markets for U.S. machine tools. The major NAFTA issues of concern to U.S. producers are the 5-year staging of certain Mexican tariffs (many are currently at 20 percent ad valorem) and the extensive NAFTA rules-of-origin requirements for metal-working machine tools covering such critical components as pumps; electric motors; electrical control panels (including numerical controllers); lasers; and major castings, weldments, and fabrications (MCWFs).

The phaseout of tariffs under NAFTA is likely to result in net gains in U.S. exports to Mexico of 9 percent in the short term and of 11 percent in the long term. This expected growth in U.S. trade is likely to result in an increase of less than 1 percent in U.S. production and employment in both the short and long term. U.S. machine tool builders marketing in the North American market are likely to purchase more of their critical components from domestic suppliers in order to meet NAFTA-origin requirements. These suppliers of critical components to the metal-working machine tool industry are located primarily in the

[1] Includes metal-working machine tools, wood-working machine tools, and machine tools for working either mineral materials or other hard materials (i.e., stone, ceramics, concrete, glass in the cold state, wood, cork, bone, hard rubber, hard plastics, or similar materials), and parts.

Midwest, New England, California, and North Carolina.

There is likely to be little or no increase in investment by U.S. machine tool builders in Mexico, which lacks a sufficiently large domestic market that would justify establishing production there. In addition, many U.S. machine tool builders lack the capital to do so. NAFTA is not expected to affect the global competitiveness of U.S. machine tool builders.

NAFTA rules-of-origin requirements for metal-working machine tool builders are likely to be difficult to meet and may even negate some of the potential trade gains for some U.S. machine tool builders. The U.S. machine tool industry is expected to benefit in terms of sales growth as Mexican end-user industries expand and upgrade their products to become globally competitive. The extent to which this will be due to the implementation of NAFTA is unknown.

Key NAFTA Provisions Affecting Sector

Tariff Provisions

Upon implementation of NAFTA, all U.S. and Canadian imports of qualifying machine tools will enter duty-free, whereas an estimated 76 percent[2] of Mexican imports of qualifying machine tools will enter duty-free. Duties on the remaining Mexican imports, which are 10, 15, and 20 percent ad valorem, will be eliminated in five equal annual stages.

U.S. tariffs on machine tools range from free to 5.8 percent ad valorem. Based on 1991 trade, the effective rate of duty for total U.S. imports of machine tools and parts is 4.0 percent ad valorem, compared with 2.0 percent for imports from Mexico and 1.1 percent for those from Canada. Approximately 53 percent of U.S. imports of machine tools from Mexico[3] and 4 percent of those from Canada entered duty-free in 1991. Virtually all the duty-free imports from Mexico entered under the Generalized System of Preferences (GSP). There are no maquiladoras that produce machine tools.[4] Approximately 87 percent of the imports from Canada entered at reduced duties under the U.S.-Canada Free-Trade Agreement (CFTA) at an effective rate of duty of 0.7 percent ad valorem.

Based on 1990 Mexican trade data, Mexican tariffs on machine tools from the United States averaged 13 percent ad valorem. For products whose tariffs will be phased out over a 5-year period, the effective rate of duty was 17 percent ad valorem. Products subject to the 5-year phaseout are concentrated in a few categories of metal-cutting machine tools (multistation transfer machines, numerically controlled[5] (NC) horizontal lathes, and certain drilling machines) and in a wide range of metal-forming machine tools (machines specifically designed for working wire or tubes, certain shearing machines and punching machines, and presses). These metal-forming machine tools constitute an important segment of the Mexican market.[6] For non-metal-working machine tools, tariffs having 5-year staging are limited to sawing machines and certain grinding and polishing machines.

Rules of Origin

Under NAFTA, rules of origin for machine tools preclude or otherwise limit the use of nonoriginating electric motors, pumps, electrical control panels (including numerical controllers), lasers, and MCWFs. The MCWFs—the major structural elements from which machine tools are built—are specifically provided for in two tariff provisions (by their names) in order to restrict the use of nonoriginating MCWFs in the assembly of machine tools.[7]

For machine tool components, origin is conferred only on those that do not contain nonoriginating machine tool parts.[8] Thus, a subassembly for a machine tool cannot be deemed originating if it was produced using any simpler, nonoriginating machine tool parts.

The rules of origin under CFTA, which currently apply to bilateral trade with Canada, are more restrictive with respect to the use of nonoriginating machine tool parts classifiable as parts under heading 8466 of the Harmonized System. CFTA requires that a regional value content minimum be met for any machine tool that was assembled in the territory of one or both of the parties using nonoriginating parts classifiable under the provision for parts of machine tools. Under NAFTA, this restriction would be extended to the use of nonoriginating MCWFs.[9] On the other hand, the CFTA rules of origin do not place any restrictions on the use of nonoriginating electric motors, pumps, electrical control panels, or lasers, all of which are specifically provided for in eo nomine provisions.[10]

[2] Based on 1990 Mexican import data.

[3] About $875,000 were sawing machines, $1.6 million were metal-forming machine tools, nesi, and $622,000 were various non-metal-working machine tools.

[4] USITC staff analysis of Solunet, *The Complete Twin Plant Guide*, 1992.

[5] Numerical controls are machine tool control systems that operate a machine by means of numerically coded programs inserted or fed into the systems on tape, punched cards, dials, plugs, preset switches, or by playback of prerecorded operating systems. Current machine tools are controlled by computer-numerical-control (CNC) controllers.

[6] Leticia Perez Sanroman, U.S. Embassy, Mexico City, *The Machine Tools—Presses Market in Mexico*, Nov. 1991.

[7] NAFTA, annex 401, pp. annex 401-87 through annex 401-98.

[8] NAFTA, art. 401, sec. B.

[9] CFTA, ch. 3, art. 301, and annex 301.2, sec. XVI; and NAFTA, art. 401, sec. B, and annex 401.

[10] An eo nomine designation is one which describes a commodity by a specific name, usually one well known in commerce.

It is difficult to measure the impact of the NAFTA rules of origin on this sector because goods that do not qualify for NAFTA preferential tariff treatment will continue to be eligible for preferential tariff treatment under other existing programs. However, the NAFTA rules of origin are likely to discourage the use of imported electric motors, pumps, electrical control panels, lasers, and MCWFs in the manufacture of machine tools, and to remove any advantage in manufacturing subassemblies for machine tools from nonoriginating machine tool parts. Further, the rules are likely to discourage the use of imported drilling, boring, milling, threading, and tapping machines in the manufacture of machining centers, unit construction machines, and multistation transfer machines. Manufacturers will, however, generally be free to use all other imported parts in the manufacturing of machine tools, to the extent that they do not have to meet regional value content restrictions.

Likely Impact on Investment

In both the short and long term, there likely will be little or no increase in investment in the machine tool industries of Canada, Mexico, and the United States as a result of NAFTA. U.S. and Canadian machine tool builders will likely be deterred from investing in Mexico because of the small size of both the Mexican market and the Mexican machine tool industry.[11] At present, there is overcapacity in the global machine tool industry. In addition, most U.S., Canadian, and European machine tool builders are small to medium-size firms that lack the capital to establish foreign production bases.

Virtually all foreign investment by the U.S. machine tool industry has been in Europe and Canada, and this has been done only by the largest U.S. builders. Foreign investment in North America has been concentrated in the United States, where about 20 Japanese and German machine tool builders have production facilities. Some of the investment in the United States reportedly is a result of the U.S. voluntary restraint agreements (VRAs) with Japan and Taiwan restricting certain imports of metal-working machine tools from those countries.[12] Foreign machine tool investment in both Canada and Mexico is minimal. One Japanese firm recently began to produce small metal-working presses in Mexico.

[11] Mexican consumption of metal-working machine tools in 1991 was estimated at $255 million and production at $15 million. Canadian consumption was estimated at $658 million and production at $301 million. See Joseph Jablonowski, "Machine-Tool Production Drops," *American Machinist*, Feb. 1992, pp. 60 and 62.

[12] The VRAs initially covered the 5-year period ending in 1991. The VRAs were extended for another 2 years through 1993, and are limited in scope to certain computer-controlled metal-working machine tools.

Likely Impact on U.S. Trade

The Commission's sectoral model indicates that U.S. imports from Mexico and Canada will likely increase by less than 1 percent in both the short and long term. This is due to current low U.S. tariff rates and because of Mexico's limited production of machine tools. Although some imports from Canada and Mexico may not be able to meet the origin requirements under NAFTA, this may not be an impediment because U.S. tariffs are relatively low and some imports from Canada may qualify for reduced tariffs under CFTA. Based on the Commission's sectoral model, U.S. machine tool exports[13] to Mexico are likely to increase by 9 percent in the short term and by 11 percent in the long term as a result of the phaseout of tariffs under NAFTA. Minor, if any, increases in U.S. exports to Canada are expected because existing Canadian tariffs are already low.

The phaseout of Mexican tariffs on U.S. machine tools will likely be offset somewhat by the inability of some U.S. machine tool builders to meet the NAFTA rules-of-origin requirements,[14] particularly those builders that use Japanese or other foreign-made motors and computer controls.[15] Some other U.S. machine tool builders will likely be at a competitive disadvantage because their products will be subject to tariff elimination over 5 years. For example, Cincinnati Milacron, a U.S. metal-working machine tool builder, expects to receive limited benefit, because the firm sources some of its machine tool models from its United Kingdom plant. U.S. producers of NC horizontal lathes have expressed concern over the 5-year phaseout of Mexican tariffs of 20 percent ad valorem on their products, especially since they know of no manufacturer of these machines in Mexico.[16]

For many U.S.-owned machine tool builders, any beneficial effect of lower tariffs may be offset by other business factors. U.S.-owned metal-working machine tool builders have reported that the Mexican customer base is very price-sensitive and Mexican firms lack hard currency for investment. They also report intense price competition by foreign builders, especially by

[13] Metal-working machine tools accounted for 83 percent of U.S. exports of machine tools to Mexico in 1991, and non-metal-working machine tools the remainder. About 18 percent of the metal-working machine tool exports are used machines. About one-half of U.S. machine tool exports to Mexico are estimated to be shipped to the maquiladora industry.

[14] Because the component requirements of the VRAs effectively match the origin requirements under NAFTA, about seven U.S. production subsidiaries of Japanese-owned machine tool builders will be able to meet the NAFTA-origin requirements for some machine tool products.

[15] Officials of U.S. machine tool builders and officials of the AMT—Association for Manufacturing Technology, interviews by USITC staff, Oct-Nov. 1992.

[16] Official of Hardinge Brothers, Inc., interview by USITC staff, Nov. 25, 1992.

those from Japan. Although prices may be reduced because of lower tariffs, U.S. builders may not be able to secure new business because they lack the ability to secure financing for their Mexican customers.[17] Currently Japanese machine tool builders, because of their large size and ties to major Japanese banks, reportedly have a greater capacity to obtain the necessary financing for Mexican customers. The large European machine tool builders also have the capability to obtain customer financing. Both Japanese and European machine tool builders also have the advantage of being able to secure export financing from their respective governments.[18] According to Mexican import data, imports of U.S. machine tools as a share of total imports of these articles, fell from 54 percent to 31 percent during 1990-91, and according to industry sources, this trend has continued during 1992. NAFTA liberalization of the financial sector may be of some benefit to U.S.-owned builders, but in the short-term, because of their limited ability to finance Mexican customers, lower tariffs may be of minimal benefit.

Likely Impact on U.S. Production and Employment

Despite the expected growth in U.S. exports to Mexico as a result of NAFTA, U.S. production and employment are likely to increase by less than 1 percent in both the short and long term, based on the Commission's sectoral model. These gains are likely to occur at U.S. firms supplying critical components to the metal-working machine tool industry. Machine tool builders will likely begin to switch to critical components of NAFTA origin in order to comply with NAFTA origin requirements. The Midwest, New England, California, and North Carolina are likely to benefit under NAFTA, because the majority of U.S. machine tool and component production is located in these areas.

Likely Impact on U.S. Global Competitiveness

NAFTA will likely have only a minor, but positive impact on the competitive position of the U.S. machine tool industry. U.S. machine tool builders are not expected to benefit from the U.S.-Mexican labor cost differential, new sources of cost competitive components, or new sources of technology from investments and joint ventures in Mexico. However, U.S. products will have a 10- to 20-percent tariff advantage over machine tools from non-NAFTA countries, benefiting U.S. machine tool builders in terms of potential profitability and improved market performance, especially in Mexico. The current markets for machine tools in Mexico are in the automotive, steel and castings, home appliance, agricultural machinery, cutlery and tableware products, fasteners, furniture (metal and wood), hardware, tooling, molds, and die industries, which include some maquiladora operations.

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[17] Officials of AMT, officials of U.S. machine tool builders and distributors, and Leticia Perez Sanroman, U.S. Embassy, Mexico City, interviews by USITC staff, Oct.-Nov. 1992.

[18] Albert W. Moore, president, AMT, statement before the Subcommittee on International Economic Policy and Trade, Committee on Foreign Affairs, U.S. House of Representatives, July 22, 1992, pp. 8-10. AMT also contends that the U.S. Export-Import Bank's programs are designed to support large manufacturers.

CHAPTER 7
Bearings[1]

Mary Kolberg, Abigail Shaine, Craig Houser

Table 7-1
Bearings: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	39	39	38	-3
Trade data (million dollars):				
Shipments	3,717	3,460	3,252	-6
Exports:				
Total	481	701	720	3
To Mexico	57	57	68	19
To Canada	109	295	310	5
Imports:				
Total	1,067	1,030	971	-6
From Mexico	13	14	11	-21
From Canada	84	80	88	10
Trade balance:				
Total	-586	-329	-251	24
With Mexico	44	43	57	33
With Canada	25	215	222	3
Consumption	4,303	3,789	3,503	-8
Import market share (percent):				
Total	25	27	28	(1)
Mexico	(2)	(2)	(2)	(1)
Canada	2	2	3	(1)

1 Not meaningful for purposes of comparison.
2 Less than 0.5 percent.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Summary of Sector Analysis

NAFTA is expected to have a minor beneficial impact on the U.S. bearing industry as a result of the elimination of duties, the limitation on duty drawback, and the new rules of origin. In addition, NAFTA is expected to result in little or no increase in investment in the North American bearing sector in the short term, given the excess capacity in the region, and it will likely result in a modest increase in investment in the long term. The expected growth in investment under NAFTA in Mexican motor vehicle production, a major market for bearings, will likely encourage U.S. bearing producers to increase their investments in North America. U.S. producers that invest in Mexico are likely to become somewhat more cost competitive with foreign producers, both in the North American and global markets, although most of the major foreign competitors already have facilities in the United States and, therefore, are also likely to take advantage of opportunities provided under NAFTA.

The expected increase in investment and rationalization of production by U.S. bearing producers in both the United States and Mexico is likely to lead to a modest increase in U.S. exports to Mexico and

[1] Includes ball and roller bearings and parts thereof; housed bearings incorporating ball or roller bearings; bearing housings; and plain shaft bearings.

U.S. imports from Mexico in the long term.[2] However, U.S. production and employment in this sector are expected to be virtually unaffected by NAFTA because any increases in U.S. production and employment obtained by an increase in Mexican demand for U.S. exports will be offset largely by increased U.S. demand for Mexican bearing imports. Any impact of NAFTA is likely to occur in Eastern and Midwestern States, where the majority of U.S. bearing production facilities are located.

The United States is the dominant bearing producer in North America, with 73[3] producers. Ten of these firms are foreign owned, and they account for approximately one-third of domestic production. All four producers in Canada and the two in Mexico also produce bearings in the United States. Excess capacity exists in both the United States and Canada, primarily because of weak demand for automobiles. Approximately two-thirds of U.S.-produced bearings are used in transportation-related equipment, largely automobiles. Canada is the largest export market for U.S. bearings by far, with Mexico a distant second. Canada is the third-largest foreign supplier of bearings to the U.S. market, and it is competitive in high volume, commodity-grade bearings used in automobiles. Mexico, on the other hand, is a very small producer, and it is competitive primarily in a few low-volume, large-diameter bearings used in construction equipment.

Key NAFTA Provisions Affecting Sector

Tariff Provisions

U.S. tariffs on bearings and parts thereof range from 4.2 percent to 11 percent ad valorem (1991 trade-weighted duty of 7 percent), compared with Mexican tariffs of 10 and 15 percent (1990 trade-weighted rate of 12 percent).[4] Tariffs on the majority of trade between the United States and Mexico will be phased out over 10 equal annual stages. The 10-year duty phaseout applies to 68 percent of U.S. imports from Mexico and to 56 percent of Mexican imports from the United States. Tariffs on another 19 percent of U.S. imports and 26 percent of Mexican imports will be phased out over 5 years. The remaining 13 percent of the U.S. imports either enter duty-free now or, like the remaining 18 percent of the Mexican imports, will enter duty-free immediately upon the implementation of NAFTA. Tariff elimination should enable U.S. producers to expand their exports to Mexico, where they supplied 71 percent of the import market in 1990.

Some 55 percent of U.S. imports from Canada in 1991 entered duty-free, mostly under the Agreement Concerning Automotive Products Between the Government of Canada and the Government of the United States of America (Auto Pact) and also under the U.S.-Canada Free-Trade Agreement (CFTA). Approximately 63 percent of dutiable U.S. imports from Canada entered at reduced tariff rates under CFTA.

Rules of Origin

Bearings produced in North America will be eligible for NAFTA preferential tariff treatment if they are made entirely from originating materials. Bearings made with nonoriginating materials also will be eligible if they satisfy the rules for change of tariff classification and minimum regional value content. Origin is conferred on ball or roller bearings when they are assembled in North America from originating inner and outer rings or races, irrespective of the origin of any other parts. Origin would also be conferred on (1) ball or roller bearings assembled from parts that include nonoriginating inner or outer rings or races; (2) housed bearings assembled from nonoriginating inner or outer rings or races; and (3) housed bearings assembled from nonoriginating bearings if, in all instances, the regional value content is not less than 60 percent by the transaction value method or 50 percent by the net cost method. This rule of origin also applies to plain shaft bearings. Origin is only conferred on parts of bearings, however, if there is a change of tariff classification from a provision other than that for parts of bearings.

The rules of origin under CFTA are less stringent for housed ball or roller bearings. Conversely, the CFTA rules requiring that a regional value content be met for all bearings made from any nonoriginating parts—not just for those that contain nonoriginating inner or outer rings or races—are more strict for ball or roller bearings. The CFTA rules of origin for parts of bearings are essentially the same as those in NAFTA.

It is difficult to measure the impact of the NAFTA rules of origin for this sector, because goods that do not qualify for NAFTA preferential tariff treatment will continue to be eligible for preferential tariff treatment under other existing programs (e.g., the Generalized System of Preferences). The rules will likely

[2] Firms with manufacturing operations in the United States and Mexico will likely increase U.S. exports of super precision bearings to Mexico and increase U.S. imports of lower precision bearings from Mexico.

[3] Carter Keithley, president, Antifriction Bearing Manufacturers Association, interview by USITC staff, Nov. 12, 1992.

[4] U.S. imports of certain bearings from the Federal Republic of Germany, France, Italy, Japan, Singapore, Sweden, Thailand, and the United Kingdom are subject to antidumping duties ranging from 0.65 percent to 212.45 percent. U.S. International Trade Commission, *Antifriction Bearings (Other Than Tapered Roller Bearings) and Parts Thereof From the Federal Republic of Germany, France, Italy, Japan, Romania, Singapore, Sweden, Thailand, and the United Kingdom* (investigation Nos. 303-TA-19 and 20 (final) and 731-TA-391 and 399 (final)), USITC publication 2185, May 1989, p. A-22.

discourage the use of imported inner or outer races in North American manufacturing of ball or roller bearings. The rules also will discourage the use of imported parts in the assembly of plain shaft bearings and the "minor" processing of imported parts when such processing does not result in a product that is "other than" a bearing part. The rules will not limit the use of imported rolling elements, except to the extent that imported rolling elements have to meet regional value content restrictions.

Government Procurement

It appears that the Department of Defense's (DOD) "Buy American" policy for bearings purchased for military use will not be waived under NAFTA, because of a national security exemption.[5] Under current policy DOD can purchase only U.S. and Canadian-made bearings.[6] Thus, the U.S. bearing industry will not be adversely affected by the government procurement provisions of NAFTA.

Likely Impact on Investment

NAFTA is expected to result in little or no increase in U.S. and other investment in the North American bearing sector in the short term, owing to excess production capacity in the United States and Canada.[7] In the long term, however, NAFTA will likely result in a modest increase in investment in the sector. The expected growth in investment will probably occur in the United States and Mexico rather than in Canada, where wages are higher and where the bearing market appears to be declining, as many bearing end users are limiting their Canadian purchases. Some U.S. producers claimed that they may invest in new facilities in the United States because there would be little advantage to investing in Mexico because the industry is so capital-intensive.[8] However, other U.S. manufacturers indicate that as the Mexican bearing market grows, it would be more cost effective for U.S. producers to further rationalize production by producing the more labor-intensive bearings in Mexico and continuing to manufacture the more capital-intensive types in the United States or Canada.[9] In addition, certain U.S. automakers have requested that bearing manufacturers open facilities in Mexico, primarily for just-in-time delivery purposes, to supply the growing Mexican market in the long term.[10] The elimination of Mexican investment restrictions on auto parts manufacturers under NAFTA is also likely to encourage U.S. bearing producers to invest in Mexico.[11]

Likely Impact on U.S. Trade

According to the Commission's sectoral model, in the short term, U.S. imports of bearings from Mexico will likely increase by only 1 percent because Mexican bearing production is limited and, as mentioned above, it does not appear that investment in Mexico will increase in the short term. In the long term, NAFTA will likely lead to a 6-percent increase in U.S. imports from Mexico, because of the expected increase in U.S. investment in Mexico and the elimination of U.S. duties. The expected increase in investment in the United States and Mexico in the long run will likely supplant existing U.S. imports from Canada and from non-NAFTA nations to North America. Many of the foreign-owned U.S. bearing producers stated that future investments within the United States and Mexico will likely lead them to divert exports originally destined for the U.S. market to Third World areas, such as Central or South America or the Pacific Rim.

NAFTA is likely to lead to only a 2-percent increase in U.S. exports of bearings to Mexico in the short term. In the long term, however, U.S. bearing exports to Mexico are expected to increase by 8 percent. The phaseout of Mexican tariffs will make U.S. bearings more cost competitive with local goods and those from non-NAFTA nations. In addition, U.S. exports to Mexico should benefit from the expected increase in the number of bearing end users manufacturing in Mexico and from the anticipated expansion of Mexican motor vehicle production. One U.S. bearing manufacturer indicated that NAFTA may encourage some bearing end users that left the United States for the Pacific Rim during the early 1980s to shift production to Mexico. Any such shifts should benefit U.S. bearing producers by stimulating demand for bearings produced in North America to meet the rules of origin and avoid Mexican tariffs. Similarly, the eventual elimination of Mexico's requirements

[5] NAFTA, art. 1018(1). See NAFTA annex 1001.1b.-1.5(h), which exempts bearings under Federal Supply Classification Code 31.

[6] However, if U.S. or Canadian producers' prices become too high, or if U.S. or Canadian producers have only a short supply of bearings, then DOD can waive this requirement and purchase bearings from foreign producers.

[7] According to industry sources, several foreign-owned bearing manufacturers operating in the United States are expected to open new facilities or expand capacity in their existing U.S. facilities in the short term to avoid paying the high dumping duties imposed on imported ball and roller bearings. Such investment is not related to the implementation of NAFTA.

[8] Official of the Torrington Co., interview by USITC staff, Oct. 27, 1992. Torrington claims that, because the industry is highly capital intensive, the potential of low wage rates would not encourage U.S. producers to invest in Mexico. The company asserts that labor costs account for only about 10 percent of total production costs.

[9] Officials of FAG Bearing Corp. and Kaydon Corp., interview by USITC staff, Nov. 18, 1992.

[10] Official of the Timken Co., interview by USITC staff, Nov. 18, 1992.

[11] For further discussion, see the "Automotive Products" sector analysis in chapter 4 of this report.

regarding automotive trade performance and national value added may encourage additional U.S. exports of bearings to be used by Mexican automakers.

Likely Impact on U.S. Production and Employment

The expected changes in U.S. sector trade under NAFTA will likely lead to an increase of less than 1 percent in U.S. production and employment in both the short and long term. The expected growth in U.S. production and employment as a result of increased U.S. exports to Mexico in the long term largely will be offset by the projected increase in U.S. imports from Mexico—albeit from a very small base—as U.S. producers further rationalize production. U.S. producers will likely move some of the more labor-intensive production as well as some of the production geared for the Mexican market from the United States to Mexico. U.S. bearing manufacturers' production facilities for the most part are in the Eastern and Midwestern States, both in rural and industrial areas. Employees in this industry tend to be highly skilled.

Likely Impact on U.S. Global Competitiveness

NAFTA will enhance the competitiveness of the U.S. bearing industry in the North American market. In addition, NAFTA may have a limited positive effect on the industry's competitive position in global markets. In recent years foreign producers have opened facilities in regions of the world with low labor costs to increase their competitiveness.[12] According to industry sources, several Japanese bearing producers have manufacturing facilities in Southeast Asia and at least one West European-owned company has plants in Eastern Europe. As U.S. producers invest in Mexico, their total production costs also should decrease slightly and improve their competitiveness with foreign, non-NAFTA manufacturers in overseas markets.

[12] Labor costs are a significant factor in the production of certain types of large diameter bearings.

CHAPTER 8
Textiles and Apparel[1]

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Table 8-1
Textiles and apparel: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	1,800	1,732	1,683	-3
Trade data (million dollars):				
Shipments	130,676	130,317	138,191	6
Exports:[1]				
Total	6,500	8,016	9,318	16
To Mexico	763	928	1,093	18
To Canada	815	1,440	1,633	13
Imports:				
Total	28,324	29,822	31,231	5
From Mexico	738	965	1,194	24
From Canada	565	657	816	24
Trade balance:				
Total	-21,824	-21,806	-21,913	(2)
With Mexico	25	-37	-101	-173
With Canada	250	783	817	4
Consumption	152,500	152,123	160,104	5
Import market share (percent):				
Total	19	20	20	(3)
Mexico	(2)	1	1	(3)
Canada	(2)	(2)	1	(3)

[1] Includes garment parts for assembly abroad and reimportation into the United States as completed garments. Roughly two-thirds of U.S. textile and apparel exports to Mexico consist of these parts.
[2] Less than 0.5 percent.
[3] Not meaningful for purposes of comparison.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

Source: Employee data from the U.S. Bureau of Labor Statistics; trade data compiled from official statistics of the U.S. Department of Commerce.

Summary of Sector Analysis

U.S. trade with Mexico in textiles and apparel has long been dominated by production-sharing operations in the maquila sector, where many U.S. firms assemble garments from U.S. components for re-export to the United States. The "special regime" quotas implemented by the United States in 1989 for garments assembled in Mexico from U.S. formed and cut fabrics helped Mexico emerge as the sixth-largest volume supplier of textiles and apparel in 1991. Because U.S. textile and apparel trade with Canada will not be affected greatly by NAFTA, the following analysis will focus only on how NAFTA will affect U.S. textile and apparel trade with Mexico.

NAFTA will likely have a minor positive impact on the U.S. textile industry in the short and long term but a minor negative impact on the U.S. apparel

[1] Products defined as textiles and apparel under NAFTA are listed in NAFTA, annex 300-B. For this study, textiles and apparel are limited to items in the annex that are in Harmonized System (HS) chapters 50-65, which account for most of the trade with Mexico. Seatbelts account for most of the excluded trade; they are not subject to textile quotas or to textile trade preference levels under NAFTA.

industry.[2] The rules of origin under NAFTA for textiles and apparel largely limit preferential tariff treatment to those products made from inputs produced in North America. The U.S. textile industry is the most competitive producer of yarns and fabrics in North America. Thus the industry, concentrated in the Southeast, would benefit from any increase in demand for North American textile inputs, particularly in relation to non-NAFTA producers, given that their shipments into Mexico will remain subject to relatively high rates of duty.

However, the U.S. apparel industry will likely experience production and employment losses that will more than offset the expected production and employment gains in the U.S. textile industry. The expected increase in investment in Mexican apparel production under NAFTA will likely lead to considerable growth in U.S. apparel imports from Mexico in the long term. This growth will partly displace imports, especially those from East Asia, and partly reduce domestic production in the major producing areas—the Northeast, the South, and California.

Industry officials have expressed the view that conclusion of the General Agreement on Tariffs and Trade (GATT) Uruguay Round along lines proposed in the "Dunkel draft" will negate any NAFTA benefits to the U.S. textile mill industry and "to the Mexican textile or apparel industry."[3] The Dunkel draft calls for the phaseout of the Multifiber Arrangement (MFA) system of textile and apparel import restraints over a 10-year period.[4]

Key NAFTA Provisions Affecting Sector

NAFTA provisions that could significantly affect the North American textile and apparel sector include rules of origin and the elimination of U.S. duties and quotas on textile and apparel imports from Mexico.[5] Duty and quota removal will likely spur an increase in investment in Mexican apparel production for export to the United States. The rules of origin should tend to promote that the North American textile industry will mainly benefit from any increase in Mexican demand for yarns and fabrics. NAFTA safeguard measures for the textile and apparel sector could moderate the impact of these provisions.[6]

Rules of Origin[7]

To qualify for NAFTA benefits, textile and apparel goods generally must be made in North America from the yarn stage forward—only the fibers may be imported. This rule is referred to as the "yarn forward" rule. A limited number of products must be made in North America from the fiber stage forward. This "fiber forward" rule applies to yarns of cotton and to yarns, knit fabrics, nonwoven fabrics, and most made-up textile articles of manmade fibers. The fiber forward rule also applies to trade between the United States and Mexico in sweaters and felt and tufted carpets of manmade fibers.

Some apparel may be made in North America of non-NAFTA fabric and still qualify for NAFTA benefits. These rules apply to apparel of silk and linen, brassieres, women's nightwear and underwear of certain cotton knit fabrics, men's shirts of specified cotton or cotton-blend fabrics, and apparel of specified fabrics in short supply in North America.

NAFTA contains exceptions to the rules of origin under "tariff preference levels" (TPLs). TPLs would permit the import of a fixed quantity of certain goods at the lower NAFTA duties, even though the imports otherwise would not qualify for the duty preferences under the NAFTA rules of origin. Once imports reach the levels established under the TPLs, they will be subject to the higher most-favored-nation (MFN) rates of duty.

NAFTA provides that the parties may agree to modify the textile and apparel rules of origin.[8] In addition, the NAFTA rules of origin will supersede the rules in force under the U.S.-Canada Free-Trade Agreement (CFTA). A major difference is that under CFTA, woven apparel is generally subject to a fabric forward rule. Under NAFTA, however, woven apparel is generally subject to the stricter, yarn forward rule.

[2] The textile industry primarily produces yarns, fabrics, home furnishings, carpets, and industrial and commercial textile products such as bags, belting, and cordage. The apparel industry produces clothing and accessories such as headwear and gloves.

[3] Carlos Moore, executive vice president, American Textile Manufacturers Institute, transcript of hearing, Nov. 19, 1992, p. 644.

[4] Industry sources believe that a phaseout of the MFA would lead to a considerable increase in U.S. imports of textiles and apparel from sources in Asia whose shipments are currently subject to quota.

[5] U.S. textile and apparel imports from Mexico are currently governed by a bilateral agreement negotiated under the MFA. The bilateral agreement is scheduled to expire at the end of 1993. There are no MFA quotas on sector trade between the United States and Canada.

[6] The safeguard test for textile and apparel trade between the United States and Mexico is modeled after article 3 of the MFA, which is considered to be easier to satisfy than the test that would be used under NAFTA for other products.

[7] The NAFTA rules of origin for textiles and apparel are covered primarily in annex 401. However, certain rules are also covered in annex 300-B, sections 6 and 7.

[8] NAFTA, annex 300-B, section 7, permits NAFTA parties to request consultations on whether the rules of origin should be modified in light of "substantial production" of any fibers, yarns, or fabrics in North America. NAFTA also requires the parties to review the origin rules within 5 years.

Quotas[9]

NAFTA will exempt immediately from quota all U.S. imports of Mexican textiles and apparel meeting the NAFTA rules of origin and all U.S. imports of Mexican apparel made from U.S. formed and cut fabric but not otherwise meeting the rules of origin.[10] Quotas on U.S. imports of other Mexican textiles and apparel will be eliminated in three stages over a 10-year period. In 1991, 87 percent of U.S. apparel imports and 36 percent of U.S. textile imports from Mexico were subject to quotas. Based on 1991 trade, slightly more than 90 percent of the apparel imports and 65 percent of the textile imports from Mexico subject to quotas will be quota-free the first year of NAFTA.

Tariff Provisions[11]

For goods meeting the NAFTA rules of origin, duties will be removed on almost all textile and apparel trade between the United States and Mexico within 6 years and the remainder, within 10 years.[12] About 17 percent of U.S. textile imports and 30 percent of U.S. apparel imports from Mexico will be eligible for duty-free treatment the first year. The 1991 trade-weighted effective duty on U.S. imports of textiles and apparel from Mexico averaged 6 percent ad valorem, reflecting the importance of U.S. apparel imports under heading 9802.00.80 of the Harmonized Tariff Schedule of the United States (HTS).[13] The phaseout under NAFTA of this relatively low effective duty will likely be less significant than quota elimination. Mexico's trade-weighted effective duty on imports from the United States in 1991 averaged 14 percent ad valorem for textiles and 20 percent for apparel.

Likely Impact on Investment

New foreign investment in Mexico's textile, apparel, and leather industries during 1989-91 totaled nearly $100 million, the majority of which represented U.S. investment in apparel production.[14] NAFTA will likely generate only a minor increase in investment in the Mexican textile industry in the short and long term but a considerable increase in the Mexican apparel industry.

The United States has the largest and most efficient textile mill industry in North America, and it has excess production capacity to meet any short-term increase in textile demand that may occur under NAFTA. U.S. mills currently supply most of the yarns and fabrics used in apparel production in the Mexican maquilas. The Mexican textile industry lags considerably behind the U.S. textile industry in production technology and lacks the capital to upgrade its facilities.[15] Although the Mexican textile industry is open to U.S. and other foreign investment, such investments face significant impediments. Textile production requires large capital investments. Mexico's underdeveloped infrastructure, particularly inadequate water supplies for dyeing and finishing yarns and fabrics, will likely discourage significant U.S. and other foreign investment to upgrade Mexico's textile industry. The quotas and TPLs under NAFTA will allow non-NAFTA producers to continue supplying specified quantities of yarns and fabrics to firms in Mexico producing for the U.S. market, thus reducing their need to invest in Mexico to serve this market.

Much of the expected increase in investment in Mexican apparel production is likely to come from U.S. apparel firms, especially those for which labor costs are a critical competitive factor and that anticipate growth in Mexican demand for their goods. NAFTA provisions that would encourage such investment include duty and quota removal and reduced investment performance requirements.[16] Investment in apparel production in Mexico, as opposed to importing apparel from East Asia, will allow U.S. firms to monitor production quality closely, to develop quick response programs, and to ship apparel to the United States more quickly and free of duty and quota. Some of these advantages, along with rising production costs and restrictive quotas facing East Asia, could also prompt some East Asian investment in the Mexican apparel industry.

Nevertheless, the pace and extent of investment in Mexico's apparel industry will likely face limits.[17] Apparel industry sources indicate that it takes twice as long to establish a productive apparel plant in Mexico as in the United States.[18] In addition, U.S. producers

[9] NAFTA, annex 300-B, sec. 3.

[10] This provision refers to U.S. coproduction imports under HTS heading 9802.00.80.10. The current bilateral agreement with Mexico has preferential special regime quotas specifically for apparel imports under this heading.

[11] NAFTA, annex 300-B, sec. 2.

[12] See appendix F for a detailed presentation of the staged tariff reductions under NAFTA.

[13] The nominal MFN rate averaged 7 percent for textiles and 18 percent for apparel, based on 1991 trade. The effective duty on U.S. apparel imports from Mexico is much lower than the nominal rate, because most of the imports enter under HTS heading 9802.00.80, with duty paid only on the foreign value added.

[14] U.S. General Accounting Office, *North American Free Trade Agreement: U.S.-Mexican Trade and Investment Data*, Sept. 1992, p. 77.

[15] Part of the Mexican Government's 5-year industrial modernization program (1990-94) is a plan to improve the competitiveness of the Mexican textile and apparel industries.

[16] Under NAFTA, U.S. apparel firms operating in the maquilas would be allowed to sell a gradually increasing percentage of their shipments in Mexico's domestic market.

[17] Arthur Gundersheim, assistant to the president and director of international affairs, Amalgamated Clothing and Textile Workers Union, discounts the existence of limitations to U.S. investment in Mexico. Transcript of hearing, Nov. 17, 1992, p. 48.

[18] Carl H. Priestland, chief economist, American Apparel Manufacturers Association, written submission to the Commission, Nov. 25, 1992, p. 3.

of apparel for which low labor costs are not a critical competitive factor—for instance, high-quality tailored clothing and high-fashion dresses—will have little incentive to invest in Mexico.

Commission interviews with 65 U.S. apparel companies having annual sales ranging from $10 million to over $500 million suggest that firm size and experience producing abroad are important determinants of which U.S. apparel firms will likely invest in Mexico.[19] About a third of U.S. apparel firms contacted by the Commission said they plan to invest in Mexico as a result of NAFTA. Nearly all of the firms planning such investment were large companies with experience producing abroad. Smaller firms, with limited offshore experience, are expected to take a wait-and-see attitude, so as to assess the impact of NAFTA on their firms, observe the experiences of the larger U.S. apparel firms in Mexico, and gain experience in Mexico through contract work first. Discussions with U.S. apparel firms suggest that the smallest producers, most of whom have never produced abroad, probably will not invest in Mexico.

Likely Impact on U.S. Trade

U.S. textile and apparel trade with Mexico will likely grow considerably under NAFTA in both the short and long term.[20] However, the impact of NAFTA on overall U.S. sector trade will likely be minor, largely because of Mexico's small share of that trade. In 1991, Mexico accounted for just under 4 percent of total sector imports and almost 12 percent of total exports.[21]

The Commission's sectoral model indicates that U.S. exports of textile mill products to Mexico will increase by about the same amount as the percentage-point duty reductions—4 percent in the short term and about 13 percent in the long term. However, such exports are likely to grow by a considerably greater amount, primarily owing to the expected increase in Mexican demand for textile inputs for production of apparel and made-up textiles such as luggage, comforters, and bags for export. Growth in Mexican disposable income could spur demand further for U.S. textile inputs, as well as for textile consumer goods such as home furnishings. U.S.-produced yarns, fabrics, and made-up textiles tend to be of higher quality than Mexican textiles and are often available in a greater number of styles and desired quantities. Mexico is only a small supplier to the U.S. textile market, reportedly because of low product quality, limited variety, high prices, and unreliable delivery.[22] However, Mexico does supply significant quantities of acrylic and polypropylene yarn, denim, and cotton sheeting. According to the Commission's sectoral model, removal of U.S. tariffs and quotas will likely result in an increase in U.S. imports of these and other commodity textiles from Mexico of some 14 percent in the short term and 25 percent in the long term. The expected long-term increase in such imports will be equivalent to about 1 percent of the total value of U.S. textile imports in 1991.

NAFTA is likely to have a considerable impact on U.S. apparel trade with Mexico. The Commission's sectoral model indicates that removal of U.S. quotas and tariffs will likely result in an increase in U.S. apparel imports from Mexico of roughly 45 percent in the short term and 57 percent in the long term.[23] However, NAFTA-induced factors such as the expected increase in investment in Mexican apparel production will likely lead to considerably greater growth in U.S. apparel imports from Mexico in the long term.

Quota elimination and, to a lesser extent, duty removal are likely to be the driving forces behind the expected growth in U.S. apparel imports from Mexico.[24] NAFTA will likely make Mexico an attractive alternative to the large apparel producers, Hong Kong, Taiwan, and Korea, which are experiencing rising production costs and, along with China, facing restrictive quotas in the U.S. market. In addition, NAFTA will likely result in a shift in some U.S. trade from the Caribbean Basin to Mexico, because Caribbean nations usually compete with Mexico for assembly work from U.S. apparel firms.[25]

[19] When contacted by the Commission, firms with apparel investments in the Caribbean Basin stated that the most decisive factor influencing their decision to invest in Mexico would be the trade and investment status of Caribbean Basin nations relative to Mexico under NAFTA.

[20] One study estimates that Mexico's exports of textiles and apparel to the United States are likely to reach $3 to $5 billion in 10 years and that the United States could have a textile and apparel trade deficit with Mexico of $1 to $2 billion a year by the end of the 1990s. Gary Clyde Hufbauer and Jeffrey Schott, *North American Free Trade Issues and Recommendations* (Washington, DC: Institute for International Economics, 1992), p. 278.

[21] Roughly two-thirds of U.S. sector exports to Mexico consisted of garment or other textile parts to be assembled in Mexico and later returned to the United States under HTS heading 9802.00.80.

[22] An underdeveloped fabric finishing and dyeing industry in Mexico limits the production of quality fabrics for use in export-oriented apparel. Mexican textiles also incur high production costs, mainly owing to low-quality inputs, outdated technology, and capacity underutilization.

[23] The Commission used a tariff equivalent of 28.3 percent in the model to quantify the likely impact of quota elimination under NAFTA. KPMG Peat Marwick, Policy Economics Group, "The Effects of a Free Trade Agreement Between the U.S. and Mexico," 1991.

[24] Recent liberalization of U.S. quotas for Mexico under the special regime and Caribbean Basin nations under the special access program led to growth of more than 100 percent in U.S. apparel imports from these suppliers during 1987-91. U.S. apparel imports from all other sources rose by only 20 percent during the period.

[25] For further discussion of this point, see U.S. International Trade Commission, *Potential Effects of a North American Free Trade Agreement on Apparel Investment in CBERA Countries* (investigation No. 332-321), USITC publication 2541, July 1992, pp. 72-73.

U.S. apparel exports to Mexico for consumption[26] are likely to grow by 13 percent in the short term and by 33 percent in the long term, according to the Commission's sectoral model. However, this export growth is likely to be less than projected, as NAFTA enables U.S. apparel firms in the maquila sector to sell a gradually increasing share of their maquila output in the Mexican domestic market, and as some of the expected new investment in Mexico is earmarked for the Mexican market. Thus, any increase in U.S. apparel exports to Mexico is likely to amount to less than 1 percent of total U.S. apparel exports.

Likely Impact on U.S. Production and Employment

In both the short and long term, the expected changes in U.S. textile and apparel trade under NAFTA will likely have a minor positive impact on production and employment in the U.S. textile industry and a minor negative impact on production and employment in the U.S. apparel industry. The expected declines for the apparel industry are likely to more than offset the anticipated increases in the textile industry.

The Commission's sectoral model estimates that production and employment in the U.S. textile industry will likely increase by less than 1 percent in both the short and long term. The industry will likely benefit from any NAFTA-induced growth in Mexican demand for inputs in apparel production for export. However, some U.S. textile producers contacted by the Commission expressed concern over the likely effect of NAFTA on U.S. apparel production and the adverse impact it could have on textile firms' domestic sales in the long run. NAFTA will likely hurt textile mills that are unable to redirect their sales from apparel firms hurt by NAFTA to firms that expand output in the United States or Mexico. The U.S. textile industry, with about $76 billion in sales, is concentrated in the Southeast, where many plants are located in rural areas and are the major source of employment in the smaller communities.

The U.S. apparel industry has been declining steadily in size for the last two decades, in part because of competition from low-cost imports. The industry, with an estimated $62 billion in sales, will likely decline further because of greater import competition under NAFTA.[27] The employment loss would be felt mainly in the South, the Northeast, California,[28] and the U.S. territories of Puerto Rico and the Northern Mariana Islands.[29] Displaced workers will likely experience difficulty finding employment in rural areas where many apparel firms are located. Nevertheless, fundamental changes within the U.S. apparel industry, such as the use of quick response programs as a competitive tool to cut costs and improve services, and limitations on Mexico's ability to absorb extensive production facilities will likely moderate employment losses in the U.S. industry.

Most of the expected decline in U.S. apparel output and employment will likely occur among smaller firms, especially contractors.[30] The small firms tend to be highly labor-intensive and often lack the financial resources, brand names, niche products, or operating efficiencies to compete against increased levels of imports from Mexico.[31] In contrast, NAFTA is unlikely to significantly affect domestic employment and production levels of the larger firms, mainly because their domestic facilities are generally highly automated and linked through QR with U.S. textile and retail firms.[32]

Likely Impact on U.S. Global Competitiveness

NAFTA rules of origin should enhance the competitiveness of the U.S. textile industry in the North American market. As the largest and most efficient producer of textiles in North America, the U.S. industry has much to gain as a supplier to the apparel maquila sector and to a small but expanding domestic textile market in Mexico.[33] However,

[26] Official U.S. export statistics include both completed garments for foreign consumption and garment parts for assembly offshore and reexport to the United States. U.S. exports of completed garments to Mexico in 1991 are estimated at about $50 million.

[27] For example, even if U.S. apparel imports from Mexico grow by as much as 200 percent in the long term, the U.S. industry's labor force will likely decline by about 3 percent.

[28] Apparel production accounts for an important share of manufacturing jobs in Alabama, California, the Carolinas, Florida, Georgia, Kentucky, Mississippi, New Jersey, New York, Pennsylvania, Tennessee, Texas, and Virginia.

[29] In a written submission to the Commission of Nov. 24, 1992, the Puerto Rico Federal Affairs Administration stated that NAFTA would negatively affect its textile and apparel sector, which accounts for 22 percent of Puerto Rico's manufacturing employment. In a submission to the Commission of Nov. 25, 1992, the Northern Mariana Islands Office of the Governor stated that NAFTA would disadvantage its apparel sector, which generates 10 percent of the territory's manufacturing jobs.

[30] One source stated that 300,000 contracting jobs would be lost under NAFTA. Jack Sheinkman, president, Amalgamated Clothing and Textile Workers Union, written submission to the Commission, Nov. 17, 1992, p. 6.

[31] Establishments employing fewer than 50 workers each accounted for 87 percent of total establishments in the U.S. apparel industry in 1989 but only 35 percent of total employment. U.S. Department of Commerce, *County Business Patterns 1989*, Oct. 1991.

[32] When contacted by the Commission, firms with sales of over $500 million stated that their domestic production would either remain stable or increase, and none expected to lose jobs.

[33] Most of the 40 textile producers contacted by the Commission during the course of the study stated that they would be able to export more to Mexico under NAFTA.

NAFTA will likely have only a small impact on the industry's competitiveness in global markets.

NAFTA likely will slightly lower the global competitive position of the overall U.S. apparel industry, particularly smaller firms. Many small firms are contractors that rely on the large U.S. apparel firms for assembly work and that compete most directly with the maquila operations of these larger firms.

However, NAFTA is expected to benefit U.S. apparel firms that use Mexico as a low-cost manufacturing base to compete with East Asian products in the United States and Mexico. Many major U.S. apparel firms already operate production-sharing programs in Mexico's maquila sector to reduce costs as part of their overall global business strategy. It is expected that NAFTA will encourage increased investment by large firms and some new investment by smaller firms. In addition many large U.S. apparel firms, which have adopted quick response programs in the United States, could extend the programs to Mexico. Often considered essential to the survival of U.S. apparel firms, quick response programs require firms to maintain enough production flexibility to adapt to changing market demands. Adoption of these programs could result in displacement of U.S. imports from the Far East.[34]

[34] Carlos Moore, executive vice president, American Textile Manufacturers Institute, written submission to the Commission, Nov. 19, 1992, p. 1.

CHAPTER 9
Pharmaceuticals[1]

Elizabeth R. Nesbitt

Table 9-1
Pharmaceuticals: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	184	190	191	1
Trade data (million dollars):				
Shipments	49,114	54,148	59,246	9
Exports:				
Total	4,346	5,132	5,798	13
To Mexico	110	157	138	-12
To Canada	390	595	640	8
Imports:				
Total	3,513	3,944	4,904	24
From Mexico	22	33	86	161
From Canada	76	101	123	22
Trade balance:				
Total	833	1,188	894	-25
With Mexico	88	124	52	-58
With Canada	314	494	517	5
Consumption	48,281	52,960	58,352	10
Import market share (percent):				
Total	7	7	8	(1)
Mexico	(2)	(2)	(2)	(1)
Canada	(2)	(2)	(2)	(1)

1 Not meaningful for purposes of comparison.
2 Less than 0.5 percent.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Summary of Sector Analysis

Many of the U.S.-based innovative pharmaceutical companies maintain operations in Canada and Mexico. These operations primarily serve the local markets, which, in 1990, were valued at $4 billion and $2 billion, respectively. In 1991 U.S. and other foreign investment (estimated at $3.5 billion) accounted for a significant portion of total pharmaceutical industry investment in Canada and for about 70 percent of total pharmaceutical investment in Mexico.[2]

The U.S. pharmaceutical industry is expected to benefit from NAFTA through the improvement of intellectual property rights (IPR) protection in Canada and the opening of the government procurement market in Mexico. These changes, along with Mexico's enactment of new IPR provisions in 1991, are important to the U.S. pharmaceutical industry because

[1] Includes bulk active ingredient and finished dosage form products, as classified in Standard Industrial Classification Industry Nos. 2833 and 2834.

[2] Investment in a foreign market can often provide a company improved market access. Although production facilities for bulk active ingredients are usually concentrated in a few countries because of the relatively high capital expenditures associated with bringing onstream duplicate production facilities, formulation facilities are often decentralized, located in or near markets being accessed. Pharmaceutical Manufacturers Association (PMA), *Statistical Fact Book*, Dec. 1991, p. 12.

of the competitive importance and cost of research and development (R&D) in this industry.[3]

The IPR provisions of NAFTA (chapter 17), will end compulsory licensing for pharmaceuticals in Canada; extend product and process patent protection for pharmaceuticals; and codify for future signatories to NAFTA "pipeline" protection for pharmaceuticals in the R&D and regulatory process.[4] Mexico already provides patent rights for pharmaceuticals "at a level and standard of the OECD [Organization for Economic Cooperation and Development] industrial trading partners" as a result of Mexico's implementation of "The Law for the Development and Protection of Industrial Property" on June 28, 1991.[5] The government procurement provisions of NAFTA (chapter 10) will open the government procurement market for pharmaceuticals in Mexico to U.S. and Canadian companies.

U.S. and foreign investment in the Canadian pharmaceutical industry has increased significantly since 1987, when Canada modified the Canadian Patent Act by passage of legislation generally referred to as "C-22." C-22 tempered but did not remove compulsory licensing in Canada. Further growth in U.S. and other foreign investment in the Canadian pharmaceutical industry is likely as a result of the ongoing commitment of firms to C-22 and the proposed changes that will occur under either NAFTA implementing legislation or under legislation currently pending in Canada.[6]

U.S. imports of pharmaceuticals from Mexico will likely increase by less than 1 percent as a result of NAFTA in the short term and by about 3 percent in the long term. U.S. exports to Mexico will likely increase by about 12 percent in the long term. These projected changes in U.S. trade under NAFTA will likely have a minor but beneficial impact on U.S. production and employment.

[3] For further discussion of Mexico's new IPR provisions, see the "intellectual property" section in chapter 3 of this report.

[4] "Pipeline" protection refers to the protection of products that have been previously patented in other NAFTA countries (i.e., country of origin). Those products would be entitled to protection for the unexpired terms of their patents in any given NAFTA country, provided that the product has not been previously marketed in that country.

[5] Mexican Investment Board, "Intellectual Property: Increased Protection for Business in Mexico, " Oct. 1991, pp. 6 and 11, and American Bar Association, International Trade Committee, "The North American Free Trade Agreement," Mar. 1992, p. 288.

[6] The Patent Amendment Act of 1992, more generally referred to as C-91, is currently under discussion in Canada.

Key NAFTA Provisions Affecting Sector

Tariff Provisions

The effective U.S. rate of duty for pharmaceuticals, whether bulk active ingredient or finished dosage form, averages 3.5 percent ad valorem, based on 1991 trade. Approximately 10-15 percent of U.S. pharmaceutical imports in 1992 were eligible for duty-free entry under either the U.S.-Canada Free-Trade Agreement (CFTA), the Generalized System of Preferences, or certain temporary duty-free provisions. Mexico's rates of duty for pharmaceuticals range from free to 60 percent, averaging about 15 percent.

Based on 1991 U.S. imports, NAFTA will immediately eliminate U.S. tariffs on approximately 85 percent of total U.S. imports of pharmaceuticals from Mexico. U.S. duties on about 13 percent of the total will be removed over 5 years and the remainder will be eliminated over 10-15 years. NAFTA will immediately eliminate Mexican tariffs on about 30 percent of Mexico's total pharmaceutical imports from the United States and Canada. Mexican duties on about 40 percent of such imports will be phased out over 10 years. Some 20 percent of Mexico's pharmaceutical imports from the United States and Canada already enter duty-free.

Intellectual Property

The Canadian patent system is reportedly the weakest in any industrialized country; this weakness, attributed primarily to Canada's compulsory licensing system,[7] has contributed to the near demise of a research-based industry within Canada.[8] Adequate national IPR protection, particularly in the form of patent protection, is a major concern of innovative pharmaceutical manufacturers worldwide since IPR allow firms a period of market exclusivity during

[7] Compulsory licenses allow individuals other than the patent holder to produce or prepare the patented medicinal product. In return, the patent holder is paid a royalty rate generally of 4 percent of the net selling price of the drug in final dosage form.

[8] Gerald J. Mossinghoff, president, PMA, testimony before the U.S. International Trade Commission on investigation No. 332-302, *Global Competitiveness of U.S. Advanced-Technology Manufacturing Industries: Pharmaceuticals*, Jan. 17, 1991; John W. Rogers, III, "The Revised Canadian Patent Act, the Free Trade Agreement, and Pharmaceutical Patents: An Overview of Pharmaceutical Compulsory Licensing in Canada," *EIPR*, 1990, p. 351; and USITC, *Global Competitiveness of U.S. Advanced-Technology Manufacturing Industries: Pharmaceuticals (investigation No. 332-302)*, USITC publication 2437, Sept. 1991, p. 3-15.

which they can partially recoup their R&D expenditures, which, in turn, can be used to fund future R&D efforts.[9]

NAFTA provisions governing patent protection would effectively eliminate Canada's compulsory licensing scheme for pharmaceuticals. The Canadian Patent Act, as modified in 1987 by C-22, currently provides patent protection of 20 years from filing (the world standard) only for new pharmaceutical products researched and discovered in Canada. For other pharmaceutical products, compulsory licenses could be issued after as little as 7 years from the date of marketing approval.[10] C-22 sought to increase pharmaceutical R&D investment in Canada to 10 percent of industry sales by 1996 from 3 percent in 1979.[11] By 1992, R&D investment in Canada had already increased to at least 10 percent of sales.[12] According to industry representatives, however, the Canadian system needs further modification to sustain this level of reinvestment.[13] Such modification is expected to occur under either C-91[14] or under NAFTA implementing legislation. Both proposals would end the compulsory licensing of pharmaceuticals in Canada. Under NAFTA, all Canadian compulsory licenses applied for or granted in Canada after December 20, 1991, would be nullified (except in cases of antitrust violations). Additionally, article 1709 of NAFTA requires Canada to provide the same treatment to products discovered and researched outside of Canada, including in non-NAFTA countries, as it provides to such products researched and developed in Canada.[15]

The national treatment provision of NAFTA (article 1703) would require the United States to change its laws to allow inventors to rely on research done in Canada and Mexico to establish an inventive date. However, since there is not a significant amount of R&D in the pharmaceutical industry done in either Canada or Mexico, this change in U.S. law is not expected to have a significant impact on the U.S. industry.

Government Procurement

The public sector tendering system in Mexico now discriminates in favor of national companies.[16] NAFTA would open to U.S. and Canadian companies procurement of biologicals and patented pharmaceuticals by certain agencies of the Mexican Government.[17] However, until January 1, 2002, the government procurement provisions of NAFTA will not apply to procurement by the following agencies of drugs that are not currently patented in Mexico or whose Mexican patents have expired: the Mexican Ministries of Health, National Defense, and the Navy; Mexican Social Security Institute; and Social Security and Services Institute for Government Workers.[18]

Likely Impact on Investment

U.S. companies are expected to continue to expand their R&D and other operations in Canada as a result of their ongoing commitment to C-22; further R&D investment is likely if strengthened IPR provisions are enacted as a result of NAFTA or C-91.[19] According to the Pharmaceutical Manufacturers Association of Canada, "over $400 million in new capital and R&D investment will accrue to Canada from the new legislation (C-91) abolishing compulsory licensing. That figure is in addition to the almost $2 billion in estimated research funding which will come from the industry between 1992 and 1996." U.S. investment is also expected to increase in Mexico, particularly in

[9] IPR infringement in 1986 was estimated to cost the U.S. industry approximately $6 billion, possibly reducing R&D investment by $720-900 million. Merck & Co., *Health Care Innovation: The Case for a Favorable Public Policy*, p. 21.

[10] This compulsory licensing scheme was perceived to be discriminatory against companies not conducting research in Canada. Some also questioned whether this provision would "violate the national treatment obligation" contained in the General Agreement on Tariffs and Trade (GATT). Rogers, "The Revised Canadian Patent Act," p. 358.

[11] C-22 also created the Patented Medicine Prices Review Board (PMPRB), an independent quasi-judicial agency to protect consumer interests by "ensuring that the prices of patented medicines are not excessive." Under C-91, in exchange for uncoupling prices from compulsory licensing, the PMPRB will be given increased powers to control the prices of patented medicines. "Reform of the Canada Patent Act on Compulsory Licensing of Pharmaceuticals," *The International Business Issues Monitor*, Monitor Bulletin No. 92-45, July 17, 1992, p. 3.

[12] According to a representative of the Pharmaceutical Manufacturers Association of Canada.

[13] PMA, *The Pharmaceutical Industry: Transition to the 1990s*, 1990, p. 49.

[14] C-91 is expected to "adopt the patent regime proposed under the Uruguay Round of negotiations of the GATT and embodied in the proposed GATT agreement." "Stronger Patents and Curbs on Pricing in Canada," *SCRIP Magazine*, Sept. 1992, p. 55. The NAFTA text was reportedly derived from the GATT TRIPS ("Dunkel draft") text.

[15] PMA states that it would be the end of "discrimination against products discovered and researched outside of Canada." PMA press release, "Impact on the Pharmaceutical Industry of the North American Free Trade Agreement," Sept. 10, 1992.

[16] PMA press release, "Impact on the Pharmaceutical Industry of the North American Free Trade Agreement."

[17] Biologicals are medicinal products made from living organisms and their products.

[18] NAFTA, annex 1001.2a(6). Notwithstanding annex 1001.2a(6), Mexico may not set aside from the obligations of NAFTA's government procurement provisions by its entities of biologicals and drugs patented in Mexico. NAFTA, annex 1001.2b.

[19] Pharmaceutical Manufacturers Association of Canada press release, "The Implications of the Removal of Compulsory Licensing," June 23, 1992.

response to the increased IPR protection that resulted from the Mexican reforms adopted in June 1991. U.S. pharmaceutical companies are likely to increase R&D investments in Mexico by a modest amount; non-R&D investment is expected to increase only by a minor amount, given current U.S. assets in the area.

The expected increase in R&D investment in Canada and Mexico is not likely to result in significant U.S. disinvestment because the United States is one of the world centers of pharmaceutical R&D.[20] Additionally it is unlikely that significant disinvestment would occur because the U.S. market for pharmaceuticals is the largest in the world, because considerable investment has been made in U.S. infrastructure and facilities, and because of U.S. regulatory standards that must be met before marketing a medicinal product in the United States.

Likely Impact on U.S. Trade

According to the Commission's sectoral model, the level of U.S. imports of pharmaceuticals from Mexico and Canada is expected to increase by less than 1 percent in the short term and by about 3 percent over the long term. This is due to a number of factors, including the existence of CFTA; the small share of the U.S. market held by Mexico and Canada; and the fact that the majority of production in Mexico and Canada is consumed in those countries. Little or no change in the level of U.S. imports over the short term is expected as a result of the IPR modifications under NAFTA, because changes in the current product mix being imported into the United States would require Food and Drug Administration approval, a process that could take a minimum of 6 months to 1 year. U.S. imports are likely to increase by a minor amount in the long term as a result of the IPR changes.

According to the Commission's sectoral model, U.S. exports of pharmaceuticals to Mexico are expected to increase by about 1 percent in the short term and by about 12 percent in the long term as a result of NAFTA. Removal of tariffs under NAFTA is expected to have relatively no effect on U.S. exports to Canada because of the existence of CFTA. However, U.S. exports to Mexico and especially Canada are more likely to increase as a result of NAFTA's IPR protection for pharmaceutical inventions.[21]

Likely Impact on U.S. Production and Employment

According to the Commission's sectoral model, the expected change in U.S. trade levels with Mexico and Canada under NAFTA will likely have a negligible impact on U.S. production and employment in both the short and long term. The expected net increase in U.S. sector trade under NAFTA represents less than 1 percent of total U.S. pharmaceutical shipments. Nevertheless, it is likely that NAFTA's IPR provisions could spur growth in U.S. production and employment.[22]

Likely Impact on U.S. Global Competitiveness

IPR improvement in Canada and Mexico is likely to benefit the pharmaceutical industries of both of those countries, as well as that of the United States. The competitive position of the U.S. industry, both in North America and worldwide, is likely to improve since companies could recoup a greater share of their R&D expenditures as a result of the extended period of market exclusivity, thereby enabling them to maintain, or perhaps increase, current levels of R&D spending. Furthermore, although the building of an R&D base can be a costly and lengthy process, the industries in Canada and Mexico potentially could become more competitive on a global basis, as their industries benefit from the additional research capabilities. Additionally, with the elimination of tariffs in Mexico for U.S. exports, the U.S. industry should have a significant tariff advantage over non-NAFTA suppliers.

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[20] Government-sponsored R&D is not covered by NAFTA. Industry-sponsored R&D generally represents a larger share than government-sponsored R&D of total such spending for most pharmaceuticals in the United States. One exception, however, is in the area of pharmaceuticals derived via biotechnology. Federal Government R&D funding of healthcare-related biotechnology projects in 1987 accounted for between 50 and 60 percent of the total $4.2 billion in biotechnology R&D funding that year.

[21] PMA press release, "Impact on the Pharmaceutical Industry," and D. J. Elliott, director of international trade, Procter & Gamble, written submission to the Commission, Nov. 19, 1992.

[22] Procter & Gamble stated that the firm's employment levels in the United States will increase as its exports to Mexico increase, "eventually more than doubling U.S. employment on exports to our Mexican business from over 1,500 jobs to over 3,500 jobs." Elliott, written submission to the Commission.

CHAPTER 10
Steel Mill Products[1]

Peg MacKnight, Dan Shepherdson

Table 10-1
Steel mill products: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	208	203	193	-5
Trade data (million dollars):				
Shipments	52,900	51,000	46,000	-10
Exports:				
Total	2,809	2,784	3,685	32
To Mexico	395	494	796	61
To Canada	502	1,179	1,193	1
Imports:				
Total	8,958	8,385	7,892	-6
From Mexico	231	285	243	-15
From Canada	1,532	1,381	1,421	3
Trade balance:				
Total	-6,149	-5,601	-4,207	25
With Mexico	165	209	553	165
With Canada	-1,030	-202	-228	-13
Consumption	59,049	56,601	50,207	-11
Import market share (percent):				
Total	15	15	16	(1)
Mexico	(2)	1	(2)	(1)
Canada	3	2	3	(1)

[1] Not meaningful for purposes of comparison.
[2] Less than 0.5 percent.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Summary of Sector Analysis

The overall impact of NAFTA is expected to be beneficial to the U.S. steel industry.[2] The U.S. industry's greater product range, technical expertise, and steel-making capacity relative to those of Mexico (annual Mexican steel production is approximately one-ninth of U.S. production) will provide a U.S. advantage in supplying the anticipated NAFTA-encouraged growth in the Mexican steel market, and enable the industry to benefit from NAFTA tariff and government procurement provisions. NAFTA is expected to increase U.S. steel exports to Mexico modestly, particularly those of stainless steel, electrical steel, wide-width flat-rolled steel, high-quality flat-rolled steel for automotive and appliance uses, plate, steel pipes and tubes, structurals, and rebars. Although many of these export areas are already increasing and would have continued to increase even without NAFTA, the agreement is expected to expedite the process not only by reducing tariffs, but by opening new government procurement markets, encouraging

[1] Includes semifinished and flat-rolled products, bars, rods, angles, shapes, sections, wire, rails, pipes, tubes, and fittings.

[2] Concurring statements received from American Iron and Steel Institute (AISI), written submission to the Commission, Nov. 25, 1992; Steel Manufacturers Association official, interview by USITC staff, Nov. 19, 1992; R. Schagrin, Committee on Pipe and Tube Imports, transcript of hearing, p. 400; and *Report of the Industry Sector Advisory Committee for Trade in Ferrous Ores and Metals of the North American Free Trade Agreement*, Sept. 1992.

development of the steel-consuming industries, and increasing pressures for infrastructure improvements in Mexico. Although individual U.S. product lines may show production increases, bringing localized employment and capacity utilization benefits in several regions, only minor overall employment or production increases are anticipated as a result of NAFTA. Firms located in the western and southwestern regions of the United States may experience the greatest gains because of their proximity to Mexico.

U.S. imports from Mexico, primarily the lower valued, commercial-grade products and construction steels, are expected to increase modestly as U.S. tariffs are lowered and Mexican transportation is improved. Further, the Mexican steel industry is expected to become more competitive as a collective result of NAFTA, industry privatization, and increasing foreign investments.

In the investment area, although little or no direct investment by U.S. firms in Mexican steel-producing facilities is expected, some of the smaller U.S. steel firms do not rule out the possibility of direct investments at some point several years into the agreement. In the short run, some U.S. firms are considering investments in warehousing operations to service the recurring procurement of equipment required at oil fields. These on-site supply operations will receive national treatment under NAFTA procurement rules.

The country-of-origin rules are expected to improve U.S. steel industry competitiveness with non-NAFTA firms by limiting opportunities for transshipments by non-NAFTA suppliers. Both the phaseout of Mexico's domestic content requirements and the phase-in of increases in country-of-origin percentages needed for some autos and auto parts to qualify for NAFTA tariff benefits also will tend to increase the use of U.S. and Canadian steel products in Mexican manufacturing over use of non-NAFTA suppliers.

Key NAFTA Provisions Affecting Sector

Tariff Provisions

Under NAFTA, tariffs for most steel mill products will be eliminated in equal stages over a 10-year period. In 1991, the average effective U.S. duty on these products was 4 percent compared with a 10 percent duty on most U.S. steel products entering Mexico and a 10-15 percent Mexican duty on pipes and tubes. Some products, including stainless steel products such as hot-rolled stainless coil and some specialty steels such as electrical steel, high-speed steel, and certain tool steels will be granted duty-free treatment immediately upon NAFTA's implementation for trade between the United States and Mexico. In addition, approximately $13 million, or 5 percent of U.S. imports from Mexico, already enter duty-free under the Generalized System of Preferences and as articles to be processed under bond for exportation. Another $50 million, or 21 percent of total U.S. steel mill imports from Mexico, enter under production-sharing provisions of Harmonized Tariff Schedule of the United States heading 9802.00.60, under which duties are assessed only on the value added abroad. This trade is made up primarily of cold-rolled stainless steel coil, processed in Mexico into thinner and more uniform material from U.S. stainless hot-rolled coil. Tariffs on steel trade between the United States and Canada are being phased out under NAFTA as previously agreed under the U.S.-Canada Free-Trade Agreement.

Rules of Origin

NAFTA rules of origin for steel mill products are relatively strict. They generally prevent most steel products from non-NAFTA countries from being imported into North America and further worked or processed to produce a more finished product in North America that would qualify for NAFTA treatment.[3] For example, wire that is produced in North America from bars or rods that are imported from a non-NAFTA country would not qualify for NAFTA benefits.

On the other hand, raw or semifinished materials from a non-NAFTA country can be used to produce a steel product that would qualify for NAFTA treatment. In particular, nonoriginating ores, concentrates, or primary materials[4] may be processed in North America into semifinished products, flat-rolled products, bars and rods, angles, shapes and sections, wire, and, where applicable, sheet piling, railway goods, or pipes and tubes. Also, nonoriginating iron or steel semifinished products may be processed in North America into flat-rolled products, bars and rods, angles, shapes and sections, wire, and, where applicable, sheet piling, railway goods, or pipes and tubes.

Government Procurement

The Government of Mexico is one of the world's largest purchasers of oil country tubular goods, line pipe, and pressure pipe. Under NAFTA, Mexican parastatals such as Petroleos Mexicanos (PEMEX) and Comision Federal de Electricidad (CFE) will be required to open their procurement bidding to U.S. and Canadian interests in stages over a 10-year period, beginning with 50 percent of their procurements in 1994 for goods and services contracts worth over $250,000. Of particular interest is the potential opening of PEMEX, which purchased approximately $2 billion worth of goods during 1991.[5]

[3] NAFTA, annex 401, sec. B-XV.

[4] Primary materials include pig iron, ferroalloys, direct reduced iron, and ferrous waste and scrap.

[5] Schagrin, Committee on Pipe and Tube Imports, prehearing brief, Nov. 6, 1992, p. 3.

In addition, NAFTA annex 1001.2b (paragraph 7) provides for national treatment and nondiscrimination for locally established suppliers of oil and gas field supplies and equipment by PEMEX at any site where it performs work. This would open additional opportunities for U.S. steel suppliers, particularly in pipe and tube products. Although individual sales may be small, considerably less than the $250,000 contract procurement cut-off for PEMEX, the cumulative effect of these recurring, on-site sales could be substantial.

Likely Impact on Investment

Modest increases in investment may occur in warehousing and distribution systems as a result of NAFTA, but minor or no investment is anticipated by U.S. or foreign firms in major steel-making operations in the short term. In 1989, Mexico revised its investment regulations to allow, among other things, for 100-percent participation by foreign interests in steel manufacturing. Although these regulations are not yet codified in Mexican law, they have already paved the way for the purchase of the government-owned Sicartsa II facilities by Ispat of India, as well as for smaller investments in carbon steel production by Hoogovens of the Netherlands, Bekaert of Belgium, Mission Energy of California, and Southern California Utilities.[6] A number of Japanese firms have minority interests in the Mexican steel pipe and tube industry, as do Italian and Argentine financiers, and Transmesa of Spain. Thyssen of Germany and Acerinox of Spain have partial ownership of Mexico's only stainless producer, Mexinox. The only recent U.S. steel industry participant in Mexico, Armco Steel, divested itself of its Mexican steel interests in 1986.[7]

Reportedly, additional investment in Mexico by non-NAFTA participants are not in process at this time, and direct investment in new or existing Mexican steel firms by U.S. integrated producers is also not anticipated due to capital constraints. However, some smaller U.S. firms expressed an interest in continuing to monitor the Mexican market for possible investments several years into the future. Mexican Government sources have pointed out difficulties in meeting the concerns of SEDESOL (the Mexican environmental ministry) in getting approval for steel operations near some of the major Mexican cities as hampering new steel industry investment in these areas.

In the distribution area, several U.S. firms already have sales or marketing support offices in Mexico and plan to expand these as business dictates. In addition, because of the NAFTA government procurement rules, several U.S. firms are considering investments in warehousing operations in order to service PEMEX oil fields with the "incidentals" needed to run oil-field machines on a day-to-day basis. These operations supply drilling sites with small quantities of steel pipes, valves, etc., and nonsteel items on a recurring, as-needed basis, and, according to industry sources, they could be a significant investment opportunity. Reportedly, some firms are already bidding on such operations even before NAFTA becomes effective.

According to Mexican steel sources, several Mexican firms, including Altos Hornos and Hylsa, are investing domestically in new technology in order to meet Mexican demands and discourage imports. Hylsa has announced plans to build a state-of-the-art thin-slab casting plant for $400 million, expected to be on-stream by early 1995.[8] Altos Hornos is planning to invest $500 million over the next 5-6 years to increase product quality.[9] These firms and others reportedly would be interested in buying capital goods from foreign suppliers if given favorable financial packages.[10] Some financing from the World Bank is available to the industry but the fund-package must be renegotiated, since it was originally intended for Sidermex, the government holding company for steel, which has now been privatized.[11]

Likely Impact on U.S. Trade

Taking into account both the effects of tariff elimination and other provisions, steel trade between the United States and Mexico is expected to show a minor short-term and modest long-term increase in both directions as a result of NAFTA.[12] Since the current Mexican steel tariffs are at least double those imposed by the United States, it is expected that trade into Mexico will be affected to a greater degree by the tariff changes. The Commission's sectoral model forecasts an increase in the quantity of U.S. imports from Mexico of less than 1 percent in the short term

[6] U.S. Department of State, Feb. 12, 1992, Monterrey, message reference No. 00366, and June 11, 1992, Monterrey, message reference No. 01408.

[7] Gary Clyde Hufbauer and Jeffrey Schott, *North American Free Trade Issues and Recommendations* (Washington, DC: Institute for International Economics, 1992), pp. 249-250.

[8] Hylsa press release, Monterrey, NL, Mexico, Nov. 9, 1992.

[9] Altos Hornos de Mexico official, interview by USITC staff, Mexico City, Nov. 11, 1992.

[10] Camara Nacional de la Industria del Hierro y del Acero (Iron and Steel Association) official, interview by USITC staff, Mexico City, Nov. 11, 1992.

[11] Ibid.

[12] During 1989-91, U.S. imports from Mexico grew by 5 percent, whereas U.S. exports of steel mill products to Mexico increased by slightly more than 100 percent due to an increase in Mexican demand for high-quality steel products. Currently, only 1 percent of total U.S. steel imports comes from Mexico, whereas Mexico receives almost 22 percent of U.S. steel exports.

and 3 percent in the long term based on the anticipated tariff changes under NAFTA. The quantity of U.S. exports to Mexico are forecast to increase by about 1 percent in the short term and by about 8 in the long term.

U.S. industry sources also indicate that NAFTA would require Mexico to maintain certain regulatory changes supporting overall economic growth and infrastructure improvements that have already made Mexico one of the fastest growing steel markets. U.S. firms anticipate being able to take better advantage than their Mexican counterparts of the initial industrial growth, citing their larger available underutilized capacity and greater range of product types and qualities, particularly technologically advanced materials for the auto and appliance markets.

Under NAFTA, U.S. pipe and tube exports are expected to increase considerably because of the phaseout of higher Mexican tariffs and new access to the PEMEX and CFE purchases after implementation of NAFTA government procurement rules. However, although prices in Mexico for pipe and tube products average 25- to 30-percent higher than prices in the United States,[13] Mexican suppliers may have advantages such as technical background specific to the project and familiarity with Mexican equipment.[14]

U.S. exports of electrical steel and specialty steel to Mexico are expected to increase because of the immediate elimination of tariffs (mostly 10 percent ad valorem) and the Mexican industry's limited product offerings. In the stainless steel area, a significant portion of U.S. trade is currently going to maquiladora operations where it is cold-rolled into thinner and more uniform products before being re-exported to the United States. The elimination of tariffs, however, is expected to make U.S. stainless more attractive to non-maquiladoras. A large Mexican private industry importer of stainless and other steel products from both the United States and Asia indicated that the immediate tariff eliminations on some stainless products from the United States would make them reevaluate their sourcing.[15]

In the carbon-steel flat-rolled area, U.S. exports are expected to continue to grow in high-quality cold-rolled steels for the automotive and appliance markets, in plate, in tinplate, and in items not readily available from Mexican firms such as electrogalvanized steel and wide-width steels.

U.S. exports to Mexico are also expected to continue rising in structural steels and rebars, although much of the anticipated market growth in this area would likely occur with or without a NAFTA.[16] The use of structural steel framing in buildings instead of reinforced concrete has been increasing recently because steel framing is more resistant to seismic disturbances and the growing investment in infrastructure has increased the consumption of rebar. The removal, under NAFTA, of the 10-percent tariff would offset the freight disadvantage of shipping overland to Mexico.

Further, the 10-year phaseout of trade-distorting restrictions of the Mexican Auto Decree should improve market opportunities in Mexico for both domestic steel producers and their automotive customers.[17] Specifically, the phaseout of Mexico's trade balancing and local sourcing requirements will allow firms operating in Mexico to have much greater access to U.S. products rather than having to seek components from relatively inefficient local suppliers.[18]

On the U.S. import side, both the elimination of tariffs and NAFTA-encouraged investment are expected to make Mexico more competitive in less expensive, commercial-grade products and construction steels, resulting in a minor short-term increase and a modest long-term increase in U.S. imports from Mexico. In the short term, for example, one industry source anticipates an increase in rebar imports from Mexico, although such imports are expected to decline as rebar is increasingly needed for infrastructure projects in Mexico. In some cases, Mexican materials could be a substitute for Far Eastern or other steel. The 10-year phaseout of steel tariffs will give the Mexican industry additional time to become more competitive for export. In addition, Mexican industry sources expect the quality of their exports to benefit from technology transfer from U.S. firms and joint ventures.[19]

Likely Impact on U.S. Production and Employment

The expected changes in U.S. trade with Mexico as a result of NAFTA are expected to have only a minor impact on overall U.S. production and employment in both the short and long term because steel trade with Mexico is small relative to the total U.S. steel market. The Commission's sectoral model forecasts virtually no change in U.S. production and employment in the short term and an increase of less than 1 percent in the long term. However, because U.S. exports may increase unevenly over the various steel product lines, certain products or mills may show production, employment, and shipment increases in the long term. Proximity may lead to some greater gains for U.S. firms in the West and Southwest.

[13] Schagrin, Committee on Pipe and Tube Imports, transcript of hearing, pp. 402-403.

[14] PEMEX officials, interview by USITC staff, Mexico City, Nov. 10, 1992.

[15] Private industry official, interview by USITC staff, Nov. 11, 1992.

[16] Chaparral Steel official, interview by USITC staff, Nov. 19, 1992.

[17] AISI, written submission to the Commission, Nov. 25, 1992.

[18] General Motors Corp., written submission to the Commission, Nov. 25, 1992.

[19] Camara Nacional interview.

Likely Impact on U.S. Global Competitiveness

NAFTA is expected to increase the competitive pressures on North American steel producers. Increased trade and competition among the steel mills of the United States, Canada, and Mexico are expected to result in continued and substantial efforts to reduce costs, thereby reducing the current U.S. price advantage in several products for the Mexican market. In addition, several U.S. steel firms expressed concern that NAFTA dispute panels, which would hear appeals of binational trade-case disputes, would result in U.S. imports from Canada and Mexico being given more lenient treatment, thereby adversely affecting U.S. competitiveness and leading to shifts in trade.[20]

[20] *Report of the Industry Sector Advisory Committee for Trade in Ferrous Ores and Metals of the North American Free Trade Agreement*, and AISI, written submission.

Overall, however, with NAFTA, the U.S. and Canadian industries are expected to "sustain" their overall international competitive positions and Mexico is expected to enhance its position.[21]

According to several Mexican sources, to the extent that NAFTA encourages investment and technology exchange between United States and Mexican firms, the competitive position of North American firms as a whole should improve. Several non-NAFTA factors, including the recent privatization of the Mexican steel industry and the removal of steel quotas should also make the Mexican industry more competitive, leading to specialization of production within North America and an improved competitive position for the North American steel industry as a whole, relative to steel industries in other areas, such as the Far East.[22]

[21] AISI, written submission.

[22] A. Elias Ayub, Undersecretary of Mining and Basic Industries, SEMIP, interview by USITC staff, Mexico City, Nov. 10, 1992.

CHAPTER 11
Flat Glass[1]

James J. Lukes

Table 11-1
Flat glass: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees[1] (1,000)	61	61	56	-8
Trade data (million dollars):				
Shipments[1]	6,800	6,600	6,100	-8
Exports:				
Total	533	751	786	5
To Mexico	31	74	85	15
To Canada	257	401	416	4
Imports:				
Total	632	614	584	-5
From Mexico	112	122	123	1
From Canada	200	183	168	-8
Trade balance:				
Total	-99	137	202	47
With Mexico	-81	-48	-38	21
With Canada	57	218	248	14
Consumption	6,899	6,463	5,898	-9
Import market share (percent):				
Total	9	10	10	(2)
Mexico	2	2	2	(2)
Canada	3	3	3	(2)

1 Estimated by the staff of the U.S. International Trade Commission
2 Not meaningful for purposes of comparison.
Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Summary of Sector Analysis

The United States is the world's largest market for flat glass, a material primarily used for glazing in the construction and automotive industries. Canada and Mexico are the largest U.S. trading partners in flat glass. U.S. firms dominate the U.S. and Canadian industries and have financial interests in three Mexican automotive-glass fabrication plants. The Mexican flat glass industry is dominated by Vitro, S.A. (Vitro), a Mexican-owned holding company, whose flat glass division is 35-percent owned by the world's leading flat glass producer, Pilkington Brothers, Ltd. (Pilkington), of the United Kingdom.[2] The U.S. industry is concerned that NAFTA maintains a gradually declining Mexican tariff advantage for 10 years, enabling the Mexican industry to use profits generated in a protected home market to gain U.S. market share. Vitro's alleged business practices also raise concern among some U.S. producers that they are unlikely to have the open access to the Mexican market that Mexican producers will have in the United States.

NAFTA is expected to have a minor beneficial impact on the U.S. industry in the short and long term, with effects concentrated in the western and southern regions of the country. It offers increased access to the Mexican market for the U.S. industry through the

[1] Includes flat glass and certain flat glass products as defined by Harmonized System (HS) headings 7003 through 7009, such as unprocessed flat glass, tempered glass, laminated glass, glass mirrors, and insulating units.

[2] Vidrio Plano de Mexico, S.A., and Vitro Flotado, S.A., posthearing submission, Nov. 25, 1992, p. 20.

elimination of a Mexican tariff advantage that is likely to result in the long term in a larger percentage increase in U.S. exports than imports. Minor U.S. shipment and employment increases are expected to have a beneficial impact on the U.S. industry, with a minimal positive effect on its global competitiveness. However, recent Mexican industry expansions are expected to augment estimated increases in U.S. imports from Mexico and could result in modest declines in U.S. shipments and employment in the long term. NAFTA is unlikely to have an effect on North American investment patterns for the foreseeable future because of unfavorable investment conditions for this industry in the NAFTA countries, such as recent investment and existing excess capacity in North America, and weak demand in the principal flat glass markets in Canada and the United States.

Key NAFTA Provisions Affecting Sector

NAFTA tariff provisions that provide for staged reductions and elimination of both U.S. and Mexican tariffs are the most direct benefits of the agreement for the flat glass industry, despite retention of a current Mexican duty advantage for most of the 10-year period. Although 93 percent of U.S. imports of flat glass from Mexico currently enter duty-free under provisions such as the Generalized System of Preferences (GSP), the remaining 7 percent of U.S. imports from Mexico that entered dutiable in 1991 had a trade-weighted average effective rate of duty of 4.8 percent ad valorem. U.S. duty rates on 80 percent of this dutiable trade will be eliminated immediately under NAFTA, 19 percent in 8 years, and 1 percent over 10 years. For Mexican rates of duty, which are 20 percent ad valorem for over 90 percent of the rate lines, duties on 5 percent of the line items will be phased out immediately upon NAFTA's implementation, 30 percent in 5 years, 2 percent in 7 years, and 2 percent in 8 years. The remaining 61 percent will be phased out in 10 years.

Likely Impact on Investment

NAFTA is unlikely to have any effect on North American investment in flat glass facilities in either the short or long term. The agreement offers little investment incentive to this industry beyond the long-term equalization of duty rates, and market conditions in North America do not appear likely to favor investment for some time. Foreign ownership restrictions for Mexican float glass and glass fabrication facilities were liberalized in 1989, allowing 100 percent foreign ownership in the industry. The competitive advantages in raw materials,[3] labor costs,[4] and fuel[5] that a Mexican facility may afford are available regardless of NAFTA. In addition, international trade in float glass is generally limited due to the existence of flat glass plants in many world markets and to the high transportation costs involved.[6] The dominance of Vitro-Pilkington operations, uncertain market opportunities, and recent capacity expansion in Mexico currently combine to discourage further investment in the Mexican industry. Recent foreign investment and weak demand in the principal flat glass markets (e.g., automotive and construction) have left the United States and Canada with excess capacity, making further investments in North America unlikely in the short run. Rapid improvement in these principal markets is not anticipated, with one producer projecting annual growth in these markets at 1 to 3 percent at most.[7] At least one U.S. producer believes that this excess capacity problem will not be eliminated until the end of the decade.

Likely Impact on U.S. Trade

NAFTA is expected to result in minor increases for U.S. imports and exports in the short and long term according to the Commission's sectoral model. The potential effects of NAFTA on U.S. imports are minor because of the high percentage of U.S. imports from Mexico that already enter duty free; the remainder are subject to a relatively low trade-weighted-average effective rate of duty. The quantity of imports is expected to increase by less than 1 percent in both the short and long term under NAFTA. Import growth is expected to occur regardless of the implementation of NAFTA because of new float capacity in Monterrey, Mexico, and the recent purchase of U.S. distribution and fabrication facilities by the Mexican industry; the resultant import growth could reach considerable levels. The United States already accounts for the bulk of Mexico's flat glass exports (95 percent in 1991).

The quantity of U.S. exports to Mexico for consumption is expected to increase by less than 1 percent in the short term and about 3 percent in the long term under NAFTA according to the Commission's sectoral model. The export growth is limited because 87 percent of U.S. exports, mainly glass for motor vehicles, goes to maquiladora operations, and thus are not subject to Mexican import

[3] PPG Industries, Inc., posthearing submission, Nov. 25, 1992, pp. 9-10.

[4] Vidrio Plano de Mexico, S.A., and Vitro Flotado, S.A., posthearing submission, Nov. 25, 1992, p. 14.

[5] U.S. International Trade Commission, *Foreign Investment Barriers or Other Restrictions That Prevent Foreign Capital from Claiming the Benefits of Foreign Government Programs*, USITC publication 2212, Aug. 1989, p. 2-12.

[6] USITC, *Potential Effects of Foreign Governments' Policies of Pricing Natural Resources*, USITC publication 1696, May 1985, pp. 50-51.

[7] Guardian Industries Corp., posthearing submission, Nov. 1992, p. 17.

duties. The expected expansion of automotive production in Mexico could boost U.S. exports of flat glass to Mexico by an additional amount. However, any possible continuation of Mexican value-added requirements in the automotive sector after NAFTA is fully implemented could favor sourcing from Mexican vendors. Projected export growth could also be constrained by the Mexican industry's new float glass capacity and a reported lack of equal market access for U.S. producers.[8]

Likely Impact on U.S. Production and Employment

NAFTA is expected to result in net increases of less than 1 percent in U.S. shipments and employment in both the short and long term according to the Commission's sectoral model. The limiting factor of transportation costs is expected to concentrate the U.S. effects of NAFTA in Western and Southern markets and for producers in these regions. However, recent Mexican industry expansions are expected to augment estimated increases in U.S. imports from Mexico; the associated declines in U.S. shipments and employment resulting from increased U.S. market penetration could reach modest levels.

[8] Peter S. Walters, group vice president, and Peter Young, director of international business, Guardian Industries Corp., transcript of hearing, Nov. 17, 1992, pp. 211-214.

Likely Impact on U.S. Global Competitiveness

NAFTA will likely have a minimal positive effect on the competitiveness of U.S. firms in the North American or global markets in either the short or long term. Any enhancement in competitiveness that does accrue to the U.S. industry is likely to affect individual companies rather than the industry as a whole.

Competition in flat glass is largely based on quality, service, and price, with price being the most important. The Mexican industry is fully capable of matching the quality of the U.S. and Canadian industries. Mexico's industry is viewed as state-of-the-art, with the world's leading flat glass producer a minority partner. The Mexican industry has improved its service potential in the U.S. market by purchasing U.S. distribution facilities. Equalization of the duties improves the price position of U.S.-produced goods relative to Mexican products because U.S. merchandise is currently subject to higher duties.

CHAPTER 12
Household Glassware

Deborah McNay

Table 12-1
Household glassware: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	26	26	26	0
Trade data (million dollars):				
Shipments	1,382	1,397	1,452	4
Exports:				
Total	86	123	137	11
To Mexico	7	7	6	-14
To Canada	18	35	39	11
Imports:				
Total	513	524	513	-2
From Mexico	21	19	19	0
From Canada	4	4	4	0
Trade balance:				
Total	-427	-401	-376	6
With Mexico	-14	-12	-13	-8
With Canada	14	31	35	13
Consumption	1,809	1,798	1,828	2
Import market share (percent):				
Total	28	29	28	(1)
Mexico	1	1	1	(1)
Canada	(2)	(2)	(2)	(1)

1 Not meaningful for purposes of comparison.
2 Less than 0.5 percent.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Summary of Sector Analysis

The United States is believed to be the world's single largest producer of and market for household glassware. The U.S. industry is dominated by four large firms that principally produce machine-made glassware. The United States is Mexico's principal export market, receiving about 75 percent of its glassware exports. Glassware from the United States represents 10 to 15 percent of total Mexican imports. Canada serves as the principal export market for the United States and a secondary market for Mexican exports. Because Canada has a secondary role in the production of North American household glassware, further discussion will focus on the U.S. and Mexican markets. The elimination of the relatively high tariffs on U.S. imports of household glassware has been the major NAFTA concern of the U.S. industry in NAFTA negotiaations.

The gradual elimination of duties under NAFTA presents both opportunities and challenges for the U.S. household glassware industry in the long term, although short-term effects are estimated to be minor. The recent Corning-Vitro joint venture will provide numerous channels for retail distribution of Mexican-made glassware in the U.S. market that will complement Corning's existing product base but also compete with the products of other U.S. and foreign manufacturers. U.S. exports to Mexico likely will increase considerably in the long term as a result of duty elimination. However, Corning likely will be the principal beneficiary of any export gains because of its greater access to the Mexican market through Vitro's distribution network. Since Vitro is a competitive, state-of-the-art producer, believed to have an estimated 75 percent of the Mexican household glassware market, this arrangement could hinder efforts by other U.S. producers to penetrate the market even as Mexican tariffs decline. With the elimination of U.S. tariffs, U.S. household glassware imports, especially commodity-type glassware, are likely to increase modestly in the long term.

The segment of the U.S. household glassware industry producing lower priced glassware, concentrated in the Midwest and Mid-Atlantic regions, likely will experience a modest adverse impact on U.S. production and employment in the long term as a result of increased imports. Additional short-term U.S. or foreign investment in the Mexican industry beyond the Corning-Vitro joint venture is considered unlikely, because of the strength of Vitro in its home market, the lack of other major Mexican producers available for investment purposes, and the significant capital investment required for constructing a greenfield plant (ranging from $50 to $120 million, depending on plant size). However, such investment cannot be ruled out in the long term. As a result of the limited investment opportunities for the industry, NAFTA will provide few benefits for overall improvement in the U.S. industry's global competitiveness. Corning will likely enhance its competitive position as a result of its joint venture through technology sharing and expanded product offerings. However, U.S. producers of lower priced glassware will likely experience greater competitive pressures as U.S. imports of this glassware increase.

Key NAFTA Provisions Affecting Sector

U.S. rates of duty for household glassware range from 6 to 38 percent. Lower-priced, commodity household glassware, accounting for 44 percent of U.S. imports from Mexico in 1991, is dutiable at the higher rates of 20 to 38 percent. Nearly all of the U.S. rates of duty are subject to 15-year staged elimination under NAFTA. Mexican rates of duty range from 10 to 20 percent; nearly all will be eliminated over 10 years.

Eighty-five percent of U.S. household glassware imports from Mexico were dutiable in 1991; the remaining 15 percent entered duty-free under the Generalized System of Preferences (GSP) provisions. Household glassware items currently eligible for duty-free treatment under the GSP are subject to immediate duty elimination. Less than 1 percent of U.S. household glassware imports from Mexico are subject to 5-year staged tariff reductions, based on 1991 trade. New tariff classifications for household glassware incorporated into both the U.S. and Mexican tariffs will also receive immediate duty-free status under NAFTA.

Likely Impact on Investment

NAFTA is not likely to have any impact on North American glassware investments in the short term. Foreign investment in the U.S. market is not expected because of the high cost of constructing a greenfield plant, the intense competition provided by U.S. and foreign producers in the market, and the relatively low growth expected in this mature market. The joint venture by Corning and Vitro likely represents the best chance for significant U.S. and foreign investment in the Mexican market. Vitro's dominance in the Mexican market results in part from its vast and established distribution network, integration into raw material supply, and extensive product line. Consequently, other household glassware firms will likely find limited investment opportunities in Mexico in the short term. However, additional foreign or U.S. investment in the Mexican market cannot be ruled out in the long term. The smaller size of the Canadian market reduces the likelihood of additional investment by other U.S. and Mexican investors.

Until the recent Corning-Vitro joint venture, the interrelationship of the North American household glassware industries had been limited. This U.S.-Mexican joint venture represents the only known foreign investment in the Mexican household glassware industry. Although the Corning-Vitro investment was initiated before the prospect of a regional trade bloc had fully materialized, the likelihood of NAFTA was an important influence on the conclusion of this joint venture.

Two subsidiaries were created from this joint venture: Corning Vitro Corporation (U.S.), of which Corning owns 51 percent; and Vitro Corning, S.A. de C.V. (Mexico), of which Vitro owns 51 percent.[1] Since Corning's subsidiary is larger, Vitro will make a $130-million cash payment to Corning. This joint venture provides complementary market access for each company's product line in the other country's market through their respective distribution systems. Combined annual worldwide sales of these subsidiaries is estimated at more than $800 million.[2]

The Canadian glassware industry has relatively few producers. Corning has a subsidiary in Ontario—Corning Canada Inc.—that produces a wide range of glass cookware and kitchenware. The other known Canadian household glassware producer is Libbey-St. Clair, which was formerly a joint operation of Owens-Illinois (U.S.) and Stone Container Corp. (Canada).[3]

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[1] Vitro Crisa does have a distribution subsidiary in the United States, Crisa Corp. (Texas).

[2] "Corning, Shifting to High-Tech Pursuits, Plans Joint Venture for Housewares Line," *Wall Street Journal*, Aug. 7, 1991, p. A4.

[3] The company was sold to private U.S. investors and Canadian-based management in 1990, and is currently in receivership.

Likely Impact on U.S. Trade

The Commission's sectoral model indicates that the quantity of U.S. imports from Mexico is expected to show an increase of 1 percent in the short term and of 10 percent in the long term. The majority of this increase would likely occur in the lower priced import categories, accounting for 44 percent of U.S. imports from Mexico, where U.S. duties range from 20 to 38 percent ad valorem. The quantity of U.S. exports is expected to increase by an estimated 2 percent in the short term and by 16 percent in the long term. An important factor not reflected in the economic estimates—the Corning-Vitro joint venture that occurred prior to NAFTA—will likely augment the short-term increases anticipated although the increase in future imports should remain in the modest range and the export increase should be considerable.

A reported estimate of an $80 to $100 million increase in Corning Vitro's share of the U.S. market during the next 2 to 3 years[4] indicates that total U.S. imports could experience a considerable increase over 1991 levels assuming this growth is supplied only by merchandise imported from Mexico. However, the high U.S. duties remain a consideration; Corning Vitro has indicated that such estimates are "grossly exaggerated"[5] and that its glassware business in the U.S. market will reflect a combination of domestically manufactured goods and imports, rather than solely an increase in imports from Mexico.[6]

Corning Vitro anticipates growth in U.S. exports to the Mexican market as a result of their joint venture to exceed their imports from Mexico in 1992.[7] Although such exports could offset, either partially or fully, any U.S. import increase, the tie-in could also hinder efforts by other U.S. producers to penetrate the Mexican market even as its tariffs decline. Other major U.S. manufacturers such as Libbey do not expect to achieve the same level of export gains as those of Corning. They perceive a limited Mexican market due to the low per capita income of Mexican consumers and the relatively low priority of household glassware in consumers' budgets,[8] combined with a lack of distribution channels because previous high duties (of up to 100 percent) effectively limited access to the Mexican market.

[4] "Pioneering a Program," *Home Furnishings Daily*, July 13, 1991.

[5] Corning Vitro Corp., posthearing brief, Nov. 25, 1992, p. 17.

[6] Corning Vitro Corp., letter to the U.S. International Trade Commission, dated Nov. 17, 1992.

[7] Ibid.

[8] Transcript of hearing, Nov. 18, 1992, p. 512.

Likely Impact on U.S. Production and Employment

Based on current U.S. import, export, and production levels, the Commission's sectoral model indicates a minor net gain in the overall value of U.S. production of less than 1 percent in both the short and long term, with employment remaining essentially unchanged. However, U.S. producers of lower priced commodity glassware, concentrated in the Midwest and Mid-Atlantic regions, would likely experience a modest adverse impact on U.S. production and employment in the long term in part as a result of the lower prices on imported goods that are expected from NAFTA duty elimination.[9]

The Corning-Vitro joint venture could present Corning an opportunity to increase production, exports, and possibly employment, to satisfy increased demand expected in the Mexican market. As currently structured, this joint venture does not involve the relocation of any U.S. production facilities to Mexico. Corning Vitro attributes a beneficial impact to the anticipated success of the Crown-Corning product line which is partially, and will continue to be, manufactured at its production facilities in the United States.[10]

Although Corning has not previously imported, manufactured, or distributed for the U.S. market a product line of this type (e.g., stemware and tumblers), such products will now be distributed with its established product lines in competition with U.S. and foreign producers. However, Corning Vitro contends that U.S. production capability otherwise does not exist for these products and that U.S. producers do not compete with some of the Crown-Corning line.[11]

Likely Impact on U.S. Global Competitiveness

The U.S. industry is likely to experience different competitive effects at the company level as a result of pre-NAFTA changes in the industry that were encouraged by NAFTA negotiations. Corning has been in the forefront of globalization with a number of international linkages, including licensing

[9] For example, Libbey Glass alleged in their pre-hearing brief of Nov. 9, 1992, that staged duty elimination under NAFTA will result in depression of the prices of U.S.-produced glassware leading to lost sales when no further U.S. price reductions can be profitably made, and that declining revenues and profit margins will be followed by plant closings.

[10] Corning Vitro Corp., posthearing brief, p. 19.

[11] Ibid., p. 17.

arrangements, subsidiaries, and joint ventures, to expand the position of its various business interests, including the household glassware industry. The joint venture with Vitro is expected to improve Corning's global competitiveness through the advantages of greater technology sharing and broader product offerings for overseas markets, such as those in Europe.[12] The addition of Corning's complementary glassware lines to Vitro Crisa's production would also likely strengthen Vitro's position in its home market relative to other Mexican and foreign manufacturers.

NAFTA is unlikely to improve the global competitive position of other U.S. household glassware manufacturers. The prospect of added price competition inthe U.S. market exists for certain U.S. producers as a result of increased imports in the long term of lower priced glassware from Mexico.

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[12] "Corning in Mexican Deal for Glass Sales," *Financial Times*, Aug. 7, 1991, p. 11.

CHAPTER 13
Ceramic Floor and Wall Tiles

Deborah McNay

Table 13-1
Ceramic floor and wall tiles: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	10	10	10	0
Trade data (million dollars):				
Shipments	698	687	582	-15
Exports:				
Total	18	21	21	0
To Mexico	1	1	2	100
To Canada	3	6	7	17
Imports:				
Total	431	421	365	-13
From Mexico	40	43	45	5
From Canada	3	2	1	-50
Trade balance:				
Total	-413	-400	-344	14
With Mexico	-39	-42	-43	-2
With Canada	0	4	6	50
Consumption	1,111	1,087	926	-15
Import market share (percent):				
Total	39	39	39	(1)
Mexico	4	4	5	(1)
Canada	(2)	(2)	(2)	(1)

[1] Not meaningful for purposes of comparison.
[2] Less than 0.5 percent.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Summary of Sector Analysis

The United States is believed to be the world's sixth-largest producer of ceramic floor and wall tiles. About 50 manufacturers and a large number of smaller "cottage" producers manufacture ceramic floor and wall tiles in the United States.[1] The United States is Mexico's largest export market, accounting for over 95 percent of Mexican exports, with Canada accounting for less than 1 percent of Mexican exports. Mexico is significant both as the third largest source of U.S. imports and the second largest U.S. export market. The Canadian market, being import-dependent, is the leading U.S. export market. Because of Canada's limited production in the North American market, further discussion will focus on the U.S. and Mexican markets. The elimination of the tariffs on ceramic floor and wall tiles has been the major concern of the U.S. industry in NAFTA negotiations.

With the elimination of duties under NAFTA, both U.S. imports from Mexico and U.S. exports to Mexico should increase considerably in the long term, although short-term trade effects are likely to be minor. Because Mexico is the principal source of U.S. imports for lower cost unglazed, nonmosaic tiles, this sector of the U.S. industry is most likely to experience a modest adverse impact on production and employment in the long term. U.S. producers located in and shipping to the Southwest could also be vulnerable as increased imports from Mexico would likely be concentrated in

[1] Tile Council of America, posthearing brief, Nov. 24, 1992, p. 3.

border regions because of geographic proximity (dictated by relatively high transportation costs) and similarity in architectural and design preferences.

Despite the current depressed condition of the commercial and residential construction markets, the promising long-term growth prospects for the North American industry have attracted several major foreign investments that increased productive capacity in the U.S. industry. In addition, one major U.S. tile producer is known to be expanding facilities in the United States and Mexico, and an Italian firm with U.S. operations has announced a joint venture with a Mexican tile producer. Infrastructure inadequacies and the level of capital investment required for new plant construction in Mexico, however, will likely hamper investment possibilities for all but these larger, more financially sound manufacturers located in the United States, Europe, and Asia.

Key NAFTA Provisions Affecting Sector

Nearly 100 percent of U.S. imports of ceramic floor and wall tiles from Mexico are dutiable at rates of either 19 or 20 percent ad valorem. All but one of the U.S. rates of duty will be eliminated in 15 equal annual stages. Harmonized Tariff Schedule of the United States (HTS) subheading 6908.10.20 (certain glazed mosaic tiles) is already eligible for duty-free treatment under the generalized System of Preferences and will receive immediate duty-free status under NAFTA. The rate of duty for Mexican imports is 20 percent, which will be eliminated in 10 equal annual stages.

Likely Impact on Investment

NAFTA is unlikely to have a significant impact on North American tile investments in either the short or long term. Greenfield investments require substantial capital outlays that will likely be undertaken by larger, more financially secure U.S. and foreign tile producers. Because the business climate for U.S. residential and commercial construction industries is currently not favorable and U.S. capacity has undergone major expansion, new investment by the U.S. industry in Mexico is unlikely in the short term. However, additional joint ventures by U.S. or by other foreign producers with Mexican firms or capacity expansions cannot be ruled out in the long term.

Lower costs of production and proximity to the U.S. market have already attracted additional foreign investment in Mexico. Industry sources have indicated that any future foreign investment by major world producers will probably focus on production of more basic, lower cost tiles such as unglazed, nonmosaic tiles, where price is a more important consideration than design. Industry sources indicated that Mexico will be more likely a site for expansion than Asia in the long term because of its proximity to the U.S. market, as well as the prospects under NAFTA of a more favorable investment climate, the ability of firms to maintain banking relationships with U.S. institutions with the opening of the Mexican financial industry, and the availability of easier transportation methods.

The global ceramic tile industry has become increasingly interrelated as major world producers seek improved access to principal markets and reduced production costs. Foreign investment in North America has been driven by the size of the U.S. market and its growth potential, given its relatively low-per-capita consumption of tile (0.4 square meters in the United States, 3.8 for Italy, 3.6 for Spain),[2] and expectations for renewed residential and commercial construction activity with an upturn in the economy.

Foreign-owned capacity in the U.S. ceramic floor and wall tile industry is estimated to have accounted for 34 percent (14 million square meters) of U.S. producers' shipments in 1991.[3] The May 1992 startup of the Tilecera facility in Tennessee (financing provided by Siam Cement Co., Ltd. (Thailand) and Finfloor S.r.L., an Italian holding company) increased foreign-owned capacity by almost 4 million square meters. In addition, American Marazzi Tile, an affiliate of the Marazzi Ceramiche Group (Italy), plans to more than double the capacity of its Dallas plant to more than 7 million square meters by year end 1993.

In Mexico, Ceramica Regiomontana, S.A. (Monterrey) has been a subsidiary of Dal-Tile (United States) for about 40 years, making this group of companies the largest tile producer in North America. The Mexican subsidiary is currently undergoing expansion with a reported 50 percent of production destined for future export. In addition, American Olean entered into a joint venture in 1990 with Interceramic, S.A. (Chihuahua), one of the largest producers of glazed ceramic floor tiles in North America. Principal goals of this joint venture were to broaden the product offering of American Olean and to improve its access to both the residential and commercial markets, thereby enhancing its competitiveness.[4] Marazzi, a principal Italian producer with operations in the United States, recently announced the conclusion of a joint venture with Penoles, a Mexican producer of refractory materials.[5] There have been no known public

[2] U.S. International Trade Commission, *Industry and Trade Summary: Ceramic Floor and Wall Tiles*, USITC publication 2504 (MM-2), Nov. 1992.

[3] Foreign-owned companies include Laufen International (formerly International American Ceramics) purchased by Keramik Holding (Brazil) in 1986, a plant in Indiana owned by KPT (Taiwan) constructed in 1986, and Monarch Tile, Inc., a subsidiary of the Cerabati Group (France). Other known foreign investment in the U.S. industry includes Glen-Gery Corporation (United Kingdom) and Stonelight Tile Co. (Australia).

[4] "American Olean Enters Joint Venture," *Ceramic Industry*, Dec. 1990, p. 11.

[5] As reported by the Tile Council of America in their posthearing brief, the joint venture will construct a new Mexican plant with capacity dedicated to serve Marazzi's U.S. and Mexican distribution channels, with a reported annual capacity of 7.5 million square meters accounting for more than 15 percent of total U.S. output.

announcements concerning any other future investments in Mexico by foreign (non-U.S.) manufacturers.

Likely Impact on U.S. Trade

The Commission's sectoral model indicates that the quantity of U.S. imports would increase by 1 percent in the short term and 18 percent in the long term, whereas the quantity of U.S. exports would increase by an estimated 2 percent in the short term and by 21 percent in the long term. Trading patterns within North America will be unlikely to change significantly. Major U.S. import sources (Italy, Spain, and Japan) generally provide a larger, higher quality, and more costly product than that imported from Mexico, and will not be expected to be widely replaced by Mexican tiles in the U.S. market.

The announced additions to Mexican industry capacity appear to reinforce the forecast of a considerable increase in U.S. imports from Mexico in the long term. The U.S. industry has indicated that increased imports from Mexico of all tile types will likely supplant both U.S. production and some imports.[6] Mexico is the third largest U.S. supplier of glazed nonmosaic tiles, after Italy and Spain. Mexico is the leading supplier of the more price sensitive, lower cost unglazed, nonmosaic tiles, for which demand should increase considerably as a result of duty elimination. Mexico accounts for 45 percent of U.S. imports in this category, representing nearly 24 percent of apparent U.S. consumption of these tiles in 1991.

[6] A significant portion of the ceramic tile imported from Mexico is standard-sized (4-1/4" x 4-1/4") glazed wall tile, a traditional U.S. product size manufactured and marketed by a host of domestic firms. Tile Council of America, posthearing brief, p. 10.

Likely Impact on U.S. Production and Employment

The Commission's sectoral model indicates that U.S. production and employment are likely to register a net loss of less than 1 percent in both the short and long term. Much of the U.S. import increase from Mexico is expected to be in the lower cost unglazed, nonmosaic tile category, however, which is directly competitive with similar U.S. production. This segment of the U.S. industry, which accounted for nearly 15 percent of U.S. producers' shipments in 1991, will likely experience a modest adverse impact in the long term as a result of duty elimination.

A significant portion of these U.S. imports will probably be concentrated in the border region, where regional cultural and architectural preferences are more similar to those of Mexico than to those in other parts of the United States and relatively high transportation costs could be minimized.[7] Those U.S. companies shipping to the Southwest United States will likely experience a more direct and immediate adverse impact than other U.S. manufacturers. California has been a significant growth market for the U.S. tile industry and would be a likely target market for Mexican tiles.

Likely Impact on U.S. Global Competitiveness

Prior investment in and modernization by the U.S. industry will likely preclude any significant impact by NAFTA on the competitiveness of the U.S. industry in either the North American or global ceramic floor and wall tile market.

[7] Transportation costs averaged 17 percent of U.S. import value in 1991.

CHAPTER 14
Chemicals[1]

Aimison Jonnard

Table 14-1
Chemicals: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	848	858	858	0
Trade data (million dollars):				
Shipments	210,000	220,000	225,000	2
Exports:				
Total	30,000	32,000	36,000	13
To Mexico	2,850	3,034	3,517	16
To Canada	5,400	7,905	8,568	8
Imports:				
Total	15,800	17,000	17,800	5
From Mexico	858	922	952	3
From Canada	4,742	5,128	5,027	-2
Trade balance:				
Total	14,200	15,000	18,200	21
With Mexico	1,992	2,122	2,565	21
With Canada	658	2,777	3,541	28
Consumption	195,800	205,000	206,800	1
Import market share (percent):				
Total	8	8	9	(1)
Mexico	(2)	(2)	(2)	(1)

1 Not meaningful for purposes of comparison
2 Less than 0.5 percent.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Summary of Sector Analysis

The chemical industries of the United States, Canada, and Mexico are similar in that most of their output is based on byproducts of petroleum and natural gas. However, the U.S. industry is much more integrated downstream than are the industries in Canada and Mexico. The U.S. chemical industry is the leader of U.S. manufacturing in overseas investment. The $40 billion in U.S. direct investment in chemicals abroad as of 1991 was 23 percent of all U.S. foreign manufacturing investment.

Most of Canada's largest chemical companies are wholly or partly owned by either U.S. companies (e.g., Du Pont, Union Carbide, Dow Chemical, and Exxon) or European firms (e.g., Imperial Chemical Industries (ICI), Hoechst, Bayer, and Rhone Poulenc). Both imports and exports are major factors in Canada's chemical industry. As one Canadian executive put it, "The Canadian chemical industry is a world-scale industry in a country whose population is only 27 million, so we need to trade."[2]

Mexico's chemical industry is essentially divided into two sectors, public and private. The production of basic petrochemicals,[3] along with petroleum and natural gas, is reserved exclusively for Petroleos Mexicanos (PEMEX), the state-owned energy company. For "secondary" petrochemicals, foreign

[1] Includes all chemical and allied products classified in chapters 28 through 40 of the Harmonized System, except primary petrochemicals, covered in part III of this report, and pharmaceuticals, discussed in chapter 9.

[2] *Chemical Engineering*, Oct. 1991, p. 55.
[3] As defined by PEMEX.

direct investment (and also domestic private investment) is currently restricted to 40 percent. Though the number of chemicals in the two groups is now small, down to 8 basic and 14 secondary petrochemicals (from as many as 700 at one time), many thousands of commercial organic chemicals and products produced from chemical intermediates are made from these few petrochemicals.

Private-sector chemical companies need secure and price-competitive feedstocks. Although its record is said to be improving, PEMEX's downstream customers have complained about having to rely on PEMEX for the primary petrochemicals; and the foreign-investment restriction on the secondary group, combined with a chronic shortage of local funds for capital investment, has made PEMEX's production insufficient to meet demand.[4]

Key NAFTA Provisions Affecting Sector

U.S. duties on imports of chemicals from Mexico average 4 percent ad valorem. More than 40 percent of these imports from Mexico already enter duty-free under the Generalized System of Preferences (GSP). Under NAFTA, there will be immediate duty elimination by the United States for most of the remainder, with 10-year staging for some chemicals and products.

Mexico's tariffs on chemicals, which cover about 3,500 individual categories, are 10 percent ad valorem for about 80 percent of them, 15 percent ad valorem for about 13 percent of the categories, 20 percent for a few, and "free" for a very few. Under NAFTA, there would be immediate duty elimination for about 70 percent of the 3,500 subheadings and 10-year staging for most of the remainder. The main factors influencing U.S. trade with Mexico in chemicals and allied products in recent years have not been tariffs but rather the effects of PEMEX's monopoly on basic petrochemicals and its partial controls on other chemicals.

Likely Impact on Investment

NAFTA will have only a minor but positive effect on U.S. investment in Mexico in the short term, mostly because of the recession that has affected most of the markets for chemicals worldwide. In the long term, with a return to normal economic conditions and chemical industry growth, the positive effect will be more pronounced.[5] NAFTA will greatly reduce Mexico's restrictions on foreign investment and the PEMEX monopoly on basic petrochemicals combined with a discriminatory dual pricing system. NAFTA will reduce the number of chemicals controlled by PEMEX and eliminate dual pricing of those basic petrochemicals that it monopolizes. NAFTA will also eliminate the 40-percent restriction on foreign direct investment. Restrictions that will remain (for all chemicals) are the requirement for government screening of foreign investments of more than $150 million and a limitation of foreign participation on boards of directors.

In all three countries, a major share of new investment will be used to meet the requirements of environmental regulations. NAFTA likely will greatly increase the necessity for such expenditures in Mexico, which is the furthest behind in removal of industry pollutants from air and water.

Likely Impact on U.S. Trade

There are a number of factors that have negatively influenced U.S. trade with Mexico in chemicals and allied products. The PEMEX monopoly on basic petrochemicals and restrictions on private investment have already been discussed. A chronic shortage of capital[6] in Mexico has inhibited investment in the construction of new chemical plants, so that the supply of upstream large-volume basic petrochemicals remains too small to satisfy Mexico's own needs or to provide enough for export.[7]

Although the Mexican basic petrochemical industry comprises world-scale plants using state-of-the-art process technology equivalent to that of plants in the United States and Canada, many other chemical plants, especially on Mexico's Gulf Coast, have had to shut down because they could not compete with low-cost imports.[8] Also, Mexico's lack of effective protection and enforcement of intellectual property rights in the past had discouraged trade in high-technology chemical products, particularly pharmaceuticals and agricultural chemicals (weedkillers, insecticides, fungicides). Mexico's

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4 *Chemical and Engineering News*, Apr. 6, 1992, p. 8.

5 A recent study forecasts that ratification of NAFTA will lead to an increase in U.S. direct investment in Mexico, but that such investment "will likely increase only gradually," given the capital-intensive nature of the

5—Continued

industry. Chemical Manufacturers Association, *International Direct Investment and the U.S. Chemical Industry*, Washington, DC, Nov. 1992.

6 *Chemical and Engineering News*, Sept. 9, 1991, p. 14.

7 Mexico's chemical exports are relatively large in downstream chemical products such as synthetic fibers, plastics, resins, and elastomers, where there is sufficient production capacity. In secondary petrochemicals, as much as 25 percent—even 50 percent—of some products are exported. *Chemical and Engineering News*, Sept. 9, 1991, p. 12.

8 *ECN European Review*, European Chemical News, Dec. 1992, p. 31.

9 *Chemical Marketing Reporter*, Nov. 30, 1992, p. 9. For further discussion of pharmaceuticals, see chapter 9 of this report.

infrastructure problems, for instance its land transportation system, have affected its ability to deliver products on a timely and dependable basis.

The Commission's sectoral model indicates that U.S. imports from Mexico of chemicals and allied products will likely increase by less than 1 percent in the short term and by approximately 3 percent in the long term as a result of NAFTA. Some of the expected increase in U.S. imports from Mexico will likely come from new plants built in Mexico by subsidiaries of European and other foreign firms. The Commission's sectoral model predicts that U.S. exports to Mexico will likely increase under NAFTA by 1 percent in the short term and by 6 to 7 percent in the long term.

Likely Impact on U.S. Production and Employment

The Commission's sectoral model indicates that NAFTA will likely have no effect on U.S. chemical industry employment and shipments in the short term and that an increase of less than 1 percent will take place in employment and shipments in the long term. U.S. trade with Mexico in chemicals represents a small fraction of U.S. production.

Likely Impact on U.S. Global Competitiveness

NAFTA should enhance the U.S. industry's ability to compete in North America, especially given that chemical companies all over the world have become interested in Mexico as a market and, to some extent, as a source of inexpensive raw materials. NAFTA should also enhance the U.S. industry's efforts to expand its chemical businesses in the remainder of Latin America in the long term. The expected increase in U.S. investment in the Mexican chemical industry is likely to be earmarked in part for export production. Those South American countries whose chemical industries are growing most rapidly, particularly Argentina, Brazil, and Venezuela, are potential export markets for the production from these new plants.[10]

[10] *European Chemical News*, Dec. 7, 1992, p. 21.

CHAPTER 15
Industrial Machinery[1]

Nelson Hogge, Laura Stonitsch, Dennis Fravel,
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Table 15-1
Industrial machinery: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Consumption	54,378	54,425	48,065	-12
Employees (1,000)	459	454	432	-5
Trade data (million dollars):				
Shipments	57,084	58,919	56,246	-5
Exports:				
Total	15,019	17,090	18,449	8
To Mexico	800	1,097	1,367	25
To Canada	3,131	3,880	3,217	-17
Imports:				
Total	12,313	12,596	10,268	-18
From Mexico	309	277	284	3
From Canada	1,595	1,613	1,449	-10
Trade balance:				
Total	2,706	4,494	8,181	82
With Mexico	491	820	1,083	32
With Canada	1,536	2,627	1,768	-22
Consumption	54,378	54,425	48,065	-12
Import market share (percent):				
Total	23	23	21	(1)
Mexico	1	1	1	(1)
Canada	3	3	3	(1)

[1] Not meaningful for purposes of comparison.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

Source: Estimated by the staff of the U.S. International Trade Commission, based on official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Summary of Sector Analysis

U.S. exports of industrial machinery to Mexico are likely to increase under NAFTA by about 6 percent in the short term and 10 percent over the long term. However, little additional U.S. investment in Mexican production facilities is likely to take place until Mexico improves its infrastructure and the Mexican economy reaches sufficient size to justify the investment. Instead, U.S. firms are likely to supply the Mexican market through increased exports. The United States supplies more than two-thirds of Mexico's imports of farm, construction, and mining machinery and air-conditioning and refrigeration equipment.

U.S. exports to Mexico of construction machinery, farm and food product's machinery, and refrigeration equipment are expected to accelerate under NAFTA. U.S. producers of construction machinery have already benefited from Mexico's decision to improve its highway system and expand its ports. In addition, Mexican farms are becoming larger and more mechanized, and the demand for packaged and

[1] Includes farm, packaging, construction, mining, oil and gas field, textile, paper, printing, and food products machinery, as well as refrigeration and heating equipment. Refrigeration and heating equipment, construction machinery, oil and gas field machinery, and farm machinery accounted for more than three-quarters of U.S. shipments and U.S. trade with Canada and Mexico in industrial machinery in 1991.

refrigerated food in Mexico will likely increase as the economy expands. However, inadequate supplies of electrical power may hinder Mexican demand for equipment and other industrial machinery.

The global competitiveness of U.S. industrial machinery firms should increase under NAFTA as standards are streamlined for the North American market and production and distribution costs are reduced. Minor beneficial impacts are likely to occur in U.S. production and employment. Because U.S. duties on imports of industrial machinery from Mexico are minimal, the removal of these duties under NAFTA is likely to result in a minor increase in U.S. imports with minimal impact on the U.S. industry.

Major U.S. concerns relate to the staging of tariff reductions on Mexican imports of refrigeration equipment[2] and oilfield and construction machinery and to the opening of the government procurement market in Mexico. According to the Petroleum Equipment Suppliers Association, U.S. companies that do not have manufacturing businesses in Mexico face tariff and non-tariff obstacles in doing business there. The Association reports that the current Mexican tariff on most imported oilfield machinery is 20 percent ad valorem. According to the Association, more immediate access to government procurement through Petroleos Mexicanos (PEMEX), Mexico's state-owned oil company, would compensate for a decline in U.S. drilling activities.[3]

Key NAFTA Provisions Affecting Sector

Tariff Provisions

Based on 1990 Mexican trade data, Mexico will immediately eliminate duties under NAFTA on about 54 percent of industrial machinery imports from the United States. This includes duties on about 80 percent of Mexican imports of textile, paper industries, printing trades, and farm machinery, and 85 percent of food products machinery. About 17 to 33 percent of Mexico's imports of mining machinery, oil and gas field machinery, and refrigeration and heating equipment will also become duty-free immediately. After 5 years, essentially only mining machinery, oil and gas field machinery, construction machinery, and refrigeration and heating equipment imported from the United States will be subject to Mexican duties.[4] Duties on about 54 percent of Mexican imports of construction equipment will be phased out over a 10-year period.

Mexico's effective tariffs on imports of industrial machinery from the United States, based on Mexican trade data for 1990, range from 10.1 percent ad valorem for textile machinery to 15 percent for construction machinery, and to 16.7 percent for refrigeration and heating equipment.

Under NAFTA, virtually all U.S. duties on imports of industrial machinery from Mexico and Canada will be eliminated immediately. Based on U.S. trade data for 1991, U.S. duty rates for imports from Mexico and Canada range from 0.1 to 2.1 percent ad valorem and from free to 1.7 percent ad valorem, respectively. Slightly more than 60 percent of U.S. imports of industry machinery from Mexico and Canada entered duty-free in 1991. Slightly less than 15 percent of U.S. imports of industrial machinery from Mexico entered duty-free under the Generalized System of Preferences (GSP) and tariff provision 9802.00.80.

Rules of Origin

Industrial machinery is subject to the rules of origin and regional value content (RVC) requirements set forth in NAFTA chapter 4.[5] In general, industrial machinery will qualify for NAFTA treatment if the machinery is constructed in North America from North American materials. Such machinery may also qualify for NAFTA treatment if non-NAFTA materials are used, provided that: (1) the non-NAFTA materials are not classifiable in a tariff provision that specifically provides for parts of machinery or (2) the RVC requirements are met. For transportation equipment, the RVC may only be calculated using the net cost method.[6] However, refrigeration compressors will qualify for NAFTA only if the stators and rotors are made in North America, and air conditioning machines will qualify only if their chassis, outer cabinets and refrigeration units are North American.

In general, parts of industrial machinery would qualify for NAFTA treatment if they are sufficiently processed in North America so that they undergo a change in classification from one tariff heading to another tariff heading. This requirement would preclude larger subassemblies that are made from smaller non-NAFTA subassemblies or parts that are classifiable in the same tariff heading from qualifying for NAFTA treatment.

On the other hand, parts of the following industrial machinery would qualify for NAFTA treatment, even if no change in tariff heading occurs, as long as the

[2] The Air-Conditioning & Refrigeration Institute reports that, while Mexican duties on most air-conditioning products will be eliminated immediately, it would have preferred a more rapid elimination of refrigeration and component tariffs than the proposed 10-year phaseout.

[3] For a discussion of NAFTA's impact on U.S. suppliers of oil and gas services, see chapter 18 of this report.

[4] About 4 percent of Mexican imports of farm and food products machinery will be dutiable after the 5-year staging period.

[5] For further discussion of these NAFTA provisions, see chapter 3 of this report.

[6] Ibid.

RVC requirements are met: (1) machinery for the treatment of materials by change of temperature; (2) lifting, handling, loading, and unloading machinery; (3) earth-moving machinery, other than buckets, shovels, grabs, grips, and bulldozer or angledozer blades; and, (4) machinery for making paper pulp, paper or paperboard. In addition, parts of transportation equipment may qualify for NAFTA, even if no change in tariff heading occurs, as long as the RVC requirements, calculated in accordance with the net cost method, are met. Lastly, the following parts would qualify for NAFTA, even if they are made from non-NAFTA parts that are classified in the same tariff provision: (1) the chassis, chassis bases, and outer cabinets for air conditioning machines; and, (2) the door assemblies for refrigerators and freezers.

The NAFTA rules of origin are similar to the rules in the United States-Canada Free-Trade Agreement (CFTA), except that the RVC requirements in NAFTA are higher and more stringent.

Likely Impact on Investment

The liberalization of Mexican investment regulations and tariffs under NAFTA are likely to result in a minor increase in U.S. investments in industrial machinery production facilities in Mexico and in the United States in both the short and long term. Low labor rates alone in Mexico are insufficient to swing investment decisions because investors would also consider the state of the Mexican economy and the infrastructure. U.S. industrial machinery suppliers more likely would serve the Mexican market through shipments from their domestic facilities that have existing excess production capacity. U.S. shipments can reach Mexican markets more quickly from the U.S. border because of recent improvements to Mexico's highway system. An increase in investment in distribution and warehousing facilities could be expected to provide critical spare parts in order to service existing equipment. Service is considered an important component of the sales decision in the Mexican market.

The opening of the government procurement market in Mexico may spark some additional U.S. investment.[7] Considerable market opportunities for oilfield machinery and refrigeration equipment exist in Mexico. Mexico's expenditures for exploration and production equipment amounted to an estimated $560 million in 1990. Mexico's National Energy Modernization Program will require an estimated minimum of $20 billion in new investments over the next 5 years. However, PEMEX has reportedly long shown a procurement preference for Mexican suppliers.[8] Government procurement of refrigeration and heating equipment in Mexico is also important. The Mexican Government's Social Security Institute is considered the most important air-conditioning equipment user in the country.[9]

Likely Impact on U.S. Trade

According to the Commission's sectoral model, NAFTA is likely to result in an increase in U.S. exports of industrial machinery to Mexico of about 6 percent in the short term and 10 percent in the long term. U.S. exports of industrial machinery to Mexico rose by 71 percent during 1989-91, despite high Mexican tariffs. Although accounting for only 7 percent of total U.S. exports and less than 3 percent of total U.S. shipments in 1991, Mexico has become one of the fastest growing markets in the world for U.S. exports of construction and mining machinery. As Mexico continues to develop, it is expected to become an increasingly larger market for this machinery.

The development of natural resources, including oil and natural gas, and improvements in sanitation, sewer, waste disposal, transportation, and communications all increase the demand for construction and mining machinery. A U.S. industry source reports that there is an estimated $1 billion to $2 billion of potential contracts to be awarded for work on renovations and new construction for PEMEX.[10] U.S. oilfield machinery firms should have greater access to these contracts under NAFTA as government procurement in Mexico is liberalized. U.S. exports of oil and gas field machinery to Mexico rose by more than 85 percent to $71 million during 1989-91.

NAFTA also is expected to double U.S.-Mexico border traffic in the near future and to add $500 million to current Mexican border construction needs of about $2.1 billion.[11] U.S. exports of construction machinery to Mexico rose by 165 percent to $383 million during 1989-91 and accounted for more than 27 percent of U.S. exports of industrial machinery to Mexico in 1991. U.S. exports of construction machinery under NAFTA, therefore, are expected to accelerate.

In terms of internal projects, the Mexican Government is in the process of privatizing infrastructure projects across the country and has announced that it intends to build several thousand

[7] The government procurement provisions of NAFTA provide formal access to the Mexican market for U.S. suppliers of oil and gas services and equipment, with restrictions to be phased out after 10 years. See discussion in chapter 17 of this report.

[8] Dale P. Jones, president, Halliburton Co., and chairman, Petroleum Equipment Suppliers Association, written submission to the Commission, Nov. 25, 1992, p. 10.

[9] U.S. Department of Commerce, International Trade Administration, "Commercial assessment paper on air conditioning equipment in Mexico," Nov. 1991, sec. C, "Market Assessment."

[10] Official of M.W. Kellogg Co., telephone interview by USITC staff, Oct. 22, 1992.

[11] "NAFTA Seen as Doubling Border Traffic, Hiking Construction Needs," *American Metal Market*, Jan. 3, 1992, p. 4.

additional miles of privately funded roads in the next 5 years, as well as to build and upgrade five or six major seaports and airports. Moreover, U.S. rail companies are being given permission to build customs and freight centers inside Mexico to speed border crossings and freight deliveries.[12] All of these projects should serve to increase the demand for construction machinery, and thereby continue the trend of Mexico being one of the fastest growing markets for U.S. exports. In both the long and short term, NAFTA is expected to result in a minor increase in U.S. imports because U.S. tariffs are low and more than 60 percent of U.S. imports of industrial machinery from Canada and Mexico already enter free of duty.

Likely Impact on U.S. Production and Employment

The reduction of tariff barriers under NAFTA and increased access to the government procurement market in Mexico should result in an increase of about 1 percent in both U.S. production and employment. U.S. exports of industrial machinery to Mexico have increased rapidly since 1989, and there are limits to Mexico's ability to fund the expansion of its economy and to improve its infrastructure. In addition, the capacity utilization in the U.S. industry is low, and U.S. production could be increased without the need for much additional employment. A 10-percent increase in U.S. exports to Mexico under NAFTA would increase U.S. production by less than 1 percent. Similar gains in U.S. employment and production could result from the liberalization of the government procurement market in Mexico over the long run.

[12] U.S. Council of the Mexico-U.S. Business Committee, prehearing brief, Nov. 10, 1992, pp. 20-1.

Likely Impact on U.S. Global Competitiveness

The removal of barriers to trade among Canada, Mexico, and the United States should enhance the competitiveness of North American products in the global market. A common North American market will enable manufacturers to operate more efficiently, streamline standards, and reduce operating costs. It also should create new sales opportunities. The region eventually will become more integrated, and the rationalization of production that has already taken place as a result of CFTA should increase. Producers of farm equipment, food-processing equipment, construction machinery, and refrigeration and heating equipment should become more competitive under NAFTA because of product standardization and the anticipated growth in Mexican farm mechanization. Firms should achieve economies of scale as Mexico's demand for packaged and refrigerated food increases and the need to bring products more quickly to market accelerates.

NAFTA could have a significant positive impact on the competitiveness of U.S. producers of oil and gas field machinery because the U.S. industry has become more dependent in recent years upon foreign markets. Mexico's estimated oil and gas reserves are twice as large as those of the United States. With its large hydrocarbon reserves, Mexico offers strong long-term business prospects to the service and supply sector that can compensate for the decline of U.S. drilling activities.[13]

[13] Jones, written submission.

CHAPTER 16
Major Household Appliances[1]

Georgia Jackson

Table 16-1
Major household appliances: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	97	94	90	-4
Trade data (million dollars):				
Shipments	13,841	13,816	13,356	-3
Exports:				
Total	1,114	1,497	1,728	15
To Mexico	148	236	293	24
To Canada	264	482	551	14
Imports:				
Total	1,586	1,524	1,617	6
From Mexico	161	199	361	81
From Canada	86	86	91	6
Trade balance:				
Total	-472	-27	111	(1)
With Mexico	-13	37	-68	(1)
With Canada	178	396	460	16
Consumption	14,313	13,843	13,245	-4
Import market share (percent):				
Total	11	11	12	(1)
Mexico	1	1	3	(1)
Canada	1	1	1	(1)

[1] Not meaningful for purposes of comparison.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

Source: Estimated by the staff of the U.S. International Trade Commission, based on official statistics of the U.S. Bureau of the Census and the U.S. Bureau of Labor Statistics.

Summary of Sector Analysis

NAFTA is likely to result in a modest increase in U.S. investment in the major household appliance sector in Mexico in the short term, and a considerable increase in the long term, as U.S. manufacturers restructure their production strategies in response to more favorable market and investment conditions in Mexico. Small initial reductions in Mexico's relatively high tariffs are likely to result in a minor increase in U.S. exports to the Mexican market in the short term, with duty-free access in the long term resulting in a modest increase in such exports. U.S. imports from Mexico are likely to show a modest increase in the short term and a considerable increase in the long term. In an effort to remain competitive in the North American market, some U.S. manufacturers of major appliances are likely to shift production to Mexico to reduce production costs and compete in a growing Mexican market. A minor decline in U.S. production and employment is likely to occur, especially in the Midwest where a major portion of the industry is located.

The industry producing major appliances for the North American market is dominated by five international companies[2] that have manufacturing

[1] Includes Standard Industrial Classification (SIC) 3631, Household Cooking Equipment; SIC 3632, Household Refrigerators and Farm Freezers; SIC 3633, Household Laundry Equipment; SIC 3535, Household Vacuum Cleaners; and SIC 3639, Household Appliances, Not Elsewhere Classified.

[2] Whirlpool Corp., Benton Harbor, MI; General Electric Co., Louisville, KY; Frigidaire, Dublin, OH, Division of AB Electrolux of Sweden; Amana, Division of Rayethon Co., Welham, MA; and Maytag Co., Newton, IA.

facilities located in the United States, Canada, and Mexico. Canada and Mexico are also the largest markets for U.S. exports. The NAFTA issue of greatest concern to some major appliance manufacturers is the effect that the 10-year phaseout of Mexican tariffs and the immediate elimination of U.S. tariffs will have on the competitiveness of U.S.-produced merchandise.[3]

NAFTA will likely enhance the competitiveness of U.S. major appliance manufacturers in the global market. Geographic proximity to a relatively large, new market for potential future growth will strengthen the position of U.S. producers to compete with other international major appliance firms.

Key NAFTA Provisions Affecting Sector

Tariff Provisions

U.S. tariffs on imports of major household appliances from Mexico range from free to 5.7 percent ad valorem, with an effective average tariff of 0.8 percent ad valorem. In comparison, Mexican tariffs of 10, 15, and 20 percent ad valorem are applied to imports from United States, with an effective average duty rate of 17.1 percent ad valorem, based on 1990 trade. Approximately 80 percent of U.S. imports from Mexico in 1991 entered duty-free. In comparison, only 8 percent of U.S. imports of major appliances from Canada entered duty-free in 1991. However, an estimated 92 percent of the dutiable imports from Canada entered at reduced duty rates under the U.S.-Canada Free-Trade Agreement (CFTA), with a trade-weighted average of 2.9 percent ad valorem.

Mexican tariffs covering approximately 5 percent of imports from the United States in 1990 will be eliminated immediately under NAFTA; tariffs on another 8 percent will be eliminated in five equal annual stages; and tariffs on the remaining 87 percent of imports will be eliminated in 10 equal annual stages.

Rules of Origin

Major household appliances are subject to the rules of origin and regional value content (RVC) requirements set forth in NAFTA chapter 4.[4] Most major household appliances will qualify for NAFTA treatment if they are made in North America using certain designated components or subassemblies that are themselves made in North America. For gas and electric stoves and ranges, refrigerators and refrigerator-freezers, dishwashers, washers, and dryers, the major components and subassemblies that must be North American include cooking chambers, surface panels, door assemblies, refrigeration units, control panels, water containment vessels, and cabinets. These appliances are not eligible for the so-called "de minimis" rule, which would allow a product to qualify for NAFTA as long as the value of non-NAFTA material is less than 7 percent.[5]

Vacuum cleaners, floor polishers, and kitchen waste disposers will qualify for NAFTA if either their electric motors and housings are North American, or the RVC requirements are met. Other major household appliances will qualify for NAFTA if they are made in North America using non-NAFTA components, provided that such components are not classifiable in a tariff provision that specifically provides for parts of appliances. If such non-NAFTA parts are used, the appliance may qualify for NAFTA if the RVC requirements are met.

The CFTA rules of origin for major household appliances are more stringent than the NAFTA rules because they require a minimum RVC for all major household appliances constructed using third-country parts. On the other hand, the CFTA rules do not directly limit the use of any specific third-country parts, such as door assemblies or control panels.

The impact of the NAFTA rules of origin on major household appliances may likely encourage the production of certain specific parts in North America and the use of these parts in the construction of such appliances.

Likely Impact on Investment

NAFTA will likely result in a modest increase in U.S. investment in Mexico in the short term. The liberalization of Mexico's trade laws in the mid-1980s provided an inducement for some major U.S. appliance manufacturers to make considerable investments in Mexico.[6] Independent Mexican producers of

[3] In written submissions to the Commission, major U.S. producers differ over NAFTA's expected effects on the appliance industry. General Electric Co. (GE), which along with Whirlpool Corp. has large investments in Mexico, reports that more than 85 percent of the material content of the appliances the company produces in Mexico are of U.S. origin and that no U.S. jobs have been lost because of the company's Mexican production facilities. Whirlpool reports that its joint venture in Mexico has increased U.S. employment and U.S. business opportunities in Mexico. Amana Refrigeration, Inc., which does not have investments in Mexico, and Maytag Corp. contend that NAFTA, which will immediately eliminate U.S. tariffs on Mexican appliances and phase out Mexican tariffs on U.S. appliances over 10 years, will accelerate the trend established by GE and Whirlpool to locate manufacturing facilities in Mexico.

[4] For further discussion of these NAFTA provisions, see chapter 3 of this report.

[5] NAFTA, art. 405(3)(i) and annex 401, general interpretative note (f)(i).

[6] Whirlpool Corp. (the world's largest producer of major appliances) markets major appliances under a joint venture with Vitromatic of Mexico, S.A. This joint venture has three manufacturing facilities in Mexico

major appliances[7] have also made considerable investment in capital equipment to increase plant productivity in anticipation of NAFTA. MABE and other Mexican firms have acquired product technology and marketing expertise from their U.S. partners, and they presently produce appliances such as small refrigerators, gas ranges, and components for both the U.S. and Latin American markets.

Several U.S. appliance manufacturers own and operate in-bond plants in Mexico that primarily serve the U.S. market. NAFTA will likely lead them to increase production capacity to serve the Mexican market. High tariffs on U.S. exports during the earlier years of NAFTA will likely provide an incentive for these companies to keep their in-bond status. However, a few U.S. major appliance companies that are not involved in joint ventures, but do have a presence in the Mexican market, indicate that the limited size of the market and low Mexican personal income levels do not warrant increased investment in the short term.[8] In addition, infrastructure problems that presently impede manufacturers from delivering products on a timely basis are also a deterrent to investment in the short term.

In the long term, U.S. investment in Mexico will likely increase considerably. The expected increase in industrialization, infrastructure development, housing construction, and family disposable income in Mexico will likely stimulate demand for major household appliances. The NAFTA provision to allow U.S. companies to operate wholly owned subsidiaries in Mexico will likely lead to increased U.S. majority ownership. According to industry sources, U.S. companies are also increasing investments in Mexico with a view to expanding participation in the Central American Common Market and in certain South American markets (e.g., Venezuela).[9] Major appliance producers that are not currently involved in joint ventures will likely restructure their present investment strategies for Mexico by possibly planning partnerships with Mexican companies or by relocating some operations to Mexico. Three major U.S. producers believe that NAFTA's immediate elimination of U.S. tariffs and Mexico's substantially lower wages will provide a strong incentive for manufacturers to relocate to Mexico in order to produce appliances for the U.S. market.[10]

Currently, there is virtually no investment in Mexico by Canadian manufacturers of major appliances. Future investment is unlikely since Canadian companies are small and medium-size enterprises and probably unable to secure the necessary capital to invest in Mexico.

NAFTA will likely cause non-NAFTA producers to increase investments in Mexico because of the proximity to the U.S. market, the economic growth potential of the Mexican market, and, to a lesser degree, low-wage Mexican labor. Brazilian and Korean firms, which account for approximately 7 percent of the total Mexican market, will likely resort to manufacturing major appliances in Mexico rather than to serving the expanding Mexican market through exports.[11] Industry sources believe that Brazilian firms are unlikely to increase production of major appliances for the U.S. market. Japanese and Korean subsidiaries in Mexico that produce small refrigerators for the U.S. market are expected to begin production of major appliances for the Mexican market.

Likely Impact on U.S. Trade

In the short term, NAFTA will likely result in a 2 percent increase in U.S. exports to Mexico and in a 10 to 15 percent increase in U.S. imports.[12] Mexico's relatively high tariffs on imports of major appliances from the United States will continue to limit U.S. manufacturers' access to the Mexican market in the short term. U.S. producers that have rationalized manufacturing facilities in Mexico are expected to increase production there and to supply additional major appliances to the U.S. market.

The long-term impact of NAFTA is likely to result in a 15 percent increase in U.S. exports as new market opportunities develop in Mexico. The gradual elimination of Mexican duty rates on major appliances, currently averaging 17 percent, would allow U.S. exports to become more competitive in the Mexican market. The expected export growth is likely to be concentrated in the high-end of the major appliance market, where Mexican production is limited. In 1991, U.S. exports of major appliances to Mexico were

6—*Continued*
producing refrigerators, washers, and gas ranges. GE (the world's fourth largest producer of major appliances) has a joint venture with MABE, a consortium of Mexican appliance manufacturers. GE/MABE has five manufacturing facilities in Mexico producing refrigerators, washers, and gas ranges. The San Potosi plant is reported to be the largest appliance manufacturing plant in the world with a capacity to produce 800,000 to 1 million gas ranges per year.

7 U.S. Department of Commerce, *Market Research Report: Mexico-Household Appliances & Parts - Industry Analysis*, Mar. 1988. According to the report, the Mexican household appliance industry consisted of 10 principal manufacturers.

8 U.S. appliance industry officials, interviews by USITC staff, Nov. 11 and 24, 1992.

9 GE official, interview by USITC staff, Dec. 9, 1992.

10 U.S. industry officials, interviews by USITC staff, Nov. 11 and 28, 1992, and Maytag Corp. written comments to the Industry Sector Advisory Committee on Consumer Goods, received from Aug. 26, 1992.

11 Brazilian manufacturers export mainly washing machines to the Mexican market. Korean firms supply the Mexican market with mostly microwave ovens. There is a limited amount of microwave oven production in the United States.

12 The Commission's sectoral model was not used in the analysis of this sector because of recent substantial foreign investment in Mexico that has led to a significant increase in U.S. imports from Mexico in 1992.

valued at $293 million; 69 percent of these exports consisted of large refrigerators (over 19 cubic feet) and clothes washers. U.S. producers, which supply almost 87 percent of Mexico's total imports of major appliances, expect the Mexican appliance market to grow significantly, as the positive effects of NAFTA improve the standard of living of the more than 90 million people currently living in Mexico.[13]

In the long term, U.S. imports from Mexico are likely to increase by 20 to 25 percent under NAFTA. The agreement is likely to accelerate the rationalization of production by U.S. manufacturers in Mexico, which has already occurred to a limited extent in response to Mexico's low-cost labor and more liberal investment laws. Some of the expected increase in investments by U.S. manufacturers likely will be used to establish production facilities in Mexico for export purposes, resulting in increased Mexican exports to the U.S. market.[14] Mexico was the leading supplier of major appliances to the U.S. market in 1991.

NAFTA is expected to have only a minimal effect on U.S. trade with Canada. U.S. imports from Mexico are not expected to compete with major appliances from Canada in any appreciable way.

Likely Impact on U.S. Production and Employment

NAFTA will likely result in a decline in U.S. major appliance production and employment of about 5 percent in the short term and 10 to 15 percent in the long term. Any decline in U.S. production and employment will likely occur in the Midwest, where the majority of domestic production takes place. U.S. manufacturers can be expected to shift certain production operations to Mexico in order to remain competitive in the North American market, especially labor-intensive operations.[15] In addition, small and medium-sized U.S. companies that manufacture appliances distributed by large U.S. appliance producers under their brand names will likely lose contracts to manufacturers based in Mexico.

Likely Impact on U.S. Global Competitiveness

While competitive pressures on some U.S. manufacturers will increase as a result of NAFTA, it is generally believed by the industry that the agreement will probably enhance U.S. manufacturers' competitiveness in the global market. The U.S. industry's geographic proximity to a low-wage labor pool in Mexico and to a new market with future growth potential may strengthen U.S. producers' position to compete with Japanese and European companies. Given the factors mentioned above, U.S. producers could benefit from increased economies of scale, which are necessary to enhance the industry's productivity. These advantages are likely to lead to increased manufacturing investment in Mexico or in the United States by major manufacturers from Sweden, Japan, and Korea. However, U.S. manufacturers are the leading innovators in the global market with the latest technology in product design, energy-efficient features, and the use of advanced plastics in products. In addition, U.S. manufacturing companies have been among the leaders in the globalization of the appliance industry.

[13] Central Intelligence Agency, *The World Factbook 1991*, p. 204

[14] On May 19, 1992, Whirlpool Corp. and Vitromatic Corp. filed a GSP annual product review petition with USTR, requesting a waiver of the competitive need limits of this program in anticipation of planned increased exportation of washing machines to the United States. The request was denied by USTR.

[15] Maytag Corp.

Part III. THE LIKELY IMPACT OF NAFTA ON U.S. ENERGY SECTORS

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CHAPTER 17
Key NAFTA Provisions Affecting Energy Sectors

This chapter describes key NAFTA provisions having broad applicability to all energy sectors. Because the chapter in NAFTA on energy is essentially a reaffirmation by the United States and Canada of most of the provisions of the U.S.-Canada Free-Trade Agreement (CFTA), the changes in law required by NAFTA that are relevant to the energy sectors will be limited to changes in Mexican law. In some instances, NAFTA will require statutory and regulatory changes, such as lifting certain investment restrictions contained in the 1973 Foreign Investment Law[1] and the 1989 Regulation to that law,[2] and changes in government procurement preferences to require national treatment. In other instances, compliance with NAFTA obligations may be achieved through changes in regulatory practice. U.S.-Mexican and U.S.-Canadian trade in the energy sectors is summarized before addressing the most significant NAFTA provisions.

U.S. trade with Mexico and Canada is dominated by petroleum and natural gas products, with primary petrochemicals and electrical energy accounting for only a minor portion of trade. U.S. exports to Mexico in 1991 for these energy sectors covered in this report were $670 million, 4 percent of total U.S. exports in these sectors. U.S. imports from Mexico were $5.3 billion, 10 percent of total U.S. imports in these sectors. U.S. exports to Canada in these energy sectors in 1991 were $1.2 billion, 17 percent of total U.S. exports in these sector. U.S. imports from Canada were $9.9 billion, 18 percent of total U.S. imports in these energy sectors.

The principal NAFTA provisions affecting the U.S. energy sectors are set out in chapter 6 of NAFTA: Energy and Basic Petrochemicals. Other significant provisions are investment (chapter 11 of NAFTA); government procurement (chapter 10); and competition policy, monopolies and state enterprises (chapter 15). Due to the extensive reservations taken by Mexico with respect to the energy sectors and the existing obligations of the United States and Canada embodied in CFTA, the economic impact of NAFTA on the energy sectors is likely to be limited to increased opportunities for U.S. investment in Mexico in nonbasic petrochemicals and electricity generation, some increase in U.S. exports of natural gas and petrochemicals to Mexico, and additional contracting opportunities for U.S. businesses in the supply of services and equipment to Mexico's parastatal energy companies Petroleos Mexicanos (PEMEX) and Comision Federal de Electricidad (CFE). Although there are some potential trade, service, and investment opportunities in the energy area in Mexico, the opportunities created by NAFTA are limited and the benefits somewhat uncertain.

[1] *Law on the Promotion of Mexican Investment and the Regulation of Foreign Investment*, art. 5, *Diario Oficial*, Mar. 9, 1973.

[2] *Regulation of the Law on the Promotion of Mexican Investment and the Regulation of Foreign Investment, Diario Oficial*, May 16, 1989.

Energy Chapter

The energy chapter of NAFTA sets out the rights and obligations of the United States, Canada, and Mexico with respect to crude petroleum, refined products, basic petrochemicals, natural gas, electricity, coal, and nuclear energy.[3] The chapter embraces General Agreement on Tariffs and Trade principles, limits the rights of the parties to impose barriers to trade in energy, and incorporates virtually all of the CFTA energy chapter. The NAFTA energy chapter closely follows, in wording and format, the CFTA energy chapter, but contains a number of reservations and exceptions on the part of Mexico, such as precluding foreign investment in petroleum, natural gas, and basic petrochemicals.

Mexico has a constitutional prohibition on the foreign ownership of hydrocarbon resources that is not affected by NAFTA. The Constitution of Mexico,[4] articles 25, 27, and 28, reserves to the state virtually all

[3] The nuclear energy and coal sectors are not separately covered in this study because they were not subject to congressional request. With regard to nuclear energy, Mexico has taken an exception to NAFTA for its nuclear energy sector. See NAFTA, annex 602.3 (1)(D); annex III, Activities Reserved to the State, Schedule of Mexico, p. III-M-2. Thus, NAFTA would not have an impact on that sector. Regarding coal, there are some investment and trade opportunities in Mexico because Mexico will allow foreign entities to invest without restriction in the coal sector and will immediately eliminate Mexican tariffs on imported coal. Investment is allowed up to 100 percent for new coal mines. Investment restrictions limit foreign ownership of existing mines to 49 percent for 3 years from the date of initial sale, after which date foreign ownership can increase to 100 percent. *Report of the Industry Sector Advisory Committee for Trade in Energy of the North American Free Trade Agreement*, pp. 9-10.

[4] *Constitution of the United Mexican States*, arts. 25, 27, and 28.

activities related to the ownership and development of energy resources and the operation of entities in the energy area. NAFTA does not alter these constitutional provisions. Indeed, the first principle cited in Chapter 6: Energy and Basic Petrochemicals is that "[t]he Parties confirm their full respect for their Constitutions."[5] NAFTA also contains significant reservations by Mexico of virtually all energy-related activities in that country, including investment and provision of services, regarding crude oil, natural gas, artificial gas, basic petrochemicals, pipelines, supply of electricity as a public service, and radioactive materials.[6] In addition, NAFTA allows Mexico to restrict the granting of import and export licenses, as a result of which foreign trade could be reserved to the state in many of the energy goods subject to the agreement, including petroleum oils and gases.[7]

Article 602 of NAFTA locks in Mexico's reclassification of certain basic petrochemicals as nonbasic, and annex 602.3.1 (b)(iv),[8] in conjunction with the general provisions of the investment chapter, allows unlimited foreign investment in nonbasic petrochemicals. Foreign ownership of certain electricity-generating facilities is also provided for in annex 602.3, as is direct negotiation of supply contracts in cross-border trade in natural gas and basic petrochemicals. Annex 602.3 also allows state enterprises to negotiate performance clauses in their service contracts,[9] a practice previously prohibited. The changes in the restrictions on foreign investment will require modification of the Mexican Foreign Investment Law, while the other changes apparently can be achieved through regulatory reform.

The impact of the changes in foreign ownership restrictions is limited. Notwithstanding those limits, there is likely to be some U.S. investment in petrochemical and electricity generation in Mexico, the only energy areas open to investment, because of the need for capital infusion in these areas and the increasing demand for electricity in Mexico.

The benefits of allowing direct negotiation of supply contracts are somewhat undercut by the required participation of PEMEX and CFE in the negotiation process. Finally, the benefits to U.S. service providers from use of performance clauses is limited because the inclusion of such clauses in service contracts is entirely at the discretion of PEMEX and CFE.

[5] NAFTA, art. 601.
[6] Ibid., annex 602.3, paras. 1 and 2.
[7] Ibid., annex 603.6.
[8] Ibid., annex 602.3 reserves most energy-related activities to the state except for those specifically allowed.
[9] PEMEX contracts currently provide for payment of a flat fee. Thus, for example, an oil well driller is not entitled to benefit from a highly profitable well. Use of performance clauses would provide additional incentive for drillers to participate in the Mexican energy sector.

Investment

The investment provision, chapter 11 of NAFTA, assures national treatment and most-favored-nation treatment for U.S. investments in Mexico and Canada.[10] This generally allows for unrestricted U.S. investment in those two countries and prevents Mexico or Canada from discriminating against U.S. investment. However, the general rule as applied to the energy sectors is subject to several exceptions. First, NAFTA allows both Mexico and Canada to require government approval for takeovers of existing businesses above specified monetary thresholds—above \$150 million (Canadian dollars) for Canada, and starting at \$25 million and increasing to \$150 million (U.S. dollars) over the decade for Mexico.[11] The second basic exception, set forth in a number of provisions of annex I of the investment chapter and annex 602.3 of the energy chapter, reserves to Mexico certain "strategic activities," including investment in such activities. The "strategic activities" include the exploration, exploitation, refining, foreign trade, transportation, storage and distribution of crude oil and natural gas, basic petrochemicals, pipelines, electricity, and nuclear power.[12]

Required changes in Mexico's investment laws will be limited due to the significant exceptions and reservations taken by Mexico to the liberalizing measures contained in NAFTA. The principal legal change required will be amendment of the investment law to allow foreign investment in nonbasic petrochemical production and electricity generation. In these specific areas, the investment protection afforded by the NAFTA investment chapter is expected to enhance the inclination and ability of U.S. investors to increase investments in Mexico.

Competition Policy, Monopolies and State Enterprises

The provisions of chapter 15 dealing with monopolies and state enterprises prohibit monopolies and state enterprises from unfairly discriminating

[10] NAFTA, arts. 1102 and 1103. For an extensive discussion of the investment provisions, see chapter 3 of this report.
[11] Ibid., art. 1138; annex I, Reservations for Existing Measures and Liberalization Commitments, Schedule of Mexico, p. I-M-4-5; annex I, Schedule of Canada, p. I-C-5-6 (citing CFTA annex 1607.3).
[12] Ibid., annex 602.3. Other activities reserved to the state include satellite communications, telegraph services, postal services, railroads, currency issuance, and port and airport control. In addition, a number of activities are reserved to Mexican nationals, including sales of liquid gas fuel and retail gas, aircraft, customs brokers, ownership of coastal and border real property, local and internal transportation, among others.

against or engaging in anticompetitive practices with respect to investments of other NAFTA parties.

Mexico presumably will be able to implement this agreement through regulatory reform by PEMEX and CFE consistent with these principles or by changes in the enabling acts of these state enterprises. The effect of this provision on U.S energy sectors is likely to be complementary to the investment provision, in that companies considering investing in the Mexican energy sectors can do so with the assurance that they will not be discriminated against in obtaining necessary feedstocks from PEMEX or necessary electricity from CFE.

Government Procurement

With respect to the energy sectors, article 1001.1 (c)(ii) applies the government procurement standards of chapter 10 to procurement by PEMEX and CFE of US $250,000 and over for goods and services and US $8 million and over for construction services.[13] The chapter will open the $6-9 billion PEMEX and CFE markets to U.S. and Canadian suppliers. Effective upon the implementation of NAFTA, 50 percent of PEMEX's procurement will be open for bidding; the 50 percent limit will be phased out over a ten year period.[14] Thus, U.S. suppliers of energy-related equipment, supplies, and technology will have greater access to the Mexican market. PEMEX will continue to reserve the right, under Mexico's Constitution, to make the decision as to whether domestically available products and services or allowance for foreign intervention and imported materials will be used. After January 2003, however, CFE and PEMEX may still reserve a combined set-aside of $300 million, exclusively for Mexican firms.[15]

Virtually all of Mexico's energy sectors are controlled by PEMEX and CFE, both of which tend to obtain their supplies and services from Mexican companies, although U.S. suppliers and service providers have a significant share of the market. Where bids from U.S. suppliers are admitted, however, their bids are often reportedly subjected to in-country performance requirements and other limits, or may otherwise be rejected. The significant changes in law required by chapter 10 that are relevant to the energy sectors are primarily limited to Mexican law, since Mexico is not a signatory to the GATT Agreement on Government Procurement and the energy sectors in Canada and the United States are not controlled by parastatal enterprises such as PEMEX and CFE. Under chapter 10, Mexico must establish procurement procedures to notify other potential NAFTA suppliers of procurement opportunities, to allow them to compete on equal footing with domestic bidders on covered contracts, and to provide for challenges to tenders and awards.

The impact of this provision on U.S. energy sectors is limited given the already significant presence of U.S. suppliers of service and equipment in the Mexican market. Further growth in the market share held by U.S. suppliers is somewhat speculative since the provision merely requires that the Mexican market be open to competitive bidding and that parties provide procedures designed to ensure equitable treatment. Nonetheless, given the need for services in Mexico and the technological expertise of U.S. suppliers, it is likely that the opening of PEMEX and CFE procurement to competitive bidding will result in a significant increase in contract awards to U.S. suppliers.

[13] The general provision is subject to certain reservations specified in the agreement (e.g., for contracts valued below the dollar threshold; small and minority businesses; procurement subject to phase out intervals; national security procurement; and government-sponsored research and development).

[14] NAFTA, annex 1001.2a, Transitional Provisions for Mexico.

[15] Ibid., annex 1001.2b, Schedule of Mexico.

CHAPTER 18
Petroleum, Natural Gas, and Related Services

Cynthia B. Foreso, Eric Land. and Denbv Misurelli

Table 18-1
Petroleum, natural gas, and related services:[1] Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	454	467	466	([2])
Trade data (million dollars):				
Production	178,952	216,426	183,493	-15
Exports:				
Total	5,450	6,751	6,769	([2])
To Mexico	559	696	639	-8
To Canada	1,303	1,389	1,102	-21
Imports:				
Total	53,602	63,813	52,499	-18
From Mexico	4,975	5,823	5,295	-9
From Canada	7,584	15,001	9,174	-39
Trade balance:				
Total	-48,152	-57,062	-45,730	20
With Mexico	-4,416	-5,127	-4,656	9
With Canada	-6,281	-13,612	-8,072	41
Consumption	227,104	273,488	229,223	-16
Import market share (percent):				
Total	24	23	23	([3])
Mexico	2	2	2	([3])
Canada	3	5	4	([3])

[1] The data are for crude petroleum, refined petroleum products, and natural gas; similar statistics for oilfield and pipeline services are not available. Statistics are presented in terms of value; however, because of the fluctuation in the per-barrel price of crude petroleum, these value data may represent incorrect trends.
[2] Less than 0.5 percent.
[3] Not meaningful for purposes of comparison.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Summary of Sector Analysis

The impact of NAFTA on petroleum, natural gas, and related services is expected to be minor in both the short and long term. NAFTA is expected to have only a minor effect on U.S. investment, trade, production and employment, and overall U.S. global competitiveness. Under the provisions of the Mexican Constitution, all aspects of Mexico's petroleum and natural gas industries, including exploration, drilling, production, refining, distribution (including pipeline transmission), trade, and oilfield services are under the sole purview of PEMEX, which was formed in 1938 after Mexico nationalized the industry and expropriated foreign investments.

Canada and the United States have historically maintained a trade relationship, exchanging crude petroleum for refined products and shipping natural gas between the countries via shared pipelines. In Mexico, only PEMEX can import crude petroleum, natural gas, and refined petroleum products; PEMEX has historically imported these products as they deem necessary, regardless of tariff rates.

Foreign investment in Mexico's energy industry, including oilfield services, is prohibited by the Constitution. Mexico has a limited infrastructure to support its petroleum industry. Mexico has vast reserves of crude petroleum and natural gas but is lacking in domestically available drilling services. Therefore, PEMEX often contracts out to foreign firms for oilfield services. Such contracts have been for flat fees without providing for "risk sharing" or foreign ownership of the subsoil hydrocarbons.

Under the government procurement provisions of NAFTA, foreign firms will be able to bid on PEMEX contracts on a nondiscriminatory basis through transparent bid and evaluation processes. The decision, however, whether to use foreign or domestic oilfield service companies still remains with PEMEX. There is no language in NAFTA assuring that any specified percentage of contracts awarded by PEMEX will be to foreign (or specifically U.S.) firms. Formal public invitations are not used for most purchases; instead PEMEX obtains quotations informally from the foreign suppliers. Foreign firms wishing to do business with PEMEX must register annually with the Government's Secretariat of Commerce and PEMEX's purchasing department. All contracts between PEMEX and foreign firms supplying oilfield services are carried out on a contract-fee basis; this practice will not change as a result of NAFTA. It is not possible for foreign firms to own any portion of the petroleum or natural gas reserve base; however, chapter 6 of NAFTA allows PEMEX to negotiate performance clauses in drilling contracts.

Key NAFTA Provisions Affecting Sector

Tariff Provisions

Under provisions of NAFTA, duty rates in the United States and Canada, which average about 0.5 percent ad valorem for crude petroleum and 1 percent for refined petroleum products, will be eliminated over a 10-year period. Mexico's tariffs, which average about 5 percent ad valorem on crude petroleum and 8.6 percent ad valorem on refined petroleum products, also will be eliminated over the same 10-year period. Tariff reductions are not expected to affect the level of trade among the nations.

The U.S. and Canadian tariff schedules currently provide for natural gas to enter their markets free of duty. Under the provisions of NAFTA, the Mexican tariffs on natural gas, which currently are 10 percent ad valorem, will be staged down to "free" over a 10-year period. The potential positive effect is moderated to a great extent by the other limitations placed on the natural gas trade.

Other Provisions

Chapter 6 of NAFTA reaffirms the provisions of the U.S.-Canada Free-Trade Agreement for petroleum (crude petroleum and refined petroleum products), natural gas, and oilfield services. However, all segments of Mexico's petroleum and natural gas industries will remain under the sole purview of PEMEX. Constitutional restrictions on investment opportunities for foreign firms are not affected by NAFTA.

As was noted in chapter 17 of this report, the government procurement rules of NAFTA will open PEMEX service contracting markets to U.S. and Canadian suppliers. Thus, U.S. suppliers of energy-related equipment, supplies and technology will have greater access to the Mexican market and will be assured of open competition and equitable treatment. The impact of this provision on U.S. petroleum, natural gas, and related services sectors is limited, given the already significant presence of U.S. suppliers of service and equipment in the Mexican market. Further growth in market share is likely, but the extent of that growth is somewhat speculative since the provision does not guarantee that U.S. suppliers will actually gain any market share.[1]

Suppliers of natural gas may now negotiate contracts directly with end users, subject to the participation of state enterprises.[2] However, PEMEX will continue to own and operate the pipeline system for delivery of the gas to Mexican purchasers and, therefore, still exercises certain controls over U.S. exports of natural gas to the Mexican market. This arrangement reportedly avoids constitutional and statutory restrictions on the participation of private entities in the Mexican petroleum industry.[3]

Chapter 6 also allows PEMEX to negotiate performance clauses in drilling contracts. Currently, PEMEX contracts are for a flat fee and "risk sharing" contracts are prohibited, as is foreign ownership of subsoil energy resources.[4] The use of performance clauses would bring Mexican contracting practice into closer conformity with world standards and should make contracting with PEMEX marginally more active. However, use of performance clauses is not required but is optional for PEMEX.

To the extent that there is excess demand for natural gas in Mexico, there does not appear to be an incentive for PEMEX to obstruct the contracting

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[1] For a discussion of NAFTA's impact on government procurement of oil and gas equipment, see the "Industrial Machinery" sector analysis in chapter 15 of this report.

[2] NAFTA, annex 602.3(3).

[3] *Constitution of the United Mexican States*, arts. 25 and 27; *Regulatory Law of Constitutional Article 27 in the Area of Petroleum, Diario Oficial*, Nov. 29, 1958. The Petroleum Regulatory Law provides that only the state may carry out activities that constitute the "petroleum industry." The petroleum industry is defined as refining, transportation and first-hand sales of petroleum products such as oil and natural gas.

[4] *Law of Petroleos Mexicanos, Diario Oficial*, Feb. 6, 1971.

process. However, because PEMEX will participate in all negotiations for the sale of natural gas in Mexico, it will always possess some control over any contract. Given this limitation, the significance of the right to negotiate directly with the end user in Mexico appears to be limited.

Likely Impact on Investment

There is likely to be, at most, only a minor impact on investment in the petroleum and natural gas industries, including oilfield services and pipelines in both the short and long term, as a result of NAFTA. There are no restrictions on foreign investment in the petroleum and natural gas industries of Canada and the United States; large multinational petroleum companies operate subsidiaries to produce crude petroleum, natural gas, and refined petroleum products in both nations. However, NAFTA does not affect the constitutional provision prohibiting foreign investment (or any private investment) in Mexico's petroleum and natural gas industries.

Likely Impact on U.S. Trade

There is likely to be only a minor impact on trade of crude petroleum, natural gas, refined petroleum products, and oilfield services in both the short and long term as a result of NAFTA. U.S. exports of crude petroleum are prohibited, except to an adjacent country, for reasons of national security. The United States is Mexico's major export market for crude petroleum, accounting for approximately 60 percent of Mexico's exports. The United States is the major source of Mexico's imports of refined petroleum products; Mexico's nine operating refineries cannot meet domestic demand. Mexican trade with Canada in petroleum is negligible because of the lack of pipeline infrastructure between the two nations. Mexico does export small quantities of crude petroleum to Canada via tanker.

Canada is the only market for U.S. exports of crude petroleum under a commercial exchange agreement approved by the U.S. Government, whereby U.S. exports of crude are exchanged for imports of refined petroleum products. This exchange is facilitated by a sophisticated pipeline system connecting the United States and Canada. Many of the large multinational petroleum companies in the United States also maintain operations in Canada, frequently shipping feedstocks and products between their plants in the two countries.

The impact on U.S. trade in terms of oilfield services is also likely to be minor. U.S. companies, under individual contracts negotiated with PEMEX, provide oilfield services in Mexico. U.S. companies have historically supplied nearly 70 percent of Mexico's imports of oilfield equipment. In 1989, PEMEX purchased approximately $1 billion of drilling equipment and services (such as geological, geophysical, and seismic exploration) from U.S. companies at the discretion of PEMEX.

There likely will be, at most, only a minor impact on natural gas trade as a result of NAFTA. International trade in natural gas is limited because of the difficulties associated with its transport. Therefore, trade in natural gas reflects regional supply and demand. For example, natural gas is imported from Canada to satisfy the demands of U.S. Northern border States. Currently, Canada is the only source of U.S. imports of natural gas, accounting for approximately 6 percent of total domestic consumption.

U.S. exports of natural gas to Mexico have been increasing over the last 5 years, because of the general liberalization of Mexican energy practices in purchases of necessary materials and indirect benefits of border growth. U.S. exports to Mexico increased dramatically between 1988 and 1989 as Valero Natural Gas Co. opened a new border crossing between Texas and Mexico to help supply the needs of PEMEX. During 1989-91, U.S. natural gas exports continued to increase, although at a much slower pace.[5] Exports should continue to increase, as Valero obtained all necessary approvals and began operating an additional border crossing near Reynosa, Mexico, as of August 1992. With additional petitions for border crossings pending from Enron Natural Gas and El Paso Natural Gas, cross-border capacity could reach over 1 billion cubic feet per day.[6]

Likely Impact on U.S. Production and Employment

NAFTA is likely to have little or no impact on U.S. production of crude petroleum, natural gas, and refined petroleum products in both the short and long term. U.S. employment is likely to experience only a minor, if any, increase as the result of the award of additional PEMEX contracts for oilfield services to U.S. firms. Further, any increased employment and production in the services area may merely offset anticipated declines in U.S. demand for such services.[7]

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[5] The rate of exports peaked in December 1991 at approximately 299 million cubic feet per day. U.S. Department of State, *Industrial Outlook for Petroleum and Natural Gas—Mexico*, Oct. 23, 1992.

[6] Ibid.

[7] Valero Energy Corp., written submission to the Commission, Nov. 24, 1992, and the Petroleum Equipment Suppliers Association, written submission, Nov. 25, 1992.

Likely Impact on U.S. Global Competitiveness

NAFTA is likely to have only a minor impact on U.S. competitiveness in terms of petroleum, natural gas, and oilfield services (including pipeline transmission) in both the short and long term. The U.S. industry is already the world's leader in terms of exploration, drilling, and refining. New technological innovations of the U.S. industry to improve recovery of material from already discovered resources is an area of expertise being called upon by those developing reserves in Mexico as well as in many other areas of the world.

CHAPTER 19
Primary Petrochemicals

Eric Land

Table 19-1
Primary petrochemicals: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	7	7	7	0
Trade data (million dollars):				
Shipments	17,158	18,272	18,754	3
Exports:				
Total	339	485	327	-33
To Mexico	32	29	31	7
To Canada	69	125	69	-45
Imports:				
Total	364	389	384	-1
From Mexico	0	1	4	300
From Canada	129	153	197	29
Trade balance:				
Total	-25	96	-57	(1)
With Mexico	32	28	27	-4
With Canada	-60	-28	-128	-357
Consumption	17,183	18,176	18,811	3
Import market share (percent):				
Total	2	2	2	(1)
Mexico	0	(2)	(2)	(1)
Canada	1	1	1	(1)

[1] Not meaningful for purposes of comparison
[2] Less than 0.5 percent.
Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Summary of Sector Analysis

There is likely to be, at most, a minor impact on U.S. investment, trade, production and employment, and competitiveness in the primary petrochemical[1] industry in both the short and long term as a result of NAFTA. The majority of Mexico's petrochemical industry has been under the sole purview of PEMEX since 1938. Historically, only limited foreign investment in Mexico's secondary (and tertiary)

[1] For purposes of this analysis, primary petrochemicals are defined as the primary olefins—ethylene, propylene, and butadiene—and the primary aromatics—benzene, toluene, and the xylenes. This definition is consistent with that of the world's major producers of petrochemicals, including those in Canada and the United States. PEMEX defines petrochemicals as "basic, secondary, and tertiary"; and it further determines which chemicals to place in these categories. Production of basic petrochemicals has been reserved for PEMEX and have historically been those chemicals that the Government of Mexico wishes to reserve for itself. In the past, chemicals have been shifted

[1]—*Continued*
from one category to another, according to the mandate of PEMEX.

The current PEMEX list of basic petrochemicals (published in the *Diario Oficial* of Aug. 17, 1992) includes ethane, propane, butanes, pentanes, hexanes, heptanes, carbon black feedstock, and naphthas. These items are generally considered to be either components of natural gas or to be petroleum products by the world market, but they are not considered to be "petrochemicals." PEMEX's list of "secondary petrochemicals" includes items generally considered to be "primary petrochemicals"—acetylene, ammonia, benzene, butadiene, butylene, ethylene, methanol, N-paraffins (a petroleum product), ortho-xylene, para-xylene, propylene, toluene, and mixed xylenes.

petrochemical industries[2] was permitted. Although Mexico has recently liberalized the regulations on investments in the secondary (and tertiary) petrochemical industries, there is a limited infrastructure to support the industry. Further, the lack of a guaranteed supply of natural gas and petroleum-based feedstocks for primary petrochemical production remains a major impediment to further industry investments, as well as an obstacle to increased Mexican industry efficiencies and to an improved trade position. PEMEX also retains control of the marketing and distribution of the feedstocks needed for primary petrochemical production.

The net effect of the lifting of investment restrictions under NAFTA on items classified by PEMEX as "secondary" petrochemicals and the reclassification of numerous primary petrochemicals as "secondary" petrochemicals will likely be a minor expansion of trade and foreign investment in Mexico.

Key NAFTA Provisions Affecting Sector

Tariff Provisions

The U.S. and Canadian tariff schedules currently provide for the majority of primary petrochemicals to enter their markets free of duty. Under NAFTA, Mexico's tariffs on primary petrochemicals, which currently are either 5 or 10 percent ad valorem for most items, will be eliminated over a 10-year period.

Other Provisions

Article 1102 of the investment chapter of NAFTA requires Mexico to open its petrochemicals sector, other than "basic" petrochemicals, to foreign investment. Annex 602.3 to the energy chapter specifically reserves the "basic" petrochemical sector to the state. NAFTA eliminates the current 40-percent limitation on foreign investment in "secondary" petrochemicals;[3] there is no limit with regard to other classifications of petrochemicals.[4] In addition to the elimination of investment restrictions on nonbasic petrochemicals, certain basic petrochemicals have been reclassified;[5] leaving only eight petrochemicals classified as basic petrochemicals by the Mexican Government. This reclassification is reflected in the definition of "energy and basic petrochemicals," which is expressed in terms of the Harmonized Tariff System tariff headings set forth in article 602.2.

[2] As defined by PEMEX.

[3] *Law on the Promotion of Mexican Investment and the Regulation of Foreign Investment*, art. 5, *Diario Oficial*, Mar. 9, 1973.

[4] *Regulation of the Law on the Promotion of Mexican Investment and the Regulation of Foreign Investment*, *Diario Oficial*, May 16, 1989.

[5] 1989 Resolution Reclassifying Specified Petrochemical Products as Basic or Secondary Petrochemicals, *Diario Oficial*, Aug. 15, 1989; and Resolution Reclassifying Specified Petrochemical Products as Basic or Secondary Petrochemicals, *Diario Oficial*, Aug. 17, 1992.

Likely Impact on Investment

The impact on U.S. investment in the primary petrochemical industry in Mexico as a result of NAFTA is likely to be minor in both the short and long term. Mexico's "basic" petrochemical industry will remain closed to foreign investment. While NAFTA does increase the opportunity for investment in other petrochemical sectors in Mexico, the extent to which U.S. companies are likely to take advantage of such opportunities is unclear. Establishing or acquiring a petrochemical plant is an expensive, capital-intensive proposition. Further, any such plant would have to rely on PEMEX to supply the bulk of its feedstock, be located near a PEMEX plant producing feedstock, and then sell its production either to PEMEX or in competition with PEMEX. Thus, to a large degree, the success of any investment in Mexico can be controlled by PEMEX. To the extent that PEMEX and the Mexican Government encourage investment, because of the need for scarce capital, and provide incentives to investors, investment may increase significantly. On the other hand, uncertainties regarding the actions of the Mexican Government and PEMEX may inhibit foreign investment.

Despite liberalization of investment regulations for those petrochemical industry segments producing primary olefins and aromatics in Mexico, the large, multinational producers from both Canada and the United States are expected to remain somewhat cautious until there is more liberalization in the energy area. Since production of more than one product occurs in a given plant, the associated privatization of production of specific items currently held by PEMEX is not a simple process. The inability to identify clearly the materials that PEMEX will divest[6] will probably inhibit both foreign and domestic private investment in these facilities.

Also, the feedstocks necessary for the production of primary petrochemicals are derived directly from crude petroleum and natural gas, materials that remain under the purview of PEMEX. Many large multinational firms prefer to supply their own feedstocks, or at the very least, be assured of a guaranteed supply.

[6] In addition to allowing foreign and domestic private investment in the production of a wider range of petrochemicals, PEMEX will also allow investment in those plants that are currently operating, thereby divesting itself of a number of production facilities. The process by which this divestiture will occur has not yet been defined.

Likely Impact on U.S. Trade

The United States maintains a trade surplus in primary petrochemicals with Mexico, but has a growing trade deficit with Canada. There likely will be only a minor impact on primary petrochemical trade with Mexico as a result of NAFTA in both the short and long term. There should be no change in petrochemical trade with Canada, as a result of NAFTA, as the NAFTA provisions for the energy sector are identical to those in U.S.-Canada Free-Trade Agreement (CFTA). International trade in primary petrochemicals is generally examined through the trade in the products produced directly from the materials, rather than trade in the primary petrochemicals themselves, owing to difficulties in transporting these materials. Although the proximity of the U.S. and Canadian markets does allow for increased primary petrochemical imports from Mexico, particularly via pipeline or via tank cars, the Mexican industry has not yet been able to meet a major goal that it has set for itself: satisfying its own domestic demand for downstream products. U.S. exports to Mexico of the downstream products made from the primary petrochemicals already represent a significant share of the Mexican domestic market.[7] Unless the Mexican Government further liberalizes investment in the Mexican energy market, or by some other means provides for expansion of its domestic production capacity to better ensure a supply of feedstocks for potential investors, further development of downstream petrochemical product capacity will continue to be inhibited. Without the demand created by increased production of derivative petrochemical products in Mexico, overall trade in primary petrochemicals will probably remain fairly stable.

[7] For a discussion of NAFTA's impact on the U.S. chemical industry, see the "Chemicals" sector analysis in chapter 14 of this report.

Likely Impact on U.S. Production and Employment

NAFTA is likely to have only a minor impact on U.S. production of primary petrochemicals in both the short and long term. U.S. employment is not likely to experience any change related to NAFTA, even if there is a slight increase in U.S. exports to the Mexican market as there is currently significant excess production capacity in the United States.

Likely Impact on U.S. Global Competitiveness

NAFTA is likely to have no impact on U.S. competitiveness in primary petrochemicals in both the short and long term. As mentioned previously, most facilities for petrochemical production in Canada and the United States are owned by multinational companies. These facilities use the latest available technology and are generally considered to be the most efficient plants in the world. The Mexican industry, though owned by PEMEX, uses the same technology as the U.S. and Canadian producers through licensing agreements.

CHAPTER 20
Electricity Transmission

Cynthia B. Foreso

Table 20-1
Electricity transmission: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	(1)	(1)	(1)	(1)
Trade data (million kilowatt hours):				
Production	2,784,304	2,808,151	2,823,025	1
Exports:				
Total	15,135	20,526	10,263	-50
To Mexico	621	590	560	-5
To Canada	14,514	19,936	9,703	-51
Imports:				
Total	26,110	22,506	20,031	-11
From Mexico	1,934	1,951	1,940	-1
From Canada	24,176	20,555	18,091	-12
Trade balance:				
Total	-10,975	-1,980	-9,768	-393
With Mexico	-1,313	-1,361	-1,380	-1
With Canada	-9,662	-619	-8,388	-1,255
Consumption	2,795,279	2,810,131	2,832,793	1
Import market share (percent):				
Total	1	1	1	(2)
Mexico	(3)	(3)	(3)	(2)
Canada	1	1	1	(2)

1 Not available.
2 Not meaningful for purposes of comparison.
3 Less than 0.5 percent.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Summary of Sector Analysis

Canada and the United States have historically traded electricity via transborder generation facilities. Foreign investment in both the Canadian and U.S. electricity sectors is permitted. In Mexico, all foreign investment in the energy sector is constitutionally restricted; the generation, distribution, and pricing of electricity is under the sole purview of the state-owned Comision Federal de Electricidad (CFE).

NAFTA is expected to have only a minor effect on U.S. investment, trade, production and employment, and competitiveness in terms of electricity transmission in both the short and long term. NAFTA reaffirms the provisions in the U.S.-Canada Free-Trade Agreement concerning energy issues. Under the terms of NAFTA, private foreign investment will be permitted for self-generation of electricity, cogeneration, and independent power plants (IPPs); these plants are for industrial consumers only and are not for satisfying the needs of residential consumers.

The level of Mexico's imports of electricity along the border will remain under the purview of CFE.

Key NAFTA Provisions Affecting Sector

Tariff Provisions

Imports of electricity into Canada and the United States are duty-free. Mexican tariffs on electricity are to be staged downward over a 5-year period from 10 percent to free. Tariff reductions will not result in an increase in electricity trade because there are other factors, such as an underdeveloped infrastructure and technical limitations, which are greater determinants of the level of trade.

Other Provisions

The energy chapter of NAFTA, annex 602.3, reserves all investment and services in the electricity sector to the Mexican state, with limited exceptions for three types of electricity-generating facilities. Under NAFTA, Mexico will allow limited private investment and ownership of electrical generating plants for self-generation, cogeneration, and independent power production. All sales of excess electricity from such plants must be to CFE. No open market sales will be permitted.

Likely Impact on Investment

Both Canada and Mexico may need substantial investments in new electricity-generating facilities in order to meet domestic demand. Investment in and development of transborder generation facilities should provide minor investment opportunities for U.S. firms. Under the NAFTA energy provisions, private foreign ownership and operation of electric generating plants for self-generation and cogeneration as well as IPPs in Mexico will be allowed. There are no significant restrictions on U.S. investment in electricity-generating facilities in Canada. Under the NAFTA government procurement provisions, Canadian and U.S. companies will be able to bid on CFE procurement contracts, through open, equitable procurement procedures subject to certain minimum threshold levels ($8 million for CFE).[1]

Because Mexican transmission lines and distribution systems are generally not state-of-the-art, future economic growth could be hampered by the inadequate infrastructure. Foreign investment in electricity transmission in Mexico will likely be concentrated in the construction of IPPs and cogeneration units in Mexico's industrial areas. Such investments allow the foreign investors to operate an electricity generating facility and to consume the electricity it produces, sell it to CFE, or export it. To the extent that CFE cannot meet growing domestic demand for electricity and does not have adequate capital to expand capacity, IPPs may be used to fill the gap. To a lesser extent, investment may occur in developing compatible interconnection grids to supply CFE with U.S.-produced power along the border.

Likely Impact on U.S. Trade

NAFTA energy provisions are likely to result in a minor impact on U.S. electricity trade with Canada and Mexico both in the short and long term, primarily because the agreement only addresses Federal regulations, rather than state and provincial regulations concerning the generation and distribution of electricity. The state and provincial regulations tend to be more stringent and in most cases, supersede Federal regulations.

Canada historically has been the major U.S. trading partner in electricity because of the existence of sophisticated interconnecting transmission systems along the shared border. Electricity trade between the United States and Canada fluctuates annually from region to region as a result of changing hydroelectric conditions along the border.

U.S. electricity trade with Mexico is generally comprised of border transactions. Such exchanges occur to minimize costs and increase reliability. Mexico has two 138-kilovolt interconnections with the Southwest region (New Mexico and Texas); there are two international 230-kilovolt interconnections between Mexico and California. Mexico's exports of electricity to the United States account for less than 10 percent of total U.S. imports. Unlike the U.S.-Canadian interconnections, those with CFE are not synchronized. In order to export electricity to Mexico, CFE must shut down an operating substation and link it to the U.S. system. In order to increase U.S.-Mexican trade, new interconnection grids along with other major improvements in CFE infrastructure would be needed.

Likely Impact on U.S. Production and Employment

NAFTA is likely to have only a minor effect, in both the short and long term, on U.S. production of electricity or employment in the industry because any increase in trade in electricity is expected to be derived from excess current capacity along the border.

[1] See discussion of government procurement in chapter 17 of this report.

Likely Impact on U.S. Global Competitiveness

NAFTA is unlikely to have any effect on U.S. global competitiveness in either the short or long term. International trade in electricity consists solely of border transactions since it can be transmitted only through power lines and interconnection grids. The United States is the only supplier of imports of electricity to Canada and Mexico. Although U.S. trade with Canada is larger than that with Mexico, the levels of trade are low relative to U.S. consumption. The border States of Texas, California, Arizona, and New Mexico are the only viable sources of electricity transmission into Mexico's industrial areas.

PART IV. THE LIKELY IMPACT OF NAFTA ON U.S. AGRICULTURAL SECTORS

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CHAPTER 21
Key NAFTA Provisions Affecting Agricultural Sectors

This chapter describes key NAFTA provisions applicable to all agricultural sectors and identifies changes likely to be required in U.S. law and, to the extent feasible, in Mexican and Canadian law. The chapter addresses whether the legal changes will have a significant impact on U.S. trade and investment. The principal NAFTA provisions affecting agriculture include market access, rules of origin, agricultural standards, drawback, investment, and export subsidies. U.S.-Mexican and U.S.-Canadian trade in the agricultural sectors is summarized before addressing the most significant provisions.

U.S. exports to Mexico in 1991 in the 15 agricultural sectors included in this report were approximately $3 billion, 7 percent of total U.S. exports of $42 billion in these sectors. Grains and oilseeds, and livestock and meat together accounted for 64 percent of total U.S. agricultural exports to Mexico in the agricultural sectors covered. U.S. exports to Canada in the 15 agricultural sectors were $5 billion in 1991, 12 percent of total U.S. agricultural exports in these sectors.

U.S. imports from Mexico of these agricultural products ($2.6 billion) represented 10 percent of total U.S. imports of $25.5 billion in these sectors. Vegetables, livestock and meat, and noncitrus fruits together accounted for 62 percent of total U.S. imports from Mexico in the agricultural sectors covered. U.S. imports from Canada in the 15 agricultural sectors were $8 billion, 30 percent of total U.S. imports in these sectors.

Market Access

The market access provisions regarding agriculture are principally contained in article 703 of NAFTA. The specific details of the provisions are set forth in separate bilateral agreements annexed to the article, one governing agricultural trade between the United States and Mexico, and the second governing agricultural trade between Canada and Mexico.[1] There is no separate U.S.-Canada agreement beyond that contained in the U.S.-Canada Free-Trade Agreement (CFTA). To the extent that legal changes are required by the market access provisions of chapter 7 of NAFTA, those changes relevant to U.S. sectors will occur only in the United States and Mexico. Accordingly, the following discussion of the elimination of tariff and most nontariff barriers (NTBs) to agricultural trade relates only to the United States and Mexico.

Articles 302 and 703 and annex 703.2 of NAFTA provide for the elimination, either immediately upon implementation of the agreement or over a 5-, 10-, or 15-year period (depending upon the category in which the particular good falls), of all tariffs and quantitative restrictions (including import licenses) on all agricultural goods traded between the two countries.[2] Upon implementation of NAFTA, all U.S. section 22[3] import quotas and the Mexican import-licensing system applicable to agricultural goods are to be replaced by tariffs or tariff rate quotas (TRQs).[4] The goods in the categories subject to longer phaseout periods are regarded as more sensitive. For example, the C+ category for the United States includes imports from Mexico of orange juice, certain seasonal vegetables, melons, and peanuts, while the C+ category for Mexico includes imports from the United States of corn, dry beans, and powdered milk.[5]

[1] The provisions governing trade between the United States and Mexico are set forth in NAFTA, annex 703.2, section A. The provisions governing trade between Mexico and Canada are set forth in NAFTA, annex 703.2, section B.

[2] For a discussion of these tariff staging categories, see "overview of the agreement" in chapter 1 of this report.

[3] *Agricultural Adjustment Act*, sec. 22 (7 U.S.C. 624). In general, section 22 authorizes the President to impose a fee or quota on imports when imports have been found to render or tend to render ineffective, or materially interfere with, U.S. Department of Agriculture price support or other programs. The President must seek a finding from the U.S. International Trade Commission before taking action under section 22, but may take action in emergency situations while awaiting that finding. U.S. section 22 import quotas will continue to remain in effect with respect to imports from other countries, including Canada.

[4] A tariff rate quota is a form of tariff and not an import quota. Unlike an import quota, the quota in a tariff rate quota does not set an absolute limit on the quantity of imports that may enter but only sets a limit on the quantity of imports that may enter at a given rate of duty. Most tariff rate quota systems involve only one quota amount; within-quota imports enter at one rate of duty, and over-quota imports enter at a different, usually higher, rate.

[5] See appendix F for staged tariff reductions under NAFTA for trade between the United States and Mexico by major product groups.

The staging provisions and the schedules for tariffs and TRQs are found in annex 302.2 of NAFTA. For agricultural goods currently subject to U.S. import quotas or Mexican import licenses, imports will be allowed to enter duty-free up to the tariff quota level; imports exceeding that level will be subject to duties. The quantity of Mexican products granted duty-free entry under the U.S. TRQs would be set at a level equal to that of the present section 22 quotas; imports exceeding that amount would be subject to a tariff rate based on the 1989-91 tariff equivalent of the border protection offered by the section 22 quotas. The quantity of U.S. goods permitted to enter duty-free under the Mexican TRQs would be based primarily on the average annual 1989-91 trade in the product involved. Imports exceeding that amount would be subject to a tariff rate based on the tariff equivalent of the border protection provided by the import license.

The U.S. and Mexican TRQs are to be phased out over a period of either 10 or 15 years. During the transition period, the quota levels under the U.S. and Mexican TRQs are to increase at a 3-percent compounded annual rate. The only exception is for Mexico's TRQ for barley/malt, the quota level for which will grow at a 5-percent compounded annual rate. At the end of the transition period, the tariffs on over-quota imports are to be eliminated.

Article 703.3 provides for a "special safeguard" option in the form of a TRQ in lieu of a straight tariff for certain sensitive agricultural goods listed in annex 703.3. Under this option, within-quota imports would be subject to the applicable NAFTA preferential rate and over-quota imports would be subject to the prevailing most-favored-nation (MFN) rate. The quotas would be permitted to increase at a 3-percent rate compounded annually, and the within-quota preferential duties would be phased down over a 10- or 15-year period. The over-quota tariff would not be phased down, but would instead be eliminated along with the remaining within-quota duties at the end of the phaseout period. Annex 703.3 sets forth a separate schedule of goods for each NAFTA country. The U.S. schedule includes seven categories of seasonal fruits and vegetables, including certain tomatoes, onions and shallots, eggplants, chili peppers, squash, and watermelons; U.S. safeguard TRQs could be in effect only during the period (season) of the year specified in the annex. The Mexican schedule includes 17 categories of goods, including live swine, certain pork products, certain potato products, fresh apples, and coffee extract; none of the Mexican safeguard TRQs would be restricted to a seasonal application. Article 703.4 provides that no such special safeguard may be maintained on a good at the same time that the good is the subject of an emergency action under chapter 8 of NAFTA.

With respect to U.S. law, implementing legislation for NAFTA agricultural market access provisions would need to (1) authorize the President to establish the TRQs and otherwise make the changes in tariff and NTBs called for; (2) authorize the President to exempt imports from Mexico from section 22 actions; (3) amend additional note 3(b)(i) of chapter 17 of the Harmonized Tariff Schedule of the United States (HTS) to change the procedures under which the quota on Mexican sugar is provided; and (4) amend the Meat Import Act of 1979 (19 U.S.C. 2253) to provide that imports from Mexico are not to be included in the calculations for determining the levels of meat imports that trigger import quotas on meat and to adjust the minimum quota amount to reflect the removal of Mexico from the calculation.[6]

Mexico would be required to amend its tariff schedules to incorporate the tariff reductions and provide for the TRQs. Mexico also would be required to eliminate its import-licensing requirements. Presumably, these changes will require legislative action.

In the short run, the tariffication of NTBs and the elimination of tariffs should not have a significant impact on U.S.-Mexico agricultural trade because of the long phaseout periods utilized to protect those industries that are considered to be the most sensitive to the changes. In the long run, the impact likely will be significant for commodities in which (1) there is market demand in both countries and (2) one or the other country has a clear competitive advantage. The extent of that impact will depend on a variety of factors, including the volume of trade, transportation costs, product perishability, and effectiveness of protection against transshipments from non-NAFTA countries.

Rules of Origin

Agricultural goods are, for the most part, subject to the generic rules of origin provisions contained in chapter 4 of NAFTA. Under these rules, agricultural products produced entirely within the NAFTA region are deemed to be originating goods. Agricultural goods extracted from, and intermediate and final food preparations produced from, raw agricultural products are originating goods provided that the processing results in a change of Harmonized System (HS) chapter. There are specific rules of origin for certain commodities, such as vegetable oils, sugar, and peanut butter, to limit the type of processing of raw material that would confer origin status.

There is also a general de minimis rule in article 405 for all goods that permits up to 7 percent by value of foreign materials in a good subject to change-of-classification or value-content rules before the product loses regional origin status.[7] NAFTA contains a number of important product exceptions to the de minimis rule, which, in the agricultural area include certain dairy products, certain fruit or vegetable juices, and instant coffee.

[6] To be sure Puerto Rico conforms to NAFTA, an amendment is also needed for U.S. note 3 to chapter 9 of the HTS to modify Puerto Rico's authority to impose its own tariff on coffee.

[7] NAFTA, art. 405. Special de minimis rules apply to tobacco products.

As noted previously,[8] the rules of origin do not require changes in existing laws, because they are supplementary rules applicable only to NAFTA goods. The supplementary rules, however, must be added to existing laws, presumably by domestic legislation in each of the countries. There is not likely to be any significant impact on agricultural sectors resulting from the rules of origin provisions. The rules of origin are merely designed to ensure that the benefits of the elimination of barriers to trade accrue only to NAFTA parties.

Agricultural Standards

The section of NAFTA on Agricultural Market Access between the United States and Mexico includes a provision on agricultural grading and marketing standards. Under this provision, set forth in annex 703.2, section A(23), if either Mexico or the United States adopts or maintains a measure regarding the classification, grading, or marketing of a domestic agricultural product, it must accord no less favorable treatment to the like agricultural imported good destined for processing than it accords to the domestic good.

The NAFTA Sanitary and Phytosanitary Measures (SPS) set forth guidelines for the establishment and enforcement of SPS that may affect trade among the three countries directly or indirectly. Basically, any of the countries may establish or apply an SPS necessary to protect human, animal, or plant life or health in its territory, even if the measure is stricter than an international standard, guideline or recommendation, so long as such measure is based on scientific principles, does not unfairly discriminate between imported and domestic goods, and does not create a disguised restriction on trade among the parties. NAFTA encourages, but does not require, the parties to make their SPS equivalent or identical, when appropriate, to those of the other parties.[9] The SPS chapter also establishes procedural rules to ensure transparency, and adequate notification in the adoption of rules and equity in their application.

The agricultural standards provisions are not believed to require changes in the laws of Canada or the United States. Any changes in Mexican law would likely be limited to the adoption of new procedures for the promulgation of standards that allow for adequate notice and comment. Given that the standards provisions will not require any substantive change in the laws of any party, they are not likely to have a significant economic impact on any agricultural sector.

[8] See chapter 3 of this report.
[9] NAFTA, arts. 709-724.

Drawback Restrictions

NAFTA's general market access provisions in chapter 3 provide for some restrictions on drawback and on deferral of customs duties for products exported to other NAFTA parties.[10] In addition to the chapter 3 ban, annex 703.2, section A(12) of NAFTA specifically prohibits either Mexico or the United States from refunding the amount of customs duties paid, or waiving or reducing the amount of customs duties owed, on an agricultural good that is imported into its territory that is substituted for an identical or similar good and that is subsequently exported to the territory of the other party.

These limitations may help to avoid unexpected increases in exports of products from one NAFTA party to another. They will likely discourage the consumption of non-NAFTA products in the Mexican market, although the like Mexican product could be exported for sale in the United States, and are intended to prevent circumvention of higher external duties in any two NAFTA parties by efforts to transship goods.[11]

Investment

At present, Mexican law permits foreign investors to own 100 percent of businesses that engaged in agriculture activities, after screening by the Mexican Foreign Investment Commission.[12] However, foreigners can own only 49 percent of "T" shares in enterprises that own land used for agriculture or livestock.[13] NAFTA will require the removal of the screening procedures, but will not affect the limitation on land ownership. In some agriculture-related sectors, the 49-percent land ownership rules currently have little significance and the continuation of these restrictions is not likely to have an impact on U.S. investments. For example, land ownership restrictions are not likely to significantly inhibit investment in the food-processing industry. In addition, screening has not been a significant impediment to investment in the past

[10] Ibid., art. 303.
[11] For a dicussion of the impact of the elimination of duty drawback on the sugar industry see chapter 33 of this report.
[12] Recent land reform in Mexico has made it easier to consolidate large tracts of land for agricultural purposes and achieve economies of scale. See discussion in chapter 1 of this report. This reform is likely to stimulate domestic and foreign investment in Mexico's agricultural sectors, although this stimulus is independent of the impact of NAFTA.
[13] NAFTA, annex I, Reservations for Existing Measures and Liberalization Commitments, p. I-M-9. This Mexican reservation regarding national treatment for investment provides that only Mexican nationals or enterprises may own land for agriculture, livestock, or forestry purposes. Such an enterprise must issue special shares ("T" shares) representing the land value at the time of purchase. NAFTA investors may own only up to 49 percent of such shares.

as most proposed investments have been approved. Because of the limited role of screening, its removal for agriculture should have little, if any, impact on U.S. investment. However, the other investment liberalizations described in chapter 3 of this report provide significantly enhanced protection for U.S. agriculture investments in Mexico.

Export Subsidies

Article 705 of NAFTA sets forth the shared objectives of the parties of the multilateral elimination of export subsidies for agricultural goods in the current GATT negotiations, but NAFTA contains no requirements that export subsidies be eliminated. Article 705 does establish certain conditions and obligations for the use of export subsidies of agricultural goods exported to the territory of another party. The parties retain the right to impose countervailing duties on imports from any source. Given the limited commitment to the elimination of agricultural export subsidies as a result of NAFTA, this provision is not likely to have a significant effect on any agricultural sector.

CHAPTER 22
Agriculture Overall[1]

Rick Rhodes

Table 22-1
Agriculture overall: Selected U.S. sector data, 1989-91[1]

Item	1989	1990	1991	Percentage change, 1990-91
Trade data (million dollars):				
Exports:				
Total	44,263	45,177	45,052	(2)
To Mexico	2,731	2,531	2,964	17
To Canada	2,431	4,505	4,859	8
Imports:				
Total	28,088	29,305	29,446	(2)
From Mexico	2,764	2,986	2,911	-3
From Canada	4,547	4,886	5,098	4
Trade balance:				
Total	16,175	15,872	15,606	(3)
With Mexico	-33	-455	53	(3)
With Canada	-2,116	-391	-239	(3)

[1] Primarily includes U.S. trade under Harmonized System chapters 1-24, 41, and 43; excludes trade in cotton (chapter 52 (pt.)) and wood products (44).
[2] Less than 0.5 percent.
[3] Not meaningful for purposes of comparison.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

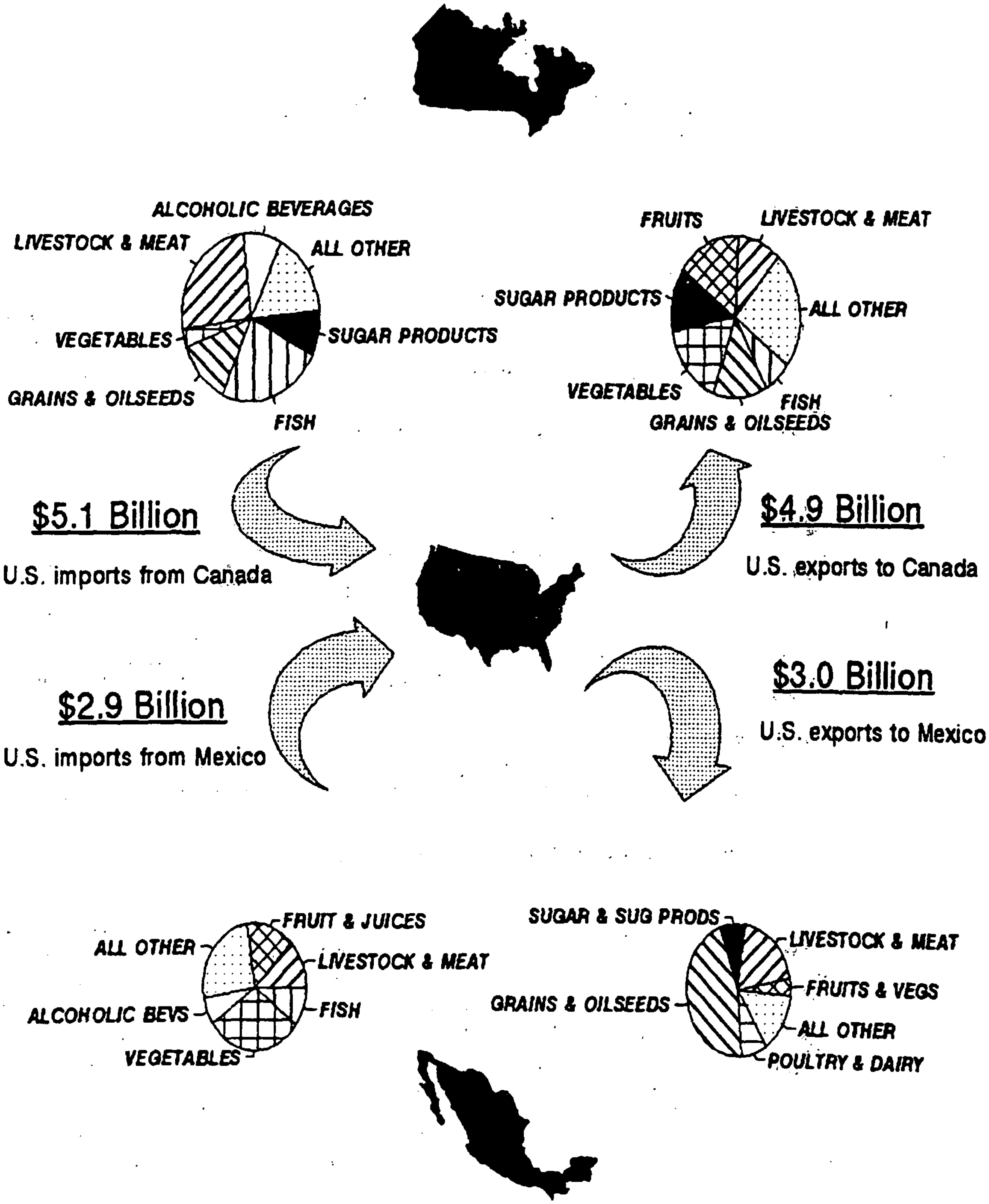
Summary of Sector Analysis

The U.S. agricultural sector has historically generated a trade surplus. Canada is the only significant agricultural trading partner with whom the United States runs an agricultural trade deficit. Canada exports a considerable amount of fish, shellfish, live animals (especially cattle), miscellaneous meats, wheat, distilled spirits, and beer to the United States, whereas the United States ships a considerable amount of vegetables, fruits, animal feeds, and meat to Canada. The largest U.S. agricultural trade surpluses with Mexico were in food grains, oilseeds, and meat offals, whereas the largest trade deficits with Mexico were in fresh vegetables, fresh fruit, coffee, and shellfish (figure 22-1).

[1] Includes the following 15 sectors: grains and oilseeds, citrus fruit and juice, other fruits, vegetables, sugar, dairy products, cotton, peanuts, sugar-containing products, livestock and meat, poultry, fish, cut flowers, lumber and wood products, and alcoholic beverages.

NAFTA will likely have a minimal effect on overall U.S. agricultural production and employment, although in certain specific sectors, there may be slight gains or losses. U.S. agricultural investment in Mexico is small, when compared to the investment by the manufacturing and service sectors. However, U.S. agricultural investment in Mexico will likely increase under NAFTA, especially in the citrus, grains and oilseeds, certain frozen vegetables, poultry, fish, and alcoholic beverage sectors. Under NAFTA, U.S. exports to Mexico of grains and oilseeds, certain fruits (primarily deciduous fruit and fresh citrus), pork and swine, meat offals, poultry, canned sardines, alcoholic beverages, dairy products, lumber and wood products, and cotton should increase in the long term. However, NAFTA is also projected to lead to increased U.S. imports, in both the short and long term, of citrus juice, certain frozen vegetables, and fresh-cut roses. Also, in the long term, imports of certain fruits (primarily

Figure 22-1
U.S. agricultural trade with NAFTA partners, by selected major groupings, 1991



Note.—Excludes U.S. trade in cotton and wood products.

Source: Derived from data provided by the U.S. Department of Commerce.

grapes, melons, and strawberries), and possibly poultry, shrimp, mackerel, and tuna could increase slightly. NAFTA will likely have a minimal effect on overall U.S. agricultural competitiveness.

Mexican Agrarian Reforms and Competitiveness

Recent Mexican agrarian reform policies are aimed at increasing agricultural productivity and efficiency (see chapter 1 of this report). Although the reforms started in February 1992, the transition is expected to take a significant amount of time—possibly 10 years or longer.[2]

About one-eighth of Mexico's land reportedly is arable. Mexico has about one-fifth as much cropland as the United States (67 million acres versus 328 million acres) but three times as many farmers (6 million versus 2 million).[3] Since only about 30 percent of Mexican agricultural land is now irrigated, a significant portion of Mexican cropland will remain by necessity in crops like corn and sorghum.[4] About 40 percent of Mexico's planted land is worked using mechanized equipment; about 20 percent does not lend itself to mechanization due to topographical conditions.[5] Agriculture in Mexico is also limited by lack of adequate cold storage facilities (which places limits on perishable products—meats, fruits, and vegetables), inadequate electrical supplies, underdeveloped road systems, and regional water shortages. However, in the vegetable sector, Mexico's Bahio region has an advantage over the United States in field yield, field harvest labor costs, and plant labor costs.[6]

Figures 22-2 and 22-3 present the tariff staging methods and the tariff-staging duration affecting various agricultural trade between the United States and Mexico under NAFTA.

The impact of NAFTA on Mexican agriculture is likely to be minor, especially when compared to the likely impact of current reforms in the Mexican economy, unrelated to NAFTA. It is virtually impossible to separate out the likely effects of NAFTA from the effects attributable to the recent Mexican reforms in the agricultural sector.

Key NAFTA Provisions Affecting Sector

In 1991, about 53 percent of U.S. agricultural imports from Canada entered free of duty. Between 1989 and 1991, the trade-weighted duty on the dutiable portion of agricultural imports from Canada declined from 3.1 percent to 2.6 percent ad valorem.[7]

In 1991, 41 percent of U.S. agricultural imports from Mexico entered the United States free of duty. Based on 1991 trade levels, it is estimated that an additional 20 percent of these imports from Mexico will be granted immediate duty-free entry under NAFTA. In 1991, the trade-weighted tariff on dutiable agricultural imports from Mexico averaged 8 percent ad valorem. Agricultural imports from Mexico that had a trade-weighted average duty rate of over 8 percent include peanuts (34 percent ad valorem), citrus fruit and juice (23 percent), other fruit (13 percent), sugar-containing products (10 percent), and vegetables (9 percent).

Under NAFTA, Mexico will eliminate its import-licensing system. In 1991, an estimated 25 percent of all U.S. agricultural exports to Mexico were covered by Mexican import licenses.[8] Under NAFTA, an estimated 52 percent of U.S. agricultural exports to Mexico will gain immediate duty-free access to the Mexican market. Figure 22-4 depicts the incremental percentage of trade, based on 1991 agricultural trade, that would be free of duty immediately and after 5 years, 10 years, and 15 years.

Likely Impact on Investment

In 1991, U.S. foreign direct investment in food and kindred products amounted to $2.5 billion in Canada and $932 million in Mexico.[9] However, U.S. investment in Mexican basic agriculture in 1990 totaled less than $100 million.[10] In 1990, of the 50 largest U.S. food-processing firms, 14 had 33 affiliates or joint ventures in the Mexican food and feed processing sector.[11] Mexican sales of the U.S. affiliates in 1991 amounted to $4.1 billion.

In the past, U.S. agricultural investment in Mexico has been most visible in the sectors of frozen vegetables, grain and oilseed processing, citrus, poultry, and distilled spirits. NAFTA likely will

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[2] Government and industry officials, various interviews by USITC staff, Mexico, Nov. 1992.

[3] Philip L. Martin, "U.S. Agribusiness Under NAFTA: Mexico - Sourcing or Direct Investment?," Center for U.S.-Mexican Studies, U. CA., San Diego, Fall 1992, p. 3.

[4] Government and industry officials.

[5] U.S. Department of Commerce, International Trade Administration, National Trade Data Bank.

[6] Government and industry officials.

[7] Under the U.S.-Canada Free-Trade Agreement, all tariffs are being reduced over periods of no more than 10 years.

[8] U.S. Chamber of Commerce, *A Guide to the North American Free Trade Agreement, 1992*, Washington, DC, p. 44.

[9] U.S. Department of Commerce, *Survey of Current Business*, Aug. 1992, p. 125.

[10] Martin, "U.S. Agribusiness Under NAFTA."

[11] U.S. Department of Agriculture, "Mexico's Food Industry," *Agricultural Outlook*, Apr. 1992, pp. 29-31.

Figure 22-2
U.S. agricultural imports from Mexico: Tariff staging under NAFTA[1]

Tariff reduction method	Staging period	Agricultural products
Immediate elimination		Corn, grain sorghum, barley, malt, soybean meal, dry beans, dried fruits, potatoes, cattle/beef, swine/pork, eggs, animal fats, other livestock, most wood products, vegetable oils (pt.), fresh nuts, dried nuts, fresh grapes, fresh deciduous fruit and stone fruit, alcoholic beverages (pt.), melons (pt.), citrus (pt.), cauliflower (pt.), cucumbers (pt.), asparagus (pt.), other fresh horticulture (pt.)
Tariff staging only	5-year	Wheat (pt.), soybean oil, vegetable oil (pt.), cucumber (pt.), asparagus (pt.), broccoli (pt.), cauliflower (pt.), melons (pt.), citrus (pt.), other fresh horticulture (pt.), processed potatoes (pt.), processed fruit juices (pt.)
	8-year	Beer
	10-year	Wheat, rice, cucumbers (pt.), asparagus (pt.), broccoli (pt.), cauliflower (pt.), melons (pt.), citrus (pt.), other fresh horticulture (pt.), processed vegetables (pt.), processed fruit juices (pt.), tobacco, alcoholic beverages (pt.)
	15-year	Cucumbers (pt.), asparagus (pt.), broccoli (pt.), melons (pt.), processed vegetables (pt.)
Safeguards plus tariffs	10-year	Tomatoes (pt.), onions, eggplants (pt.), squash (pt.) peppers (pt.), watermelon (pt.), potatoes (pt.)
Tariff-rate-quotas	10-year	Milk powder, cheese, cotton, sugar-containing products
	15-year	Frozen concentrated orange juice (FCOJ), peanuts, sugar

[1] The term "pt." indicates that different types of the specified product or imports during different seasons of the year will be subject to different staging schedules under NAFTA.

maintain, or possibly further encourage, a minor increase in U.S. investment levels in these sectors as well as in Mexico's fish sector and alcoholic beverages sector. Potential investment in Mexico's vegetable, citrus, other fruit, and cut rose industries primarily would be focused on exports to the U.S. market.

Likely Impact on U.S. Trade

In the short term, NAFTA likely will result in a minor-to-modest increase in U.S. exports to Mexico of grains and oilseeds, certain fruits (primarily deciduous fruit), meat offals, dairy products, alcoholic beverages, certain wood products, canned sardines, and certain cut flowers. In the long term, there will likely be a modest-to-considerable increase in U.S. exports of grains and oilseeds, certain fruits (primarily deciduous fruit and fresh citrus), pork and swine, meat offals, poultry, canned sardines, alcoholic beverages, dairy products, cotton, certain cut flowers, lumber and wood products, and possibly sugar-containing products. In both the short and long term, NAFTA likely will result in a minor-to-modest increase in U.S. imports of citrus juice (primarily frozen concentrated orange juice), certain frozen vegetables, and fresh-cut roses. Additionally, in the long term, there will likely be a minor increase in U.S. imports of other fruit (primarily grapes, melons, and strawberries), and possibly poultry, shrimp, mackerel, and tuna.

Likely Impact on U.S. Production and Employment

NAFTA likely will have a minor effect on overall U.S. agricultural production and employment. Minor production and employment gains are projected in the

Figure 22-3
Mexican agricultural imports from the United States: Tariff staging under NAFTA[1]

Tariff reduction method	Staging period	Agricultural products
Immediate elimination		Grain sorghum, eggplants, squash, most peppers, peanuts, vegetable oils (pt.), raisins, prunes, fresh and dried nuts, cherries, alcoholic beverages (pt.)
Tariff staging only	5-year	Dried fruits and nuts (pt.), deciduous fruit (pt.), cucumbers (pt.), chili peppers, asparagus (pt.), broccoli (pt.), cauliflower (pt.), melons (pt.), citrus (pt.), FCOJ (pt.), processed vegetables (pt.), processed fruit juices (pt.), livestock products (pt.), cotton (pt.), alcoholic beverages (pt.)
	8-year	Beer
	10-year	Wheat, rice, soybean products, vegetable oils, dried fruits (pt.), grapes, deciduous fruit (pt.), cucumbers (pt.), onions, asparagus (pt.), asparagus (pt.), broccoli (pt.), cauliflower (pt.), melons (pt.), citrus (pt.), FCOJ (pt.), processed vegetables (pt.), processed fruit juices (pt.), edible meat offals, cheese, livestock products (pt.) (pt.), cotton (pt.), sugar-containing products (pt.), tobacco, alcoholic beverages (pt.), most wood products
	15-year	Dried onions, processed vegetables (pt.), FCOJ (pt.), melons (pt.)
Safeguards plus tariffs	10-year	Apples, processed potatoes, swine/pork
Tariff-rate-quotas	10-year	Potatoes, poultry, eggs, animal fats, barley/malt, some wood products
	15-year	Corn, dry beans, milk powder, sugar

[1] *The term "pt." indicates that different types of the specified product or imports during different seasons of the year will be subject to different staging schedules under NAFTA.*

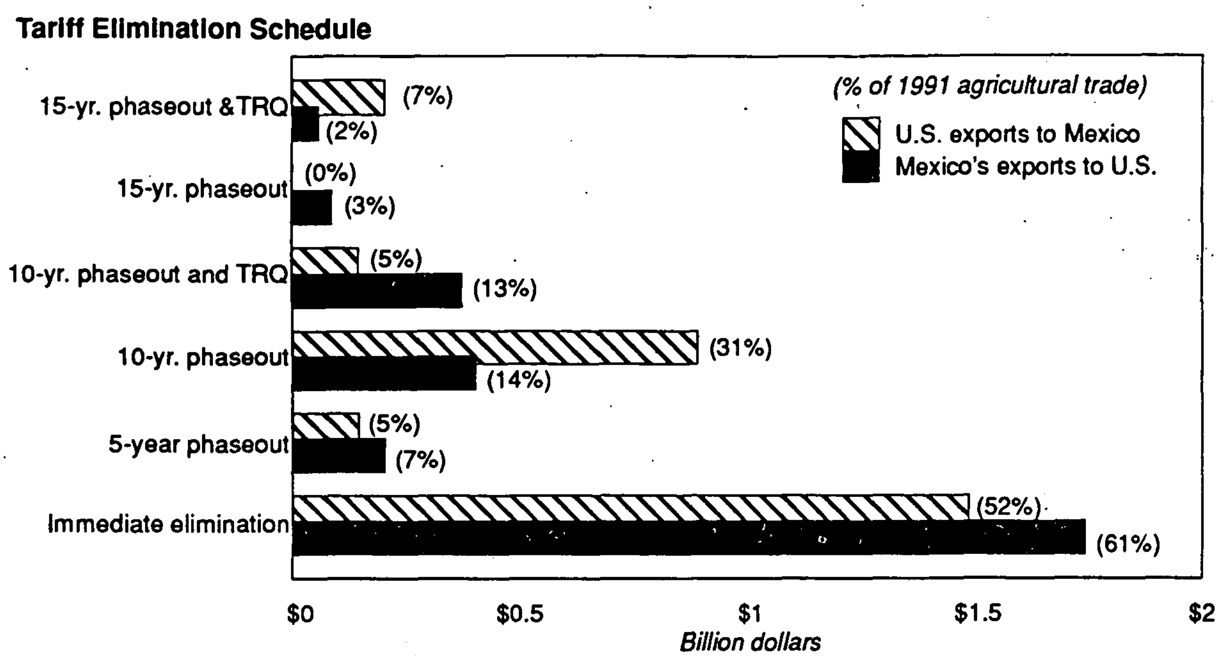
grains and oilseeds sector (primarily occurring on corn and soybean farms) and in the canned sardine industry in Maine. Also, a minor increase in production could occur in the U.S. alcoholic beverage sector.

The potential for domestic production and employment declines exists in the Florida citrus industry. Production and employment declines could also occur for processors of certain frozen vegetables, especially for those processors who specialize in a very limited assortment of vegetables; however, most of this contraction already may have occurred. The domestic fresh-cut flower industry, specifically fresh-cut roses also may experience negative production and employment effects, particularly in the long term.

Likely Impact on U.S. Global Competitiveness

NAFTA will likely have minimal effect on U.S. agricultural sector competitiveness in the North American market in the short term. The phaseout of Mexican tariffs and NAFTA-related tariff rate quotas and safeguards will likely have a beneficial impact on overall U.S. agricultural competitiveness in the North American market in the long term, because the agreement will allow certain low-cost U.S. producers to lower their prices in the regional market, thus increasing sales. The largest U.S. agricultural sector,

Figure 22-4
U.S.-Mexican tariff phaseouts under NAFTA for agriculture, based on 1991 trade



Source: Data provided in *Report of the Agricultural Policy Advisory Committee for Trade on the NAFTA*, Sept. 1992.

grains and oilseeds, should improve its competitiveness in the North American market, along with sectors producing deciduous fruit, pork and swine, meat offals, poultry, alcoholic beverages, cotton, and dairy products. U.S. competitiveness in the fish and fish products sector, particularly sardines, also should increase under NAFTA.

In the long term, NAFTA is likely to result in decreased U.S. competitiveness in the North American market for sectors producing citrus juice, certain vegetables, certain non-citrus fruits (such as grapes, melons, and strawberries). The gradual decline in U.S. tariffs under NAFTA is likely to result in an increase in U.S. imports of these products from Mexico and, in general, a decline in the U.S. share of the North American market. For cut flowers, a sector in which the United States is both an exporter and importer, NAFTA is likely to result in a slight adverse overall effect on U.S. competitiveness in North America. In addition, the effect of increased Mexican access to the U.S. sugar market under NAFTA on U.S. competitiveness in North America will depend largely on growth in Mexican sugar consumption and future changes in Mexican Government sugar policies.

Transportation cost differentials generally favor U.S. over Canadian agricultural producers in agricultural sectors where both Canada and the United States compete in the Mexican market due to the United States' proximity to Mexico. Thus, in general, agricultural producers in the United States are expected to benefit relatively more from NAFTA than Canadian producers. However, Canada's exports of grains and oilseeds are eligible for transportation subsidies under the Western Grain Transportation Act. Increases in Canadian exports to Mexico of products such as wheat, barley, and possibly canola oil could reduce the expected NAFTA-related gains to the U.S. grains and oilseed sector.

NAFTA is expected to have a minimal effect on the U.S. agricultural sector's global competitiveness in both the short and long run. The reason is that the changes in U.S. exports and imports projected from NAFTA-related reductions in Mexican trade barriers are relatively small when compared with current U.S. agricultural-sector production and trade.

In general, NAFTA should not significantly affect the global competitiveness of the U.S. food-processing sector. However, for certain U.S. agricultural processing industries, competitiveness could be affected somewhat by NAFTA. In particular, NAFTA-related investment opportunities may enable U.S. poultry processors to take account of lower Mexican labor and land costs and, thereby, to expand exports of processed poultry to third-country markets. On the other hand, the expected increase in U.S. imports of orange juice from Mexico under NAFTA could result in a decline in U.S. production as well as a displacement of U.S. imports from Brazil, the major foreign supplier by far. This development could result in a loss of U.S. competitiveness in the citrus products sector if Brazil should seek to sell its displaced product in U.S. export markets.

CHAPTER 23
Grains And Oilseeds

John Reeder

Table 23-1
Grains and oilseeds: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	([1])	([1])	([1])	([2])
Trade data (million dollars):				
Shipments	85,600	85,900	88,400	3
Exports:				
Total	23,824	20,129	19,026	-5
To Mexico	1,590	1,391	1,354	-3
To Canada	502	633	651	3
Imports:				
Total	1,688	1,641	1,679	2
From Mexico	45	46	45	-2
From Canada	671	626	642	3
Trade balance:				
Total	22,136	18,488	17,347	-6
With Mexico	1,545	1,345	1,309	-3
With Canada	-169	7	9	29
Consumption	63,464	67,412	71,053	5
Import market share (percent):				
Total	3	2	2	([3])
Mexico	([4])	([4])	([4])	([3])

[1] The grain and oilseed sector encompasses both cash-grain farmers and industrial processors of these products. Over 600,000 farmers grow these crops, and an estimated 160,000 persons were employed in the oilseed, fats and oils, and grain milling industries in the United States in 1992.
[2] Not available.
[3] Not meaningful for purposes of comparison.
[4] Less than 0.5 percent.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

Source: Compiled from official statistics of the U.S. Department of Commerce, except shipments which are estimated by staff of the U.S. International Trade Commission.

Summary of Sector Analysis

The United States is the leading world exporter of grain and oilseed products. The United States has a considerable competitive advantage over Mexico in these products. Mexico has protected and assisted its farmers who have traditionally specialized in corn, wheat, sorghum, and, to a lesser degree, oilseed production. Mexican corn is primarily grown for human consumption. On the other hand, U.S. corn is mostly consumed as animal feed.

The United States and Canada compete in the Mexican market for grain and oilseed products, particularly wheat. The United States is likely to benefit from expanded Mexican imports of grain and oilseed products as Mexico's protection of its farmers is reduced over the transition period of 15 years. The expected increase in U.S. production and employment in the sector is likely to benefit mostly the Corn-Belt States in the Midwest where corn-soybean farms are primarily located. Reduction of barriers to U.S. investment in the Mexican grain and oilseed processing industries, fueled by the higher level of expected trade with the United States, is likely to encourage a considerable expansion of U.S. investment.

The U.S. Government has traditionally assisted U.S. exports of grain and oilseed products in Mexico through export credit guarantees and the export enhancement program to counter the stiff competition from third-country suppliers. Canada has used its Western Grain Transportation Act for payment of transportation subsidies for its wheat exports to Mexico.[1]

Key NAFTA Provisions Affecting Sector

U.S. tariffs on imports of all grain and oilseed products from Mexico averaged below 2 percent ad valorem during 1989-91 (duties range from free to 22.5 percent). Many of the Mexican grain and oilseed products enter the United States free of duty under tariff provisions either with a most-favored-nation (MFN) rate of free or with the Generalized System of Preferences (GSP) designation.

NAFTA will immediately eliminate U.S. duties on imports from Mexico of corn, grain sorghum, barley and malt, soybean meal, and certain vegetable oils (peanut, olive, linseed, corn, sesame, jojoba, and castor oils). U.S. duties on wheat, rice, soybean oil, sunflowerseed oil, cottonseed oil, and safflower oil from Mexico will be eliminated during either a 5- or a 10-year period.

Mexico currently restricts imports of U.S. grain and oilseed products through tariffs, import licensing, and import quotas. Under NAFTA, the import-licensing systems will be replaced with tariff rate quotas (TRQs) for corn, and barley and malt, and with a tariff for wheat. In addition, Mexico will phase out its tariffs on U.S. grain and oilseed products generally during a 10-year period; these tariffs tend to be either 10, 15, or 20 percent ad valorem.

Under NAFTA, Mexico will convert its import-licensing system for corn into a TRQ that will be in place for 15 years. U.S. corn exports of 2.5 million metric tons annually will enter Mexico free of duty under the TRQ that will grow at a 3-percent compounded annual rate over the 15-year period.[2] Above the 2.5 million-metric-ton amount, U.S. corn will be dutiable at $206 per metric ton, but not less than 215 percent ad valorem.[3] This duty will be reduced by 24 percent during the first 6 years of NAFTA, and the remaining duty eliminated during the subsequent 9 years in the 15-year transition period.

The Mexican import-licensing system for barley and malt is to be replaced with an annual TRQ of 120,000 metric tons of U.S. barley and malt (and 30,000 metric tons of Canadian barley and malt) to be in place for 10 years.[4] Above that amount, U.S. barley and malt will be dutiable at $155 per ton, but not less than 128 percent ad valorem. This duty is to be reduced by 24 percent during the first 6 years of NAFTA, and the remaining duty eliminated during the subsequent 4 years in the 10-year transition period.

Under NAFTA, Mexico will change its import-licensing regime for wheat imported from the United States and Canada to tariff-only treatment. The licensing will be replaced with a 15-percent tariff, which in turn will be reduced in equal installments over a 10-year period.

Mexico will eliminate its two important seasonal tariffs on sorghum and soybeans as they relate to the United States. The 15-percent seasonal tariff on U.S. sorghum will be eliminated immediately upon implementation of NAFTA. The 15-percent seasonal tariff on U.S. soybeans will be reduced to 10 percent upon NAFTA's implementation, and then phased out over the next 10 years.

Under NAFTA, Mexico will phase out its tariffs on the other leading U.S. grain and oilseed exports over 10 years. The current Mexican tariffs that will be eliminated include—

U.S. product	*Percent*
Rice:	
Rough and broken	10
Brown and milled	20
Soybean oil:	
Crude	10
Refined	20
Soybean meal	15
Vegetable oil, n.e.c.:	
Crude	10
Refined	20

Likely Impact on Investment

Under NAFTA, the reduction of Mexican barriers to investment, fueled by the expected increase in trade with the United States, is likely to encourage a considerable expansion of U.S. investment in grain and

[1] Madison Angell, president, National Association of Wheat Growers, in a written submission to the Commission, indicated that Canada under NAFTA is able to use rail subsidies under its Western Grain Transportation Act for its wheat exports to Mexico. The association also expressed concern about the lack of price transparency for Canadian wheat to determine if Canada is using unfair trading practices to undermine U.S. export sales in Mexico.

[2] U.S. exports of corn to Mexico averaged 2.9 million metric tons annually during 1989-91.

[3] The 215-percent tariff is larger than the difference between the current prices of Mexican and U.S. yellow corn, thus affording protection to Mexican corn production in the early stages of NAFTA.

[4] U.S. exports of barley and malt to Mexico averaged 182,000 metric tons annually during 1989-91 on a barley equivalent basis. The initial TRQ for barley and malt will grow at a 5-percent compounded annual rate over the 10-year transition period.

oilseed processing, particularly in grain elevators, and in port and related facilities needed to move bulk grain and oilseed products. Mexico faces serious impediments to expanding the volume of grain and oilseed trade because of lack of investment in this infrastructure.[5]

Historically, there has been little U.S. investment in grain and oilseed farms in Mexico, but considerable U.S. investment in oilseed and grain processing. With a few exceptions, U.S. affiliates in Mexico produce primarily for the Mexican market rather than for export.

At least five leading U.S. food processors of grains and oilseeds operate currently in Mexico. Ralston Purina has a number of prepared animal-feed plants and one breakfast-cereal plant in Mexico; CPC International has a corn-refining plant that produces fats and oils and milled grain products.[6] In 1990 PepsiCo purchased a large multifood product firm in Mexico that produces fats and oils products and cereal. Sara Lee undertook recently a joint venture with Grupo Industrial Bimbo, Mexico's largest bread and bakery producer.[7] Another large fats and oils company in Mexico is Unilever, a European multinational, with operations in Canada and the United States. Unilever produces edible vegetable oil, margarine, prepared flours, and other consumer food products in Mexico.[8]

A large Mexican company in grain and oilseed processing, Grupo Industrial Maseca, has investments in the United States. This Mexican company supplies over 60 percent of the Mexican corn meal market from its Mexican plants, and also produces corn flour in at least 3 plants in the United States, and tortillas in 12 U.S. plants in 5 States.[9]

Most of the leading U.S. companies in oilseed processing and grain processing industries operate in Canada as well. There are believed to be few, if any, Canadian companies in grain and oilseed processing operating in Mexico or having direct investments there.

Likely Impact on U.S. Trade

Because U.S. duties on Mexican grain and oilseed products average less than 2 percent ad valorem, the elimination of the duties under NAFTA is likely to have a minor effect on U.S. import levels.[10] Mexico is a net importer of grain and oilseed products, and is not likely to reverse this situation under NAFTA.

Eight leading U.S. grain and oilseed exports with specific Mexican tariff or nontariff measures changes will be affected under NAFTA.[11] Based on the Commission's sectoral model, estimates of the percentage increase in these U.S. exports to Mexico under NAFTA are shown below (in percent):

U.S. export	*Short term*	*Long term*
Barley	0	450
Rice	4	39
Sorghum[1]	1	1
Wheat	6	46
Corn	0	381
Fats and oils	4	38
Soybeans[1]	8	2
Soybean meal	5	50

[1] Assumes that the current Mexican seasonal tariff of 15 percent applied for about 6 months of the year and duty-free for the other 6 months is equivalent to an annual tariff of 7.5 percent.

The TRQs for barley and corn are likely to block any growth in U.S. exports in the first year of NAFTA since the average volume of these U.S. exports to Mexico during 1989-91 exceeded the volume specified in the respective TRQs. The tariffs on U.S. exports above the TRQ levels exceed the estimated difference between current U.S. and Mexican market prices.

The above estimates for barley and malt assume that the tariff equivalent of Mexican licensing is 128 percent ad valorem, the same rate implicitly specified in NAFTA for the TRQ on these products. For corn, the estimated tariff equivalent of Mexican licensing is assumed to be 112 percent ad valorem.[12] The NAFTA TRQ implicitly specified a tariffication rate of 215 percent for corn. As a result, there is likely to be substantial protection of Mexican corn producers during the early years of the 15-year NAFTA transition. Furthermore, since many grain and oilseed products are substitutes for each other in animal feed, increased exports of corn, for example, may offset the projected increased exports of sorghum or soybean meal.

[5] Roberto Servitije Achutegui, Grupo Industrial Bimbo, quoted in "Bimbo Diversifies, Expands as Reforms Continue in Mexico," *Milling and Baking News*, Nov. 3, 1992, p. 26.

[6] U.S. Department of Agriculture (USDA), "Mexico's Food Industry Draws U.S. Investment," *Agricultural Outlook*, Apr. 1992, pp. 29-31.

[7] Grupo Industrial Bimbo has announced a joint venture with Mrs. Field's Cookies, and is negotiating with Keebler Co. for another joint venture. "Bimbo Diversifies," p. 1.

[8] Mexican Investment Board, *Mexico: Your Partner for Growth*, prepared by Grupo Financiero Bancomer, S.A. de C.V., May 1992, p. 15.

[9] USDA, "Mexico's Food Industry," pp. 29-31.

[10] U.S. imports of grain and oilseed products from Mexico are composed mainly of sesame seed, safflower seed, and safflower oil.

[11] U.S. exports of grain and oilseed products to Mexico in 1991 consisted of 46 percent grain (mostly sorghum and corn); 27 percent oilseeds (mostly soybeans); 14 percent animal feeds (mostly soybean meal); and 11 percent fats and oils (mostly tallow, lard, corn oil, and soybean oil). U.S. milled grain exports to Mexico are relatively small.

[12] This estimate is based upon data of USDA, Foreign Agricultural Service, "1992 Grain and Feed Annual Report: Mexico," prepared by R.L. Barnes, Mar. 16, 1992, pp. 14 and 20, which reported that 1991 Mexican farm prices of yellow corn and barley were $198 and $219 per metric ton. Other USDA data indicated that U.S. farm prices in 1991/92 were respectively $93 and $96 per metric ton for corn and barley, placing the Mexican price at 112 percent above the U.S. corn price and 128 percent above the U.S. barley price in that year.

Likely Impact on U.S. Production and Employment

Based on the Commission's sectoral model, NAFTA is likely to result in short-term increases of less than 1 percent in U.S. farm employment and in U.S. production of all grain and oilseed products. This expected increase in U.S. output is likely to be concentrated in the short term in sorghum and soybeans. The rice, wheat, barley, corn, fats and oils, and soybean meal sectors are likely to experience little or no effect in the short term. Most of the anticipated increase in U.S. employment in the grain and oilseed sector is expected to be farm-based, and thus the estimate may overstate the effect since wheat, barley, corn, sorghum, and soybeans are often raised on the same farms.

In the long term, U.S. production of grain and oilseed products and employment on grain and oilseed farms are expected to increase by no more than 3 percent as a result of NAFTA. The corn, soybean, and barley sectors would benefit most in the long term: increased corn output would account for 65 percent of the total rise in production and employment, soybean output about 10 percent, and barley about 5 percent. All of the other sectors also would experience positive but much smaller benefits in the long term. The expected gains in U.S. production and employment in the sector would mainly benefit the Midwest (Corn-Belt States) where corn-soybean farms are primarily located.

CHAPTER 24
Vegetables[1]

Tim McCarty

Table 24-1
Vegetables: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	(1)	(1)	(1)	(1)
Trade data (million dollars):				
Shipments	19,230	19,830	20,430	3
Exports:				
Total	1,178	1,753	1,855	6
To Mexico	92	146	71	-51
To Canada	298	707	800	13
Imports:				
Total	1,747	1,931	1,822	-6
From Mexico	738	981	880	-10
From Canada	174	188	181	-4
Trade balance:				
Total	-569	-178	33	(2)
With Mexico	-646	-835	-809	3
With Canada	124	519	619	19
Consumption	19,799	20,008	20,397	2
Import market share (percent):				
Total	9	10	9	(2)
Mexico	4	5	4	(2)
Canada	1	1	1	(2)

[1] Not available.
[2] Not meaningful for purposes of comparison.
Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

Source: Shipments estimated by the staff of the U.S. International Trade Commission; exports and imports, compiled from official statistics of the U.S. Department of Commerce.

Summary of Sector Analysis

The effects of NAFTA on the overall U.S. vegetable products industry will be minor. The United States is a major producer and consumer of vegetables. The bulk of U.S. vegetable production historically has been for domestic consumption (table 24-1), whereas the majority of Mexican production has been intended for export, principally to the United States. Mexico has captured 5 percent of the U.S. vegetable market in recent years.

For those U.S. growers raising vegetables that compete directly with Mexican shipments of fresh winter vegetables, the effects of NAFTA may be more important. Mexico's exports of certain winter vegetables have accounted for one-fourth to one-third of the U.S. market (table 24-2). About one-half of winter vegetable imports from Mexico consist of fresh or chilled tomatoes, and the remainder consists largely of peppers, cucumbers, and squash. These products compete with U.S. production, nearly all of which is centered in Florida. U.S. growers and processors of vegetables such as asparagus, broccoli, and cauliflower also may be negatively affected by NAFTA, due to an expected increase in U.S. imports of these vegetables from Mexico.

[1] Includes over 55 different vegetables in both fresh or processed form.

Table 24-2
Certain winter vegetables:[1] Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	(2)	(2)	(2)	(2)
Trade data (million dollars):				
Shipments	1,250	1,290	1,330	3
Exports:				
Total	64	142	176	24
To Mexico	1	3	5	67
To Canada	60	136	166	22
Imports:				
Total	478	667	545	-18
From Mexico	439	632	498	-21
From Canada	10	9	13	44
Trade balance:				
Total	-414	-525	-369	30
With Mexico	-438	-629	-493	22
With Canada	50	127	153	20
Consumption	1,664	1,815	1,699	-6
Import market share (percent):				
Total	29	37	32	(3)
Mexico	26	35	29	(3)
Canada	1	(3)	1	(3)

[1] Includes fresh or chilled cucumbers, eggplants, peppers, squash, and tomatoes.
[2] Not available.
[3] Not meaningful for purposes of comparison.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

Source: Shipments estimated by the staff of the U.S. International Trade Commission, exports and imports, compiled from official statistics of the U.S. Department of Commerce.

NAFTA should increase opportunities for U.S. shipments of both fresh and processed vegetables to the Mexican market during those months when production in Mexico is normally low. Mexican consumption of processed vegetables has risen in recent years and should result in increased demand for U.S. exports of processed vegetables.[2] Mexico is expected to continue to rely heavily on an array of food imports to satisfy its growing domestic consumption requirements.[3]

Canada and the United States undoubtedly will compete directly in the Mexican vegetable market. The United States is expected to benefit more from the opening of the Mexican market, especially for perishable products (i.e., fresh vegetables). The United States has a comparative advantage over Canada for supplying fresh vegetables to Mexico on the basis of proximity to major Mexican markets. Also, a number of U.S. growers and food processors currently operate in Mexico and are in a better position to satisfy Mexican market demand from their operations within Mexico.

Under NAFTA, only a minor increase in U.S. investment in the Mexican vegetable production and processing sector is expected. U.S. food distributors may increase investment in Mexico in an effort to ensure adequate raw-product supplies on a timely basis. Any increase in U.S. investment in the Mexican vegetable freezing sector is expected to be confined to existing subsidiary operations of U.S. multinational corporations.

The likely impact on U.S. production and employment as a result of NAFTA is expected to be minor. Domestic production, dispersed throughout the United States, generally supplies the bulk of U.S. consumption. The U.S. vegetable growing and processing industry has competed successfully against imports from Mexico for a number of years and has undergone a continuous restructuring as a result.

Key NAFTA Provisions Affecting Sector

U.S. most-favored-nation (MFN) rates of duty on vegetables range from free to 35 percent ad valorem. Current U.S. rates of duty for some major vegetable

[2] U.S. Department of Agriculture (USDA), Economic Research Service, "North American Free Trade Agreement: Impact on Horticulture," *Vegetables and Specialties—Situation and Outlook Yearbook*, TVS-259, Sept. 1992, p. 16.
[3] USDA, "Agricultural Trade—Big Business for U.S. and Mexico," *Agricultural Outlook*, Mar. 1992, p. 33.

products are as shown in the tabulation below (in percent ad valorem equivalent):

Vegetables	Duty rate
Fresh or chilled:	
Potatoes	0.5-2.7
Tomatoes	5.3-7.1
Onions	5.5-12.5
Cauliflower	5.5-17.5
Broccoli	25.0
Cucumbers	10.4-14.9
Asparagus	5.0-25.0
Frozen:	
Asparagus	17.5-25.0
Broccoli	17.5-25.0
Cauliflower	17.5-25.0
Dried:	
Onions	25.0-35.0
Garlic	35.0
Prepared or preserved:	
Tomatoes	13.6-14.7

Although U.S. tariffs on imports of most vegetable products are relatively low (i.e., less than 5 percent ad valorem equivalent), some fresh and processed vegetables face significantly higher duties of as much as 35 percent. In 1991, an estimated 7 percent of total U.S. imports entered free of duty under existing tariff provisions including the Generalized System of Preferences (GSP). For the remaining 93 percent of the imports, the trade-weighted average ad valorem equivalent duty rate was 9.3 percent. Under NAFTA, a number of fresh vegetables (including chili peppers, eggplants, onions, squash, and tomatoes) entering the U.S. market at specific times of the year will be subject to TRQ provisions. U.S. duty reductions for a number of other fresh vegetables (including asparagus, cucumbers, and broccoli) and dried onions and garlic will be phased out over 15 years.

Most U.S. fresh vegetable exports to Mexico are subject to a duty rate of 10 percent. Most frozen or otherwise prepared or preserved vegetables are subject to duty rates of 15 and 20 percent, respectively. Under NAFTA, Mexico will establish TRQs on imports of potatoes and dry beans from the United States. The over-quota rates will be phased out over 10 and 15 years, respectively. The rates on other vegetable imports from the United States will be phased out over periods varying from immediate duty-free status to 10 years.

Likely Impact on Investment

Growers

It is likely that only a minor increase in U.S. investment in the Mexican vegetable production sector will result from NAFTA in both the short and long term. Mexican growers are believed to be in a better position to take advantage of opportunities under NAFTA than are U.S. growers. Since Mexican shipments of certain vegetables have occurred for a number of years, successful distributor relationships and channels of distribution are already in place. Most of the production of fresh vegetables in Northwestern Mexico has been well-organized and, in most cases, unionized for a number of years. This has enabled Mexican growers to ensure U.S. distributors of a constant supply of high-quality products. Similar arrangements are expected to be instituted among vegetable producers in the Bahio, Mexico, region in the future.

Mexican growers increasingly benefit from technology transfer in such areas as seeding, planting, and harvesting. With the availability of additional domestic or foreign investment, Mexican growers are expected to overcome any existing comparative advantage in technology currently held by U.S. growers. Under NAFTA, Mexican growers also likely will benefit financially from the removal of the existing duties and become more competitive in U.S. markets. In the long run, U.S. investment will likely increase as Mexican farming operations become more advanced and U.S. distributors seek to contract for increased raw product supplies.

Most U.S. agribusiness investment in the Mexican vegetable growing industry has been limited to the production of commodities not produced in the United States (e.g., bananas) or those that can be shipped to the United States for entry during periods of little or no domestic production (e.g., tomatoes, peppers, and cucumbers).[4] Some contractual arrangements exist between Mexican growers, principally in the Northwestern States of Sinaloa or Sonora, and U.S. producers/shippers, whereby Mexican growers contract with U.S. shippers to have their products sold in U.S. markets. Under such arrangements, U.S. shippers often provide seed, technical advice, and sometimes even financing, but there is little or no actual U.S. investment in Mexican land or equipment. An estimated 90 percent of Mexico's commercial fresh vegetable production in some areas of Northwestern Mexico is financed by U.S. growing interests, especially those in California and Arizona.[5]

As a result of NAFTA, U.S. firms are expected to alter existing production and supply agreements with Mexican growers. New arrangements are expected to focus more on working with Mexican farmers to produce vegetables jointly. Future U.S. investment in Mexican vegetable production is expected to be targeted initially for the production of vegetables for sale in Mexican, as opposed to U.S., markets.[6]

[4] Philip L. Martin, "U.S. Agribusiness Under NAFTA: Mexico - Sourcing or Direct Investment?," Center for U.S.-Mexican Studies, U. CA., San Diego, Fall 1992, p. 3.
[5] John W. Hagen, "Mexico's International Trade Status: Trade Barriers, Present and Potential Markets," California Agricultural Technology Institute, CA State U., Fresno, CA, CATI No. 911201, Dec. 1991, p. 9.
[6] Martin, "U.S. Agribusiness Under NAFTA," p. 6.

Freezers

Any increase in U.S. investment in Mexican vegetable-freezing operations as a result of NAFTA is likely to be minor. Few U.S. firms have shown any interest in investing in the construction of new freezing operations, although at least one U.S. firm recently has bought a share of an existing Mexican processing operation.[7] Any NAFTA-generated investment will most likely be confined to current subsidiary operations by U.S. multinational firms as they modernize and expand their existing Mexican operations, especially through the introduction of labor-saving devices.[8] The bulk of the frozen vegetables processed by these firms is intended for U.S. markets.

The Mexican vegetable freezing industry is believed to have declined in size in recent years.[9] Some Mexican-owned freezing operations ship frozen vegetables primarily to Mexican markets and/or process frozen products for sale by U.S. distributors under private labels in the United States. Most of these processing facilities are believed to be as technologically advanced as those firms freezing vegetables in the United States.

Some of the U.S. multinational firms processing vegetables in Mexico also operate in Canada. Historically, the Canadian frozen vegetable industry has been much smaller than that in the United States and has been made up primarily of U.S. multinational firms. The Canadian industry is believed to have shrunk appreciably with little U.S. investment in recent years.

Likely Impact on U.S. Trade

The effects of eliminating current U.S. tariffs under NAFTA on the vegetable sector as a whole are expected to result in an increase of less than 3 percent in overall U.S. trade in both the short and long term. The trade-weighted average ad valorem duty rate for most vegetables is currently below 10 percent, and many U.S. vegetable imports from Mexico currently enter free of duty under GSP. Part of any increase in U.S. vegetable imports from Mexico is expected to be at the expense of U.S. imports from countries whose vegetables already enter duty-free under the Caribbean Basin Economic Recovery Act (CBERA). These CBERA countries currently ship principally small amounts of vegetables and do not have the capability to expand overall supplies or increase the length of the growing season during which their products are entered.

With certain winter vegetables, the overall effects of eliminating current tariffs under NAFTA are expected to be minor in the short term. In the long term, the effects on growers in Florida, Arizona, and California may be greater. In recent years, Mexican shipments entered the U.S. market earlier in the winter season when U.S. production was relatively small. Also, they remained in the market for a longer time period, extending into the time when domestic production was coming on and thus competing head-on with U.S.-produced goods.

Existing rates of duty are higher during periods of early U.S. production and are believed to have negatively affected Mexican vegetable shipments to U.S. markets in recent years. In addition, Mexican products entering into U.S. markets sometimes sell at prices below U.S. growers' costs, especially early in the season.

A number of Mexican internal factors, such as inadequate transportation infrastructure, long delays at border crossing points, and a shortage of truck capacity (particularly of refrigerated trucks) likely will continue to restrain Mexican vegetable shipments to U.S. markets for the foreseeable future. Moreover, Mexican producers are expected to divert increasing quantities of their production to their own domestic markets while maintaining exports at recent levels.[10] Although Mexican wage rates are lower than those in the United States, this wage disparity is more than offset by lower labor productivity rates and higher prices for fertilizers, chemicals, and transportation in recent years.[11]

U.S. vegetable exports to Mexico under NAFTA are expected to increase by less than 3 percent in the short term as Mexican growers continue to fulfill most of Mexican demand. In the long term, a similar increase may occur in U.S. shipments of certain processed vegetables as a result of NAFTA. U.S. vegetable exports to Mexico will continue to face constraints imposed by Mexico's underdeveloped distribution channels for fresh and processed vegetables.

Likely Impact on U.S. Production and Employment

According to the Commission's sectoral model, changes in both U.S. shipments and employment due to tariff elimination are expected to be minimal in both the short and long term. Most of the U.S. vegetable production is distributed regionally, with many freezers near production sites. In the past, domestic production has accounted for the bulk of U.S. consumption and imports have been complementary to domestic production.

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7 Representatives of the Mexican vegetable-processing industry, interviews by USITC staff, Nov. 1992.
8 Ibid.
9 Ibid.

10 U.S. Embassy, Mexico City, Agricultural Affairs Office, "1992 Annual Agricultural Situation Report," Feb. 28, 1992, p. 7.
11 Hagen, "Mexico's International Trade Status," p. 15.

Certain fresh-vegetable growers and vegetable freezers may experience minor negative effects in the short and lon term. Those firms growing and marketing fresh vegetables during the same time periods when products from Mexico are available may have to shift their production schedules to more favorable times. This may result in an overall drop in production and a resulting decline in employment for some firms, especially those in Florida.

A number of vegetable freezers process a vast assortment of vegetables and, in many instances, some fruit as well. As a result, they are able to continue operating during most of the year. Any decline in supply of one or a few items for processing usually is offset by an increase in production of others. Other firms are described as narrow-line processors, however, specializing in the processing of a limited assortment of vegetables. These vegetable-freezing firms may be more affected by increased imports. Indeed, some vegetable freezers have expressed concern over the effects of a possible influx of frozen vegetables under NAFTA.

CHAPTER 25
Citrus Products

Alfred Dennis

Table 25-1
Citrus products: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	250	250	250	0
Trade data (million dollars):				
Shipments	2,663	2,247	2,494	11
Exports:				
Total	778	815	845	4
To Mexico	2	3	1	-67
To Canada	126	253	219	-13
Imports:				
Total	533	767	461	-40
From Mexico	73	108	88	-19
From Canada	2	2	2	0
Trade balance:				
Total	245	48	384	700
With Mexico	-71	-105	-87	17
With Canada	124	251	217	-14
Consumption	2,418	2,199	2,110	-4
Import market share (percent):				
Total	22	35	22	(1)
Mexico	3	5	4	(1)
Canada	(2)	(2)	(2)	(1)

1 Not meaningful for purposes of comparison.
2 Less than 0.5 percent.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

Source: Compiled from official statistics of the U.S. Department of Commerce, except shipments which are estimated by staff of the U.S. International Trade Commission.

Summary of Sector Analysis

The U.S. citrus sector is concentrated in Florida and California, as well as in Texas and Arizona. California produces citrus mainly for the fresh market, whereas Florida produces mainly for the processed market, including citrus juice. The United States is a net exporter of citrus products (table 25-1), including fresh grapefruits, lemons, navel oranges, and orange juice, much of which are exported to Japan and Canada. The United States is a net importer of citrus juice; most of these imports consist of frozen concentrated orange juice (FCOJ) from Brazil, the major supplier by far, and Mexico (table 25-2). The imported FCOJ is lower quality juice that is blended with Florida juice to produce a higher quality product.

NAFTA is likely to have a minor adverse impact in both the short and long term on the U.S. citrus products sector. Canada does not produce citrus and its trade barriers in the citrus sector currently are negligible. After phaseout of all tariffs and tariff rate quotas (TRQs) under NAFTA, U.S. imports of citrus products from Mexico, particularly FCOJ, are expected to increase considerably. At the same time, however, U.S. exports of high-quality fresh citrus to Mexico, especially navel oranges from California, should see a modest increase from duty reductions under NAFTA. Because the projected increase in U.S. citrus product imports is likely to exceed the expected growth in U.S. fresh citrus exports, NAFTA should result in a minor overall decline in employment and production in the U.S. industry in the long run. Virtually all of the decline in employment and production will likely occur in Florida, where production of FCOJ competes directly with production from Mexico.

NAFTA should accelerate investment in Mexican citrus operations at both the growing and processing levels. Mexico's climate and low labor costs at the citrus-growing level have already provided incentives for U.S. investment in Mexico's industry. However, citrus juice processing is highly capital-intensive, and infrastructure problems, particularly in electric power and transportation, could inhibit production and investment growth.

Key NAFTA Provisions Affecting Sector

U.S. tariffs on citrus products range from free to 33 percent ad valorem. The tariff rate on most fresh citrus is 2.2 cents per kilogram. Lemons are dutiable at 2.75 cents per kilogram, while fresh grapefruits are dutiable at 1.8 to 2.9 cents per kilogram, depending upon the season. Under NAFTA, several new U.S. tariff lines will be created for oranges, mandarins, and tangerines, mainly to differentiate fruit that enters during different times of the year. The tariff on fresh oranges will be phased out over 5 years, except for the tariff on oranges that enter from June through November, which will be phased out immediately. Duties on mandarins and tangerines that enter during October through April will be phased out over 10 years, but those that enter May through September, over 5 years. The tariffs on all lemons and limes will be phased out over 10 years. The tariff on fresh grapefruits entered during August through September will be phased out immediately, but tariffs on all other grapefruits will be phased out over 10 years.

U.S. imports of most concentrated citrus juices are dutiable at a most-favored-nation (MFN) rate of 9.25 cents per liter (single-strength juice equivalent), which corresponded in 1991 to a trade-weighted, ad valorem equivalent rate of 27 percent. Under NAFTA, these rates will be reduced over 15 years; however, Mexico will be allowed an immediate TRQ of 40 million gallons of FCOJ dutiable at half the MFN rate. The over-quota tariff on FCOJ will decline a total of 15 percent in the first 6 years, in equal increments, stay constant in years 7 through 10, and decline to zero in equal increments in years 11 through 15. The in-quota tariff will remain unchanged until it equals the

Table 25-2
Citrus juice: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	145	145	145	0
Trade data (million dollars):				
Shipments	1,376	919	1,166	27
Exports:				
Total	144	233	231	-1
To Mexico	(1)	1	(1)	(2)-51
To Canada	42	98	97	-1
Imports:				
Total	458	677	311	-54
From Mexico	59	90	48	-47
From Canada	1	1	1	0
Trade balance:				
Total	314	-444	-80	82
With Mexico	-59	-89	-48	46
With Canada	41	97	96	-1
Consumption	1,690	1,363	1,246	-9
Import market share (percent):				
Total	27	50	25	(3)
Mexico	3	7	4	(3)
Canada	(4)	(4)	(4)	(3)

1 Less than $0.5 million.
2 Figure based on unrounded data.
3 Not meaningful for purposes of comparison.
4 Less than 0.5 percent.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures unless otherwise indicated.

Source: Compiled from official statistics of the U.S. Department of Commerce, except shipments which are estimated by staff of the U.S. International Trade Commission.

over-quota tariff in year 13, at which time it will be phased out at the same rate as the over-quota tariff.

Most unconcentrated citrus juice is dutiable at an MFN rate of 5.3 cents per liter, except lime juice, which is dutiable at 2.6 cents per liter. These rates will also be phased out over 15 years, except for the tariff on grapefruit juice, which will be phased out over 10 years. For single-strength orange juice, Mexico will have an annual TRQ of 4 million gallons of juice dutiable at half the MFN rate under NAFTA, and the over-quota juice tariff will be phased out in equal increments over 15 years. The in-quota tariff will remain unchanged until year 8 when it will equal the over-quota tariff, at which point they will both be phased out at the same rate.

The U.S. rates of duty for other citrus products vary from free to 33 percent ad valorem. Some of these duties will be immediately phased out under NAFTA although others will be eliminated over periods of 5 and 10 years.

Mexico currently assesses a duty of 20 percent ad valorem on imports of all U.S. citrus products except citrus peel, which is dutiable at 15 percent ad valorem. Under NAFTA, Mexico will match the U.S. tariff line changes and duties on oranges and grapefruits, and eliminate immediately its 20-percent ad valorem duty on lemons. Mexican tariffs on both FCOJ and single-strength juice will be phased out over 15 years. Mexico will match U.S. tariff line changes, duties, and 15-year phase-out periods for other citrus products.

Likely Impact on Investment

NAFTA will likely result in a modest increase in investment in Mexico's citrus sector in the short term, and a considerable increase in the long term. In the past, Mexico primarily produced fresh citrus, but in recent years, U.S. citrus juice marketers and processors have invested heavily in Mexican citrus juice for the export market. Most groves in Mexico are Mexican owned, while most of the foreign investment is directed towards processing plants. The incentive for U.S. investors is to provide year-round alternative sources of citrus juice at low prices, particularly in view of freezes in Florida and droughts in Brazil. This investment would likely continue without NAFTA, but would undoubtedly accelerate under NAFTA.

Citrus-growing is a relatively labor-intensive industry that can readily utilize Mexico's lower cost labor supply, but citrus juice processing is capital-intensive. Infrastructure problems, particularly electrical power shortages, may inhibit investment in the short run. Citrus grove investment is one in which returns on investment are long term because of the many years needed to establish mature trees.

Likely Impact on U.S. Trade

NAFTA will likely result in an increase of about 12 percent in U.S. imports of citrus products from Mexico in the short term, and an increase of 17 percent in the long term. NAFTA will primarily affect U.S. imports of citrus juice and U.S. exports of fresh citrus. The phaseout of Mexico's 20-percent duty on citrus juice under NAFTA is not expected to affect U.S. citrus juice exports to Mexico. Currently, there is almost no market in Mexico for frozen concentrated citrus juices, owing to the few freezers in Mexican households and supermarkets.

Under NAFTA, the U.S. TRQ of 44 million gallons that will be established for both FCOJ and single-strength orange juice from Mexico will cover most of the 49 million gallons that entered in 1991 and which were valued at $48 million. U.S. imports under the TRQ will benefit from an immediate tariff reduction of 50 percent. It is likely that U.S. imports from Mexico will exceed the TRQ in all years. The tariff reduction in the first year of NAFTA on the over-quota product will only be about 2.5 percent, thus resulting in a minor impact on U.S. citrus juice imports.

Based on the Commission's sectoral model, NAFTA will likely result in an increase of 17 percent in U.S. imports of citrus juice from Mexico in the long term. Mexican imports could displace Brazilian FCOJ in the U.S. market. Mexican FCOJ quality is similar to Brazil's, and Mexican imports have already started to reduce Brazil's import share in the U.S. market. Transportation differentials favor Mexican over Brazilian production, but Mexican FCOJ will be more competitive than Florida production in some U.S. geographical regions, such as California. Nevertheless, the long-term effect must be viewed with considerable caution because of the many uncertainties attached to how quickly the Mexican citrus industry will develop, especially in terms of citrus tree plantings and tree yield, and also on the availability of electricity and transportation.

U.S. exports of high-quality fresh citrus, especially navel oranges from California, could see a minor increase in the short term, and a modest increase in the long term from the 20-percent reduction of Mexican tariffs under NAFTA. U.S. exports of fresh citrus to Mexico amounted to $1 million in 1991.

Likely Impact on U.S. Production and Employment

Based on the Commission's sectoral model, NAFTA will likely have little or no effect on U.S. employment and production in the citrus juice industry in the short term. In the long term, U.S. production and employment will likely decline by about 1 percent. The expected job losses are likely to be concentrated in Florida where there are approximately 70,000 workers directly employed in citrus growing and processing, and another 75,000 indirectly employed by the citrus industry in areas such as distribution, marketing, and services.

CHAPTER 26
Other Fruit (Fresh and Processed)[1]

Lee Frankel

Table 26-1
Other fruit (fresh and processed): Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	240	240	240	0
Trade data (million dollars):				
Shipments	7,695	8,117	8,083	(1)
Exports:				
Total	947	1,390	1,482	7
To Mexico	31	41	53	29
To Canada[1]	239	531	547	3
Imports:				
Total	1,849	2,032	2,149	6
From Mexico	229	254	345	36
From Canada	58	60	65	8
Trade balance:				
Total	-902	-642	-667	-4
With Mexico	-198	-213	-292	-37
With Canada[1]	181	471	482	2
Consumption	8,597	8,759	8,750	(1)
Import market share (percent):				
Total	22	23	25	(2)
Mexico	3	3	4	(2)
Canada	1	1	1	(2)

[1] Less than 0.5 percent.
[2] Not meaningful for purposes of comparison.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Summary of Sector Analysis

U.S. trade in noncitrus fruit and fruit products with Mexico is largely complementary in terms of shipment periods and fruit product categories. Mexico exports products such as bananas, mangoes, papayas, and other tropical specialty fruits that are produced in limited quantities in the United States, or products such as melons, grapes, and strawberries that are seasonally limited in supply. U.S. exports to Mexico, led by fresh apples and pears, are mostly premium-quality fresh deciduous fruits, which accounted for over three-fourths of total noncitrus fruit shipments to Mexico in 1991.

The effects of NAFTA on the U.S. fruit industry will be minor. Trade between the United States and Mexico represents only a small fraction of each country's domestic consumption. U.S. imports will likely increase by less than 1 percent in the short term and by about 5 percent in the long term as a result of NAFTA. Meanwhile, U.S. exports to Mexico will increase by about 5 percent in the short term and by 35 percent to 40 percent in the long term albeit starting from a small base relative to U.S. production. There are expected to be no statistically significant changes in production or employment in the noncitrus fruit

[1] Includes non-citrus fruits that may be fresh, canned, frozen, dried, or provisionally preserved. These fruits include apples, bananas, grapes, berries, peaches, nectarines, plums, pineapples, pears, watermelons, cantaloupes, other tree fruits, other tropical fruits, other melons, and other vine fruits.

sector as a result of NAFTA. NAFTA also is expected to have a minimal effect on investment in the production or processing of noncitrus fruit.

Key NAFTA Provisions Affecting Sector

U.S. import tariffs on fresh and processed fruit from all sources in 1991 averaged 1.76 percent ad valorem. The ad valorem equivalent rate of duty for such imports from Mexico averaged a much higher 7.21 percent. Presently, 45 percent of imports from Mexico enter the United States free of duty. For the 55 percent of goods that are dutiable, the ad valorem equivalent rate was 13.19 percent in 1991. Under NAFTA, roughly 10 percent of the dutiable products will immediately be granted duty-free access, 15 percent will be duty-free in 5 years, 20 percent will be duty-free in 10 years, with the remaining 10 percent duty-free in 15 years, based on 1991 import figures. U.S. tariffs on Mexican cantaloupes and other melons, which run as high as 35 percent during certain periods of the year, will generally be phased out over 15 years during those periods and immediately for the rest of the year. Watermelons, currently subjected to a 20-percent tariff in the summer, will be subject to a tariff rate quota (TRQ) of 54,000 metric tons for the period May 1 through September 30 for the next 10 years.

Most U.S. exports to Mexico are subject to a 20-percent rate of duty. Mexican duties on imports of apples, peaches, nectarines, grapes, and melons from the United States will be phased out under NAFTA over 10 years, with apples subject to a safeguard TRQ. Mexican duties on U.S. pears and plums will be immediately reduced to 15 percent and then be phased out over 5 years. U.S. grapes shipped to Mexico from October 15 through May 31 (mostly affecting the grapes coming from cold storage in late October), fresh strawberries, raisins, and certain other dried fruits will become duty-free immediately. Mexico's duties on most other widely traded items from the United States will be phased out over the next 5 years.

Likely Impact on Investment

To date, authorized foreign direct investment in Mexican production of fruits has been very limited. The most prevalent practice has been for food brokers/shippers in the United States to enter into contractual agreements with Mexican growers to purchase their production on a prearranged basis in exchange for providing capital, technical assistance, machinery, and other support services.[2]

New investment in the production of fruit crops in Mexico as a result of NAFTA will be minor. The driving force for U.S. use of Mexican product as a source has been U.S. demand for counterseasonal or extended season shipments of certain fruits when there is limited or no domestic production of these products and U.S. prices are high.[3] Mexican fresh exports are produced at a competitive disadvantage to U.S.-produced fruits both at the producer level and in timeliness of delivery to the final U.S. market destination.

Likely Impact on U.S. Trade

Based on the Commission's sectoral model, changes in U.S. imports of noncitrus fruit products are likely to be minor as a result of NAFTA. NAFTA will likely result in an increase in U.S. imports of Mexican fruit products of less than 1 percent in the short term and by less than 5 percent in the long term. The expected increase in U.S. imports as a result of NAFTA tariff reductions is minor relative to the increase in such imports of over 50 percent that took place from 1989 to 1991. U.S. shippers have used Mexican production, often providing the financing, technology, and cultivation advice necessary, as a means to extend the seasonal availability in the United States.

The Commission's sectoral model indicates that U.S. exports to Mexico under NAFTA will likely rise by about 5 percent in the short term and by 35 to 40 percent in the long term. In comparison, U.S. exports to Mexico increased by 73 percent from 1989 to 1991, likely the result of the internal Mexican reforms that already have taken place. Many industry sources state that the remaining constraints to U.S. exports to the Mexican market are the delays associated with border crossings into Mexico, the underdeveloped Mexican transportation network, the lack of adequate cold storage facilities, and the inability of Mexico City's wholesale fruit market to handle even the current volume of goods.

Likely Impact on U.S. Production and Employment

The expected changes in U.S. sector trade with Mexico under NAFTA are not very significant relative to the $8.1 billion of noncitrus fruit and fruit product shipments in the United States. Thus, no statistically significant changes in either net U.S. shipments or U.S. employment for the total sector are forecast by the Commission's sectoral model as a result of NAFTA in either the short or long term.

[2] Representatives of the U.S. and Mexican fruit industry, interviews by USITC staff, Oct. 1992.

[3] Ibid.

Certain U.S. industry groups have expressed concern over increased competition with imports from Mexico. Specifically, these groups include producers of fresh cantaloupes, watermelons, other melons, table grapes, and strawberries in addition to producers for the frozen strawberry and processed avocado markets. Nevertheless, there will be little impact for the fresh fruit products mentioned. Some cost of production estimates[4] show roughly equivalent or higher costs to bring Mexican products to the U.S. border, even without the present duties.

In regard to the processed products, frozen strawberries have been selling into the U.S. market at a premium over the U.S. product and enjoy a freight advantage into the eastern U.S. markets, relative to production from California, Oregon, and Washington.[5] However, even the elimination of the 14-percent tariff is likely to have only minor negative impacts on U.S. production or employment. U.S. imports of processed avocadoes from Mexico have risen from $1.2 million in 1989 to $11.8 million in 1991, even with the present 13.2 cents per kilogram duty, equivalent to 6.5 percent ad valorem. The effect of the elimination of the U.S. tariff is projected to have only a minor negative impact on U.S. production and employment. Ultimately, NAFTA may encourage a minor shift of utilization of U.S. production of avocadoes, with an increasing share going to the fresh market.

[4] American Farm Bureau, Research Foundation Project, *North American Free Trade Agreement*, vol. 4, 1991.

[5] Representatives of the U.S. and Mexican fruit industry, interviews by USITC staff, Oct. 1992.

CHAPTER 27
Livestock and Meat[1]

Dave Ludwick

Table 27-1
Livestock and meat: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	1,500	1,500	1,500	0
Trade data (million dollars):				
Shipments	64,087	68,765	66,963	-3
Exports:				
Total	2,181	2,193	2,245	2
To Mexico	318	291	576	98
To Canada	182	411	529	29
Imports:				
Total	2,013	2,322	2,521	9
From Mexico	285	424	365	-14
From Canada	1,062	1,311	1,304	(1)
Trade balance:				
Total	168	-129	-276	-114
With Mexico	33	-133	211	(2)
With Canada	-880	-900	-775	14
Consumption	63,919	68,894	67,239	-2
Import market share (percent):				
Total	3	3	4	(2)
Mexico	(2)	1	1	(2)
Canada	2	2	2	(2)

1 Less than 0.5 percent.
2 Not meaningful for purposes of comparison.
Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Summary of Sector Analysis

NAFTA will likely result in only a minor increase in U.S. imports in the livestock and meat sector inasmuch as U.S. rates of duty are already low, and no other NAFTA programs affect this sector. In the short term, NAFTA could lead to a minor increase in U.S. exports of live swine and pork and in edible meat offals. In the long term, there could be a considerable increase in U.S. exports to Mexico. NAFTA will likely have only a minor impact on U.S. investment, production, employment, or global competitiveness in this sector. A large share of U.S. exports of live animals to Mexico has consisted of those destined for immediate slaughter whereas most of the U.S. imports of live animals from Mexico have consisted of feeder cattle to be grown to appropriate slaughter weights in U.S. feedlots.

1 Primarily includes live cattle, swine, sheep, and meat of these animals.

Key NAFTA Provisions Affecting Sector

Tariff provisions that will take effect under NAFTA will have only a minor impact on sector trade between the United States and Mexico. The ad valorem equivalent of the U.S. rate of duty for most imports of live cattle from Mexico (that account for the great bulk of U.S. sector imports from Mexico) is less than 2 percent. Mexican imports of live cattle and fresh, chilled, or frozen beef and veal, which account for over half of the value of U.S. sector exports to Mexico, had been duty-free. On November 11, 1992, however, Mexico imposed tariffs of 15 percent on live cattle and fresh, chilled, and frozen beef carcasses, 20 percent on fresh beef cuts, and 25 percent on frozen beef cuts.[2]

A 10-year phased reduction in the current 20-percent duty on Mexican imports of certain edible offals, a major U.S. export item, appears to be one of the major NAFTA developments for the U.S. livestock and meat sector. The 20-percent duty on Mexican imports of fresh, chilled, or frozen pork also will be phased out over 10 years. Such imports, however, will be subject to a two-tiered tariff system: i.e., Mexican agricultural safeguards. These safeguards will allow certain quantities of imports at preferential NAFTA tariffs, whereas imports in excess will be assessed the lower of the current applied MFN rate or the MFN rate in effect at that time. Live swine (other than for breeding purposes), an expanding U.S. export to Mexico in recent years, also will be subject to phased duty reductions (also from 20 percent over 10 years) and the agricultural safeguards. Animals for breeding purposes will be allowed immediate duty-free treatment under NAFTA.

Likely Impact on Investment

NAFTA's impact on the investment patterns in the livestock and meat sector among the United States, Mexico, and Canada is likely to be minor in both the short and long term. Because U.S. rates of duty are relatively low or free, NAFTA appears unlikely to result in large changes in U.S. imports of livestock or meat and, thus, there will be little impact on investment. The phased reduction in the Mexican duties on edible offals is unlikely to result in additional investment solely to expand this industry because edible offals are low-value byproducts of the livestock and meat sector. The phased reduction in the Mexican duties on live swine and on fresh, chilled, or frozen pork appears to be the other major NAFTA development for the livestock and meat sector. Pork accounted for about 25 percent of Mexican consumption of red meat and poultry in 1992. U.S. production of both live swine and pork could expand in existing facilities to supply any increase in exports that might occur because of the NAFTA and, thus increased investment would not be needed.

Likely Impact on U.S. Trade

NAFTA will likely have little or no impact on the level of U.S. imports of livestock and meat because U.S. duties are already small. The effects of NAFTA are likely to be concentrated on U.S. exports to Mexico of swine, pork, and offals, including beef offals; the cattle and beef sector will be relatively unaffected by NAFTA. The Commission's sectoral model suggests that NAFTA could lead to an increase of about 4 percent in U.S. exports of live swine and fresh, chilled, or frozen pork to Mexico in the short term and an increase of about 35-40 percent in the long term.[23] In 1992, U.S. exports of live swine to Mexico were equal to less than 1 percent of the number of swine born in the United States in that year, and U.S. exports of fresh, chilled, or frozen pork were equal to less than 1 percent of U.S. production. The Commission's sectoral model also suggests that NAFTA could lead to an increase of about 4 percent in U.S. exports of edible offals to Mexico in the short term and an increase of nearly 40 percent in the long term. U.S. exports of edible pork offals to Mexico were equal to about 13 percent of U.S. production.

Likely Impact on U.S. Production and Employment

The Commission's sectoral model suggests that there could be an increase of less than 1 percent in both the short and long term in U.S. production in the live swine and pork sectors because of increased exports to Mexico as a result of NAFTA. However, the expected long-term increase in U.S. exports is equal to less than 1 percent of the value of U.S. production of live swine and pork. There appears to be enough underutilized capacity in the U.S. swine-growing and pork-packing sectors to supply any likely increase in U.S. exports.

Even though there likely would be an increase in U.S. exports of offals to Mexico as a result of NAFTA, there likely would be no impact on U.S. production or employment in the edible offal sectors but rather a shift in markets to Mexico from other more distant export markets or less domestic uses. Inasmuch as edible offals are byproducts of the live swine and pork sectors, it is unlikely their production would be expanded to supply the Mexican market.

[2] In announcing the tariffs, the Mexican Government emphasized "that the access of exporters to the Mexican market will remain free in the sense that quantitative restrictions will not be imposed, preserving the competitive nature of the domestic beef market." It characterized the tariffs as "an isolated event, temporary in nature, [which] in no way should be generalized or used to imply or infer that Mexico is adopting protectionist trade measures." At the U.S. Department of Agriculture (USDA) Agricultural Outlook Conference in Washington, DC, on December 2, 1992, USDA officials pointed out that one advantage of NAFTA would be the elimination of the aforementioned tariffs and the protection from imposition of similar tariffs in the future.

[3] Mexico will have access to relatively lower priced animal feeds (corn, grain sorghum, and oilseed meal) from the United States and Canada as a result of NAFTA. As a consequence, Mexican production of live animals and meat could increase.

CHAPTER 28
Poultry

Doug Newman

Table 28-1
Poultry:[1] Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	164	173	179	3
Trade data (million dollars):				
Shipments	19,718	[2]20,203	[2]19,832	-2
Exports:				
Total	600	775	930	20
To Mexico	58	64	122	91
To Canada	82	153	158	3
Imports:				
Total	22	26	26	0
From Mexico	0	(3)	0	(4)
From Canada	15	22	21	-5
Trade balance:				
Total	578	749	904	21
With Mexico	58	64	122	91
With Canada	67	131	137	5
Consumption	19,140	19,454	18,928	-3
Import market share (percent):				
Total	(5)	(5)	(5)	(4)
Mexico	0	(5)	0	(4)
Canada	(5)	(5)	(5)	(4)

[1] Standard Industrial Classification (SIC) industry code 2015; trade data are for live poultry and poultry meat.
[2] Estimated by USITC staff.
[3] Less than $0.5 million.
[4] Not meaningful for purposes of comparison.
[5] Less than 0.5 percent.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

Source: Compiled from official statistics of the U.S. Department of Commerce, except as noted.

Summary of Sector Analysis

NAFTA likely will benefit the U.S. poultry industry, particularly in the long term. U.S. investment in the Mexican poultry industry is expected to increase under NAFTA in the long run. This investment will occur mainly to serve the rapidly expanding Mexican poultry market as well as to expand exports to third-country markets such as Japan. NAFTA likely will have a minor impact on production and employment levels in the U.S. poultry industry. U.S. exports to Mexico represent a small share of production; this share will remain small under NAFTA, even if absolute export levels increase substantially.

U.S. producers enjoy a substantial competitive advantage over Mexico with respect to input costs (mainly feedgrains), economies of scale, and experience and technology.[1] However, improved

[1] Mexican poultry production costs have been estimated to be 28 percent higher than U.S. costs. This difference is accounted for mainly by the feed component of the poultry production cost structure. U.S. Department of State, "Poultry Annual - Mexico," message reference No. MX2129, prepared by the U.S. Embassy, Mexico City, June 11, 1992, p. 9.

access to feedstuffs imported from the United States and Canada under NAFTA, combined with the expected increase in investment, could improve the competitive position of the Mexican poultry industry vis-a-vis the U.S. industry. Mexican poultry consumption has expanded substantially in recent years, and U.S. poultry exports to Mexico increased nearly sixfold during 1987-91. U.S. export growth, however, has been tempered by Mexico's current import-licensing system, which will be replaced by a tariff rate quota (TRQ) system under NAFTA.

Key NAFTA Provisions Affecting Sector

U.S. poultry imports from Mexico are subject to tariffs that range from an ad valorem equivalent of 0.2 percent to 14.8 percent. Under NAFTA, these tariffs will be eliminated immediately. However, U.S. animal health and processing plant inspection regulations preclude the importation of most poultry products from Mexico. U.S. poultry interests support the maintenance of these regulations and view Mexico as a buffer against the entry of disease from other Latin American sources.[2]

The Mexican Government maintains an import-licensing system for fresh, chilled, and frozen poultry. This system functions as a quota, as the Government generally restricts the entry of poultry products geographically to border areas. This system will be converted under NAFTA to a transitional TRQ that will be in effect for 10 years. Initially, an aggregate of 95,000 metric tons of U.S. poultry will be allowed duty-free treatment; this quantity will increase at an annual compounded rate of 3 percent during the transition period. The amount in excess of the duty-free quota initially will be subject to a tariff of $1,850 per metric ton, but not less than 133 percent ad valorem, for whole turkey, and $1,680 per metric ton, but not less than 260 percent, for chicken and other poultry. An aggregate 24 percent of these TRQs will be phased out during the first 6 years of NAFTA, with the remainder phased out over the rest of the 10-year transition period. Discrete TRQs will be established in the following manner:

Product	NAFTA TRQ	Overquota tariff
	(metric tons)	
Whole turkey	2,000	133%/$1,850
Other whole poultry	13,000	260%/$1,680
Turkey parts and offals	28,000	260%/$1,850
Other poultry parts and offals	25,000	260%/$1,680
Mechanically deboned poultry	27,000	260%/$1,680
Total	95,000	

[2] Ibid., p. 2.

Based on 1991 trade, U.S. exports to Mexico of poultry that will not be dutiable under the TRQs totaled approximately 92,000 metric tons (valued at $101 million), about 3 percent less than the total TRQ that will be set under NAFTA. Such exports grew by 92 percent in quantity during 1991 compared with growth in the previous year and likely would have continued growing substantially. Thus, the TRQ has been set at a level that will tend to limit the growth of such U.S. exports, at least during the transitional period. U.S. poultry exports to Mexico covered by TRQs are currently dutiable at 10 percent ad valorem.

U.S. exports to Mexico of processed poultry not covered by the TRQs are subject to a 20 percent ad valorem duty; this duty will be eliminated in 10 equal stages during a 10-year period. U.S. exports of such poultry totaled about 9,700 metric tons, valued at $16 million—about 10 percent of the quantity and 13 percent of the value of total U.S. poultry exports to Mexico in 1991.

Likely Impact on Investment

NAFTA likely will lead to a modest increase in investment by the U.S. poultry industry in Mexico. The factors leading to this increase include the liberalization of Mexican restrictions on foreign ownership and repatriation of profits and a restructuring of the Mexican poultry industry that likely will cause smaller Mexican producers to seek foreign investment.

Investment by U.S. poultry concerns in the Mexican market has existed for several years.[3] In 1987 the then sixth-largest U.S. broiler processor, Pilgrims Pride, acquired several poultry operations in Mexico to produce for the Mexican market. In 1989 the largest U.S. poultry company, Tyson Foods, entered into an agreement with a major Mexican poultry producer, Trasgo, to further process U.S. broilers in Mexico for export to Japan; the agreement was expanded in 1992 into a joint venture, with an option for Tyson to acquire a majority ownership position of Trasgo. This venture involves the export of U.S. poultry products for the Mexican market as well as for further processing for other export markets (mainly Japan and other Pacific Rim Asian countries). Other major U.S. poultry processors are believed to be exploring investment opportunities in Mexico, reflecting Mexico's lower relative costs of labor and land. However, constraints include a general lack of familiarity of the Mexican market; the animal disease

[3] Data on the level of foreign direct investment by U.S. poultry firms in Mexico are proprietary and, thus, are not available.

and plant inspection system situation; and uncertainty regarding Mexican import liberalization of feedgrains.[4]

Likely Impact on U.S. Trade

NAFTA likely will have no short-term impact on U.S. imports of poultry since such imports generally are restricted by animal health and processing plant sanitary and inspection requirements. The long-term effect of NAFTA on U.S. poultry imports is less certain. Lower duties under NAFTA will not lead to increased imports given current health and sanitary restrictions. Efforts are currently underway in Mexico to address the animal health situation. The Mexican Secretariat of Agriculture and various producer organizations are engaged in poultry disease eradication programs and are attempting to establish that the State of Sonora is free of Newcastle disease.[5] In addition, the U.S. and the Mexican Governments have been involved in a cooperative effort to improve and harmonize the Mexican poultry-processing inspection system; Mexico has applied for approval of individual poultry-processing plants to export to the United States. If this were to occur, U.S. processors could export live birds or carcasses to Mexico for further processing to take advantage of lower labor costs, and import the resultant processed poultry products.

The primary U.S. poultry export items to Mexico include frozen chicken and turkey parts and fresh chicken parts. The Mexican poultry market is complementary to the U.S. market, as it has a preference for poultry cuts not in great demand in the United States.[6] The market for turkey products in Mexico is nascent and presents an opportunity for U.S. exports in the future.

[4] Government and poultry industry officials, interviews by USITC staff.

[5] Highly contagious respiratory poultry disease.

[6] The U.S. market prefers lighter meat cuts, such as breast meat, while the Mexican market prefers darker meat cuts, such as legs and thighs. The relatively high degree of further processing of lighter cuts in the United States creates a surplus of darker cuts, which the Mexican market can absorb.

In the short term, NAFTA could dampen the growth of U.S. poultry exports to Mexico that had been occurring in previous years, and thus result in only a minor growth in export levels. The TRQ (95,000 metric tons) has been set at a level near the quantity of such exports in 1991 (about 92,000 metric tons), and any expansion in exports will be subject to high tariffs. As the TRQs are phased out, an increasing amount of U.S. poultry will be accorded duty-free treatment under NAFTA. Moreover, during the transition period, U.S. poultry producers may attempt to shift their exports to further processed products, such as breaded chicken nuggets and poultry frankfurters, not covered under the TRQ system.

In the long term, NAFTA likely will result in a considerable increase in U.S. poultry exports. However, the pace of U.S. poultry exports to Mexico likely will be limited by the current state of the Mexican infrastructure and distribution system. Improvements are needed in transportation, refrigeration, and traditional marketing channels in order for U.S. poultry exports to fully realize their market potential in Mexico.

Likely Impact on U.S. Production and Employment

There likely will be a minor positive short-term effect of NAFTA on production and employment in the U.S. poultry industry. U.S. poultry exports to Mexico account for less than 1 percent of domestic production, thus any expansion in overall U.S. production and employment will be limited.

There likely will be a positive long-term impact of NAFTA on U.S. poultry production and employment as U.S. exports to Mexico gradually rise in concert with the expanding duty-free quota amount. However, if Mexico eventually meets U.S. animal disease and plant inspection restrictions and improves access to low-cost, imported feedstuffs under NAFTA to its poultry industry, U.S. poultry imports could increase, or U.S. poultry exports could decrease.

CHAPTER 29
Fish

Roger Corey

Table 29-1
Fish: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)[1]	73	72	(2)	(2)
Trade data (million dollars):				
Shipments	6,889	7,401	7,007	-5
Exports:				
Total	2,309	2,819	3,080	9
To Mexico	22	16	17	6
To Canada	199	324	336	4
Imports:				
Total	5,444	5,206	5,635	8
From Mexico	393	279	291	4
From Canada	1,218	1,180	1,234	5
Trade balance:				
Total	-3,135	-2,387	-2,555	-7
With Mexico	-371	-263	-274	-4
With Canada	-1,019	-856	-898	-5
Consumption	10,024	9,788	9,562	-2
Import market share (percent):				
Total	54	53	59	(3)
Mexico	4	3	3	(3)
Canada	12	12	13	(3)

[1] Processing and wholesaling employment only.
[2] Not available.
[3] Not meaningful for purposes of comparison.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Summary of Sector Analysis

The United States ranks fifth in world production, by volume, of fish and shellfish, with a 1990 harvest of nearly 6 million metric tons. Mexico ranks 18th, with a 1990 harvest of 1.4 million metric tons. While the U.S. harvest consists largely of menhaden (from which low-valued industrial products are made) and groundfish (e.g., cod, pollock), the Mexican catch consists largely of shrimp and other high-valued seafoods. The United States ranks first by value among the world's exporters of fish products, and second among the world's importers; Mexico does not rank among the top 20 nations in either category.

Most fish products traded between the United States and Mexico enter each market duty-free, and so are unlikely to be affected by the tariff-reduction provisions of NAFTA. One notable exception is Maine canned sardines, the Mexican market for which is expected to increase as a result of the NAFTA tariff provisions.

Of potential significance for a variety of fish products is the likely effect of NAFTA on cross-border investment. Whereas currently there is very little such investment, NAFTA is likely to spur greater U.S. investment in Mexican processing facilities, such as shrimp-processing plants, similar to those currently in place near the U.S.-Mexico border. Such investment could have several possible effects: (1) an increase in U.S. exports of shrimp for Mexican processing and re-export to the U.S. market; (2) an increase in processing and export of Mexican-harvested shrimp and other seafood; and/or (3) an improvement in the product quality of Mexican seafood, following the introduction of U.S. product handling, processing, and storage methods.

Key NAFTA Provisions Affecting Sector

U.S. tariffs on imports of fish and fish products range from free to 35 percent ad valorem. Less than 1 percent by value of U.S. fish imports from Mexico are subject to import duties. U.S. rates of duty on fish imports from Mexico of less than 5 percent ad valorem will become duty free immediately, and the others will have a 10-year straight line phaseout.

Mexican tariffs on imports of fish and fish products range from 10 to 20 percent ad valorem, with more than half of all imports subject to a 20-percent ad valorem duty. Virtually all U.S. exports of fish products to Mexico are nominally subject to import duties, but most such exports are unprocessed products (e.g., shrimp) that are processed in maquiladoras. These exports are thus re-exported to the U.S. market and Mexican duties are not collected. Under NAFTA, Mexican rates of duty will be phased out over a 10-year period.

Likely Impact on Investment

There has been little direct cross-border investment between the Mexican and U.S. fish-harvesting or processing sectors. The Commission estimates that less than $50 million was accounted for by U.S. fish-sector direct investment. In the U.S. fish-products industry, one Mexican-owned wholesaler and distributor of shrimp and other Mexican-produced seafoods is believed to account for much if not most of the approximately $180 million (1991) in Mexican sales of shrimp in the U.S. market.

In the short term, the harmonization of investment rules under NAFTA is likely to encourage a minor increase in cross-border investment, particularly by U.S. firms in the Mexican industry and market. In the long term, however, there is likely to be modest growth in such investment. With a coastline of 9,330 kilometers (slightly less than half that of the United States), Mexico has significant fish production and processing capacity. Species with significant production and export growth potential include shrimp, mackerel, and tuna. In recent years there also has been significant maquiladora processing of U.S.-exported shrimp for re-export to the U.S. market; such processing and trade are likely to continue as U.S. shrimp distributors based along the Gulf of Mexico seek low labor costs. NAFTA is likely to spur greater U.S. investment in Mexican shrimp-processing facilities that also process Mexican-harvested shrimp along Mexico's Gulf coast. U.S. investment is more likely, largely because U.S. firms bring the quality-control knowledge and other experience that many Mexican firms lack.

Likely Impact on U.S. Trade

Virtually all U.S. imports of fish products from Mexico are duty-free, either because there are no U.S. duties or because of Generalized System of Preferences (GSP) eligibility. U.S. imports of dutiable items from Mexico in 1991 totaled only $1.4 million, or 0.5 percent of total imports from Mexico.[1] The average tariff rate on such dutiable fish products imported from Mexico is 6.4 percent ad valorem equivalent; therefore, the phaseout of these tariffs on such a small portion of U.S. imports from Mexico is expected to have a minor effect on the fish sector.

NAFTA is likely to spur U.S. investment in Mexican fish-processing facilities outside of the maquiladoras. This new investment in turn is likely to boost Mexican exports of fish products to the U.S. market. Currently, the most likely items for export include shrimp and mackerel. Tuna, in both unprocessed and canned forms, also would be a likely U.S. import item once the problems surrounding the tuna-dolphin controversy are resolved.[2]

Currently the United States exports a wide variety of fish and shellfish products to Mexico. Most important are shellfish: out of total 1991 U.S. exports to Mexico of about $17 million, the largest items included shrimp (50 percent of the total), and other molluscs (chiefly clams, abalone, and octopus, totaling 25 percent).

Much of the fish trade is subject to duties of 20 percent ad valorem (the average Mexican tariff on U.S. exports of dutiable items is 18.8 percent). Among the products whose current U.S. export level is constrained by significant Mexican tariffs are canned sardines, both in vegetable oil and smoked, for which there is a large demand in the Mexican market. NAFTA is expected to significantly expand such U.S. exports, particularly because Mexican production of sardine products is limited by tight constraints on fish resources in the Pacific Ocean. However, the overall effect on U.S. fish-products exports is expected to be minor.

[1] Such dutiable products exclude those items for which Mexico is eligible for GSP treatment.

[2] This issue concerns periodic U.S. embargoes of imports of Mexican and other yellowfin tuna harvested in ways that harm dolphins; the embargoes are administered under provisions of the Marine Mammal Protection Act, as amended. This issue is not directly addressed in NAFTA.

Likely Impact on U.S. Production and Employment

Employment and production in most parts of the U.S. fish-products sector is highly immobile: the fish must be harvested and (in most types of preparation, such as fresh-fish processing) must be processed at or near where the fish are harvested. This fact limits the extent to which current U.S. production and employment can be shifted to Mexico. Thus, except for the shrimp processing noted above, there is likely to be little out-migration of U.S. fish-products production and employment.

Overall, NAFTA is likely to result in increases of less than 5 percent in both U.S. production and employment; however, the effects are expected to be felt more in some regions than in others. For example, canned-sardine production and employment in Maine is likely to benefit; production is expected to increase by as much as 5 percent. The size of the employment effects is uncertain. In the shrimp sector, production and processing in less competitive States (such as along the South and mid-Atlantic coasts) are likely to decline because of competition from increased imports of Mexican- harvested and-processed shrimp. There are no data on shrimp-harvesting employment in these regions, so that estimates of the magnitude of such employment changes are not available.

CHAPTER 30
Cut Flowers

Steve Burket

Table 30-1
Cut flowers: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	(1)	(1)	(1)	(1)
Trade data (million dollars):				
Shipments	483	493	474	-4
Exports:				
Total	11	30	34	13
To Mexico	1	1	4	300
To Canada	2	17	16	-6
Imports:				
Total	316	326	322	-1
From Mexico	10	13	15	15
From Canada	3	3	4	33
Trade balance:				
Total	-305	-296	-288	3
With Mexico	-9	-12	-11	8
With Canada	-1	14	12	-14
Consumption	788	789	762	-3
Import market share (percent):				
Total	40	41	42	(2)
Mexico	1	2	2	(2)
Canada	(3)	(3)	1	(2)

[1] Not available.
[2] Not meaningful for purposes of comparison.
[3] Less than 0.5 percent.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Summary of Sector Analysis

The United States remains a net importer of fresh-cut flowers. U.S. cut flower exports are believed to consist of dried flowers, specialty flowers, and high-quality roses. U.S. cut flower imports include a wide range of fresh-cut flowers. Fresh-cut roses composed approximately 39 percent of U.S. imports of fresh-cut flowers from 1989 through 1991 and made up approximately 73 percent of Mexico's exports of fresh-cut flowers to the United States.

NAFTA will have, at most, a minor adverse impact on the U.S. cut flower industry in the short and long term. The domestic cut flower industry, except for the fresh-cut rose subsector, already has been competing with duty-free imports from Mexico under the Generalized System of Preferences (GSP) and, therefore, NAFTA will not directly affect that part of the industry. However, for the fresh-cut rose subsector, the Commission's sectoral model indicates a minor increase in imports from Mexico in the short term and a modest increase in the long term.

U.S. growers of fresh-cut roses currently have the protective advantage of an 8-percent ad valorem duty. Eliminating the duty would have a minor impact on U.S. production and employment for the total rose-growing sector in both the short and long term; however, that portion of the U.S. rose-growing industry in the Southwest and California would be affected to a greater degree. Producers in the Southwest and California have a transportation cost advantage over imports from Colombia and the

Netherlands. Much of this transportation cost advantage could be lost to imported roses from Mexico.

U.S. exports of cut flowers to Mexico should increase considerably as a result of the elimination of Mexico's 20-percent ad valorem duty under NAFTA. However, total U.S. cut flower exports are small; hence, the overall impact on the U.S. industry will be minor.

Investment by the U.S. rose-growing industry may decline, particularly in the Southwest, as growers shift to other crops (potted flowering plants and foliage plants) where competition from imports from Mexico is not a factor. Also, U.S. growers are likely to reduce investment in new rose plants and production facilities to reduce expenses. The U.S. rose industry will likely become relatively less competitive, because of the elimination of duties, in addition to lower labor costs in Mexico, accounting for a smaller share of the U.S. market and concentrate primarily in local and niche markets.

Key NAFTA Provisions Affecting Sector

U.S. tariffs on imports of cut flowers range from 4 percent to 8 percent ad valorem. All of these flowers except roses are currently eligible for duty-free entry under GSP. The 8-percent rate of duty for roses will be phased out under NAFTA over 5 years; the rates for all other cut flowers will be eliminated immediately. Mexico's general rate of duty for imports of cut flowers is 20 percent ad valorem, which will be eliminated immediately under NAFTA.

Likely Impact on Investment

NAFTA is expected to have a minor negative, if any, impact on investment in the cut flower industry except the segment producing fresh-cut roses. U.S. investment in the fresh-cut-rose-growing industry is expected to decline modestly in both the short and long term. Industry sources have indicated that they are not planning any new investment in production facilities or the purchase of new or replacement rose plants. Instead, they reportedly intend to wait until more information becomes available on import trends following the implementation of NAFTA and on import levels from Colombia and Bolivia following their eligibility for duty-free entry under the Andean Trade Preference Act (ATPA).

Table 30-2
Fresh cut roses: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	([1])	([1])	([1])	([1])
Trade data (million dollars):				
Shipments	196	194	178	-8
Exports:				
Total	3	4	4	0
To Mexico	([2])	([2])	([2])	([1])
To Canada[3]	2	3	3	0
Imports:				
Total	75	86	92	7
From Mexico	7	10	11	10
From Canada	1	1	1	0
Trade balance:				
Total	-72	-82	-88	-7
With Mexico	-7	-10	-11	-10
With Canada	1	2	2	0
Consumption	268	276	266	-4
Import market share (percent):				
Total	28	31	35	([3])
Mexico	3	4	4	([3])
Canada	([4])	([4])	([4])	([3])

[1] Not available.
[2] U.S. exports are zero or negligible.
[3] Not meaningful for purposes of comparison.
[4] Less than 0.5 percent.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Industry sources believe that there will be little, if any, new investment by U.S. growers in Mexico or investment by Mexico in the U.S. cut flower industry. Although a few large firms are producing cut flowers in both the United States and Mexico, they are for the most part not internationally oriented. The majority of the cut flower production is accounted for by family-owned and operated businesses. These businesses are not likely to invest in foreign production facilities.

On the other hand, Mexican growers in cooperation with the Government of Mexico have been working to develop the necessary infrastructure to produce and market high-quality flowers including roses in the U.S. market. Without this infrastructure development, a large portion of Mexico's rose production will not be of sufficient quality to meet the requirements of the U.S. market.

Likely Impact on U.S. Trade

NAFTA likely will have little or no impact on U.S. imports of cut flowers, except for imports of fresh-cut roses. Imports of cut flowers other than fresh-cut roses from Mexico are currently eligible for duty-free entry under the GSP; therefore, the level of imports from Mexico of such flowers will not be directly affected by NAFTA. U.S. imports of fresh-cut roses under NAFTA can be expected to increase by less than 1 percent in the short term and by about 7 percent in the long term.

Mexico has a transportation cost advantage over all other foreign suppliers except Canada (truck transportation versus air transportation). Mexico's advantage may be tempered during the 5-year staging of the duty reduction because two of Mexico's principal foreign competitors in the U.S. market (Colombia and Bolivia) will have the advantage of duty-free treatment under ATPA. Colombia and Bolivia accounted for nearly three-quarters of U.S. fresh-cut rose imports in 1991.

U.S. imports of all cut flowers from Mexico could increase in the long term as a result of increased NAFTA trade in fresh-cut roses. U.S. intermediate purchasers of cut flowers (wholesalers, retail florists, and mass merchandisers) prefer to purchase their floral requirements from as few suppliers as possible; hence, Mexican rose growers may have to increase production and shipments of other flower types to compete on the same terms as other foreign suppliers and domestic growers of cut flowers.

The U.S. export market for cut flowers is relatively small, with Canada accounting for nearly one-half of U.S. export shipments and Mexico accounting for about 12 percent of such shipments. The elimination of the Mexican duties on cut flowers under NAFTA is likely to result in an increase of at least 25 percent in U.S. exports of cut flowers to Mexico. Although exports from Canada to Mexico will also benefit from the duty elimination, the United States will most likely expand its market share in Mexico because the United States has a transportation cost advantage over Canada, and cut flowers from the United States are perceived as having a longer shelf life because of its proximately.

Likely Impact on U.S. Production and Employment

In both the short and long term, NAFTA will likely result in a decrease of less than 5 percent in U.S. production and employment in the overall cut flower industry and in the fresh-cut roses sector. Industry sources stated that they were trying to convert existing facilities used for fresh-cut rose production to other floriculture crops, primarily potted flowering and foliage plants that do not compete with imported products. Other growers are likely to withdraw from markets where they have to compete directly with imported roses. Instead of competing with imports, these growers would concentrate on local and niche markets, and provide value-added services such as direct selling to retailers and mass merchandisers and other services that were traditionally provided by wholesalers (credit, delivery, and small lot shipments).

CHAPTER 31
Alcoholic Beverages

Elizabeth Lee

Table 31-1
Alcoholic beverages: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	53	51	50	-2
Trade data (million dollars):				
Shipments	20,635	21,124	20,616	-2
Exports:				
Total	433	520	595	14
To Mexico	13	14	19	36
To Canada	65	77	75	-3
Imports:				
Total	3,134	3,341	3,037	-9
From Mexico	204	223	203	-9
From Canada	486	587	455	-22
Trade balance:				
Total	-2,701	-2,821	-2,442	13
With Mexico	-191	-209	-184	12
With Canada	-421	-510	-380	25
Consumption	23,336	23,945	23,058	-4
Import market share (percent):				
Total	13	14	13	([1])
Mexico	1	1	1	([1])
Canada	2	2	2	([1])

[1] Not meaningful for purposes of comparison.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

Source: Import and export data compiled from official statistics of the U.S. Department of Commerce; shipment and employee data compiled from U.S. Department of Commerce, *U.S Industrial Outlook, 1992,* p. 32-32.

Summary of Sector Analysis

U.S. trade in alcoholic beverages, overall and with Mexico and Canada, was marked by deficits during 1989-91 (table 31-1). U.S. imports from Mexico consisted mostly of beer and tequila, while U.S. imports from Canada consisted of beer and whiskey. U.S. exports to Mexico in 1991 were concentrated in beer, while U.S. exports to Canada were concentrated in wine.

NAFTA is likely to result in a modest increase in U.S. exports of alcoholic beverages to Mexico as well as a modest increase in U.S. investment in Mexico. U.S. exports of alcoholic beverages to Mexico have increased substantually since 1985, when Mexico reduced or removed many of its duties and nontariff barriers. U.S. imports from Mexico are not expected to increase significantly as a result of NAFTA because U.S. duties on alcoholic beverages are already low. Overall, NAFTA is not expected to have a significant impact on production and employment in the U.S. alcoholic beverage industry.

The alcoholic beverage markets in both the United States and Mexico are highly regulated. To the extent that NAFTA results in a reduction in investment and distribution barriers, U.S. investment in the Mexican alcoholic beverage industry should increase. Government regulations in both countries cover recognition of designated regions of origin, standards of identity, labeling, and certain aspects of the distribution system.

Key NAFTA Provisions Affecting Sector

U.S. imports of alcoholic beverages from Mexico are dutiable at relatively low rates of duty, generally about 3-percent trade-weighted ad valorem equivalent. The range of duties varies from free under the Generalized System of Preferences (GSP) to 60.7 percent ad valorem equivalent. Under NAFTA, these duties are to be eliminated immediately, except for the duties imposed on rum, beer, and most wine. The U.S. tariff on rum from Mexico (currently 13.7 percent ad valorem) and on most wines (4.4 to 16.7 percent) will be phased out over a 10-year period. The U.S. tariff on beer imported from Mexico (1.7 percent) will be phased out over an 8-year period.

The Mexican rate of duty on virtually all alcoholic beverages from the United States is 20 percent ad valorem. Under NAFTA, the 20-percent tariff on U.S. Tennessee and bourbon whiskey will be eliminated immediately. Mexico's 20-percent tariff on beer will be reduced immediately to 16 percent, and then phased out over an 8-year period. The 20-percent tariff on U.S. rum will be phased out over a 5-year period. Most other Mexican tariffs will be phased out over 10 years.

Likely Impact on Investment

Currently there is little direct U.S. investment in the Mexican beer and wine industries, but a considerable degree of investment in the distilled spirits industry. With a few exceptions, U.S. investments in Mexico's distilled spirits industry are geared toward export to the United States rather than for the Mexican market. Although U.S. equity investments in the Mexican wine and beer industry are relatively small, a number of U.S. brewers maintain agreements with Mexican firms that allow import and distribution of their products in Mexico.

Three large companies in Mexico produce tequila for the Mexican market, and for export in bulk to be bottled in the United States. These three Mexican firms are partly owned by multinationals, or they have made contractual arrangements that provide for distribution of their products in the United States. In 1991, Heublein Inc., a U.S. firm owned by Grand Metropolitan PLC of the United Kingdom, acquired a 45-percent stake in Jose Cuervo, which produces most of the tequila exported to the United States. Bacardi, a multinational firm with headquarters in Puerto Rico, owns a tequila distillery in Mexico. Bacardi also operates a rum distillery in Mexico and has acquired an interest in three sugar mills, which allows Bacardi to obtain discounted prices on molasses, the raw material for rum production. Bacardi has also bought a major Mexican brandy company.[1]

The Mexican beer industry is dominated by two large malt beverage firms, Cerveceria Modelo and Grupo Femsa (which is owned by the Mexican conglomerate, Grupo Visa).[2] There is little integration between the Mexican brewing industry and U.S. firms. As required by U.S. law, Mexican beers are imported and marketed by U.S. companies, which handle promotion and distribution in the United States. Mexican brewers, on the other hand, have maintained a strict policy against distribution of imported beer through the retail outlets they control.[3] Miller Brewing has had an import and distribution agreement with Casa Cuervo SA de CV since 1988.[4] In 1989, Cerveceria Modelo and Anheuser-Busch agreed to an import and distribution contract for the Mexican market.[5] In late 1991 it was reported that Adolph Coors Co. was considering a similar deal with Cerveceria Cuauhtemoc-Moctezuma, a division of Valores Industriales SA (VISA). VISA is also seeking foreign partners through a stock offering for its brewery division, and Coors is reportedly considering a 30- to 40-percent equity investment in Cuauhtemoc-Moctezuma.[6]

A reduction in barriers to investment under NAFTA is likely to encourage a modest expansion of U.S. investment in the alcoholic beverages industry, especially as U.S. firms attempt to establish themselves in the Mexican markets. In the short term, most ventures between the U.S. and Mexican wine and beer industries are likely to be marketing and distribution agreements such as those presently in use. In the long term, U.S. investment in Mexico for production, as well as marketing and distribution may expand considerably.

Likely Impact on U.S. Trade

U.S. duties on Mexican beer are currently low, averaging less than 2 percent ad valorem, and many distilled spirits from Mexico already enter duty-free under the GSP. The Commission's sectoral model estimates that NAFTA will likely result in an increase of less than 5 percent in U.S. imports of alcoholic

[1] Hiram Walker, a U.S. subsidiary of Allied-Lyons PLC of the United Kingdom, bought an interest in Bacardi Corp. in 1978 and now holds 13 percent of the shares.

[2] Citicorp purchased a 15-percent stake in Grupo Femsa in late 1988.

[3] Industry sources note that U.S. firms without ties to the Mexican brewers' distribution network lack access to the number of retail outlets needed for the high sales volume best suited for profitability in the beer industry.

[4] "Coors Considers Deal with Mexican Brewery," *Market Watch*, Dec. 1991, p. 69.

[5] Ibid.

[6] Ibid.

beverages overall from Mexico over the long term. U.S. imports from Canada of beer enter at a rate of under 2 percent, and whiskey enters duty-free under the U.S.-Canada Free-Trade Agreement. Any increase in U.S. imports of alcoholic beverages from Canada that may be seen would be only in the northern U.S. markets where low transportation costs may give these imports an edge.

The Virgin Islands Rum Industries, Ltd. (VIRIL) believes that providing duty-free treatment to Mexican rum will damage its industry irreparably. Currently, all of VIRIL's production, which consists of low-valued rum, is purchased by the United States. VIRIL stated that its products will have to compete directly with imports from Mexico. VIRIL is concerned that the proposed 10-year duty phaseout on rum does not give the Virgin Islands time to respond to a projected increase in U.S. imports of low-value Mexican rum. VIRIL believes that Mexico is well equipped to respond to NAFTA because of low prices paid for molasses, low transportation costs, the availability of cheap labor, and a well-established distribution system (through Bacardi and the tequila industry). The Puerto Rican rum industry, which produces mostly premium rum, currently holds approximately 70 percent of the U.S. market.

[7] Jay Kramer, on behalf of VIRIL, transcript of hearing, Nov. 17, 1992, p. 10.

The Commission's sectoral model indicates that U.S. alcoholic beverage exports to Mexico are expected to increase by 3 percent in the short term, and 6 percent in the long term. According to the U.S. industry, trade agreements negotiated between Mexico and other Latin American countries will give these supplying countries the opportunity to develop the Mexican market first, which could dampen some of the expected increase in U.S. exports to Mexico. Because Mexico currently accounts for only about 3 percent of total U.S. exports of alcoholic beverages, the projected increases in U.S. exports to Mexico would have a negligible impact on overall U.S. exports of alcoholic beverages.

Likely Impact on U.S. Production and Employment

The Commission's sectoral model estimates that shipments and employment in the U.S. alcoholic beverage industry will likely increase by less than 1 percent in both the short and long term as a result of NAFTA.

CHAPTER 32
Lumber and Wood Products[1]

Fred Ruggles

Table 32-1
Lumber and wood products: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	454	443	416	-6
Trade data (million dollars):				
Shipments	53,166	52,498	59,831	14
Exports:				
Total	5,985	6,445	6,346	-2
To Mexico	234	270	383	42
To Canada	643	935	951	2
Imports:				
Total	5,538	5,151	4,945	4
From Mexico	215	213	245	15
From Canada	3,880	3,487	3,380	-3
Trade balance:				
Total	447	1,294	1,401	8
With Mexico	19	57	138	142
With Canada	-3,237	-2,552	-2,429	5
Consumption	52,719	51,204	58,430	14
Import market share (percent):				
Total	11	10	8	(1)
Mexico	(2)	(2)	(2)	(1)
Canada	7	7	6	(1)

1 Not meaningful for purposes of comparison.
2 Less than 0.5 percent.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

Source: Compiled from official statistics of the U.S. Department of Commerce, except shipments which are estimated by staff of the U.S. International Trade Commission.

Summary of Sector Analysis

The United States is a major world producer, consumer, and exporter of solid wood products. It supplies the majority of Canada's imports of such products and accounts for 40 to 50 percent of Mexico's consumption. U.S. exports to Mexico consist largely of softwood lumber that is used primarily in building construction. NAFTA likely will not affect U.S.-Canadian solid wood products trade since the major trade items in this sector are already duty free; however, it will eliminate Mexico's tariffs and nontariff barriers on imports of U.S. solid wood products.

The United States has a considerable comparative advantage in solid wood products over Mexico. Mexico has limited forest land and is a net importer of the products. Mexico has protected and assisted its producers who traditionally have specialized in the production of builders' joinery[2] and lumber. Mexican production of primary solid wood products (e.g., logs and chips) are manufactured for domestic

[1] Includes all products in chapter 44 of the Harmonized System. For purposes of this report, all products in chapter 44 will be referred to as "solid wood products."

[2] Builders' joinery refers typically to higher grades of lumber suitable for such uses as cabinetry, millwork, or interior trim. It is usually a remanufactured product.

consumption; remanufactured[3] products are primarily exported to the United States. The United States is likely to benefit from expanded Mexican imports of U.S. solid wood products as Mexico's protection of its producers is phased out over the transition period of 10 years and its construction industry expands. Canada and the United States compete in the Mexican market for solid wood products, particularly with regard to lumber and panel product exports.

Key NAFTA Provisions Affecting Sector

U.S. most-favored-nation (MFN) rates of duty on imports of solid wood products range from free to 20 percent ad valorem. In 1991, about three-quarters of all U.S. imports of solid wood products from Mexico entered duty-free. The trade-weighted duty on the dutiable portion of Mexican imports was about 2.4 percent ad valorem in 1991. For the nine major products, the current rates of duty for the United States and Mexico are as follows (in percent):

Product	United States	Mexico
Rough wood products ...	0-5.1	10
Lumber	Free	10-15
Veneer	Free	15
Particleboard	0-4	10-15
Fiberboard	0-6	15
Plywood	3-20	15-20
Builders' joinery	0-7.5	20
Siding, flooring, and molding	0-7.6	10-20
Other wood	0-16.67	15-20

U.S. rates of duty, other than free, will be phased out under NAFTA over a maximum period of 10 years. Some will have immediate tariff elimination; some will have a 5-year straight line staging; and others will have a 10-year straight line staging. Most of Mexico's tariffs on U.S. solid wood exports are to be phased out over a 10-year period. However, lumber used specifically for wood-frame construction will receive immediate tariff elimination.

Likely Impact on Investment

There has been little direct U.S. investment in timberland or primary production in Mexico, and it is unlikely that this situation will change as a result of NAFTA. There has been substantial direct U.S. investment, however, in Mexico's remanufacturing industry. With a few exceptions, U.S. affiliates in Mexico produce primarily for the U.S. market. U.S. investment in this sector may increase by a minor amount as a result of NAFTA, primarily to supply the Mexican market, especially the building construction industry.

Likely Impact on U.S. Trade

NAFTA is unlikely to have any appreciable effect on U.S. import levels. Present duty levels on U.S. imports of Mexican solid wood products are relatively low and many items qualify for duty-free entry under the Generalized System of Preferences (the trade-weighted duty on all imports of Mexican solid wood products was about 0.6 percent ad valorem in 1991). U.S. imports of solid wood products from Mexico consisted mainly of remanufactured builders' joinery and lumber, flooring, siding, and molding.

The Commission's sectoral model predicts that U.S. solid wood exports to Mexico will increase by about 2 percent in the short term, and by 18 percent in the long term. These expected increases account for less than 1 percent of total U.S. exports of solid wood products in the short term and about 2 percent in the long term. In 1991, 52 percent of U.S. exports of solid wood products to Mexico consisted of lumber, flooring, siding, and molding (most of which is softwood lumber); 20 percent, panel products (mostly plywood and particleboard); 9 percent, builders' joinery; 7 percent, rough wood products; and 12 percent, other solid wood products (mostly shipping containers and tool handles).

Likely Impact on U.S. Production and Employment

Based upon the Commission's sectoral model, U.S. employment and production are likely to increase by less than 1 percent in both the short and long term. Most of the estimated increased employment is manufacturing-based. Increased U.S. output of remanufactured and panel products is likely to account for most of the expected increase in domestic employment and production.

[3] This refers to a process whereby a common product, such as lumber, is further processed into a more specialized and higher grade product.

CHAPTER 33
Sugar

Joan Williams

Table 33-1
Sugar: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	61	61	61	0
Trade data (million dollars):				
Shipments	4,538	4,962	4,222	[1]-15
Exports:				
Total	[2]157	[2]194	[2]199	[2]3
To Mexico	57	96	92	-4
To Canada	23	27	24	-11
Imports:				
Total	592	776	639	-18
From Mexico	36	1	3	200
From Canada	6	13	23	77
Trade balance:				
Total	-435	-582	-440	24
With Mexico	[3]21	[3]95	[3]89	-6
With Canada	[3]17	[3]14	[3]1	-93
Consumption	4,973	5,544	4,662	-16
Import market share (percent):				
Total	13	14	14	([4])
Mexico	1	([5])	([5])	([4])
Canada	([5])	([5])	([5])	([4])

[1] The decline in the value of shipments was the result of a decline in sugar prices rather than the quantity of shipments. The volume of U.S. sugar shipments increased by 4 percent from 1989 through 1991.
[2] Includes exports under the U.S. sugar re-export program and exports to Puerto Rico. In 1990 and 1991, U.S. exports consisted solely of exports under the re-export program and exports to Puerto Rico.
[3] Results from U.S. exports under the U.S. sugar re-export program.
[4] Not meaningful for purposes of comparison.
[5] Less than 0.5 percent.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Summary of Sector Analysis

The United States is a net importer of sugar, but it has maintained trade surpluses with Canada and Mexico in recent years through the operation of a sugar re-export program. Although table 33-1 shows a decline in the value of U.S. sugar consumption between 1989 and 1991, the volume of U.S. sugar consumption increased during this period by approximately 4 percent. The U.S. sugar cane industry is concentrated in Florida, Louisiana, Texas, and Hawaii. High-cost sugar cane producers in Hawaii and Texas would be most vulnerable to increased imports from Mexico. The U.S. sugarbeet industry is concentrated in Texas, Ohio, Michigan, Minnesota, California, Montana, Wyoming, Colorado, Idaho, and Oregon and is less vulnerable to imports from Mexico because of location and costs of production.

The recent privatization of sugar mills, the possibilities for change in the Government of Mexico's pricing policies for sugar, and the recent land reform have placed Mexico's sugar industry in a state of change. The shape of the Mexican sugar industry in the future will be determined not only by Mexican

Government policies, but also by Mexican sugar consumption, whether or not the Mexican beverage industry follows the U.S. industry and switches from sugar to high fructose corn syrup (HFCS), and by the relative price of Mexican sugar compared to the U.S. price.

The opening of the Mexican market is unlikely to have any considerable effect on U.S. sugar producers. The changing state of the Mexican sugar industry makes it difficult to assess with any degree of certainty the impact the eventual opening of the U.S. market to Mexican sugar will have on the U.S. sugar industry.[1] The U.S. sugar industry believes that the NAFTA sugar provisions will have a significant adverse impact on the domestic industry. The possibility does exist that U.S. imports from Mexico could increase to the point of causing contraction in both the U.S. production and processing industries.[2]

Key NAFTA Provisions Affecting Sector

U.S. imports of sugar currently are covered by a tariff rate quota (TRQ) system. Under this system, an allocated amount of sugar is allowed to enter the United States subject to the minimum duty of 0.625 cent per pound, raw value, with the beneficiaries of the Generalized System of Preferences and the Caribbean Basin Initiative having zero duty. Any sugar imported in excess of the allocated amount has a second-tier duty of 16 cents per pound, raw value. The United States also maintains a quota-exempt refined sugar re-export program. Eligible refiners are able to import raw sugar at world prices, refine the sugar, re-export it to the world market, and collect a drawback on the import duties paid on the raw sugar imports.

During the initial 6 years of NAFTA, Mexico's duty-free exports to the United States will be limited to the greater of its current export allocation (7,258 metric tons) or to the quota allocated by the United States under the current sugar program to "other specified countries and areas," a minimum access level of 0.3 percent of the quota allocation. However, if Mexico has production exceeding consumption (net surplus) during the initial 6 years of NAFTA, it may ship annually up to 25,000 tons of its surplus production to the United States at the first-tier duty level. The United States incrementally will reduce its second-tier tariff on sugar imports from Mexico by 15 percent during years 1-6 of NAFTA. During years 7-15, the United States and Mexico will reduce all remaining sugar tariffs linearly to zero. Mexico will be allowed to ship up to a maximum of 150,000 tons of surplus production beginning in year 7, with the ceiling growing 10 percent per year through the rest of the 15-year phase-in. If Mexico reaches net surplus producer status for 2 consecutive years during the 15-year transition period, either in year 7 or in the second year of net surplus, whichever is later, it may ship its total surplus to the United States.

Mexico currently uses a variable tariff, which is adjusted monthly in order to bring imported sugar up to a government-determined reference price. By year 6 of NAFTA, Mexico will align its tariff regime with that of the United States, implementing a TRQ. U.S. shipments under the U.S. refined sugar re-export program will remain in place for exports to Mexico and will receive Mexico's most-favored-nation tariff rate. Both the United States and Mexico will allow nonquota duty-free access for raw sugar imported from the other country, refined, and re-exported to the originating country.

Likely Impact on Investment

Although Mexico has been a net sugar importer in recent years, it has considerable potential to expand its production through an expansion of sugarcane acreage, through improvements in milling and refining efficiencies, and through the introduction of new sugarcane varieties.[3] Industry sources indicate that Mexican sugar producers are actively seeking investment from the United States and elsewhere. However, there is no known pending investment in Mexico by the U.S. sugar-growing or processing industry.

Investment in the Mexican sugar industry and in the Mexican corn wet milling industry for production of high fruclose corn syrup (HFCS) will depend upon Mexican domestic policies controlling the price of sugar and sugar production costs, the support prices of corn, and the volume of duty-free corn allowed into Mexico. Currently the Government of Mexico subsidizes both producers and consumers of sugar, through minimum guaranteed producer prices and officially controlled retail pricing. Profit margins allowed from the two sets of controlled prices reportedly have not been large enough for the majority of newly reprivatized sugar-processing operations to modernize. Mexico's sugar mills are of relatively small size compared to U.S. mills, and are integrated with sugar refineries. Most Mexican mills are over 50

[1] The number of variables and the existence of a tariff rate quota on sugar precluded the use of the Commission's sectoral model to assess the likely impact of NAFTA on the U.S. sugar sector.

[2] This analysis was based upon the current U.S. price-support program for sugar. Any changes in the program could obviously affect the impact of NAFTA on the U.S. and Mexican sugar industries.

[3] Instituto para el Mejoramiento de la Produccion de Azucar (IMPA), which was the sugarcane variety breeding program of the Mexican Government, ceased operation on February 15, 1991, as part of the reprivatization of the Mexican sugar industry, leaving Mexico without a major sugarcane breeding and research operation.

years old, and only one-quarter are estimated to operate with efficient machinery and equipment.[4]

A shift to HFCS by the large Mexican soft-drink industry, which accounts for approximately 56 percent of total industrial use of sugar in Mexico, could spur investment in the Mexican HFCS industry. Such a switch would only be likely if the HFCS price were below the sugar price in Mexico, as it is in the United States. Investment in Mexico would be needed to retool Mexico's beverage-manufacturing industry, which is currently set up to use crystalline sweetener in beverage manufacture, rather than liquid sweetener, and to facilitate the transportation and storage of HFCS from production sites in either the United States or Mexico. The need for this large investment and the costs of transferring either corn or HFCS to Mexico makes the feasibility of HFCS use in Mexico questionable.

In the event of sugar displacement by HFCS in the Mexican beverage industry, all displaced Mexican sugar could be shipped to the U.S. market after the sixth year of NAFTA, provided that Mexico achieves net surplus producer status. Additionally, for Mexican exports to increase, the Mexican producer price must remain below the price in the U.S. market, thereby retaining the U.S. market premium.

The U.S. corn wet milling industry, which is the world's largest, is in the best position to invest in the Mexican wet milling industry. U.S. companies have invested in the Mexican corn wet milling industry, and one U.S. company now holds 50 percent interest in Mexico's third-largest wet miller.

Likely Impact on U.S. Trade

U.S. imports of duty-free sugar from Mexico in the initial year of NAFTA are set by NAFTA at Mexico's current duty-free sugar allocation under the operating U.S. sugar program, and therefore are unlikely to have considerable impact on U.S. trade. Given the Mexican production levels of the past several years, Mexico is not likely to reach surplus producer status in the initial year of the agreement, which would allow it to export up to 25,000 tons of its excess production. A switch to HFCS in the beverage industry, which could make Mexico an excess sugar producer, is improbable during the first year of the agreement. It is possible, though, that Mexico will continue to require considerable imports of U.S. refined sugar through the U.S. sugar re-export program during the initial year of NAFTA, as Mexican stocks have been drawn down from their 1991-92 high and as production continues to fail to keep pace with increases in consumption.

[4] U.S. Department of Agriculture, Economic Research Service, *Latin America's Big Three Sugar Producers in Transition: Cuba, Mexico, Brazil*, Sept. 1992, p. 14.

U.S. imports from Mexico and exports to Mexico in the long term are dependent upon whether or not Mexico eventually achieves net surplus producer status. The vast majority of U.S. sugar-trading partners are those countries currently holding a TRQ allocation under the present U.S. sugar program. If Mexico were to start shipping sugar over its first-tier quota allocation, the first countries to be affected most likely would be the other countries that hold U.S. first-tier quota allocations as the quantity of the allocations could decline as imports from Mexico increased. However, Mexico will continue to be a net sugar importer if contraction of sugarcane acreage occurs and if sugar consumption continues to expand without attractively priced substitutes such as HFCS available. In this situation, U.S. exports under the sugar re-export program probably would occur.

Likely Impact on U.S. Production and Employment

In the initial year of NAFTA, there should not be any effect on the U.S. industry. Mexico is not expected to achieve net surplus producer status in sugar, and therefore it will be allowed to export only the greater of either its current export allocation or the minimum quota allocation.

Given the continuation of the policies of the present U.S. sugar legislation, there would be no effect on the U.S. industry from increased Mexican exports to the United States in the long term, provided that overall imports meet the U.S. minimum import requirement of 1.25 million short tons set by the 1990 farm legislation.[5] Mexican exports of sugar to the U.S. market simply would displace shipments from other suppliers. However, in the face of imports in excess of the difference between domestic production and consumption, and meeting the minimum import level of 1.25 million short tons (thus avoiding marketing controls), the United States' Commodity Credit Corporation (CCC) would be required to purchase U.S.-produced sugar in order to keep the price from falling below the market stabilization price. If the CCC were not able to dispose of the sugar at prices equivalent to the purchase and storage prices, the purchases could interfere with the no-cost provision of the U.S. sugar program as set forth in the 1990 U.S. farm legislation. Furthermore, U.S. growers, millers, and refiners could face depressed U.S. prices caused by the increased imports, and long-term price depression could result in the contraction of the U.S. sugar industry.

[5] Overall imports below this level can trigger U.S. marketing allotments, which limit the amount of sugar domestic producers can market in order to allow minimal imports without price declines.

The NAFTA provision on drawback has raised concern among U.S. sugar producers that the domestic sugar industry will be severely harmed by the withdrawal of duty drawback because the refunds, and the accompanying cash flow, are essential to keep refineries operating.[6] They assert that drawback has been incorporated into refiners' budgets during periods of restricted higher duty imports because of the exemption of sugar imported for refining and export under license from such restrictions and duties, essentially offering opportunities for continuing growth in such operations.

Drawback on exports to non-NAFTA markets would still be available; such markets are significant and might then be expanded, along with other growth in the industry prompted by NAFTA. Contraction of the refining industry also would depend on whether imports entered the United States in refined or raw form. Raw imports could take advantage of U.S. cane-refining capacity, staying contraction in that industry. However, if imports of sugar from Mexico are in refined form, they could hurt the U.S. sugar refining industry. At this time, Mexican imports are most likely to enter in raw form, thus taking advantage of excess U.S. refining capacity.

[6] For a general discussion of duty drawback for agricultural goods under NAFTA, see chapter 21 of this report.

CHAPTER 34
Sugar-Containing Products

Joan Williams

Table 34-1
Sugar-containing products: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	339	345	347	1
Trade data (million dollars):				
Shipments	52,660	53,349	53,600	([1])
Exports:				
Total	1,147	1,674	2,109	26
To Mexico	80	115	150	30
To Canada	201	501	639	28
Imports:				
Total	1,178	1,334	1,463	10
From Mexico	63	72	85	18
From Canada	312	349	410	17
Trade balance:				
Total	-31	340	646	90
With Mexico	17	43	65	51
With Canada	-111	152	229	51
Consumption	52,641	53,009	54,954	4
Import market share (percent):				
Total	2	3	3	([2])
Mexico	([1])	([1])	([1])	([2])
Canada	1	1	1	([2])

[1] Less than 0.5 percent.
[2] Not meaningful for purposes of comparison.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Table 34-2
Miscellaneous edible preparations: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	55	56	56	0
Trade data (million dollars):				
Shipments	11,500	11,960	12,000	([1])
Exports:				
Total	606	837	1,117	33
To Mexico	23	41	53	29
To Canada	78	201	236	17
Imports:				
Total	304	363	452	25
From Mexico	23	21	29	38
From Canada	38	41	89	117
Trade balance:				
Total	302	474	665	40
With Mexico	-	20	24	20
With Canada	40	160	147	-8
Consumption	11,198	11,486	11,335	-1
Import market share (percent):				
Total	3	4	4	([2])
Mexico	([1])	([1])	([1])	([2])
Canada	([1])	([1])	1	([2])

[1] Less than 0.5 percent.
[2] Not meaningful for purposes of comparison.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Table 34-3
Confectionery: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	53	54	54	0
Trade data (million dollars):				
Shipments	8,900	8,974	9,000	([1])
Exports:				
Total	68	111	130	17
To Mexico	12	18	20	11
To Canada[1]	15	48	56	17
Imports:				
Total	216	237	266	12
From Mexico	13	11	15	36
From Canada	26	33	45	36
Trade balance:				
Total	-148	-126	-136	-8
With Mexico	-1	7	5	-29
With Canada[1]	-9	15	11	-27
Consumption	8,752	8,848	8,864	([1])
Import market share (percent):				
Total	2	3	3	([2])
Mexico	([1])	([1])	([1])	([2])
Canada	([1])	([1])	([1])	([2])

[1] Less than 0.5 percent.
[2] Not meaningful for purposes of comparison.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Table 34-4
Cereal and bakery products: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	220	224	226	1
Trade data (million dollars):				
Shipments	29,300	29,435	29,600	1
Exports:				
Total	303	466	645	38
To Mexico	11	23	30	30
To Canada	72	187	268	43
Imports:				
Total	414	448	489	9
From Mexico	23	34	35	3
From Canada	156	166	201	21
Trade balance:				
Total	-111	18	156	767
With Mexico	-12	-11	-5	55
With Canada	-84	21	67	219
Consumption	29,411	29,417	29,444	(1)
Import market share (percent):				
Total	1	2	2	(2)
Mexico	(1)	(1)	(1)	(2)
Canada	1	1	1	(2)

1 Less than 0.5 percent.
2 Not meaningful for purposes of comparison.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Table 34-5
Cocoa and chocolate products: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	11	11	11	0
Trade data (million dollars):				
Shipments	2,960	2,980	3,000	1
Exports:				
Total	170	200	217	9
To Mexico	34	32	47	47
To Canada	36	65	79	22
Imports:				
Total	244	288	257	-11
From Mexico	3	7	5	-29
From Canada	93	109	120	10
Trade balance:				
Total	-74	-88	-40	55
With Mexico	31	25	42	68
With Canada	-57	-44	-41	7
Consumption	3,034	3,068	3,040	-1
Import market share (percent):				
Total	8	9	8	(1)
Mexico	(2)	(2)	(2)	(1)
Canada	3	4	4	(1)

1 Not meaningful for purposes of comparison.
2 Less than 0.5 percent.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Summary of Sector Analysis

Sugar-containing products include a wide variety of articles ranging from beverage mixes that may be almost entirely composed of sugar to pharmaceuticals that may contain minute amounts of sugar. U.S. exports to both Mexico and Canada grew faster than imports from those countries during 1989-91. Breakout tables for four general categories of sugar-containing products—miscellaneous edible preparations, confectionery, cereal and bakery products, and cocoa and chocolate products—provide more specific data.

Mexico's industrial use of sugar has more than doubled in the past two decades as a result of rising population and incomes, and these factors are likely to keep the industrial use of sugar growing. However, past consumption growth also stemmed from low government-controlled consumer prices on sugar and many sugar-containing products. In the short term, the United States and Mexico both are likely to have increased exports to and imports from the other country as a result of NAFTA because of Mexico's currently slightly lower wholesale sugar prices and labor rates and the United States' diversity of products and advanced production technology. Additionally, Mexico may increase exports to the United States of products that were previously under U.S. section 22 global import quotas, but these imports will be limited by new Mexico-specific quotas. The long-term net impact of NAFTA on the U.S.-Mexican sugar-containing products trade cannot be determined at this time, as it will be affected by the Mexican price of sugar relative to the U.S. price of sugar, and the net sugar producer status of Mexico as defined by NAFTA.[1]

Key NAFTA Provisions Affecting Sector

U.S. tariffs on sugar-containing products, involving more than 200 tariff provisions, range from free to 20 percent ad valorem. Both U.S. tariffs and U.S. section 22 import restrictions on sugar-containing products from Mexico will be phased out during a 10-year transition period under NAFTA. The U.S. section 22 import restrictions will be replaced by tariff rate quotas (TRQs). Initially, Mexico will receive three aggregate quotas covering a basket of products: (1) 1,500 metric tons for blended syrups; (2) 1,500 metric tons for certain articles containing more than 65 percent sugar; and (3) 12,791 metric tons for certain articles containing more than 10-percent sugar. These quotas will grow by a 3-percent compounded annual rate during the transition period. In-quota imports from Mexico will enter the United States duty-free. Imports from Mexico above quota will face U.S. tariffs ranging from 91.2 to 120.3 percent ad valorem, depending on the product. The overquota tariffs will be phased out linearly over 10 years. The U.S. re-export program for sugar-containing products will end on January 1, 2001, with respect to Mexico.

Mexican tariffs on sugar-containing products range from 10 to 20 percent ad valorem and will be phased out linearly over 10 years. Mexico does not have NTBs affecting trade in sugar-containing products.

Likely Impact on Investment

Short-term U.S. investment in the Mexican sugar-containing products industry most likely will focus on servicing the Mexican domestic market, as U.S. producers have found present distribution channels in Mexico to be inadequate for their export products. In addition, the Mexican wholesale price of sugar is currently closer to that of the United States than the wholesale price of sugar in other countries exporting to the United States, tempering U.S. import demand from Mexico of products not under quota.

Sugar-containing products industries are generally highly capital intensive. Increases in the Mexican wholesale price of sugar relative to that of the United States could minimize any savings in labor costs, although investment decisions also will depend upon the costs of other inputs.[2] Decreases in the wholesale price of Mexican sugar would make investments in sugar-containing products more favorable in Mexico. However, a decline in the wholesale sugar price also would raise the profit Mexican sugar producers could receive for selling sugar in the U.S. market, possibly increasing the Mexican sugar cost to sugar-containing products producers in Mexico.

U.S. and other companies that produce sugar-containing products already have invested in the Mexican industry. Several of the best known joint ventures have been between Grupo Industrial Bimbo and Sara Lee, and PepsiCo and Gamesa. Grupo Industrial Bimbo is Mexico's largest baking company, and already services the U.S. market, largely in areas of large Latino concentration. Its association with Sara Lee allows Sara Lee access to the Mexican market

[1] This analysis was based upon the current U.S. sugar program. The number of variables and the existence of section 22 provisions on many of the products precluded the use of the Commission's sectoral model to assess the likely impact of NAFTA on this U.S. sector.

[2] By year 6 of NAFTA, Mexico will align its tariff regime for sugar with that of the United States, implementing a tariff quota with rates equal to those of the United States. Despite rules of origin specified in NAFTA for sugar-containing products, the cost of production of these products could be affected by the amount of world price sugar and sugar-containing products imported into Mexico both before and after alignment of the Mexican tariff regime with that of the United States.

through distribution by the Mexican baking giant. PepsiCo's joint venture with Gamesa, an important producer of cookies and crackers in the Mexican market, has concentrated on expanding production facilities. U.S. companies Ralston-Purina and Kellogg's also have operations in Mexico. Nestle, the Swiss food company, is already one of Mexico's largest food corporations, and supplies sugar-containing products to the U.S., Central American, Caribbean, and European markets from its Mexican operations.

Likely Impact on U.S. Trade

In the initial year of NAFTA, U.S. exports of sugar-containing products to Mexico are not likely to undergo important change as Mexico does not have any NTBs on imports of sugar-containing products, and Mexican tariffs on sugar-containing products currently range from 10 to 20 percent ad valorem, to be phased out incrementally over 10 years under NAFTA. Furthermore, the U.S. re-export program for sugar-containing products will still be in effect the first year of NAFTA.

In the long run, increased investment in Mexico resulting in the improvement of the distribution channels should allow greater market access for U.S. exports of sugar-containing products to Mexico. However, even after the total elimination of Mexican tariffs under NAFTA on U.S. sugar-containing products, U.S. companies exporting to Mexico could compete against imports into Mexico of sugar-containing products from countries with lower sugar prices.

Mexican exports to the United States of non-section-22 sugar-containing products should not be greatly affected by NAFTA in the short term, as the relatively high wholesale price of Mexican sugar compared to other U.S. suppliers may offset the benefit over other suppliers to the U.S. market gained by the reduction in tariffs. Under the provisions of NAFTA, Mexican exports of sugar-containing products under section 22 will not affect the quantitative value of U.S. global quotas on section 22 products. Whether Mexican exports to the United States will affect the fulfillment of the global quotas in the future will depend upon the price of the Mexican products compared with those of other suppliers as well as whether demand for the products exceeds the global quota. In the long term, growth in overall Mexican exports of sugar-containing products to the United States will be partially dependent upon Mexican exports of sugar to the United States and the premium received for each product in the U.S. market.

Under the provisions of the U.S.-Canada Free-Trade Agreement, Canada remains subject to U.S. section 22 quotas on sugar-containing products, and therefore its exports of section 22 sugar-containing products to the United States will continue to enter as part of the global quota. Canada has grown in recent years as a supplier to the U.S. market of sugar-containing products not under quota. Because Canada is an importer of world sugar (which is currently less expensive than U.S. or Mexican sugar), existing Canadian sugar-containing product exports not under section 22 quotas to the United States are unlikely to be greatly affected by future Mexican exports to the United States.

Likely Impact on U.S. Production and Employment

NAFTA is not likely to have any impact on the U.S. sugar-containing products industry in the short run. The quotas on Mexican exports to the United States under NAFTA as well as the current price of Mexican sugar will limit the possible adverse impact on the U.S. industry in the short term. In the long run, U.S. production and employment in the sugar-containing products industry could experience growth, given improvement in distribution channels in Mexico and the continued closeness of sugar prices. However, the U.S. sugar-containing products industry could face increased imports from Mexico, particularly after the 10-year phase-in of the sugar-containing products provisions of NAFTA and before the 15-year phase-in of the final sugar provisions. While increased imports could have an adverse effect on U.S. production and employment, considerations such as quality, brand-name recognition, and stability of supply may moderate the impact. U.S. sugar production and employment could be affected adversely by these imports of sugar-containing products provided they are sufficient to drive the U.S. sugar price downward.

CHAPTER 35
Dairy Products

Fred Warren

Table 35-1
Dairy products: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	790	785	770	-2
Trade data (million dollars):				
Shipments	42,568	45,616	43,613	-4
Exports:				
Total	365	282	325	15
To Mexico	200	57	113	98
To Canada	12	20	22	10
Imports:				
Total	815	853	756	-11
From Mexico	0	0	0	0
From Canada	16	18	12	-33
Trade balance:				
Total	-450	-571	-431	25
With Mexico	200	57	113	98
With Canada	-4	2	10	400
Consumption	43,018	46,187	44,044	-5
Import market share (percent):				
Total	2	2	2	(2)
Mexico	0	0	0	(2)
Canada	(1)	(1)	(1)	(2)

1 Less than 0.5 percent.
2 Not meaningful for purposes of comparison.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Summary of Sector Analysis

The United States has been a net importer of dairy products for many years. U.S. exports of dairy products to all countries, including Mexico, have been limited due to competition from low-cost suppliers as well as from subsidized exports from the European Community. The U.S. trade balance with Mexico has been positive, however. Donations, concessional, or government-aided sales of milk powder generally have accounted for most of this trade surplus. There have been no U.S. imports of dairy products from Mexico for many years, because such products cannot compete in the U.S. market. Mexico also has not been allocated any of the section 22 quotas for dairy products.

NAFTA will likely benefit the U.S. dairy products sector in both the short and long term because (1) Mexico's dairy industry is at a competitive disadvantage relative to the U.S. dairy industry, and (2) Mexico's production of milk and dairy products does not meet its domestic demand. While NAFTA will likely result in only a minor increase in U.S. imports of Mexican dairy products in both the short and long term, the agreement will likely lead to a considerable increase in U.S. exports of dairy products to Mexico. Virtually all of these exports will likely consist of milk powder and possibly butter oil. NAFTA will likely result in only a minor increase in U.S. exports of other dairy products because of limited refrigerated transportation and storage in Mexico.

The expected increase in U.S. exports of dairy products to Mexico as a result of NAFTA will largely be supplied from the surplus production of nonfat dry milk, butter, or cheese that is purchased by the U.S. Department of Agriculture (USDA) to support the price of milk as required by law, or from forgone USDA purchases that, instead, will be moved into the export trade. Hence, the impact of NAFTA on U.S. investment, production, and employment in the dairy products sector is expected to be minor in both the short and long term.

Canada and Mexico mutually excluded their dairy product trade from NAFTA; and Canada and the United States excluded their trade from the U.S.-Canada Free-Trade Agreement (CFTA). Hence, NAFTA will not affect U.S. or Mexican dairy product trade with Canada.

Key NAFTA Provisions Affecting Sector

For many years, imports of dairy products into the United States from Mexico have been subject to quotas, and imports of such products into Mexico from the United States have been subject to import licenses. Under NAFTA, both countries will eliminate these measures. A number of dairy products will be subject to tariff rate quotas (TRQs) that will be phased out over a specified transition period.

U.S. tariffs on imports of dairy products range from free to 30 percent ad valorem equivalent. About half of the dairy products included in this sector, mostly casein, lactalbumin, and cheeses made from sheep's milk, enter the United States duty-free under existing tariff provisions. The aggregate trade-weighted average rate of duty for the dutiable products is 8.4 percent ad valorem equivalent, based on 1991 imports; the ad valorem equivalent for all products in the sector is 4.6 percent.

For some dozen fluid dairy products (including cajeta and chongoes), U.S. rates of duty on imports from Mexico are scheduled to be eliminated immediately; for the remaining 50 or so products, U.S. rates of duty are to be phased out over 10 years.

Under NAFTA, the United States will establish TRQs for milk powder and cheese—to be increased at a 3-percent compounded annual rate over the 10-year transition period. Relatively high tariffs will be imposed on imports in excess of the TRQs, and these tariffs will be eliminated over the 10-year transition period. For cheeses subject to section 22 quotas, for example, the TRQ rate under NAFTA initially will be 5,500 metric tons to be increased at a 3-percent compounded annual rate over the 10-year transition period; imports in excess of the quota will be dutiable at specific rates of duty ranging from $1,200 to $2,180 per metric ton, or not less than 69.5 percent. For most other products, the initial quotas will be approximately 5 percent of the current U.S. quotas. Over the 10-year transition period Mexico will gradually receive open access to the U.S. market for all dairy products.

Mexico's rates of duty on imports of U.S. dairy products average about 20 percent ad valorem on cheese, butter, yogurt, and ice cream; 15 percent ad valorem on condensed milk in airtight containers, casein, caseinates, and lactalbumin; 10 percent ad valorem on condensed (other than in airtight containers), evaporated, and fluid milk; and free on nonfat dry milk and dehydrated butyric fat.

Under NAFTA, Mexico's rates of duty on imports of U.S. dairy products are scheduled to be phased out over 10 years on about 40 of the dairy product provisions in the Mexican Tariff Schedule. On three of the Mexican provisions, the rates of duty are scheduled to be eliminated immediately. On two of the provisions, skim and whole milk powder, Mexico is scheduled to establish TRQs to be increased at a 3-percent compounded annual rate over a 15-year transition period; relatively high tariffs (initially not less than 139 percent) will be imposed on imports in excess of the TRQ.

Upon enactment of NAFTA, Mexico is scheduled to convert its import- licensing system for U.S. dairy products to tariff-only treatment. This tariff treatment is to be reduced to zero in equal installments over a 10-year transition period (15 years for milk powder). For example, Mexican imports of U.S. cheese will be assessed the 20-percent ad valorem rate of duty (40 percent for fresh cheese) when the licensing is terminated. Such duties are to be reduced to zero over the 10-year transitional period.

Likely Impact on Investment

The impact of NAFTA on U.S. investment in the United States is expected to be minor in the short and long term because the anticipated increase in U.S. exports of dairy products to Mexico resulting from NAFTA would be supplied from surplus production.

NAFTA is expected to result in virtually no U.S. investment in the dairy products sector in Mexico in the short or long term. Mexico is lacking in climatic conditions similar to those existing in the United States for producing sufficient feed supplies for dairy herds. The expected increase in U.S. exports of feed grains to Mexico as a result of NAFTA are expected to be used to produce food for human consumption and feed for pork and poultry, rather than for dairy herds. Mexico also lacks infrastructure of the type found in the United States for handling and transporting milk as well as the state-of-the-art techniques for manufacturing and distributing dairy products. Traditionally, Mexicans have not been large consumers of dairy products.

NAFTA-related Mexican investment in its dairy products sector to supply the U.S. or Mexican dairy market is expected to be virtually nil. Mexico is not cost-competitive[1] with the United States in the production of milk and dairy products. Moreover, the surplus dairy situation in the United States will discourage Mexican investment in the U.S. industry.

Likely Impact on U.S. Trade

NAFTA will likely have little or no short- or long-term impact on U.S. imports of dairy products from Mexico, with the possible exception of a minor increase in U.S. imports of cheese and a few specialty products. U.S. health and sanitary regulations for milk and other fluid dairy products will continue under NAFTA; Mexican dairy products generally do not comply with U.S. health and sanitary regulations. Mexico is a net importer of milk and dairy products. Mexican imports of dry milk and butter oil are reconstituted into a fluid milk product for consumption by the poor.

With the exception of milk powder and possibly butter oil, U.S. exports of dairy products to Mexico will likely experience only minor increases in the short and long term as a result of NAFTA, largely because refrigerated transportation and storage are in limited supply in Mexico. For skim and whole milk powder, U.S. exports of 40,000 metric tons in the initial year of NAFTA will be allowed duty-free access to the Mexican market. In 1991, U.S. exports of such products to Mexico totaled 23,000 metric tons. Growth in this TRQ at a 3-percent compounded annual rate over the 15-year NAFTA transition period will allow duty-free access of up to 62,300 metric tons.

[1] USDA, Foreign Agricultural Service, "1992 Annual Dairy Report," prepared by the U.S. Embassy, Mexico City, AGR No. MX 2225, p. 14.

It is doubtful that U.S. exports of skim and whole milk powder to Mexico will exceed the duty-free access amount, at least until the end of the 15-year transitional period, because the excess quantities are dutiable at a tariff of not less than 139 percent to be phased out over the period. These dutiable excess quantities from the United States will not be competitive in Mexico with exports from other world suppliers. Other suppliers would be subject to Mexico's lower most-favored-nation duty rates, but would still be subject to Mexico's import licensing requirements, which restrict imports.

The anticipated increase in U.S. exports to Mexico as a result of NAFTA is expected to come from USDA inventories. In 1991, all U.S. exports of dairy products to Mexico (milk powder) were under U.S. Government programs.

Likely Impact on U.S. Production and Employment

NAFTA is expected to have virtually no impact on U.S. production and employment in the U.S. dairy products sector. During the past several years, about 32 percent of the average annual U.S. production of butter, 2 percent of the production of Cheddar cheese, and 14 percent of the production of nonfat dry milk have been removed from the commercial market under the USDA price-support programs to support the price of milk as required by law. Surplus production generally has plagued the U.S. dairy sector for many years, and USDA data do not suggest any significant change in the foreseeable future. Thus, adequate supplies exist to meet any increased demand as a result of NAFTA.

CHAPTER 36
Peanuts

Steve Burket

Table 36-1
Peanuts: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	(1)	(1)	(1)	(1)
Trade data (million dollars):				
Shipments[2]	1,117	1,257	1,406	12
Exports:				
Total	205	220	201	-9
To Mexico	4	7	10	43
To Canada	33	46	41	-11
Imports:				
Total	4	6	24	300
From Mexico	(3)	0	(3)	(4)
From Canada	2	3	8	167
Trade balance:				
Total	201	214	177	-17
With Mexico	4	7	10	43
With Canada	31	43	33	-23
Consumption	916	1,043	1,229	18
Import market share (percent):				
Total	(5)	1	2	(4)
Mexico	(5)	0	(5)	(4)
Canada	(5)	(5)	1	(4)

[1] Not available.
[2] Farm value.
[3] Less than $0.5 million.
[4] Not meaningful for purposes of comparison.
[5] Less than 0.5 percent.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures.

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

Summary of Sector Analysis

The United States is a major producer of peanuts and is the world's leading exporter of peanuts. The United States is recognized as a reliable supplier of high-quality peanuts whereas Mexico is relatively unknown in world peanut trade. NAFTA is likely to have little or no impact on the global competitiveness of the U.S. peanut industry in the short and long term. U.S. imports, and investment patterns among the United States, Canada, and Mexico are unlikely to be affected. U.S. production and employment in the peanut industry are not likely to be affected by NAFTA. NAFTA is projected to have a minor impact on U.S. exports of peanuts to Mexico.

The U.S. price support program for peanuts protects U.S. farmers' income. The quota-support loan rate acts as a floor for domestic market prices for peanuts produced within the national poundage quota. The domestic market price has seldom dropped appreciably below the quota-support rate. This analysis is based on the assumption that the peanut price-support program will remain unchanged in the future. If the quota-support loan rate or the national poundage quota are reduced as a result of increased U.S. imports of peanuts from Mexico, U.S. production and employment could possibly be hurt by increased imports from Mexico.

Key NAFTA Provisions Affecting Sector

U.S. most-favored-nation (MFN) rates of duty for imports of peanuts are 6.6 cents and 9.35 cents per kilogram.[1] Under NAFTA, U.S. rates of duty on peanut imports from Mexico will be phased out over 15 years. For those products covered by the section 22 quota, the quota will be replaced with a tariff rate quota that will be eliminated over 15 years.[2]

Mexico's MFN rates of duty are free for in shell and shelled peanuts, not roasted or otherwise cooked, whether or not shelled or broken. Mexico's tariff on peanuts, otherwise prepared or preserved, is 20 percent ad valorem. This duty will be phased out in equal increments over 10 years.

Likely Impact on Investment

NAFTA will have no effect on investment in the U.S. peanut industry in either the short or long term, nor will it have an effect on existing investment patterns among the United States, Canada, and Mexico. The production of peanuts and peanut products are capital-intensive and hence do not lend themselves to taking advantage of Mexico's abundant labor supply. Large quantities of water are also required to produce the high-quality edible peanuts that are consumed in the U.S. and world peanut markets. In the areas of Mexico where sufficient quantities of water exist to produce high-quality peanuts, other high-value crops compete for available water supplies. Also, peanuts do not fit particularly well into multicrop rotations because of their long maturity.

There is substantial investment by U.S. peanut product manufacturers in Canada. However, none of the provisions within NAFTA should affect investment decisions between the United States and Canada in the short or long term.

Likely Impact on U.S. Trade

NAFTA is not likely to affect U.S. imports of peanuts from Mexico. In the short term, Mexico does not have significant quantities of high-quality peanuts for export to the U.S. market. Total Mexican production of peanuts is believed to be less than 90,000 metric tons annually, virtually all being consumed locally. Most of Mexico's peanut production is in the Mexico City area and the Southern States of Puebla, Oaxaca, and Chiapas. In the long term, the area planted with peanuts for export could be expanded. However, this would require substantial investment in planting and harvesting equipment, shelling and grading equipment, and storage facilities, along with the necessary infrastructure to move peanuts from the shellers in Southern Mexico to processors and manufacturers in the United States. Such investment is unlikely because of the high cost of capital in Mexico compared to the cost of capital in the United States.

The United States has developed an export market in Mexico based on the quality and reliability of the U.S. product. More importantly, the U.S. Department of Agriculture (USDA) as of August 1, 1992, amended the administrative rules with regard to exports of peanuts and peanut products to Canada and Mexico. Prior to August 1, these exports had to consist of quota peanuts.[3] Beginning August 1, U.S. exporters to Canada and Mexico were allowed to ship U.S. "additionals" and use them in peanut products going to these markets.[4] This change is expected to greatly enhance the competitiveness of U.S. exporters in these markets. U.S. additionals are usually priced at one-half to two-thirds of the price of U.S. quota peanuts.

In 1991, 88 percent of U.S. exports of peanuts and peanut products to Mexico consisted of raw shelled peanuts for use by food processors in Mexico. U.S. exports of peanuts have supplied about 10-12 percent of Mexico's consumption in recent years. The Commission's sectoral model indicates that U.S. exports of such peanuts likely would be virtually unchanged in the short term and would increase by less than 5 percent in the long term as a result of NAFTA.

Likely Impact on U.S. Production and Employment

In the short term, there likely would be no effect on U.S. production or employment in the U.S. peanut industry. In the long term, U.S. production and employment could decline if Mexico were to increase its exports to the United States, but the extent of any decline will be tempered by the price support program for peanuts administered by the Commodity Credit Corporation (CCC) of USDA. U.S. production of peanuts is regulated through a national poundage quota, and the price is maintained through a two-tier

[1] The 9.35 cents rate applies to in shell peanuts, not roasted or otherwise cooked; the 6.6 cents rates applies to all other peanuts. U.S. imports of peanuts are not eligible for duty-free treatment under the Generalized System of Preferences (GSP).

[2] Treatment of the quota under NAFTA is described in the next section of the chapter.

[3] "Quota peanuts" are peanuts produced within a farm-level poundage quota.

[4] "Additionals" are peanuts that are produced in excess of a farm-level poundage quota as provided for in the Food, Agriculture, Conservation and Trade Act of 1990.

price-support system.[5] The Secretary of Agriculture is required to annually establish a national poundage quota.[6] The national poundage quota equals the estimated domestic edible, seed, and related uses (domestic consumption) for the year.

Under NAFTA, the Secretary of Agriculture will be required to estimate the level of peanut imports from Mexico in establishing the national poundage quota. The national poundage quota would be reduced if domestic consumption does not increase as fast as imports from Mexico. Therefore, the quantity of peanuts eligible for the quota support price would decline, with any excess farm production receiving only the lower additional price if placed under loan to the CCC, which could result in farm income declining. The decline in production and employment in the U.S. peanut industry will be dependent on the magnitude of the decline in income.

If U.S. imports of peanuts should increase to a level that would require the national poundage quota to be set at a level below the minimum required by law, the CCC would have to purchase peanuts produced within the national poundage quota at the quota support price. Farm income for those producers who place "additionals" under loan to the CCC could decline.[7]

[5] Quota-support prices ($743.97 per metric ton in 1992) are limited to quota holders and apply to peanuts produced within the national poundage quota (quota peanuts). Peanuts produced in excess of the poundage quota ("additionals") are eligible for the lower tier ($144.50 per metric ton in 1992) of the two price-support levels. The additional price support level is set sufficiently low so as to insure that the CCC will not incur any losses.

[6] The Food, Agriculture, Conservation and Trade Act of 1990 provides for a minimum national poundage quota of 1,224,712 metric tons.

[7] The Secretary of Agriculture through marketing associations in the major producing area establishes loan pools for quota peanuts placed under loan and for additional peanuts are distributed to producers in proportion to the value of such peanuts placed in the pool by each producer. Any gain on additional peanuts are first used to reduce losses on quota peanuts to the extent of any such losses incurred by the CCC, and then distributed to producers.

CHAPTER 37
Cotton[1]

Mary Elizabeth Sweet

Table 37-1
Cotton: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Acres harvested[1] (1,000 acres)	9,538	11,732	12,960	10
Trade data (million dollars):				
Production[1]	3,875	5,076	4,929	-3
Exports:				
Total	2,276	2,822	2,519	-11
To Mexico	28	58	65	12
To Canada	58	66	77	17
Imports:				
Total	4	3	6	100
From Mexico	(2)	0	2	(3)
From Canada	(2)	(2)	1	[4]555
Trade balance:				
Total	2,272	2,819	2,513	-11
With Mexico	28	58	63	9
With Canada	58	66	76	15
Consumption[1]	2,782	2,834	2,658	-6
Import market share (percent):				
Total	(5)	(5)	(5)	(3)
Mexico	(5)	(3)	(5)	(3)
Canada	(5)	(5)	(5)	(3)

[1] Based on crop year beginning Aug. 1; consumption data take into account changes in yearend stock levels, not shown in this table.
[2] Less than $0.5 million.
[3] Not meaningful for purposes of comparison.
[4] Figure based on unrounded data.
[5] Less than 0.5 percent.

Note.—A comparison of 1989 and later export data (total and Canada) may be misleading because the U.S. Department of Commerce changed its method of compiling statistics on U.S. exports to Canada in 1990. Percentage changes are based on rounded figures unless otherwise indicated.

Source: Compiled from official statistics of the U.S. Departments of Agriculture and Commerce.

Summary of Sector Analysis

The United States ranks among the world's largest producers, consumers, and exporters of cotton. It supplies about 85 percent of cotton imports into Canada, which does not produce any of the fiber because of unfavorable climate. The United States is also the major foreign cotton supplier to Mexico, a small world producer with production of 180,000 tons accounting for about 1 percent of global production in crop year 1991/92. In that crop year, Mexico exported 55,000 tons of raw cotton, or 31 percent of its production and imported 44,000 tons, or 26 percent of its consumption.[2]

NAFTA is expected to have a minor beneficial impact on the U.S. cotton industry. No foreign investment is anticipated as a result of NAFTA. U.S. quotas on imports of cotton from Mexico have not been binding, and duty rates are currently free or 5 percent or less. An indirect effect on the U.S. cotton

[1] For purposes of this report, cotton includes raw cotton, cotton waste, and unspun processed cotton, classified under Harmonized System headings 5201-5203.

[2] Mexico mainly produces cotton under 1-1/8 inches in length and imports cotton with greater staple length.

industry resulting from NAFTA would be the downstream projected minor increase in production by the U.S. textile mill industry resulting from expected increased demand for U.S. textile exports to the Mexican market.[3]

Key NAFTA Provisions Affecting Sector

U.S. imports of cotton from Mexico were subject to a trade-weighted ad valorem equivalent duty of 0.1 percent in 1991 and to quotas under section 22. The tariff provisions, products covered by quotas, and quantity of U.S. imports (in thousands of kilograms) for cotton are shown in the tabulation below.

U.S. tariffs will be eliminated immediately under NAFTA. For those products subject to section 22 quotas, the current product-specific quotas will be replaced under NAFTA with one tariff rate quota, which will increase by 3 percent annually, remain in effect for 10 years, and then be eliminated entirely. U.S. imports above the tariff rate quota would be subject to a tariff initially of 26 percent ad valorem, which will be phased out in equal increments over 10 years.

Mexico's most-favored-nation rate of duty for virtually all imports of cotton is 10 percent ad valorem. The one exception is cotton of a staple length over 1-11/16 inches, which enters duty-free and which is not generally grown in Mexico. Most of the Mexican tariffs on cotton will be phased out over 10 years under NAFTA, with the tariffs on yarn waste, garnetted stock, and certain other waste products phased out over 5 years.

[3] See the "Textiles and Apparel" sector analysis in chapter 8 of this report.

Likely Impact on Investment

NAFTA is unlikely to change the status of foreign direct investment in the cotton industry in the United States or in Mexico. Future investment in Mexico is unlikely because of water shortages, problems with environmental contamination from chemicals used on cotton, and greater profits from production and processing of food crops rather than cash crops such as cotton.[4]

Likely Impact on U.S. Trade

The changes effected by NAFTA on trade in cotton will likely be minor. U.S. imports from Mexico consist almost entirely of raw cotton that currently enters duty-free. Moreover, Mexico has filled less than 50 percent of its raw cotton quota in recent years; in some years no imports from Mexico have been reported. The Commission's sectoral model indicates that imports from Mexico would increase by 21 percent in quantity over 1991 imports, an amount equivalent to roughly 6 percent of total 1991 U.S. cotton imports, but an insignificant share of U.S. consumption.

The increase in cotton exports directly attributable to duty elimination under NAFTA as projected by the Commission's sectoral model would be a 3-percent increase for U.S. exports to Mexico on a short-term basis and a 30-percent increase over the long term. Although considerable in terms of growth to that market, this is an amount equivalent to less than 1 percent of total 1991 U.S. cotton exports.

[4] Offering a somewhat opposing view, the National Cotton Council of America in its written submission to the Commission stated that as imports of feed grains from the United States to Mexico increase as a result of NAFTA, prices for these grains in Mexico will likely fall and Mexican farmers will respond by seeking alternative crops, one of which is cotton.

Product	U.S. duty rate	Covered by quota	1991 imports
Cotton, not carded or combed:			
Staple length under 1-1/8 inches:			
Under 3/4 inch	Free	No	268
Other	Free	Yes	2,121
Staple length 1-1/8 inches or more but under 1-11/16 inches	4.4¢/kg	Yes	50
Staple length 1-11/16 inches or more	1.5¢/kg	Yes	0
Cotton waste:			
Yarn	Free	No	0
Garnetted stock	5%	No	0
Other waste:			
Card strips and comber, lap, sliver, and roving waste	Free	Yes	0
Other	Free	No	90
Cotton, carded or combed	5%	Yes	0

Likely Impact on U.S. Production and Employment

The anticipated increase in U.S. cotton exports to Mexico would more than offset any growth in U.S. cotton imports from Mexico, overall resulting in a minor beneficial impact on the U.S. cotton industry, equivalent to increases of less than 1 percent of production and employment.[5]

[5] Employment in the cotton sector, including farming, ginning, and warehousing, is about 15,000 workers.

Part V. THE LIKELY IMPACT OF NAFTA ON U.S. SERVICE SECTORS

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CHAPTER 38
Key NAFTA Provisions Affecting Service Sectors

Overview

The United States has some of the largest and most competitive services firms in the world. U.S. providers have invested in services and exported services on a cross-border basis to both Canada and Mexico. U.S. services trade with Canada and U.S. investment in Canada are not expected to change appreciably as a result of NAFTA. Almost all service sectors were included in the U.S.-Canada Free-Trade Agreement, and U.S. providers with an interest in this market actively participate in Canada already. Because Mexico has restricted trade in services, NAFTA will likely have a more noticeable impact on U.S. service investment in, and trade with, Mexico. Prior to the negotiation of NAFTA, U.S. service providers in sectors where foreign participation was permitted had few investments in the Mexican market. However, investment by U.S. service providers accelerated in response to the 1989 liberalization of the law regulating foreign investment and the concurrent privatization of state-owned firms in several Mexican service sectors, such as telecommunications. This trend is expected to accelerate further under NAFTA.

Service transactions require a high degree of interaction between the user and the provider of the service. Such interaction often results in the service provider establishing an affiliate in the user's country. Foreign direct investment (FDI) is thus key to many international service transactions. Sales by overseas affiliates of U.S. firms account for a large share of the total foreign revenues of U.S. service providers and their subsidiaries. Given the importance of FDI to service transactions, restrictions on establishment and denial of national treatment of foreign enterprises, and barriers to cross-border flows of information present significant NTBs to trade in services.

The temporary cross-border movement of personnel, information, and equipment is also an important aspect of trade in services. For some services, the buyer and seller may interact at a distance through electronic information flows and other modern telecommunications channels.

In general, U.S. trade in services with Mexico does not represent a significant portion of U.S. international services trade activity. U.S. sales of services worldwide are approximately $256.8 billion, but U.S. sales to Mexico are approximately $8.0 billion, 3 percent of total U.S. sales of services worldwide.[1] Available data indicate that the size of the Mexican market for services is less than 5 percent of the size the U.S. market for services.

The current low level of U.S. participation in Mexico is the result of existing structural and economic factors. Mexico's relatively small commercial sector, coupled with the country's relatively underdeveloped telecommunication and computer systems and transportation infrastructure, results in a relatively low level of demand for business and professional services and for various types of high-technology services. Although Mexico has made significant progress in liberalizing its economy, it is unlikely that the Mexican economy and business environment will change quickly enough to have much of an impact on services trade in the short term. Under NAFTA, the removal of NTBs such as restrictions on investment and the ability to provide freely services such as trucking, insurance, and banking likely will, in the long term, make Mexico a more attractive market for service providers.

NAFTA Provisions

The general NAFTA provisions on investment,[2] cross-border trade in services,[3] and the annexes attached thereto create important new opportunities for U.S. and Canadian service providers and their investments in Mexico. The "Cross-Border Trade in Services" chapter applies to all service providers except financial services and air services.[4] It establishes the principle of nondiscrimination (the

[1] The intangible nature of many service transactions presents difficult challenges in collecting trade data as well as in assessing the impact of services trade barriers. It is often impossible to identify a unique "unit" of services and most providers do not collect or report information on services that clearly separates domestic activities from foreign activities. The most comprehensive and detailed trade figures for services are available from the U.S. Bureau of Economic Analysis as cross-border transactions and sales by majority-owned foreign affiliates of U.S. companies in 1990.

[2] NAFTA, ch. 11.

[3] Ibid., ch. 12.

[4] Chapter 12 "applies to measures adopted or maintained by a party relating to cross-border trade in services by service providers of another party, including measures respecting (a) the production, distribution, marketing, sale and delivery of a service; (b) the purchase or use of, or payment for, a service; (c) the access to and use of distribution and transportation systems in

better of national treatment or most-favored nation treatment)[5] or prohibits local presence requirements,[6] and sets forth commitments to negotiate the removal of quantitative restrictions,[7] licensing, and performance require- ments.[8] It also provides for transparent licensing and certification of service providers on the basis of objective criteria such as competence and ability to provide the service. In addition, this chapter provides for the elimination of any citizenship and permanent residency requirements that "professional service providers" (e.g., doctors, lawyers, and accountants) of another party are currently required to meet.[9]

Similarly, the NAFTA Investment chapter also provides substantial new benefits to U.S., Canadian, and Mexican service providers operating in Mexico. The "Investment" chapter[10] applies to investments that are defined, among other things, as "enterprises," and which involve the "establishment, acquisition, expansion, management, conduct, operation, and sale or other disposition of investments" by investors of any party.[11] Many U.S. and Canadian service providers are likely to establish investments (enterprises) in Mexico.[12] These investments of U.S. and Canadian service providers will receive the better of MFN or national treatment, freedom to transfer profits, elimination of burdensome performance requirements, the right to prompt compensation of their fair market value in the event of expropriation, and the right to international arbitration of disputes with Mexican state enterprises or the Mexican Government.[13]

The "Cross-Border Trade in Services" and "Investment" chapters will not require significant changes to either U.S. or Canadian federal laws because each country already has relatively open and nondiscriminatory services markets.[14] Each of the parties to NAFTA has exempted certain sectors from the liberalized treatment described above. Those reservations are set forth in the various annexes to the agreement, and where relevant, are discussed below in the individual sector discussions. While broad, these reservations are the only exceptions permitted because NAFTA provides that all services are covered unless they are specifically withdrawn from the agreement in a process called "scheduling reservations." This proviso allows for the widest possible coverage of existing services and any new services in the future. In addition, NAFTA applies to both existing and future laws governing trade in services.

A number of sector-specific NAFTA provisions create significant new openings in Mexico for U.S. and Canadian service providers, either through cross-border trade or by allowing investment in, or establishment of, Mexican enterprises in the telecommunications, banking, insurance, engineering, construction, and transportation services markets.[15]

As discussed in the individual sector reports that follow, current restrictive Mexican Federal laws and/or regulations either prohibit foreign participation altogether or limit foreign participation to a minority-ownership position, without any guarantees of national treatment or transparency. Mexico's NAFTA commitments to accord service providers the better of MFN or national treatment, together with the commitment to liberalize the licensing and certification of service providers,[16] means that many of these restrictive laws and/or regulations will be eliminated, amended, or superseded by the NAFTA text, unless

4—*Continued*
connection with the provision of a service; (d) the presence in its territory of a service provider of another party; and (e) the provision of a bond or other form of financial security as a condition for the provision of a service." NAFTA, art. 1201.

5 Ibid., arts. 1202, 1203, and 1204.

6 Ibid., art. 1205.

7 Ibid., art. 1207. Quantitative restrictions are measures that impose limitations on the number of service providers or the operations of any service provider. NAFTA, art. 1213. These restrictions do not violate the general principles of the cross-border trade in services chapter but, nevertheless, could constitute barriers to trade. Annex V contains a list of the parties' quantitative restrictions made at the Federal level; State and Provincial quantitative restrictions must be set forth in this annex within 1 year of the date of entry into force of the agreement.

8 NAFTA, art. 1207.

9 Ibid., art. 1210. Chapter 12 also contains specific annexes governing professional services (section A of annex 1210.5), foreign legal consultant services (section B of annex 1210.5), temporary licensing of engineers (section C of annex 1210.5), and land transportation services (annex 1212).

10 The "Investment" chapter, like the "Cross-Border Trade in Services" chapter, does not apply to financial services such as insurance and banking.

11 NAFTA, art. 1102(1).

12 For example, U.S.-owned construction and engineering services firms, telecommunications firms, and transportation services firms that establish Mexican subsidiaries, open offices, or otherwise operate in Mexico as a corporation, partnership, or sole proprietorship would be considered "enterprises" (defined in article 201 as "any entity constituted or organized under applicable law, whether or not for profit, and whether privately-owned or governmentally-owned, including any corporation, trust, partnership, sole proprietorship, joint venture or other association.").

13 NAFTA, arts. 1102, 1103, 1106, 1109, 1110, and 1115-38.

14 In both Canada and the United States, services are primarily regulated at the State and Province level, and there are a number of restrictive requirements on foreign services at the State and Province level. However, since States and Provinces are not required to list their nonconforming laws until 2 years after the agreement becomes effective, it is difficult to ascertain at this point what changes will be required.

15 See, e.g., NAFTA, chs. 11-14, and annex 1210.5.

16 Mexico currently has strict citizenship requirements that act as a complete ban on foreign professional service providers. Thus, Mexico's liberalization in this area will be significantly greater than that of the United States and Canada, which do not discriminate against foreign professionals.

specifically reserved by the parties.[17] To a large extent, NAFTA will result in Mexico receiving the benefits and accepting the obligations previously agreed to by Canada and the United States in CFTA.

[17] The parties are entitled to "reserve" certain current or future restrictions on services, that would otherwise violate the principles established under the cross-border trade in services provisions, if they specifically list the nonconforming laws in one of the applicable annexes to the agreement. NAFTA, art. 1205. Each of the parties has listed a number of sectors in annex I of NAFTA.

CHAPTER 39
Telecommunication Services

Melanie Posey

Table 39-1
Telecommunication services:[1] Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	722	784	835	7
Trade data (million dollars):				
Revenues	74,083	80,300	95,200	19
Exports (receipts):				
Total	1,200	1,300	2,100	62
To Mexico	16	27	30	11
To Canada	90	93	196	111
Imports (payments):				
Total	77	98	161	64
From Mexico	(2)	(2)	(2)	(3)
From Canada	12	13	23	77
Trade balance:				
Total	1,123	1,202	1,939	61
With Mexico	16	27	30	11
With Canada	78	80	173	116

[1] Excludes basic telephony service.
[2] Less than $500,000.
[3] Not available.

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

Summary of Sector Analysis

The telecommunications provisions of NAFTA exempt basic voice telephony services from coverage. As a result, voice services between the three signatories will continue to be covered by bilateral government agreements negotiated between each country. These agreements contain provisions called basic accounting rates that allow each carrier to receive a portion of the revenue for the voice traffic destined for another country and carried on their respective domestic networks.

The bulk of telecommunications trade between the three signatories currently takes place in the basic voice telephony sector. Federal Communications Commission data show that in 1990, the United States made net payments of $590 million to the Mexican carrier and $36 million to the Canadian carriers.[1]

[1] Common Carrier Bureau of the Federal Communications Commission, "Trends in the International Telecommunications Industry, 1990," p. 10.

NAFTA provisions on telecommunications address "enhanced and value-added telecommunications" services.[2] The U.S. enhanced telecommunications services industry is the largest and most competitive in the world, with revenues of over $90 billion[3] and a $1.9 billion trade surplus in 1991.[4] Mexico's industry is relatively undeveloped and Canada's industry, though open to U.S. service providers, is quite small. Therefore, NAFTA is expected to have the greatest impact on U.S. service providers attempting to expand their market into Mexico.

The Mexican enhanced telecommunications services industry is currently less than 1 percent the size of the U. S. industry, generating revenues of $130

[2] These services include computer, data processing, and electronic data base services.
[3] USITC staff estimate derived from U.S. Department of Commerce, *Statistical Abstract of the United States*, 1992 and INPUT, "Worldwide Information Services Forecast 1990-1995," July 1991.
[4] U.S. Department of Commerce, Bureau of Economic Analysis, "U.S. International Sales and Purchases of Services," *Survey of Current Business*, Sept. 1992.

million for 1987.[5] Although the Mexican market for enhanced telecommunications services is relatively undeveloped, it displays substantial growth potential. The development of this market is important not only to telecommunication service providers who believe that these sectors will account for an increasing share of total revenues, but also for most international corporations. For these enterprises, the ability to purchase or engage in these services is vital to reducing communications expenditures and ensuring efficient operations.

While U.S. service providers have reacted favorably to the NAFTA telecommunications provisions, little short-term impact is expected.[6] In the medium to long term, however, the Mexican economy will grow and the Mexican telecommunications network capacity will increase. U.S. service providers' competitive advantages of software development expertise, superior customer support and service, and experience in a competitive home market will then provide substantial market opportunities in Mexico.[7]

Key NAFTA Provisions Affecting Sector

NAFTA creates a significant new market opportunity for U.S. and Canadian firms in the area of enhanced telecommunications services. Both NAFTA general service provisions in chapter 12, and the requirement in article 1303(1)(a) that licensing and permit provisions relating to the furnishing of enhanced and value-added services be nondiscriminatory, should ensure that wholly owned U.S. or U.S.-based entities will be able to provide value-added telecommunications services in Canada and Mexico.[8] The licensing and permit provisions, like the other key NAFTA telecommunications provisions, will not require material changes in U.S. or Canadian law. However, it will require a number of changes in Mexico's foreign investment regulations, which currently limit foreign investment in companies providing telecommunications services to 49 percent of capital stock. It will also require change in Mexico's Telecommunications Regulations, which indicate that only Mexican citizens and corporations may receive permits to perform value-added telecommunications services.[9]

[5] Robert Schware, "The World Software Industry and Software Engineering," World Bank Technical Paper 104, 1989, p. 32.

[6] USITC staff telephone interview with a U.S. industry representative, Nov. 12, 1992.

[7] USITC staff telephone interview with a U.S. industry representative, Nov. 13, 1992.

[8] Under an annex, however, Mexico retains through July 1, 1995, certain investment restrictions pertaining to entities furnishing videotext and enhanced packet switching services.

[9] NAFTA, article 1301(3) expressly states that nothing in the chapter may be construed to require a party to

NAFTA article 1302 ensures U.S. and Canadian firms "access and use of" Mexico's public telecommunications transport networks or services.[10] This commitment by Mexico will result in the elimination of present Mexican restrictions on the establishment of foreign-owned private networks or the provision of enhanced telecommunications services by foreigners utilizing leased lines from Mexico to the United States.[11] Significantly, NAFTA article 1302(3) also requires that prices of public telecommunications transport services reflect economic costs directly related to providing the services. This is important because reasonable prices for these services are essential to the cost-effectiveness of private networks and the provision of value- added telecommunications services.[12] Prior to NAFTA, Mexican law did not address this area.

Likely Impact on Investment

NAFTA telecommunications provisions are likely to have no short-term impact on investment in Mexico because the large-scale introduction of these services will require further modernization of the Mexican telecommunications infrastructure.[13] In the long term, U.S. investment is likely to show a modest increase, given that Telefonos de Mexico's (Telmex)[14]

[9]*—Continued*
authorize a person of another party to establish, construct, acquire, lease or provide basic telephone services. Furthermore, each signatory country has executed an annex stating that it reserves the right to adopt or maintain any measures pertaining to investment in or provision of basic telecommunications services.

[10] Additionally, NAFTA article 1304 states that parties can establish standards-related measures relating to attachment of equipment to public telecommunications transport networks only to the extent necessary to prevent technical damage to, interference with, or malfunction of the telephone network. While this is not directly contrary to present Mexican law, it will require Mexico to adopt streamlined and more transparent standards for approval of equipment.

[11] The Mexican Telecommunications Regulations require those seeking to connect private or leased circuits to the public network to obtain a permit. Although the regulations do not expressly forbid the issuance of permits to cross-border private networks, the Mexican Government in recent years has not granted such permits.

[12] Pricing guidelines for leased lines are important components of value-added services agreements because leased lines are often only available from a monopoly telecommunication authority in a country. Many of these telecommunication authorities are still wholly or partially controlled by their governments.

[13] USITC staff telephone interview with a U.S. industry representative, Nov. 13, 1992.

[14] Telmex is now held by a consortium comprised of Southwestern Bell, France Telecom, and Group Carso (a group of Mexican firms).

telecommunications network modernization program is proceeding on schedule and that the market for information services will likely expand to a degree commensurate with increased business activity and anticipated economic growth in Mexico.

NAFTA telecommunications provisions give U.S. service providers the option of offering services through foreign direct investment or from U.S.-based facilities. U.S. service providers in labor-intensive sectors that use telecommunications networks to transmit their services, such as data processing, appear most likely to increase investment modestly in Mexico to take advantage of lower labor costs. These firms are likely to set up affiliates in the Mexican market to establish close ties with potential clients and create direct distribution networks. In addition, the intellectual property rights protection of NAFTA chapter 17 will likely reduce the traditional risk of foreign investment in Mexico due to unauthorized use of copyrighted software.[15] However, it appears unlikely that U.S. service providers will relocate their U.S.-based facilities to Mexico, although some may establish new facilities in Mexico.

Likely Impact on U.S. Trade

In 1991, the United States had a $30 million surplus in enhanced telecommunications services trade with Mexico.[16] NAFTA telecommunications provisions will likely have a modest beneficial effect on the U.S. trade surplus with Mexico in the long term. U.S. service providers are likely to offer enhanced telecommunications services to customers in Mexico from U.S.-based facilities. As U.S. firms establish operations in Mexico, there will likely be a corresponding increase in demand for and sales of international enhanced telecommunications services between the signatories, particularly on the part of multinational corporations.[17] Increased trade in software and network consulting services is also likely, given the reduction of tariffs on telecommunications equipment and expedited procedures for type-approval of this equipment. As a result, Mexican firms, as well as U.S. and other foreign firms, are expected to take advantage of their improved ability to construct intra-corporate private networks.

Likely Impact on U.S. Production and Employment[18]

NAFTA telecommunications provisions will have no significant short-term impact on U.S. production and employment in enhanced telecommunications services, given the need for further development of the basic infrastructure and the infant state of these services in Mexico.[19] In the long term, there will likely be a minor beneficial impact due to technological innovations that have increased productivity, the result being small annual increases in employment despite substantially increased demand.[20]

Industry sources disagree as to whether employment will actually increase.[21] While some U.S. service providers may increase their transfer of labor-intensive operations (such as data processing) to Mexico to take advantage of lower labor costs, the expected increase in cross-border trade of value-added and information services could offset these job losses. Ultimately, the effect of NAFTA provisions on U.S. production and employment in this industry will depend on the extent of growth in the Mexican market and whether U.S. service providers will serve this market from U.S.- or Mexico-based facilities.

Likely Impact on U.S. Global Competitiveness

The opening of the Mexican enhanced telecommunications services market will likely have a considerable beneficial effect on the competitiveness of U.S. service providers in the North American market because NAFTA telecommunications provisions give U.S. and Canadian firms greater access to a growing market where there will be fewer restrictions than in the EC and other markets. The expected beneficial changes in Mexico's overall economic environment as a result of NAFTA as a whole, such as increased business activity and foreign investment, combined with the U.S. industry's competitive advantage in enhanced telecommunications services, will create additional opportunities for U.S. service providers.

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[15] USITC staff telephone interview with a U.S. industry representative, Nov. 13, 1992.

[16] U.S. Department of Commerce, Bureau of Economic Analysis, "U.S. International Sales and Purchases of Services," *Survey of Current Business*, Sept. 1992.

[17] USITC staff telephone interview with a U.S. industry representative, Nov. 13, 1992.

[18] U.S. Department of Commerce, "Information Services," *U.S. Industrial Outlook—1992*, p. 26-3. In this industry, "production" is considered to be user expenditures on value-added telecommunications services.

[19] USITC staff telephone interview with a U.S. industry representative, Nov. 13, 1992.

[20] U.S. Department of Commerce, *Statistical Abstract of the United States*, 1992, p. 401.

[21] USITC staff telephone interview with a U.S. industry representative, Nov. 13, 1992.

In recent years, U.S. firms have sought opportunities in foreign markets because the market for enhanced telecommunications services is growing more rapidly outside the United States.[22] However, NAFTA's telecommunications provisions will likely have a minor beneficial effect on the global competitiveness of U.S. service providers because at present, the Mexican enhanced telecommunication services market amounts to a negligible percentage of the total world market.

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[23] U.S. Department of Commerce, "Information Services," *U.S. Industrial Outlook—1992*, p. 26-3.

CHAPTER 40
Transportation[1]

Kathleen Lahey

Table 40-1
Transportation services: Selected U.S. sector data, 1989-91[1]

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	1,733	1,757	1,746	-1
Trade data (billion dollars):				
Revenues	285	301	313	4

[1] Comparable transportation trade data, other than revenues, are not available for the time period covered by the table. Because of current legal restrictions, trade in trucking is limited to the transfer of cargo at the border, and certain limited revenues to Mexican companies derived from U.S. operations. U.S. companies' trucking operations in Mexico have been limited to joint venture and/or interline arrangements; however, some U.S. rail revenues are derived from cross-border trade. There are currently no comparable data available for cross-border trade between the United States and Canada.

Source: Compiled from the U.S. Department of Commerce, *U.S. Industrial Outlook 1992*, 1991, pp. 40-7 and 40-11.

Summary of Sector Analysis

The U.S. transportation services industry (for the purposes of this analysis, principally trucking, bus and rail) has limited investment in Canada and negligible but growing investment (in both trucking and truck/rail partnerships) in Mexico. In 1990, two-way trade with Mexico in goods carried was approximately $65 billion, or about 37 percent of two-way trade with Canada. The current size of the Mexican market is estimated at 5 to 10 percent of the U.S. market at most. Although most cargo between the United States, Mexico, and Canada moves by truck, an increasing market share of cargo moves by rail.

The major issues of concern in NAFTA are the 7-year staging of full ownership in Mexican trucking companies and the lack of reciprocal cross-border access to U.S. and Mexican markets. A related concern is the lack of harmonization of standards-related measures in the immediate future, particularly exhaust and noise emissions and safety standards. A lengthy harmonization process is anticipated, which may limit market access in the short run.

As a result of NAFTA, minor increases in cross-border trade in trucking services are expected from both U.S. and Mexican trucking firms in the short term. A modest increase in trade is expected in the long term. In the short term, under NAFTA, U.S. trucking services firms likely will face some increased competition from Mexican trucking firms, primarily in the border States. However, under NAFTA, this should be offset as the transportation market expands because of the anticipated growth of the Mexican economy, related business expansion in the U.S. border States, and the increase in cross-border business. In the short term, a modest increase in U.S. investment is likely to result and in the long term, U.S. investment in Mexican trucking and bus service firms is likely to increase considerably, as greater equity shareholding is permitted after the 3rd, 7th, and 10th years of NAFTA. In addition, increased investment is likely to accompany any improvements in the Mexican transportation infrastructure, and hence, the development of a larger market. Modest beneficial impacts on U.S. production and employment are expected in both the short and long term.

At present, most cross-border traffic is largely regional and more concentrated in the U.S.-Mexican border area, thus primarily benefiting the trucking services sector. U.S. railroads are expected to also gain in both the short and long term, as the volume of

[1] This section focuses primarily on trucking, bus, and rail services, because NAFTA contains reservations that exclude maritime and air services. Policy for and regulation of maritime and air services will continue under existing bilateral and national regimes. The exclusion of maritime and air services from the agreement was supported by U.S. industry. (Only aircraft repair and maintenance services during which an aircraft is withdrawn from service, and specialty air services, are covered under NAFTA, article 1201 (2)(b).)

business increases, in part due to the substantial elimination of tariffs on U.S. and Canadian exports to Mexico. The impact of NAFTA on U.S.-Canada trade in all transportation services likely will be negligible.[2]

Key NAFTA Provisions Affecting Sector

Truck and Bus

Current Federal laws of both Mexico[3] and the United States[4] prohibit trucking and bus transportation service providers access to each other's countries, except for limited access to the U.S. Border Commercial Zones.[5] Under NAFTA, the United States and Mexico have agreed to eliminate most of their truck and bus restrictions over a specified phaseout period.[6] Within three years after the date of entry into force of the agreement, the United States is to allow access to Mexican truck services to and from the border States; and within 6 years from the date of entry into force of the agreement, Mexican truck services are to be granted access to the entire U.S. territory. Similarly, U.S. trucking services will be granted access to Mexico's border States within three years after the date of entry into force of the agreement and to Mexico's entire territory within six years. Mexico agreed in NAFTA to permit U.S. and Canadian nationals the right to invest in Mexican truck and bus service companies.

Under NAFTA, no party to the agreement is required to permit firms from another signatory to engage in bus transportation or truck carriage of domestic cargo (cabotage).[7] The only exception is for services involving the shipment of international cargo (e.g., package distribution by Federal Express).[8] However, Mexico's reservation of small parcel delivery to its Government postal system may limit U.S. firms' access to this market in Mexico.[9]

The limited trade of bus transportation between the United States and Mexico is currently regulated by a memorandum of understanding that allows entry of U.S. charter or tour bus services into Mexico, but that does not grant the same to Mexico.[10] Under NAFTA, however, Mexican charter and tour bus services will be granted access to the United States immediately upon entry into force of the agreement.[11] At the third year after implementation, all other scheduled U.S. and Canadian bus services may operate throughout Mexico.[12] Mexico's cross-border bus services will be granted access to the entire U.S. territory within 3 years after the date of entry into force of the agreement.[13] Canadian restrictions are Provincial: all Provinces except New Brunswick, Prince Edward Island, and the Yukon Territory permit the provision of local and extra-Provincial bus services only on the basis of a public convenience and necessity test, which is apparently very difficult to meet.[14]

[2] U.S. International Trade Commission, *The Likely Impact on the United States of a Free Trade Agreement with Mexico*, USITC publication 2353, Feb. 1991, pp. 4-48 and 4-49.

[3] Mexican land transportation is regulated by the Mexican Federal Government. Foreigners are prohibited by the Mexican Constitution from owning air, land, railroad, or maritime transportation companies. The Constitution also restricts commercial use of Federal highways to Mexican nationals. The General Communications and Transport Law of 1940 prohibits foreign carriers from operating in Mexico. The 1989 Foreign Investment Regulations continue these restrictions by permitting only Mexican nationals to engage in transportation related to construction materials, moving, autofreight services in general, foreign passenger transportation, bus service within Mexico, and school and tourist transportation service. Thus, Mexico does not provide national treatment for foreigners and a commercial presence has usually been required as a condition for providing services in Mexico. *Report of the Advisory Committee for Trade Policy and Negotiations on the North American Free Trade Agreement*, Sept. 1992, p. 28.

[4] U.S. land transportation is regulated by Federal, State and local governments. The Federal Government has jurisdiction over interstate transportation and transportation between the United States and other countries. The Bus Regulatory Reform Act, enacted in 1982, placed a *moratorium on new grants of operating authority for* foreign carriers if the carrier's country of origin restricted U.S. land transportation services into its territory. See 49 U.S.C. 10922(L)(1) and (2). Currently, the moratorium applies to Mexico, since Mexico restricts U.S. access into its territory, but it does not apply to Canada, since Canada has no such restrictions. The moratorium was renewed for another 2 years in September 1992. See 57 F.R. 44647 (Sept. 8, 1992).

[5] An operating authority is not required for entry into such zones. However, a certificate of registration is required for truck services. No certificate is required for bus services. See 49 U.S.C. 10530(b).

[6] NAFTA, annex I, Reservations for Existing Measures and Liberalization Commitment, Schedule of the United States, p. I-U-20; NAFTA, annex I, Schedule of Mexico, p. I-M-69; and also U.S. Chamber of Commerce, International Division, *A Guide to the North American*

6—Continued

Free Trade Agreement, What it Means for U.S. Business, 1992, p. 17.

[7] See NAFTA, annex I, Schedule of Mexico, p. I-M-70; annex I, Schedule of the United States, p. I-U-20;, and annex I, Schedule of Canada, p. I-C-37. See also NAFTA, annex V, Quantitative Restrictions, Schedule of Canada, p. V-C-6.

[8] Attorney, U.S. Department of Transportation, interview by USITC staff, Nov. 17, 1992.

[9] Kenneth D. Simonson, American Trucking Association, transcript of hearing, pp. 196-197.

[10] *Memorandum of Understanding Between the United States of America and the United Mexican States on Facilitation of Charter/Tour Bus Service*, Dec. 3, 1990.

[11] Currently, Mexican charter and tour buses have access only to the Border Commercial Zones. Attorney, U.S. Department of Transportation, interview by USITC staff, Nov. 17, 1992.

[12] NAFTA, annex I, Schedule of Mexico, p. I-M-70.

[13] Ibid., annex I, Schedule of the United States, p. I-U-20.

[14] *The National Transportation Act*, 1987, R.S.C. 1985, c. 28 (3d supp.). This restriction is the same for foreign, as well as Canadian bus service providers and, therefore, is listed as a quantitative restriction in annex V rather than as a reservation.

The United States however, will continue to impose a moratorium on U.S. establishment of Mexican-controlled domestic companies until the seventh year, when Mexico grants majority investment rights. The United States and Canada already have reciprocal rights in each other's markets.[15] With respect to Mexican companies providing intercity bus services, tourist transportation services, truck services for the transportation of international cargo between points in the territory of Mexico, and bus and truck terminals, U.S. and Canadian investors may own up to 49 percent of such companies between 3 and 7 years after initiation of NAFTA, up to 51 percent between 7 and 9 years, and up to 100 percent after 10 years.[16]

The United States will not have to amend Federal laws to implement NAFTA land transportation provisions. Any necessary U.S. legal changes vis-a-vis Mexico can be accomplished with an executive order according to the phaseout schedule.[17] Canada would not have to make any changes to its cross-border land transportation laws and does not otherwise restrict cross-border access by foreign land transportation service providers. Mexico will be required to phase-out or amend laws that restrict or prohibit foreigners from providing or investing in land transportation services.[18]

Rail

For rail transport, NAFTA codifies a recent liberalized Mexican policy directive (similar to a U.S. executive order), entitled "The Rail Modernization Plan," which grants foreigners certain rights of general access to Mexican rail transportation.[19] Thus NAFTA also codifies the right of U.S. and Canadian nationals to own and operate rail terminals and some private spur lines, bring in their own locomotives, and market their own services.[20] However, Mexico retains the exclusive right to operate, administer, and control traffic within the Mexican railway system; supervise and manage railway right-of-way; and operate, construct, and maintain basic railway infrastructure.[21] Another reservation made by Mexico requires that railway crew members be Mexican nationals.[22] The CFTA did not address transportation issues, including any issues relating to rail transport.

Ports

NAFTA contains a Mexican commitment to allow, upon entry into force, 100 percent foreign investment in port facilities, such as cranes, piers, terminals, and stevedoring companies for enterprises that handle their own cargo. Operating permits will also be granted. For enterprises handling other companies' cargo, up to 100-percent foreign investment will be allowed after screening by the Mexican Foreign Investment Commission.[23]

Standards

NAFTA countries are required to make their standards-related measures compatible with respect to motor carrier and rail operations.[24] The major standards-related measures include vehicle safety equipment, weights and dimensions, maintenance and repair, and certain engine emissions levels; nonmedical testing and licensing of truck drivers; medical standards for truck drivers; locomotive and rail equipment safety and operating personnel standards relevant to cross-border operations; the transportation of dangerous goods; and road signs and supervision of motor carrier safety compliance. Annex 1212 of NAFTA also provides for the designation of contact points for information related to land transportation-type operating authorizations and safety requirements.

Standards-related differences are likely to remain a barrier to the implementation of many of the transportation provisions of NAFTA. Also, there are many new points of dispute raised by the prospect of attempting to harmonize a variety of transportation standards. However, if standards-related measures are not harmonized, potential investment decisions could be abandoned or postponed and disparities in trade flows could result. Standards-related measures will be resolved by the Land Transportation Standards Subcommittee formed under NAFTA.[25] For example, Mexican law strictly limits the importation of used

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[15] U.S. Council of the U.S.-Mexico Business Committee, submission to the Commission, Nov. 10, 1992.

[16] NAFTA, annex I, Schedule of Mexico, p. I-M-62-63, I-M-68-71.

[17] Official of the Office of International Transportation, U.S. Department of Transportation, conversation with USITC staff, Nov. 13, 1992, and attorney, U.S. Department of Transportation, conversation with USITC staff, Nov. 17, 1992.

[18] *Ley de Vias Generales de Comunicación, Libro I, Capítulos I, II, III; Libro II, Título II, Capítulo Unico* and the 1989 Foreign Investment Regulations, arts. 5, 7, and the annexes relating to transportation services investments.

[19] NAFTA, annex III, Activities Reserved to the State, Schedule of Mexico, p. III-M-3, par. 8 (national treatment applies to areas not specifically reserved).

[20] Official of the U.S. Department of Transportation, Office of International Transportation, interview by USITC staff, Nov. 18, 1992. See also *Report of the Intergovernmental Policy Advisory Committee for Trade on the North American Free Trade Agreement*, Sept. 1992, p. 35.

[21] NAFTA, annex III, Schedule of Mexico, p. III-M-3, par. 8, citing *Constitución Política de los Estados Unidos Mexicanos*, arts. 25 and 28, and *Ley Orgánica de Ferrocarriles Nacionales de México*.

[22] NAFTA, annex I, Schedule of Mexico, p. I-M-64, citing *Ley Federal del Trabajo*, Capítulo I.

[23] *Report of the Industry Sector Advisory Committee for Trade in Service of the North American Free Trade*, Sept. 1992.

[24] NAFTA, annex 913.5.a-1.

[25] Ibid. Item 3 of this annex states, "The Subcommittee may address other related standards-related measures as it considers appropriate."

motor carrier equipment; this prohibition will be eased in 2015 and removed in 2025.[26] The lack of standard truck weights and dimensions may require added off-loading and reloading onto trucks conforming with truck sizes of the particular party to the agreement.[27] Both Canada and Mexico allow for longer and heavier trucks, especially double or triple combination trailer units. Such vehicles are a competitive concern to the railroad industry.[28] Another potential problem for U.S. trucking firms is the lack of available clean diesel fuel in Mexico for U.S. truckers.[29]

Likely Impact on Investment

The enactment of NAFTA is likely to result in a modest short-term increase in the level of U.S. investment in Mexican transportation services. In the long term, a considerable increase in investment is likely as firms that currently do business through various types of joint-venture arrangements reportedly are planning to move in the direction of more active participation in the Mexican transportation market.[30] In addition, many U.S. firms have planned to increase investment, primarily in trucking firms in Mexico, when permitted by the agreement.[31] However, such investment will be tempered by the lack of equal investment opportunities due to the various reservations and the lack of parallel language in the agreement. According to the American Trucking Association, U.S.-owned carriers in Mexico will be limited to the transportation of international freight whereas Mexican-owned U.S. carriers will be able to both transport and distribute such freight.[32] Investment by U.S. trucking and bus service firms in Mexico will be initially limited by Mexico's developing transportation infrastructure.[33] Currently, U.S. rail companies are being given permission to build customs and freight centers inside Mexico to speed border crossings and freight deliveries,[34] so similar investment by Mexico is not expected on a large scale in the short term.

Mexican firms are expected to increase investment in the United States primarily in small to medium-size trucking and bus service firms. Overall Mexican investment is expected to increase a minor to modest amount and such investment may be concentrated in U.S. States that border Mexico. NAFTA provides Mexican companies a 7-year "head start" over U.S. companies in investment opportunities in trucking and bus companies.[35]

Likely Impact on U.S. Trade

NAFTA will have a relatively greater effect on trade in the trucking sector of transportation services, since significant liberalization has already been implemented with respect to rail transportation. Current trucking services are primarily the transfer of cargo at the border from the domestic carrier of one country to a domestic carrier of the other. In the short term, a minor increase in Mexican trucking services to the United States is expected. Mexican trucking firms are likely to gain some market share in the U.S. border States, as a result of offering lower prices supported by lower cost Mexican labor. However, any potential losses by U.S. trucking firms are expected to be offset by an expanding transportation market in the border States due to increased trade in goods resulting from tariff elimination and tariff reductions in NAFTA.[36] In the long term, a modest increase in Mexican trucking services is likely to take place. Trucking services from Mexico are also expected to compete, somewhat successfully, against U.S. railroads.[37]

Since U.S. trucking services to Mexico will be limited during the first 3 years of the agreement, a minor increase in revenues from cross-border services

[26] The U.S. trucking industry contends that high-quality used vehicles that meet Mexican road worthiness and air-quality standards should be allowed to be leased or sold to Mexican-U.S. joint ventures. Kenneth D. Simonson, American Trucking Association, transcript of hearing, p. 194.

[27] Ibid., p. 195.

[28] Association of American Railroads, posthearing submission, Nov. 24, 1992, p. 2.

[29] Beginning on October 1, 1993, U.S. heavy truck manufacturers will be required to sell only trucks that use low-sulfur diesel fuel.

[30] Robert P. James, "Mexico Trade Talks in 'Ninth Inning,' Big Changes Seen in Investment Rules," *Traffic World*, July 27, 1992, p. 15.

[31] Transcript of hearing, pp. 192-193. The American Trucking Associations, Inc. (ATA) states that U.S. carriers should be given the same equity schedule and rights as Mexican carriers. For example, 3 years after NAFTA is signed, Mexican citizens are permitted to have full ownership rights in a U.S. international trucking company whereas U.S. citizens will not gain full ownership rights in Mexican international trucking firms until year 10.

[32] Transcript of hearing, pp. 193-194.

[33] Roads and highways in Mexico are not comparable to the U.S. road and highway system. Mexico currently does not have the road and highway capacity to support an immediate influx of U.S. trucking, and given 20-year projections on traffic, it will not be able to support it for a number of years. Finally, though the Mexican motor carrier industry has been deregulated, industry sources report that certain remaining regulations still cause delays and inefficiencies, problems that are likely to be intensified at border crossings.

[34] U.S. Council of the Mexico-U.S. Business Committee, prehearing brief, Nov. 10, 1992, p. 20-1.

[35] Michael L. Jenkins, president, American Warehouse Association, transcript of hearing, p. 183.

[36] AFL-CIO, Transportation Trades Department, posthearing submission, Nov. 23, 1992, p. 3, and, in the context of cabotage, the Association of American Railroads (AAR), posthearing submission, Nov. 24, 1992, p. 3.

[37] The U.S. railroad industry contends that potential side effects of such competition are increases in traffic congestion, air pollution, and accidents. AAR, posthearing submission, Nov. 24, 1992, p. 2.

to Mexico is expected, although partnerships may provide some source of revenue to U.S. trucking firms. In the long term, a modest increase in U.S. trucking and bus services is expected. However, price competition due to low Mexican wages is expected to pressure U.S. trucking firms to employ Mexican labor in their operations in Mexico.

Likely Impact on U.S. Production and Employment

The implementation of the transportation provisions of NAFTA is likely to have only a minor beneficial impact on the production and employment of the U.S. transportation industry as a whole, primarily due to the smaller size of the Mexican transportation industry relative to the U.S. industry. In both the short and long term, NAFTA is likely to result in a modest beneficial impact in U.S. production and employment in truck, bus, and rail services as the result of tariff elimination and reductions and the expanding cross-border trade in goods. However, this will be partially offset by Mexican trucking firms gaining market share, particularly in certain border markets.[38]

[38] The California Trucking Association considers NAFTA somewhat more controversial because of a possible immediate impact on California trucking firms. Trucking industry representative, interview by USITC staff, Aug. 1992.

U.S. provision of transportation services is expected to increase modestly after the third year of NAFTA, as tariff elimination and investment in production facilities and transportation infrastructure occur. In the long term, some employment for U.S. truckers, especially for independents and those at smaller companies in the border region, may be displaced by Mexican companies with lower cost Mexican labor.

Likely Impact on U.S. Global Competitiveness

The transportation provisions of NAFTA, because they primarily affect the land transportation sector, are unlikely to have any separate or additional effects on the global (as opposed to North American) competitiveness of U.S. trucking and rail firms. There are unlikely to be substantial added competitive pressures as a result of NAFTA that will affect the U.S. comparative advantage and/or global competitive prospects of truck, bus, and rail transportation firms.

CHAPTER 41
Construction and Engineering

Laura Stonitsch

Table 41-1
Construction and engineering services: Selected U.S. sector data, 1989-91

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	(1)	(1)	(1)	(1)
Trade data (billion dollars):				
Shipments	(1)	(1)	(1)	(1)
Billings earned by U.S firms in foreign markets:				
Total	41.5	47.3	73.6	56
To Mexico	(2)	(2)	(2)	(2)
To Canada	4.2	3.4	4.2	24
U.S. billings awarded to foreign firms:				
Total	16.5	16.4	13.6	-17
From Mexico	(2)	(2)	(2)	(2)
From Canada	0.6	0.9	1.2	33
Trade balance:				
Total	25.0	30.9	60.0	94
With Mexico	(2)	(2)	(2)	(2)
With Canada	3.6	2.5	3.0	20
Consumption	(1)	(1)	(1)	(1)

[1] Data not available for the industry segment as defined.
[2] Comparable data not available.

Source: Compiled from statistics in "The Top 250 International Contractors," *Engineering News-Record,* July 5, 1990, July 22, 1991; "The Top International Contractors," Aug. 24, 1992; "The Top 200 International Design Firms," Aug. 2, 1990, Aug. 19, 1991, and July 20, 1992. "Design firms" represent firms that may or may not be pure engineering firms; for example, architectural/engineering firms and construction/engineering firms are included.

Summary of Sector Analysis

NAFTA is expected to result in a minor increase in U.S. construction and engineering firms' investment in Mexico in the short and long term. U.S. firms recognized the benefits of joint ventures with Mexican firms prior to the negotiation of NAFTA, and this type of investment likely will continue. NAFTA is expected to result in a minor increase in overall U.S. construction and engineering firms' earnings in the short and long term; however, these firms' earnings in Mexico compared to previous earnings in this market will increase moderately in the long term. The agreement should provide added business opportunities in Mexico for the U.S. construction and engineering services industry, although the sector's ability to compete in the North American market and globally is not expected to be affected.

Key NAFTA Provisions Affecting Sector

Mexico agreed in NAFTA to eliminate within 2 years its current prohibition on the licensing of all foreign professional service providers, including engineers.[1] The United States and Canada do not have

[1] NAFTA, art. 1210. NAFTA, annex I, Reservations for Existing Measures and Liberalization Commitments, Schedule of Mexico, p. I-M-45 (citing current Mexican laws that will have to be amended including *Ley Reglamentaria del Articulo 50. Constitucional, relativo al Ejercicio de las Profesiones en el Districto Federal,* Capitulo III, Seccion Tercera, Capitulos IV, V, and the implementing regulations; *Ley General De Poblacion,* Titulo III, Capitulo III). Engineering and construction services in NAFTA are governed generally by the cross-border trade in services provisions. There are no specific NAFTA provisions that govern construction services and the only provision relating specifically to

citizenship or permanent residency requirements for engineers or construction service providers at the Federal level and, therefore, have taken no reservations and will not be required to amend any laws.[2] Mexico also agreed to eliminate within 5 years all screening of U.S. and Canadian investments constituting over 49-percent ownership of Mexican companies in a variety of construction sectors, including constructing roads and industrial plants.[3] However, Mexico continues its restriction that only Mexican nationals and Mexican enterprises can obtain the necessary concessions issued by the Mexican Government to construct, and operate road services for land transportation.[4]

Likely Impact on Investment

NAFTA is expected to result in a minor increase in investment in both the short and long term. Major U.S. construction and engineering firms formed joint ventures with Mexican companies before the negotiation of the agreement; if the infrastructure development in the Mexican market proceeds as anticipated, many other U.S. construction and engineering companies likely will form similar relationships to take advantage of the new opportunities stimulated by NAFTA.[5] Significant monetary investment by U.S. construction and engineering firms in Mexico is not an important method for exporting relatively mobile, personnel-based construction and engineering services, perhaps with the exception of heavy construction firms. Although the agreement will allow, when fully implemented, for wholly-owned subsidiaries of U.S. construction and engineering firms in Mexico, U.S. firms prefer joint ventures between U.S. and Mexican firms.[6]

Likely Impact on U.S. Trade

NAFTA is expected to have a minor increase on overall U.S. construction and engineering firms' earnings in the short and long term.[7] However, due to the 10-year staging period, U.S. construction and engineering firms' earnings in Mexico in the long term likely will increase moderately. However, U.S. firms will have a competitive advantage over many Mexican firms because of the highly skilled professional staff and advanced engineering techniques they possess. The best prospects for U.S. firms in Mexico are in environmental engineering, industrial plant design, and engineering for a variety of construction projects such as highways, dams, and hospitals. Specialized engineering services in the Mexican market likely will pose greater growth opportunity than construction services; therefore, the relative increase in engineering earnings may outpace the increase in construction earnings in the long term.

Rising demand in Mexico for construction and engineering services is anticipated in response to the agreement in several ways: first, through U.S. investment in manufacturing facilities; second, through infrastructure improvements; third, through stricter enforcement of environmental laws; and fourth, through potential contracts to be awarded for work on renovations and/or new construction for PEMEX[8], the Government-owned oil company.[9] The Mexican housing, construction, and related services market is forecast to experience average annual growth of 12 percent over the next 3 years, while total imports,

[1]—*Continued*
engineering services is annex 1210.5, section C, which covers the temporary licensing of engineers.

[2] However, both Canada and the United States have numerous citizenship and permanent residency requirements at the Provincial and State level that will have to be phased out within 2 years after entry into force of the agreement. Official at Mexico desk, U.S. Department of Commerce, telephone interview by USITC staff, Nov. 25, 1992.

[3] NAFTA, annex I, Schedule of Mexico, p. I-M-21-22. Mexico will be required to amend articles 5 and 7 as well as the annex listing screening categories for construction activities in its 1989 Foreign Investment Regulations to be consistent with its NAFTA obligations.

[4] Ibid., annex I, Schedule of Mexico, p. I-M-73 (citing *Constitution Politica de los Estados Unidos Mexicanos,* Articulo 32; *Ley de Vias Generales de Communicacion,* Libro I, Capitulos I, II, III; Libro II, Titulo II, Capitulo II, Libro III, Capitulos II, XV).

[5] In 1991, close to 10 U.S. firms were working in Mexico. This was up from five in 1989. Mexican construction industry officials expect that eventually, 70 of the 80 major U.S. construction firms that win contracts overseas will be operating in Mexico.

[6] Official of M.W. Kellogg Co., telephone interview by USITC staff, Oct. 22, 1992.

[7] The total value of the Mexican construction market is estimated to be less than 5 percent of its U.S. counterpart; therefore, increased earnings as a result of the agreement could only be minimal when compared with U.S. domestic earnings. Since U.S. construction and engineering firms have a strong presence in every major market in the world, increased earnings in Mexico would likely be minor in comparison to overall U.S. construction and engineering earnings overseas.

[8] NAFTA will open construction procurement by Mexican Federal Government agencies and Government-owned industrial enterprises, such as PEMEX, to American bidders. NAFTA rules will apply to construction projects with a value greater than $6.5 million for Mexican Federal agencies and greater than $8 million for PEMEX and CFE. There will be a 10-year phase-in period beginning with the first year of the agreement. However, there is no language assuring that any specified percentage of contracts awarded by PEMEX will be to foreign firms. See chapters 3 and 17 of this report for more information on government procurement.

[9] Official of M.W. Kellogg Co.

and imports from the United States, of these services are forecast to experience average annual growth of 15 percent over the same period.[10]

U.S. contract awards to Mexican construction and engineering service providers have been confined to the border region of Texas and California, and have mostly been for lower technology projects. Mexican firms can be relatively more cost-competitive by doing the engineering for a project in Mexico, but presently lack the capacity and technology to significantly penetrate the U.S. market in the short term.[11] In the longer term, Mexican service providers are expected to use effectively joint ventures and technology transfer to become more competitive in higher technology fields, although trade with Mexico likely will continue to favor the United States, due to the relative sizes of the industries and markets.[12]

The trading relationships within the U.S. and Canadian markets should be favorably affected by NAFTA, as Canada has agreed to go beyond the U.S.-Canada Free-Trade Agreement to open its Federal Government procurement (over the course of 10 years) to U.S. construction and related services providers.[13] In the short and long term, Mexican construction and engineering firms are not likely to affect significantly the Canadian and U.S. markets and the existing trading relationships in these markets. Currently, the majority of the Mexican industry is at a technological disadvantage compared with U.S. and Canadian construction and engineering firms, and therefore are not likely to compete substantially with these firms in their home markets. Mexican firms are also less advanced in productivity and project management.

Likely Impact on U.S. Industry and Employment

The agreement, in the short and long term, should have a minor beneficial impact on the U.S. construction and engineering services industry. The U.S. industry may experience minor expansion as a result of increased opportunities in Mexico. In the long term, U.S. construction and engineering firms may face increased competition from Mexican firms, particularly in the border region, but the effects of this competition likely will be minor on the overall U.S. industry.

Industry sources indicate that in the short to midterm, the agreement will have a minor beneficial impact on U.S. employment in this industry. Because U.S. firms have a technological advantage over Mexican firms, they are likely to win bids for many higher technology projects for which they were once unable to bid, thus creating more job opportunities for U.S. construction and engineering professionals. However, some industry sources speculate that, as Mexican firms gain competitiveness relative to U.S. firms in the very long term, this may affect U.S. construction and engineering professional employment to a limited degree.

Likely Impact on U.S. Global Competitiveness

While significant opportunities will accrue to U.S. construction and engineering firms as a result of the agreement, the potential earnings from these opportunities will be negligible relative to overall earnings of U.S. construction and engineering firms, both domestically and internationally. Thus, the global competitiveness of the U.S. construction and engineering industry is not expected to be affected, nor is the competitiveness of these firms expected to be affected in the North American market.

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[10] U.S. Department of Commerce, International Trade Administration, "Mexico—Housing/Construction/Services-Industry Analysis," Market Research Reports, Aug. 28, 1992. In 1991, approximately 65 percent of total Mexican imports of these services were accounted for by U.S. firms.

[11] Some industry sources estimate that there are approximately 33,000 contractors in Mexico; however, many of these are family-run operations of a mobile nature. The Camara Nacional de la Industria de la Construccion (CNIC) has some 15,000 members. The only firms that are authorized to bid on government projects are the members of the CNIC. Of this membership, 91 percent are considered to be small or microcompanies.

[12] Official of Bechtel Corp., telephone interview by USITC staff, Oct. 26, 1992.

[13] U.S. Chamber of Commerce, The International Division, *A Guide to the North American Free Trade Agreement: What It Means for Business*, 1992, p. 17.

CHAPTER 42
Banking

Richard Brown

Table 42-1
Banking: Selected U.S. sector data, 1989-91[1]

Item	1989	1990	1991	Percentage change, 1990-91
Employees (1,000)	1,531	1,517	1,486	-2
Industry data (billion dollars):				
Assets	3,299	3,389	3,430	1
Deposits	2,549	2,650	2,688	1
Liabilities to foreigners[2]				
Total	805	824	790	-4
To Mexico	16	17	21	24
To Canada	19	21	26	24
Claims on foreigners:[3]				
Total	662	655	635	-3
On Mexico	25	16	16	0
On Canada	20	20	23	15

[1] Data pertaining to international trade in banking services are not collected. Banks' liabilities to, and claims on, foreigners are commonly referenced as trade data, and are believed to accurately reflect the extent of trade in banking services between the United States and other NAFTA signatories.
[2] Figures reflect liabilities to foreigners reported by banks, other depository institutions, and brokers and dealers in the United States.
[3] Figures reflect claims on foreigners reported by banks, other depository institutions, and brokers and dealers in the United States.

Source: Federal Deposit Insurance Corporation, *Quarterly Banking Profile*, various issues, and U.S. Department of the Treasury, *Treasury Bulletin*, various issues.

Summary of Sector Analysis

Both the Mexican and Canadian banking markets are small relative to the U.S. banking market. In terms of total banking assets, the Mexican and Canadian banking industries are approximately 3 percent and 16 percent as large as the U.S. industry, respectively.[1] Although U.S. banks' total liabilities to foreigners have declined slightly in recent years, deposits in U.S. banks by Mexican and Canadian nationals have grown by over 30 percent (table 42-1). Claims on Mexican nationals, which include bank loans, have decreased in recent years, in large part due to loan write-offs, whereas claims on Canadian nationals appear to have expanded.

[1] Gary Clyde Hufbauer and Jeffrey J. Schott, *North American Free Trade: Issues and Recommendations* (Washington, DC: Institute for International Economics, 1992), pp. 308-309; U.S. Department of Treasury, *National Treatment Study 1990*, p. 129; and Federal Deposit Insurance Corp., *Quarterly Banking Profile*, first quarter 1992, p. 4.

The principal effect of NAFTA on the banking sector will be to modestly increase U.S. and Canadian banks' foreign direct investment in Mexico. The Mexican Government has agreed in NAFTA to allow foreign banks[2] to increase their collective share of Mexico's banking market from 8 percent to 15 percent by January 1, 2000,[3] and eliminate all market share limitations on January 1, 2004. Total U.S. and Canadian exports of banking services to Mexico will likely increase as a result, although loans extended to Mexican nationals by banks in the United States may be displaced by transactions of new U.S. and Canadian bank operations in Mexico. NAFTA likely will have a minor effect on U.S.-Canadian trade in banking services as trade in this sector was liberalized by the U.S.-Canada Free-Trade Agreement (CFTA).

[2] For the purpose of the analysis of the banking sector, foreign banks are defined as U.S. banks, Canadian banks, and all banks from non-NAFTA countries.
[3] For the purposes of this chapter, market share is defined as the authorized capital of one or several banks expressed as a percentage of the aggregate capital of all similar financial institutions in Mexico.

There will be little or no employment and production effects stemming from NAFTA in the United States and Canada due to the small size of the Mexican banking market, although increases in employment and production in Mexico are likely.[4] Combined with the liberalization and privatization of Mexican banking that began in 1989 and 1991, respectively, NAFTA will improve the efficiency of the Mexican banking sector, which may thereafter act to facilitate economic growth and merchandise trade.

Key NAFTA Provisions Affecting Sector

Articles 1403, 1405, and 1406 create for the first time the opportunity for U.S. and Canadian banks to establish wholly-owned bank subsidiaries that will be able to engage in a complete range of banking services in Mexico.[5] Currently, foreign investment in Mexican commercial banks and financial holding companies is limited to 30 percent of common stock capital.[6] In addition, aggregate foreign investment in general deposit warehouses, financial leasing companies, financial factoring companies, and bonding companies is currently limited to less than 50 percent of paid-in capital.[7] Foreign investment in Mexican credit unions, financial agents, and foreign exchange firms is prohibited.[8] In annex VII of NAFTA, Mexico has now specified that all of these percentage limits and prohibitions no longer apply to investments in "foreign financial affiliates," that is, financial institutions established in Mexico and owned and controlled by U.S. and Canadian investors.[9]

Articles 1405 and 1406 establish the general right of U.S. and Canadian investors to provide in Mexico the same commercial banking services as are provided by Mexican banks under general principles of national and MFN treatment.[10] U.S. and Canadian investors can participate in the Mexican banking system either through acquisition of existing banks,[11] or by establishing subsidiaries ("foreign financial affiliates") owned and controlled by U.S. or Canadian investors. Foreign financial affiliates may provide financial services, expand geographically, and own financial institutions without the application of ownership requirements specific to foreign financial institutions, as well as provide new financial services.[12] In addition, article 1407 permits the establishment by U.S. and Canadian investors of certain special financial institutions, such as mortgage lending institutions and credit card companies, which have no counterparts in Mexico.[13]

Article 1401.3 preserves each party's right to be the exclusive service provider in its territory with respect to certain financial activities related to public retirement plans, statutory systems of social security, and activities or services for the account of, with the guarantee of, or using the financial resources of the party or its public entities.[14] Chapter 14 and annex VII set up a transition period ending in 2004, during which individual and aggregate market share limits on U.S. and Canadian investment will be allowed to increase.[15] In general, no changes to U.S. law are expected to be necessary as a result of NAFTA. Canada has committed to provide Mexico the same treatment under

[4] For the purpose of this analysis, production effects are measured by changes in the size of banking assets.

[5] NAFTA, ch. 14. NAFTA has no impact on U.S. banks operating in Canada and vice versa due to CFTA. Section C of Canada's schedule to annex VII, p. VII-C-4, provides that Canada will provide the same treatment under certain of its banking laws to Mexico as it gives to U.S. residents and institutions controlled by U.S. residents pursuant to CFTA.

[6] *Ley para Regular Agrupaciones Financieras (Law Regulating Financial Groups)*, art. 18, *Ley de Instituciones de Credito (Law of the Credit Institutions)*, arts. 11 and 15.

[7] *Ley General de Organizaciones y Actividades Auxiliares del Credito (General Law of Auxiliary Credit Organizations and Activities)*, art. 8-III-1.

[8] *General Law of Auxiliary Credit Organizations and Activities*, arts. 8-III-1, 82-III, and *Law of the Credit Institutions*, art. 92, Reglas de la Secretaria de Hacienda y Credito Publico (Regulations of the Ministry of Finance and Public Credit).

[9] NAFTA, annex VII, Reservations, Specific Commitments and Other Items, Schedule of Mexico, pp. VII-M-1, VII-M-3.

[10] Ibid., arts. 1405-1406.

[11] Mexico has placed its largest banks "off limits" from purchase by limiting the market share of any single foreign financial affiliate. Ibid., annex VII, Schedule of Mexico, p. V-M-13.

[12] Foreign financial affiliates may function as a "financial group" under Mexican law, separately operating a bank, a securities firm, and insurance firm, as well as leasing and factoring businesses. Ibid., annex VII, Schedule of Mexico, p. VII-M-21. Thus, U.S. banks will be able to engage in more lines of business in Mexico than they can in the United States.

[13] Ibid., arts. 1403-1408.

[14] In addition, article 1410 reserves to each party the right to adopt and maintain measures for "prudential reasons," including measures to ensure the protection of investors, depositors, financial market participants, policy holders, policy claimants, and persons to whom a fiduciary duty is owed, to maintain the safety, soundness, integrity, or financial responsibility of financial institutions, and to ensure the integrity and stability of a party's financial system. Article 1410 also specifies that the provisions of chapter 14 do not apply to nondiscriminatory measures of general application taken by public entities relating to monetary and related credit policies or exchange rate policies. Section B of Mexico's schedule to annex VII provides that foreign banking affiliates established in Mexico shall be separately capitalized. Ibid., annex VII, Schedule of Mexico, p. VII-M-14, sec. 3.

[15] Ibid., art. 1409; annex VII. Initially, market share restrictions would limit foreign banks from controlling more than 8 percent of the entire banking sector. This share would rise to 15 percent by 1999. If foreign banks achieve 25 percent of the Mexican market between 2000 and 2004, Mexico can freeze foreign financial affiliates' market share at that level. Once imposed, however, this freeze could not stay in place for more than 3 years.

various laws that limit foreign ownership of Canadian financial institutions as accorded to U.S. residents and institutions pursuant to the CFTA.[16]

Likely Impact on Investment

To date, the only U.S. bank with deposit-taking operations in Mexico is Citibank, which operates six Mexican branch offices with assets totalling about $500 million.[17] Citibank's assets represent less than 1 percent of Mexico's total banking assets. By comparison, 20 U.S. banks operate banking subsidiaries in Canada, accounting for about 3 percent of the Canadian banking industry's total assets.[18] Twelve Mexican and Canadian banks jointly operate 66 banking offices in the United States. Six Canadian banks[19] account for assets of $57.3 billion in the United States. Six Mexican banks[20] account for assets of $5.6 billion. When combined, Canadian and Mexican assets are equivalent to less than 2 percent of total U.S. banking assets.[21]

Trade in banking services between Mexico and Canada appears to be limited. Canada's representation in the Mexican banking market is limited to four representative offices established by the Bank of Montreal, the Bank of Nova Scotia, the Royal Bank of Canada, and the Canadian Imperial Bank of Commerce.[22] Mexico's representation in the Canadian banking market is limited to one representative office established by the Banco Nacional de Mexico.[23]

NAFTA is likely to result in a modest increase in U.S. investment in Mexico during the short term. The agreement principally will increase foreign direct investment by U.S. and Canadian banks. Interviews with U.S. industry representatives have indicated that market share limitations imposed by NAFTA on foreign banks through December 31, 2003, generally will not be used to exclude interested U.S. and Canadian investors from the Mexican banking market; however, banks from non-NAFTA countries will be better able to invest in the Mexican banking market after these limitations are lifted.[24]

NAFTA principally will spur investment that establishes or improves the competitive position of U.S. and Canadian retail (small customer) banking operations in Mexico.[25] Article 1403 stipulates that foreign banks must establish themselves as separately capitalized subsidiaries, which likely will limit new opportunities for lucrative capital loans in corporate banking. Without the ability to extend loans on the basis of their parent banks' capital, it is unlikely that foreign banks will be able to extend large corporate loans from their Mexican offices. It appears that corporate banks account for the vast majority of U.S. bank loans to Mexican nationals, as reflected in table 42-1.

NAFTA will likely have a modestly beneficial impact on long-term investment in Mexico. In the absence of U.S. domestic regulatory reform, however, long-term investment in Mexico's universal banking system will be particularly attractive to U.S. and Japanese banks. Once established as financial groups in Mexico, they will be able to operate commercial banking, investment banking, insurance, leasing, and factoring businesses simultaneously. The United States' Glass-Steagall Act and Japan's article 65 separate commercial banking and investment banking in these two countries. Both regulations have provided incentives for U.S. and Japanese commercial banks to establish overseas operations, where they may participate more freely in securities-related activities.

Investment by Mexican banks in the United States will not be affected by NAFTA in the short or long term since they have long been allowed to operate in the United States.

Likely Impact on U.S. Trade

Overall, U.S. trade in banking services with Mexico is expected to show a modest increase, although the share of trade accounted for by cross-border transactions likely will decrease as Mexican affiliates of foreign banks increase sales of banking services. During the short term, NAFTA will likely increase U.S. and Canadian bank participation in Mexico's retail banking market. Over the long term, foreign retail banks domiciled in the United States or Canada will clearly benefit, too. Moreover, opportunities in Mexico's retail banking market should increase if NAFTA increases the income of Mexican families, many of whom do not have bank accounts at present because of low incomes.

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16 Ibid., annex VII, Schedule of Canada, p. VII-C-4.

17 Estimated by USITC staff on the basis of figures appearing in U.S. Department of Treasury, *National Treatment Study 1990*, p. 273.

18 U.S. Department of Treasury, *National Treatment Study*, p. 129.

19 These banks are the Bank of Montreal, Bank of Nova Scotia, Canadian Imperial Bank of Commerce, National Bank of Canada, Royal Bank of Canada, and Toronto Dominion Bank.

20 These banks are Banca Serfain, Banco Internacional, Banco Mexicano Somex, Banco Nacional de Mexico, Bancomer, and Multibanco Comermex.

21 American Banker, "Ranking the Banks: Top Numbers 1992 Edition," pp. 136-140.

22 Hufbauer and Schott, *North American Free Trade*, p. 307.

23 Financial Times Business Information, "Who Owns What in World Banking 1991" (London: Financial Times Business Information, 1991), p. 19.

24 Representatives of U.S. banking industry, interviews by USITC staff, Washington, DC, Oct.-Nov. 1992.

25 Ibid.

Likely Impact on U.S. Production and Employment

There will be only a minor increase in U.S. banks' total assets as a result of NAFTA during either the short or long term, principally due to the small size of the Mexican market. NAFTA is likely to have relatively little impact on employment in U.S. banks because these banks will likely staff most positions in newly established Mexican banking affiliates with Mexican nationals.

Likely Impact on U.S. Global Competitiveness

NAFTA is expected to increase U.S. firms' share of the Mexican banking market, thereby exerting a modestly beneficial impact on U.S. banks' competitive position in the North American market. Overall, NAFTA is expected to have a limited but positive effect on the global competitiveness of the U.S. banking industry because of improved access resulting from NAFTA provisions that allow U.S. banks to further diversify in terms of geographic coverage and line-of-business. Diversification of this type should make U.S. firms less vulnerable to downturns in specific geographic or product markets.

CHAPTER 43
Insurance

James Bedore

Table 43-1
Insurance: Selected U.S. sector data, 1989-91[1]

Item	1989	1990	1991	Percentage change, 1990-91
Total U.S. premiums	453,201	482,108	502,500	4
Exports (receipts):[2]				
Total	1,572	1,834	2,063	12
To Mexico	19	-20	25	([3])
To Canada	848	1,339	1,230	-8
Imports (payments):[2]				
Total	823	1,845	2,639	43
From Mexico	-3	-2	-5	-150
From Canada	404	226	580	157
Trade balance:[2]				
Total	749	-11	-576	-5,136
With Mexico	16	-22	20	([3])
With Canada	444	1,113	650	-42

[1] Care is warranted in interpreting this table due to changing Mexican foreign investment rules and exchange rate fluctuations during the period depicted.
[2] Net transactions of cross-border direct trade for primary insurance and reinsurance (premiums received or paid, minus losses paid or recovered).
[3] Not meaningful for purposes of comparison.

Sources: U.S. Department of Commerce, Bureau of Economic Analysis, *Survey of Current Business*, Sept. 1992, pp. 112-114; *Sigma*, Swiss Re; and U.S. Department of Commerce estimates.

Summary of Sector Analysis

The U.S. and Canadian insurance markets have long permitted foreign direct investment on a national treatment basis. Mexico, conversely, has traditionally restricted foreign investment. The major effect of NAFTA on the insurance sector of the three countries will be to remove, after a short transition, current restrictions on foreign equity ownership in Mexico's insurance market. This will considerably enhance U.S. insurance investment in the Mexican insurance market—a market that is in its infancy and which is expected to continue its current rapid expansion. Cross-border trade, however, especially between Mexico and the other two NAFTA signatories, will remain minor and largely unaffected because Mexico will continue to require, due to different regulatory practices among NAFTA signatories, that insurance transactions be conducted only by formally licensed companies or subsidiaries rather than branches.

Key NAFTA Provisions Affecting Sector

NAFTA creates for the first time a significant opening for U.S.- and Canadian-majority-owned insurance operations in various types of health, life, and property/casualty insurance markets in Mexico. Prior to NAFTA, foreign investments in a particular Mexican insurance company had to be less than 50 percent of all paid-in capital.[1] Article 1403 and

[1] *Ley General de Instituciones y Sociedades Mutualistas de Seguros (General Law on Insurance Institutions and Mutual Societies)*, art. 29-I. In section A of its schedule to annex VII, Mexico specified that these percentage limits will not apply to investments in "foreign financial affiliates," that is, financial institutions established in Mexico and owned and controlled by U.S. and Canadian investors, subject to the transition provisions and other specific limitations in sections B and C of its schedule to annex VII. Mexico's 1973 Foreign Investment Law and 1989 regulations will have to be amended to reflect these commitments.

Mexico annex VII (B) establish the general right of U.S. and Canadian investors to own a majority share of insurance companies. These investors are protected by the general principle of national and MFN treatment.[2] U.S. and Canadian investors can participate in the Mexican insurance market either through acquisition of existing insurance companies in which they have an ownership interest, new joint ventures, or by establishing subsidiaries under Mexican law, owned and controlled by U.S. or Canadian investors.[3] Mexico also agreed to lift current restrictions that prohibit its citizens from purchasing U.S. and Canadian life and health insurance when in the United States. Mexico also removed the requirement that insurance of cargo moving between NAFTA parties be placed in Mexico, and agreed to continue the present liberalized access by reinsurers into Mexico.[4] Chapter 14 of NAFTA and annex VII set up a transition period ending in the year 2000, during which individual and aggregate market share limits on U.S. and Canadian investment will be allowed to increase according to a phased schedule.[5]

In general, no changes to U.S. law are expected to be necessary as a result of NAFTA. Canada has committed in NAFTA to provide Mexico the same treatment accorded by the U.S.-Canada Free-Trade Agreement to U.S. residents and institutions in regard to limitations on the foreign ownership of Canadian financial institutions.[6]

Likely Impact on Investment

U.S. and Canadian insurers will likely expand their investment in Mexico's insurance markets due to NAFTA's liberalized investment rules. U.S. and Canadian insurance markets can be considered mature; thus, insurance providers are seeking opportunities in growth regions of the globe. Both U.S. and Canadian markets are open to foreign direct investment and are highly competitive, and as indicated by table 43-2, insurance premiums per capita and as a proportion of GDP are high compared to Mexico. NAFTA's impact on the U.S. and Canadian insurance markets will thus be minor because these markets are largely saturated.

Mexico, conversely, is a largely undeveloped insurance market with great potential for growth.[7]

[2] NAFTA, art. 1405-1406.

[3] Ibid., annex VII (B), Reservations, Specific Commitments and Other Items, Schedule of Mexico, p. VII-M-15-16.

[4] Ibid., annex VII, Schedule of Mexico, p. VII-M-10-11. Article 1410 reserves to each party the right to adopt and maintain measures for "prudential reasons," including measures to ensure the protection of investors, depositors, financial market participants, policy holders, policy claimants, and persons to whom a fiduciary duty is owed, to maintain the safety, soundness, integrity, or financial responsibility of financial institutions, and to ensure the integrity and stability of a party's financial system.

[5] Ibid., art. 1409, annex VII. Initially, NAFTA would limit foreign insurance firms' investment as a percentage of the total capitalization of the Mexican insurance sector to 6 percent. This limit would rise to 8 percent in 1995, then would rise 1 percent additionally per year until it reaches 12 percent in 1999, and would disappear in 2000. Ibid., annex VII, Schedule of Mexico, p. VII-M-15. Although both life and nonlife insurance could be sold by an insurance company, the two categories would be measured separately. Ibid. A foreign insurance company that has an investment of 10 percent or more in a

5—*Continued*
Mexican insurance company on July 1, 1992, could (a) continue to operate as before that date with respect to ownership interests, or (b) as of 1996, acquire up to 100 percent of a Mexican insurance company. Ibid., annex VII, Schedule of Mexico, p. VII-M-20-21.

[6] Ibid., annex VII, Schedule of Canada, p. VII-C-4.

[7] For example, only 20 percent of cars are insured. Less than 8 percent of houses have any kind of household insurance. Only 20 percent of the population holds any kind of life insurance policy. See presentation of Adrian Paez Martinez, Grupo Seguros la Comercial, to the International Insurance Council's 8th International Insurance Symposium, New York City, Oct. 29, 1992.

Table 43-2
Insurance: Comparative statistics for NAFTA countries, 1990

Description	United States	Mexico	Canada
Number of companies	5,900	42	518
Insurance premiums as percentage of GDP	8.9	1.1	5.5
Employees	1,374,000	[1]19,000	183,000
Total premiums, 1990 (US$ billion)	482	2.6	31.8
Numerical global ranking for world market share in terms of largest sized national insurance markets	1	27	7
Numerical global ranking for world market share in terms of insurance density, i.e., premiums per capita	3	41	14
Premiums per capita (US$)	1,929	30	1,197

[1] Does not include some 35,000 agents.

Sources: *Sigma*, Swiss Re; U.S. Department of Commerce; and Grupo Seguros la Comercial.

U.S. industry representatives have indicated that Mexico's commitment to permit foreign insurers actual control over their Mexican insurance investments is exceptionally appealing.[8] Also, given the history of Mexico's tradition of nationalizing financial service sectors, the fact that Mexico will be bound to a trade-liberalizing treaty provision, and thus unable to modify its liberalization without penalties, is attractive to foreign insurance companies. Thus, it is possible, for example, that several U.S. and Canadian insurance companies that currently have minority-share investments in Mexico will acquire majority control by 1996.[9]

Current Foreign Direct Investment in the Mexican Market

The 1989 Mexican insurance investment reforms both liberalized investment rules and required better capitalized insurance firms. These reforms stimulated foreign insurance investment. At least 18 Mexican insurance companies (of 42) now enjoy significant financial backing from foreign companies.[10]

Foreign direct investment in insurance will also be enhanced significantly as foreign industries increase their presence in Mexico. Many U.S. property/casualty insurers, for example, will likely follow firms they insure in the United States while these companies increase their Mexican business. For life insurance firms, potentially significant growth is expected for employee-benefit programs. Insurance lines such as group health and pension plans are expected to grow substantially. Mexican officials have indicated they will move toward privatization of these programs over the next few years.[11]

As for Mexican investment in the U.S. insurance market, at least three Mexican insurance firms currently have representative offices in the United States. They have not yet chosen to formally incorporate. The Canadian and U.S. markets have a high degree of integration in terms of cross-border investment and commercial presence in each others' markets.

Insurance Intermediaries

In the same way that NAFTA affects investment by Canadian and U.S. insurance companies, it will also permit Canadian and U.S. intermediaries such as insurance brokers, and service vendors such as claims adjusters, to obtain majority-equity stakes in Mexican insurance brokerage houses for the first time. It is expected that U.S. and Canadian firms will be interested in doing so, and the investment impact will be considerable. Firms such as Marsh & McLennan, Alexander & Alexander, and Johnson & Higgins have had minority-share investments or correspondent relationships with Mexican brokerage houses for many years. These relationships are now likely to be formalized as U.S. and Canadian firms choose to invest a controlling share in Mexican insurance brokerage firms.[12]

Non-NAFTA Insurance Companies

U.S. and Canadian insurers choosing to invest in the Mexican market will enjoy benefits not open to insurers of non-NAFTA countries. In particular, non-NAFTA insurers will be unable to obtain majority-equity control in the way that the NAFTA will permit U.S. or Canadian companies. The impact of this benefit may be limited, however, by the fact that European, Japanese, or other companies with subsidiaries in the United States or Canada (which have thus become "U.S." or "Canadian" companies) may use their U.S. or Canadian subsidiaries to create new Mexican subsidiaries to serve the Mexican market. Such companies would thus enjoy the same national treatment as other NAFTA-based insurers. Moreover, Mexico may improve access of non-NAFTA insurers by modifying its investment law to extend its liberalization to all nations. According to Mexican sources, such a modification to Mexico's investment law is already underway.[13]

Likely Impact on U.S. Trade

The major U.S. trade effect of NAFTA insurance provisions will occur via direct foreign investment. Table 43-1 indicates that cross-border trade, compared

[8] Since 1935, Mexico has restricted foreign investment in insurance. Between 1935 and 1989 foreign investment was limited to 10 percent. In late 1989, foreign insurers were permitted to invest up to 49 percent. This cap was lowered to 30 percent in 1990.

[9] Over the long term, one industry leader expects U.S. insurance companies investing in the Mexican market to obtain "a 10 percent share" of a projected $50 billion annual market. Henry G. Parker III, chairman of the international committee, American Insurance Association, Washington, DC, quoted in *Investor's Business Daily*, Nov. 3, 1992.

[10] U.S.-based companies currently active in Mexico include, the American International Group (AIG), Cigna, and Aetna. Other U.S.-based insurance companies with minority shares in Mexican insurers include Chubb and Metropolitan Life. U.S. Council of the Mexico-U.S. Business Committee, prehearing submission, Nov. 10, 1992, p. 19.

[11] Adrian Paez Martinez, Grupo Seguros la Comercial, presentation to the International Insurance Council's Eighth International Insurance Symposium, New York City, Oct. 29, 1992.

[12] Ibid.

[13] Official of the Secretaria de Comercio y Fomento Industrial (SECOFI), interview by USITC staff, Nov. 1992.

with total U.S. premiums, currently plays only a small role in the U.S. market.[14] The table also shows both the significant integration of the U.S. and Canadian insurance markets, as well as the current negligible impact of Mexican cross-border trade.

In general, NAFTA does not permit either significantly increased cross-border insurance transactions, or the sale of insurance in Mexico via branches of U.S. or Canadian insurance companies, largely because of differences in the way each of the three countries regulates its insurance industry.[15]

The continued restriction on branch operations is significant because insurance companies generally prefer to expand through branches wherever they are permitted to do so. Branches are less expensive to create and administer than subsidiary operations. Most importantly, branches permit a company to use its parent's capital as reserves; thus it can write much more insurance without moving investment capital to a new country. Unlike subsidiaries, however, branches are not "corporate citizens" of a given political jurisdiction. This fact makes insurance regulators more wary of branch operations than subsidiaries, because the regulators' access to (and consequent ability to order, punish, confiscate, or impound) an insurance company's officers, records, and capital may be restricted.

Because of the continued limitations on cross-border direct insurance trade, some smaller U.S. insurance companies may attempt entry to the Mexican market by direct investment in a Mexican company. It is more likely, however, that U.S. and Mexican smaller insurers, perhaps especially those located adjacent to the border, will await further cross-border trade liberalization before they have a significant opportunity to do business across the U.S.-Mexican frontier. Such further trade liberalization will likely depend on some form of harmonization or cross-recognition of the disparate insurance regulatory systems of the three NAFTA signatory nations.[16]

The one significant exception to continued cross-border trade restrictions in the insurance markets among the three countries will be the liberalization of marine cargo insurance. For the first time, Mexico will permit U.S. and Canadian firms to insure cargoes moving in and out of Mexico.[17] The chairman of the New York-based American Institute of Marine Underwriters estimates that these marine cargo restrictions have resulted in the loss of as much as $130 million in annual premiums to U.S. insurers.[18] Mexico will also formalize the right of Mexicans who are physically outside the country to buy insurance in other countries. Additionally, various Mexican formal trade restrictions for the purchase of foreign reinsurance (which have not been enforced in the immediate past years) will be removed.

Likely Impact on U.S. Production and Employment

Since little cross-border insurance business is liberalized by the NAFTA agreement, the beneficial impact on U.S. production and employment is likely to be minor. U.S. jobs created, however, will likely be relatively well paid, high-skill jobs. The president of the Washington, DC-based International Insurance Council has supported this conclusion and has stated that most noted new U.S. employment will result in U.S. technical support of expanding operations in Mexico.[17]

Likely Impact on U.S. Global Competitiveness

NAFTA is likely to have only a minor beneficial impact on U.S. global competitiveness in the insurance field. In particular, any market share gains made by U.S. insurance firms as a result of NAFTA will be relatively small compared to the overall global market share currently held by these firms. Table 43-2 indicates the disparities between the large U.S. domestic market and those of Canada and Mexico. Mexico, however, has a large and growing population, and is a highly attractive potential market if its current industrialization program continues its rapid advance. NAFTA will offer to some large U.S. insurers additional experience in the skills needed to operate an insurance enterprise in foreign markets. Also, over time, NAFTA insurance provisions will likely create profits and advanced-skill jobs at home that should ultimately benefit the U.S. economy.

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[14] Indeed, other than marine insurance and reinsurance, little insurance is currently sold cross-border anywhere in the world. The proposed EC 1992 rules of the European Community, however, may begin to change this traditional pattern. The banking and securities industries, for example, are increasingly global in their trade patterns. In the same way, insurance markets may also become increasingly international.

[15] However, article 1404 does provide that no new or additional restrictions will be placed on cross-border trade and that prior to the year 2000 consultations will be held between the signatories to assess the feasibility of further liberalization.

[16] There are differing rules for branch operations, for example, even between the 50 U.S. State insurance regulatory jurisdictions. Until such time as greater U.S. interstate consistency on branch operations can be agreed, it may be difficult for U.S. States to consent to reciprocal U.S.-Mexican branch operations.

[17] NAFTA, annex VII, Schedule of Mexico, p. VII-M-10-11.

[18] Paul Dykewicz, "U.S. Marine Insurers Stand to Gain if Mexican Trade Plan is Approved," *The Journal of Commerce*, July 2-3, 1992, p. A-8.

[19] Gordon J. Cloney, testimony before the Trade Subcommittee of the House Committee on Ways and Means, Sept. 21, 1992.

APPENDIX A
REQUEST LETTER

Rec'd in Chairman Office
TO: DOCKETS
cc: Commission - FYI

Congress of the United States
Washington, DC 20515

September 22, 1992

DOCKET NUMBER
1723
Office of the Secretary
Int'l Trade Commission

'92 SEP 23 AM 11:53

The Honorable Don E. Newquist
Chairman
U.S. International Trade Commission
500 E Street, S.W.
Washington, D.C. 20436

Dear Mr. Chairman:

As you know, on August 12, negotiations were concluded for a North American Free Trade Agreement (NAFTA). The President notified the Congress September 18 of his intention to enter into the NAFTA, as required at least 90 days before actually signing the Agreement.

The NAFTA will have important implications for the U.S. economy overall and could have a significant impact on individual industrial, agricultural, and service sectors. An understanding of the potential short- and long-term costs and benefits of the Agreement for U.S. producers and workers will be crucial to the consideration of implementing legislation by the Congress.

Consequently, on behalf of the House Committee on Ways and Means and the Senate Committee on Finance, we request that you conduct a study under section 332(g) of the Tariff Act of 1930 consisting of (1) an analysis of the economic costs and benefits of the NAFTA for the U.S. economy in the short and long term and (2) analyses of the short- and long-term impact of the NAFTA on important agricultural, industrial, and service sectors of the economy. The analyses should be based on the provisions of the Agreement itself as concluded, not on hypothetical assumptions. The study should focus on those provisions having the most direct impact on the U.S. economy or individual sectors.

The analysis of the likely impact of the NAFTA on the U.S. economy should reflect the Commission's own work and expertise in this area and its understanding of the actual provisions of the Agreement. The assessment should include an analysis of the likely impact of the NAFTA on (1) overall employment and wage rates in the United States, (2) U.S. wages at different skill levels, (3) U.S. production, (4) U.S. import and export performance, and (5) the national income. This assessment should also address, to the extent feasible, related implications for Canada and Mexico. In addition, it is also important that the context in which the Agreement is being implemented, especially with regard to Mexico, be well understood. The Commission's report should, therefore, also provide an overview of recent economic trends in Mexico, including, but not necessarily limited to, major developments in infrastructure, productivity, product quality, and education; foreign trade and investment patterns; and related government regulatory reform.

The sector analyses should include assessments of the likely impact of the Agreement on U.S. exports and imports, and on U.S. production, employment, and investment. To the extent feasible, the analyses should address the likely impact on investment patterns among the three countries, as well as the potential impact of the NAFTA on U.S. global competitiveness and trade patterns. The study should identify the changes in U.S. law required by the Agreement that may significantly affect individual sectors and discuss the potential economic impact of those provisions. To the extent feasible, the study should also identify significant changes in Mexican and Canadian law required by the Agreement for those sectors for which there is a significant economic impact.

The key sectors for individual analysis should include agriculture overall and the following individual sectors: grains and oilseeds, citrus fruit and juice, other fruits, vegetables, sugar, dairy products, cotton, peanuts, sugar-containing products, livestock and meat, poultry, fish, cut flowers, lumber and wood products, and alcoholic beverages; automotive (motor vehicles and parts); textiles and apparel; computers (including major components) and electronics; petroleum (including oilfield services); primary petrochemicals; pharmaceuticals; natural gas; oil/natural gas pipelines; electricity transmission; steel mill products; bearings; machine tools; flat glass; household glassware; ceramic tile; and service sectors such as telecommunications, transportation, engineering and construction, banking, and insurance. These analyses should take into account generic as well as sector-specific provisions in the Agreement.

Since Congressional committees will be reviewing the draft NAFTA text this fall before adjournment and are likely to develop implementing legislation early in the 103rd Congress, we would appreciate receiving the study by January 29, 1993. It is recognized that adjustments in the timetable for submitting the study may be appropriate. In view of the time constraint and to provide the most useful information, the report should be concise and emphasize important implications rather than be excessively quantitative and detailed.

In addition, the Committees would appreciate technical assistance from the Commission and its staff as the Committees begin the process of developing implementing legislation for the NAFTA. In particular, the Committees expect to seek informal advice from the Commission, as with previous trade agreements, regarding changes in U.S. laws that must be made to implement the NAFTA and, to the extent questions may arise, necessary changes in Mexican and Canadian laws.

Thank you for your cooperation.

Sincerely yours,

Lloyd Bentsen
Chairman
Committee on Finance
United States Senate

Dan Rostenkowski
Chairman
Committee on Ways and Means
U.S. House of Representatives

APPENDIX B
INSTITUTION OF INVESTIGATION

INTERNATIONAL TRADE COMMISSION

[Investigation No. 332-337]

Potential Impact on the U.S. Economy and Selected Industries of the North American Free Trade Agreement

AGENCY: United States International Trade Commission.

ACTION: Institution of investigation and scheduling of public hearing.

EFFECTIVE DATE: October 23, 1992.

SUMMARY: Following receipt on September 23, 1992, of a request from the House Committee on Ways and Means and the Senate Committee on Finance, the Commission instituted investigation No. 332-337 under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)) for the purpose of providing (1) an analysis of the economic costs and benefits of the North American Free Trade Agreement (NAFTA) for the U.S. economy in the short and long term and (2) analyses of the short-and long-term impact of the NAFTA on important agricultural, industrial, and service sectors of the economy.

FOR FURTHER INFORMATION CONTACT: Information on the sectors may be obtained from Robert W. Wallace, Office of Industries (202-205-3458); economic aspects, from Hugh Arce, Office of Economics (202-205-3234); and legal aspects, from William Gearhart, Office of the General Counsel (202-205-3091). The media should contact Edward Carroll, Acting Director, Office of Public Affairs (202-205-1819). Hearing impaired persons are advised that information on this matter can be obtained by contacting the TDD terminal on 202-205-1107.

BACKGROUND: In their letter dated September 22, 1992, the Committees noted that negotiations for a NAFTA had been concluded on August 12, 1992, and that the President had notified the Congress on September 18, 1992, of his intention to enter into the NAFTA, as required at least 90 days before actually signing the Agreement.

The Committee asked the Commission to conduct a study under section 332(g) consisting of (1) an analysis of the economic costs and benefits of the NAFTA for the U.S. economy in the short and long term and (2) analyses of the short-and long-term impact of the NAFTA on important agricultural, industrial, and service sectors of the economy. The Committees asked that the analyses be based on provisions of the Agreement itself as concluded, not on hypothetical assumptions. They also

INTERNATIONAL TRADE COMMISSION

[Investigation No. 332-337]

Potential Impact on the U.S. Economy and Selected Industries of the North American Free Trade Agreement

AGENCY: United States International Trade Commission.

ACTION: Amendment to scope of investigation.

SUMMARY: The Commission instituted the above referenced investigation on October 23, 1992, following receipt of a request therefor under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)) from the House Committee on Ways and Means and the Senate Committee on Finance. Among other things, the request asked that the Commission provide an analysis of the short- and long-term impact of the NAFTA on important agricultural, industrial, and service sectors of the economy. The request identified 36 key sectors that should be included for individual analysis. In the course of conducting the investigation, the Commission has identified three additional sectors for individual analysis, chemicals, major household appliances, and industrial machinery (including farm, packaging, construction, mining, oil and gas field, textile, paper industries, printing trades, food products, and refrigeration and heating machinery), and will include analyses of these sectors in its report as well.

Notice of the Commission's institution of the investigation and of the scheduling of a public hearing (for November 17, 1992) was published in the Federal Register of October 30, 1992 (57 FR 49192).

EFFECTIVE DATE: November 13, 1992.

FOR FURTHER INFORMATION CONTACT: Robert W. Wallace, Office of Industries on (202) 205-3458. Hearing impaired persons can obtain information on this matter by contacting the Commission's TDD terminal on (202) 205-1810. Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary on (202) 205-2000.

WRITTEN SUBMISSIONS: Interested persons are invited to submit written statements concerning the sectors added to the scope of investigation. Written statements should be submitted to the Commission no later than noon December 11, 1992. The Commission is especially interested in receiving information regarding the impact of the NAFTA on individual sector investment, on investment patterns among NAFTA nations, and on the global competitiveness of individual U.S. sectors. The Commission is also interested in obtaining sector related information on major developments in Mexico's infrastructure, productivity, product quality, and education.

Commercial or financial information that a submitter desires the Commission to treat as confidential must be submitted on separate sheets of paper, each clearly marked "Confidential Business Information" at the top. All submissions requesting confidential treatment must conform with the requirements of section 201.6 of the Commission's Rules of Practice and Procedure (19 CFR 201.6). All written submissions, except for confidential business information, will be made available for inspection by interested persons. All submissions should be addressed to the Secretary at the Commission's office in Washington, DC.

By order of the Commission.

Issued: November 16, 1992.

Paul R. Bardos,

Acting Secretary.

[FR Doc. 92-28223 Filed 11-19-92; 8:45 am]

BILLING CODE 7020-02-M

APPENDIX C
AMENDMENT TO SCOPE OF INVESTIGATION

asked that the study focus on those provisions having the most direct impact on the U.S. economy or individual sectors.

More specifically, the Committees asked that the Commission's assessment include an analysis of the likely impact of the NAFTA on (1) overall employment and wage rates in the United States, (2) U.S. wages at different skill levels, (3) U.S. production, (4) U.S. import and export performance, and (5) the national income. The Committees asked that this assessment, to the extent feasible, address related implications for Canada and Mexico. In order that the context in which the Agreement is being implemented, especially with regard to Mexico, might be well understood, the Committees asked that the Commission's report also provide an overview of recent economic trends in Mexico, including, but necessarily limited to, major developments in infrastructure, productivity, product quality, and education; foreign trade and investment patterns; and related government regulatory reform.

The Committees asked that the sector analyses include assessments of the likely impact of the Agreement on U.S. exports and imports, and on U.S. production, employment, and investment, and that they address, to the extent feasible, the likely impact on investment patterns among the three countries, as well as the potential impact on the NAFTA on U.S. global competitiveness and trade patterns. The Committees also asked that the study identify the changes in U.S. law required by the Agreement that may significantly affect individual sectors and discuss the potential economic impact of those provisions. The Commission was also requested to identify, to the extent feasible, significant changes in Mexican and Canadian law required by the Agreement for those sectors for which there is a significant economic impact.

The Committees identified as the key sectors for individual analysis agriculture overall and the following individual sectors: Grains and oilseeds, citrus fruit and juice, other fruits, vegetables, sugar, sugar-containing products, dairy products, cotton, peanuts, livestock and meat, poultry, fish, cut flowers, lumber and wood products, and alcoholic beverages; automotive (motor vehicles and parts); textiles and apparel; computers (including major components) and electronics; petroleum (including oilfield services); primary petrochemicals; pharmaceuticals; natural gas; oil/natural gas pipelines; electricity transmission; steel mill products; bearings; machine tools; flat glass; household glassware; ceramic tile; and service sectors such as telecommunications, transportation, engineering and construction, banking, and insurance.

The Commission will seek to provide the information requested by the Committees and to submit its report by January 29, 1993.

PUBLIC HEARING: A public hearing in connection with the investigation will be held in the Commission Hearing Room, 500 E Street SW., Washington, DC, starting at 9:30 a.m. on November 17, 1992 and extending through November 19 if needed. 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 hearing should be filed with the Secretary, U.S. International Trade Commission, 500 E Street SW., Washington, DC 20436, no later than November 9, 1992. Any prehearing briefs (original and 14 copies) should be filed not later than November 9, and any posthearing briefs should be filed by noon November 25, 1992.

WRITTEN SUBMISSIONS: In lieu of or in addition to appearing at the hearing, interested persons are invited to submit written statements concerning the investigation. Written statements should be submitted to the Commission no later than noon November 25, 1992. The Commission is especially interested in receiving information regarding the impact of the NAFTA on individual sector investment, on investment patterns among NAFTA on nations, and on the global competitiveness of individual U.S. sectors. The Commission is also interested in obtaining documented information on major developments in Mexico's infrastructure, productivity, product quality, and education.

Commercial or financial information that a submitter desires the Commission to treat as confidential must be submitted on separate sheets of paper, each clearly marked "Confidential Business Information" at the top. All submissions requesting confidential treatment must conform with the requirements of § 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 for inspection by interested persons. All submissions should be addressed to the Secretary at the Commission's office in Washington, DC.

Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202-205-2000.

Issued: October 28, 1992.

By order of the Commission.

Paul R. Bardos,

Acting Secretary.

[FR Doc. 92-26331 Filed 10-29-92; 8:45 am]

BILLING CODE 7020-02-M

APPENDIX D
LIST OF SUBMISSIONS AND HEARING PARTICIPANTS

GOVERNMENT

U.S. Department of Commerce
Thomas J. Duesterberg, Assistant Secretary for International Economic Policy

Government of the Virgin Islands
*Eric E. Dawson, Commissioner of Economic Development and Agriculture
*Peter N. Hiebert of Winston & Strawn
*Andrew R. Wechsler, Principal and Managing Director, Law & Economics Consulting Group, Inc.

Commonwealth of the Northern Mariana Islands
Benjamin T. Monglona, Acting Governor
Commonwealth of Puerto Rico
Jose Roberto Martinez, Director of Puerto Rico Federal Affairs Administration and Special Counsel to the Governor

State of California
Ira H. Goldman, Office of the Governor

Florida Department of Agriculture & Consumer Services
Bob Crawford, Commissioner of Agriculture
*James H. Lundquist of Barnes, Richardson & Colburn
*Matthew T. McGrath of Barnes, Richardson & Colburn
*Edward E. Martin, Consulting Economist

State of Hawaii, Executive Chambers
Honorable John Waihee, Governor

State of Texas
Honorable Rick Perry, Commissioner of Agriculture
J. Jorge Verduzco, Department of Commerce

City of San Antonio
Nelson W. Wolff, Office of the Mayor

AGRICULTURE

American Sheep Industry Association
Dwight Dial, Chair of Legislative Action Council

Brandy Association of America and the U.S. Brandy Export Association
*V. Irene Darzenta, Government Relations Counsellor of International Business-Government Counsellors, Inc.
*Robert Ivie, President

Brandy Exporters Association
Tim Bishop

California Avocado Commission
Mark Affleck, President
Avi Crane, Vice President
Carolyn B. Gleason of McDermott, Will, & Emery
Pamela D. Walther of McDermott, Will, & Emery
Karen S. Sealander of McDermott, Will, & Emery

California Citrus Mutual
*James H. Lundquist of Barnes, Richardson & Colburn
*Edward E. Martin, Consulting Economist
*Matthew T. McGrath of Barnes, Richardson & Colburn

California Cut Flower Commission
Gordon Chan, Chairman of Legislative Committee

California Tomato Growers Association, Inc.
David L. Zollinger, President

Citrus Grower Associates
*James H. Lundquist of Barnes, Richardson & Colburn
*Edward E. Martin, Consulting Economist
*Matthew T. McGrath of Barnes, Richardson & Colburn

Distilled Spirits Council of the United States
F. A. Meister, President & CEO

Farmers Union Milk Marketing Cooperative
Stewart G. Huber, President

Floral Trade Council
*James R. Cannon, Jr. of Stewart & Stewart
*K. Fred Fries, President, Dillon Floral Corp.
*Timothy J. Haley, President
*David F. Machtel, Jr., Executive Director
Eugene L. Stewart of Stewart & Stewart

Florida Citrus Mutual
*James H. Lundquist of Barnes, Richardson & Colburn
*Edward E. Martin, Consulting Economist
*Matthew T. McGrath of Barnes, Richardson & Colburn
*Bobby F. McKown, Executive Vice President

Florida Citrus Packers
*James H. Lundquist of Barnes, Richardson & Colburn
*Edward E. Martin, Consulting Economist
*Matthew T. McGrath of Barnes, Richardson & Colburn

Florida Department of Citrus
*Robert Behr, Director of Economic Research
*James H. Lundquist of Barnes, Richardson & Colburn
*Edward E. Martin, Consulting Economist
*Matthew T. McGrath of Barnes, Richardson & Colburn

Florida Farm Bureau Federation
Carl B. Loop, Jr., President
*James H. Lundquist of Barnes, Richardson & Colburn
*Matthew T. McGrath of Barnes, Richardson & Colburn
*Edward E. Martin, Consulting Economist

Florida Fruit and Vegetable Association
*John M. Himmelberg of Holland & Knight
*David Land, Vice President
*Michael J. Steward, General Manager

Florida Tomato Exchange
John M. Himmelberg of Holland & Knight

Georgia Agricultural Commodity Commission for Peanuts
Wilbur T. Gamble, Chairman
Don Koehler

Gulf Citrus Growers Association, Inc.
*James H. Lundquist of Barnes, Richardson & Colburn
*Edward E. Martin, Consulting Economist
*Matthew T. McGrath of Barnes, Richardson & Colburn
Bert R. Pena of Hogan & Hartson

Indian River Citrus League
*James H. Lundquist of Barnes, Richardson & Colburn
*Edward E. Martin, Consulting Economist
*Matthew T. McGrath of Barnes, Richardson & Colburn

Michigan Asparagus
Harry A. Foster, Exec. Director

Minnesota Milk Producers Assoc.
Patricia A. Jensen, Executive Director of Farmers' Legal Action Group, Inc.

National Association of Wheat Growers
Carl Schwensen, Executive Vice President

National Cotton Council

National Farmers Union
Leland Swenson, President

National Juice Products Association
David C. G. Kerr, Exec. Director

National Peanut Growers Group
*William Bain, Virginia Peanut Farmer
*Dell Cotton, Meyers & Associates
*Larry Meyers, President, Meyers & Associates

National Potato Council
Jerry C. Hill of McDermott, Will, & Emery

North American Free Trade Agreement on the Florida Tomato Industry
Wayne Hawkins, Executive Vice President

North Dakota Farmers Union
Alan Bergman, President

Roses Incorporated
James C. Krone, Executive Vice President

South Carolina Farm Bureau Federation
Harry S. Bell, President

Southeastern Peanut Association
John T. Powell, Executive Director

Sweetener Users Association
*Thomas A. Hammer, President

AGRICULTURE-Continued

United Fresh Fruit and Vegetable Association
*Jodean R. Bens, Manager of International Trade

United States Sugar Association
*Joseph Famalette, President and CEO, American Crystal Sugar Co.
*Van R. Olsen, President, United States Beet Sugar Association
*Eiler Ravnholt, Hawaiian Sugar Planters' Association

Vegetable Growers Association
Al Lopez, President

Virgin Islands Rum Industries, Ltd.
*Jay R. Kraemer of Fried, Frank, Harris, Shriver & Jacobson

West Mexico Vegetable Distributors Association
T. Albert Yamada of Masaoka & Associates

Western Growers Association
Jack Pope of Schramm and Associates, Inc.
Robert Schramm of Schramm and Associates, Inc.

The Wine Institute
*V. Irene Darzenta, Government Relations Counsellor of International Business-Government Counsellors, Inc.
*Bobby Koch, Vice President of Federal Relations

AUTO AND AUTO PARTS

General Motors Corporation
International Union, United Auto, Aerospace and & Agricultural Implement Workers of America
Don Stillman, Director, Governmental and International Affairs

Nippondenso America, Inc.
Doreen M. Edelman of Miller, Canfield, Paddock and Stone

United Automobile Workers of America on behalf of UAW Local Union 249 and the Greater Kansas City Maquiladora Task Force
*Jack Hedrick, Vice President

CHEMICALS AND ENERGY

Chemical Manufacturers Association
William M. Stover, Vice President, Government Relations

Independent Petroleum Association of America
Gene L. Ames, President

Oil, Chemical, and Atomic Workers International Union
Nolan W. Hancock

Procter & Gamble
D.J. Elliot, Director, International Trade

Society of the Plastics Industry, Inc.
Lewis R. Freeman, Jr., Vice President, Government Affairs

CHEMICALS AND ENERGY-Continued

Valero Energy Corp.
Bill Greehey, Chairman and CEO

Vista Chemical Co.
Michael S. Reynolds, Manager, Public Relations

ELECTRONICS

Electronic Industries Association
Kevin J. Shannon, Staff Director, Government Relations

Computer and Business Equipment Manufacturers Association
John L. Pickitt, President

International Brotherhood of Electrical Workers
J. J. Barry, International President
*Neil S. Coladstein, Senior Analyst, Research & Economic Department
*Lawrence E. Liles, International Representative
*Robert Wood, Director of Research

GLASS AND CERAMIC PRODUCTS

American Olean Tile Company
John F. Mooney, Manager, Technology Acquisition

Association of North American Tile Manufacturers
*David E. Cox, Vice President, Dal Tile Corporation
*Steven P. Kersner of Brownstein Zeidman and Lore
*Pieter T. Van Leeuwen, Senior Economist, Law & Economics Consulting Group

Carolina Mirror Co.
Tommy Huskey, President and CEO, letter submitted by Rep. Cass Ballenger, U.S. Congress

Corning, Incorporated
Timothy J. Regan
Mary Ann Richardson

Corning Vitro Corporation
Irwin P. Altschuler of Brownstein, Zeidman, and Lore
Charles L. Peifer, Vice President and General Manager, U.S. Consumer Products Division

Crossville Ceramics
Svend Hovmand, President & General Manager

Durand International
Jean-Rene Gougelet, Executive Vice President

GTE Glass Products
Geoffrey P. Hunt

Guardian Industries Corporation
*Peter S. Walters, Group Vice President
*Peter Joel C. Young, Director, International Business

GLASS AND CERAMIC PRODUCTS-Continued

Laminators Safety Glass Association
Valerie Block, President

Libbey Glass, Inc., Unit of Owens-Illinois, Inc.
*John F. Meier, Vice President and General Manager
*Terence P. Stewart of Stewart & Stewart
*Charles A. St. Charles of Stewart & Stewart

PPG Industries, Inc.
*John C. Reichenbach, Jr., Director
*Terence P. Stewart of Stewart & Stewart

Stoneware Tile Co.
Richard D. Moore, Vice President & General Manager

Summityville Tiles, Inc.
Peter C. Johnson, Jr., Vice Chairman of the Board and Director of Sales & Marketing

Tile Council of America, Inc.
John F. Bruce of Howrey and Simon
Robert J. Kleinhans

United States Ceramic Tile Co.
Robert E. Schlemmer, President

Vidrio Plano de Mexico, S.A; Vitro Flotado, S.A.; Vitro Flex, S.A. de C.V.; and Cristales Inastillables de Mexico
Irwin P. Altschuler of Brownstein, Zeidman, and Lore

MACHINERY AND EQUIPMENT

Air-Conditioning & Refrigeration Institute
Renee S. Hatcher, Director of International Trade

Amana Refrigeration, Inc.
Charles F. Mueller, Vice President of Marketing

General Electric Company
Gregory R. Mues, Senior Counsel

International Association of Drilling Contractors
Brian T. Petty, Senior Vice President-Government Affairs

Maytag Corp.
Douglass C. Horstman, Director, Government Affairs

NTN Bearing Corp. of America, American NTN Bearing Mfg. Corp., NTN-Bower Corp., and NTN Driveshaft Inc.
Donald J. Unger of Barnes, Richardson, & Colburn

Petroleum Equipment Suppliers Association
Dale P. Jones, Chairman, and President, Halliburton Co.
Susan Huey, Director, Industry Communications
Sherry A. Stephens

Whirlpool Corp.
Michael C. Thompson, Director, Government Relations

SERVICES

American Institute of Merchant Shipping
Ernest J. Corrado, President

American Trucking Associations
*Linda Bauer Darr, Director, International Affairs
*Kenneth D. Simonson, Vice President & Chief Economist

American Warehouse Association
*Michael L. Jenkins, President
*Patrick C. O'Connor, Washington Representative

Association of American Railroads
L. Lee Lane, Vice President

Bankers' Association for Foreign Trade
Michael E. Rossi, Vice Chairman

Coalition of Service Industries

Communications Workers of America. AFL-CIO
*John Morgan, Administrative Assistant to Secretary-Treasurer

Cullen/Frost Bankers
T. C. Frost, Chairman

International Insurance Council
*Gordon J. Cloney, President

The Laredo National Bank
Gary G. Jacobs, President

Motion Picture Association
Frances Seghers

Railroad Commission of Texas
Bob Krueger

Service Employees International Union, AFL-CIO
John J. Sweeney, International President

Transportation Trades Department
Walter J. Shea, President

STEEL MILL PRODUCTS

American Iron and Steel Institute
Frank Fenton, Senior Vice President, Public Policy

Committee on Pipe and Tube Imports
*Roger B. Schagrin, Executive Director and General Counsel

TEXTILES, APPAREL, AND FOOTWEAR

Amalgamated Clothing and Textile Workers Union
*Arthur Gundersheim, Assistant to the President and Director of International Affairs

American Apparel Manufacturers Association
Carl H. Priestland, Chief Economist

American Textile Manufacturers Institute
*Carlos Moore, Executive Vice President

Atlantic Apparel Contractors Association
*Arnold Delin, Executive Director

Bremen-Bowdon
Warren P. Sewell, Jr., CEO

Cordage Institute
Ann Ottoson King of Leighton and Regnery

International Ladies Garment Workers' Union
Herman Starobin, Ph.D., Director of Research

Tru-Stitch Footwear
Charles F. Morgo

OTHER

American Paper Institute, Inc.
Irene W. Meister, Senior Vice President

Ameritech International
Roxane C. Wiser

Broom Manufacturers' Tariff Task Force
*William Libman, Treasurer of the Libman Co.
*David Brody, Attorney

Cigar Association of America
Peter Buck Feller of McKenna and Cuneo

Independent Zinc Alloyers Association, Inc.
R. M. Cooperman, Executive Director

Ingersoll-Rand, Door Hardware
Clyde Hartz, Corporate Economist

Lykes Bros, Inc.
Tom L. Rankin, President and Chairman

National Wood Window and Door Association
John W. Shoemaker

Polaroid Corporation
*V. Irene Darzenta, Government Relations Counsellor of International Business-Government Counsellors, Inc.
Rodney Schonland, Manager of Trade Regulations

OTHER-Continued

Public Citizen's Testimony

United Food and Commercial Workers International Union, AFL-CIO & CLC
Jerry Menapace, International Secretary-Treasurer
William H. Wynn, International President

World Tableware International
John B. Nano, Senior Vice President, Operations Chief Financial Officer

GENERAL

AFL-CIO
*Mark A. Anderson, Director of Task Force on Trade
*Thomas R. Donahue, Secretary-Treasurer

American Association of Exporters and Importers
Richard J. Salamone, Chairman of Duty Drawback Committee

American Institute of Marine Underwriters
Walter M. Kramer, Vice President

Baylor University
*Joseph A. McKinney, Professor of Economics

The Brookings Institution
Nora Lustig, Senior Fellow

Center for Strategic & International Studies
*Sidney Weintraub, Distinguished Visiting Scholar, Americas Program

Consumers Union
Eileen Marable, Administrative Assistant to the Washington Office Director
*John F. McDermid, Esq., President
*Mark Silbergeld, Director, Washington Office

Cornell University
*Duane Chapman, Professor of Resource Economics

Friends of the Earth
Andrea C. Durbin, Policy Analyst

Institute for International Economics
*Gary C. Hufbauer, Senior Fellow
*Jeffrey J. Schott, Senior Fellow

International Labor Rights Education and Research Fund
*Pharis J. Harvey, Executive Director

International Trade Facilitation Council
*Robert L. Muse, General Counsel
Robert K. Windson

Laredo State University
*Dr. Khosrow Fatemi, Dean, Graduate School of International Trade and Business Administration
Leo Sayavedra

GENERAL-Continued

Charles F. Morgo

National Customs Brokers & Forwarders Association
Harold G. Brauner, President
John Hammon, CAE
J. H. Kent
*Frank McCarthy, Chairman of Duty Drawback Committee

National Polytechnic Institute of Mexico City, Mexico
*Lic. Adolfo Del Castillo, Professor

Texas/Mexico Authority Advisory Board
J. Jorge Verduzco, Chairman

U.S. Chamber of Commerce
Willard A. Workman, Vice President

U.S. Council of the Mexico-U.S. Business Committee
*Colleen S. Morton, Executive Director

University of Maine
Peter Morici, Director

University of Texas at El Paso
*Donald A. Michie, Director

World Trade Center of South Texas

* Denotes hearing participant.

APPENDIX E
OVERVIEW OF IMPLEMENTATION PROCESS IN NAFTA COUNTRIES

United States

U.S. procedures for implementing NAFTA are set forth in the Omnibus Trade and Competitiveness Act of 1988, which also authorized the President to enter into the negotiations that culminated in NAFTA.[1] As explained in greater detail below, the 1988 Act authorizes the President to enter into bilateral tariff and nontariff agreements with foreign countries, subject to certain Congressional consultation requirements and special "fast track" procedures for approval of implementing legislation. Bilateral agreements entered into under such authority cannot enter into force for the United States and become binding as a matter of domestic law unless and until the President complies with specific requirements for consultation with the Congress and implementing legislation approving the agreement and any changes in U.S. law is enacted into law. The purpose of the approval process is, among other things, to preserve the Congress' constitutional role in trade matters.[2] The President's current authority to enter into such agreements expires on June 1, 1993.

Before an agreement can be considered under the fast-track process, it must appear prior to the commencement of the negotiations that the agreement would make "progress in meeting the applicable objectives" for trade negotiations set forth in the 1988 Act. In addition, the foreign government must request the negotiation of such an agreement. Finally, the President is required to provide written notice to Congress of an intention to enter into such an agreement at least 60 days prior to entering into negotiations, and 60 days must elapse without either the Senate Committee on Finance or the Committee of Ways and Means of the House of Representatives disapproving of the proposed negotiation.[3]

The fast-track procedures require the President to consult with the Committee on Ways and Means of the House of Representatives, the Committee on Finance of the Senate, and each other committee of Congress that has jurisdiction over legislation involving subjects that would be affected by the agreement in question before entering into such an agreement. The consultations must address the nature of the agreement, how and to what extent the agreement will achieve the applicable purposes, policies, and objectives of this title, and all matters relating to the implementation of the agreement.[4] Once the negotiations are complete, the statute requires the President to send a formal notification to Congress of his intention to enter into a trade agreement.[5] With respect to NAFTA, these steps all have been completed. The President sent his formal notification to Congress on September 18, 1992.

The President may not sign such an agreement prior to 90 calendar days after he has notified Congress. These steps have been completed, leading the President, together with Prime Minister Mulroney of Canada and President Salinas of Mexico, to sign the agreement on December 17, 1992.

After entering the agreement, the President must send to Congress the final text of the agreement; a statement of the administrative actions that the President proposes to take to implement the agreement; an explanation of how the implementing bill and the administrative action would change U.S. law; and a statement asserting that the agreement makes "progress in achieving" the objectives set forth in the 1988 act.[6]

Once the President has submitted implementing legislation to Congress, Congress has 90 days in which to consider the legislation. The 90-day period is measured only in terms of days on which the House that is actually considering the bill is in session.[7] This period is divided further between committee action and floor action. Committees in the House of Representatives, the part of Congress responsible for originating revenue bills, have 45 legislative days to complete their consideration of the implementing legislation. The bill must then be voted on by the House within

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[1] 19 U.S.C. 2902 et seq. NAFTA is not considered to be a treaty, which under the U.S. Constitution requires ratification only by the U.S. Senate before it can take effect.

[2] For a general discussion of the 1988 Act provisions regarding bilateral trade agreements negotiated under the Act and implementation procedures with respect thereto, see Committee on Ways and Means, U.S. House of Representatives, *Overview and Compilation of U.S. Trade Statutes* (1991 ed.), 102d Cong., 1st Sess., WMCP 102-5, at 155-65.

[3] 19 U.S.C. 2902(c).

[4] 19 U.S.C. 2902(d).

[5] 19 U.S.C. 2903(a)(1)(A).

[6] 19 U.S.C. 2903(a).

[7] 19 U.S.C. 2191(e)(3).

15 legislative days. Senate Committees then have 15 legislative days to complete their consideration of the implementing legislation, after which the Senate must act within 15 legislative days.[8]

Debate on the implementing bill cannot exceed 20 hours in either legislative branch. Further, the fast-track process prohibits filibusters and amendments.[9]

Canada[10]

In Canada, both treaty making, and the negotiation, signing and ratification of an international agreement are the exclusive responsibility of the Federal Crown. Once an agreement is initialled by the Ministers who conducted the negotiations, it is sent to the Cabinet for review. After the Cabinet approves the agreement, an Order in Council is drawn up to authorize signature of the agreement and the drafting of implementing legislation. By convention, the international agreements themselves are generally tabled for debate in the House of Commons and the Senate. Approval of an agreement is generally either sought by the inclusion of a provision approving the agreement in any implementing legislation that is passed or by separate resolution.

Only those treaties or agreements that have provisions that require the amendment of existing legislation or the expenditure of public money, or those that affect the rights of private citizens need to be implemented by legislation. Although the Federal Government of Canada possesses the executive authority to negotiate, sign, and ratify a treaty addressing subjects that fall within the Provinces' jurisdiction, the *Labour Conventions* decision of 1937 held that the Federal Government does not have the authority to pass implementing legislation addressing such subjects.[11] Thus, it may be necessary in the case of NAFTA for both the Parliament and the Provincial Governments to pass legislation implementing various portions of NAFTA. [12]

Section 91 of the Constitution Act of 1867 gives exclusive authority to Parliament over legislation pertaining to tariffs, import and export restrictions, and border measures regarding "aliens" are the exclusive domain of the Parliament. Such legislation is initially drafted by the Department of Justice. After approval by the Cabinet committee on Legislation and House Planning, the Cabinet sends the bill to Parliament. [13] One House of Parliament at a time considers the legislation. The appropriate committees hold hearings before reporting to the House considering the legislation as a whole. Once one House has voted on the legislation, the bill goes to the other House, where it goes through a similar process. Amendments are limited to the implementing legislation and cannot be made to the agreement itself. The legislation must be passed by both the House and the Senate. After royal assent, which is a formality, the legislation takes effect.

Section 92 of the Constitution Act of 1867 gives the Provinces authority over measures relating to such subjects as agriculture, alcoholic beverages, Provincial Government procurement, or pricing practices. Thus, it may be necessary for some measures implementing NAFTA to be enacted at the Provincial level.

Mexico[14]

As in Canada, the process in Mexico for approval of trade agreements is the same as the process for approval of treaties. Article 89, section X of the Constitution of the United States of Mexico

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[8] 19 U.S.C. 2191(e).

[9] 19 U.S.C. 2191(f),(g).

[10] Information for this summary was obtained from interviews with various members of the governments of the United States and Canada. Debra Steger, *A Concise Guide to the Canada-United States Free Trade Agreement* (Carswell 1988), p 86; *U.S.-Canada Free Trade Agreement, The Complete Resource Guide*, vol. 1, 18-20 (Bureau of National Affairs 1988).

[11] *A.G. Canada v. A.G. Ontario*, [1937] A.C. 326 (P.C.).

[12] For a discussion of the debate concerning Federal-Provincial relations in such matters, *see*, *Trade-Offs on Free Trade*, pp. 131-167.

[13] Parliamentary procedures are governed by a combination of the British North American Act, common law, written parliamentary rules, and tradition.

[14] This summary is based on interviews with officials from the United States and Mexican Governments.

grants the power to execute international treaties to the President, subject to the approval of the Senate. Once the President has formally signed either a treaty or a trade agreement, the agreement is considered by the Senate, which, under article 76, section I of the Constitution, has the exclusive power to approve it.

The first step in the Senate's consideration of such an agreement is for the Senate Foreign Affairs, Commerce and Constitutional Questions Committees to review the agreement. Subsequently, the three chairmen of that committee prepare a "dictamen," or committee report for submission to the full Senate for ratification. Although the committees are generally required to submit their reports on the agreement 5 days following its receipt, they may extend this time limit by announcing the requirement for a delay.

Once the agreement has been ratified, any necessary legislation is presented to the Mexican legislature in the same manner as all other legislation. Bills dealing with loans or taxes must be introduced in the Chamber of Deputies. Either chamber can introduce any other bills.

As in the United States, both houses must pass legislation, after which it is presented to the executive branch for approval. There is also a process for overriding executive vetoes that is very similar to the process in the United States.

The extent to which NAFTA will be self-executing in Mexico is unclear. There is no provision of the Constitution that addresses the question of priority between international treaties and existing statutes. Nor are there any Mexican Supreme Court cases that resolve this question completely. It is the position of the Government of Mexico, however, that where there is a conflict between an earlier statute and a later international agreement, or vice versa, the later of the two would prevail. This is a matter which may need to be addressed by the Mexican Supreme Court before it can be fully resolved.

APPENDIX F
STAGED TARIFF REDUCTIONS UNDER NAFTA

Table F-1
Staged tariff reductions under NAFTA for U.S. trade with Mexico, by specified sectors (HTS chapters)[1]

Sector and category	U.S. imports from Mexico	Mexican imports from the United States
Agriculture (1-24) (million dollars)	2,848.8	2,642.3
Category A (percent)	35.5	36.5
Category B (percent)	5.6	3.1
Category C (percent)	12.1	34.2
Category C with TRQ (percent)	13.3	3.4
Category C+ (percent)	4.2	7.4
Category D (percent)	29.3	15.4
Minerals (25-26) (million dollars)	432.3	158.4
Category A (percent)	48.1	34.0
Category B (percent)	0	4.7
Category C (percent)	.1	5.0
Category D (percent)	51.8	56.3
Energy (27) (million dollars)	5,192.1	906.4
Category A (percent)	0	1.8
Category B (percent)	0	1.9
Category C (percent)	96.8	11.6
Category D (percent)	3.2	84.7
Chemicals, including pharmaceuticals (28-40) (million dollars)	928.2	2,173.6
Category A (percent)	62.5	26.4
Category B (percent)	2.7	7.7
Category By (percent)	([2])	0
Category B+ (percent)	0	5.0
Category C (percent)	4.5	37.3
Category Cc (percent)	0	.5
Category C10 (percent)	.6	0
Category D (percent)	29.7	23.2
Wood and wood products (44-49) (million dollars)	440.4	812.0
Category A (percent)	73.9	9.3
Category B (percent)	0	4.0
Category B8 (percent)	0	2.4
Category Bp(percent)	0	11.7
Category C (percent)	.8	21.0
Category Cq (percent)	0	4.2
Category D (percent)	25.3	47.4
Textiles and apparel (50-63, 65) (million dollars)	870.6	504.9
Category A (percent)	22.7	21.1
Category B (percent)	0	.8
Category B6 (percent)	74.0	52.0
Category Bww (percent)	([2])	0
Category C (percent)	1.7	11.7
Category D (percent)	1.6	14.4
Category XX (percent)	0	.1
Leather and leather goods, including footwear (41-43, 64) (million dollars)	286.1	152.4
Category A (percent)	29.1	15.5
Category AX(percent)	.1	0
Category B (percent)	.5	5.5
Category Bx (percent)	0	0
Category C (percent)	20.4	12.8
Category C+ (percent)	12.3	0
Category C+x (percent)	.6	0
Category C10 (percent)	25.8	0
Category C10x (percent)	.7	0
Category Cc (percent)	0	3.9
Category D (percent)	10.6	43.2
Category XX (percent)	0	19.1

See footnotes at end of table.

Table F-1—Continued
Staged tariff reductions under NAFTA for U.S. trade with Mexico, by specified sectors (HTS chapters)[1]

Sector and category	U.S. imports from Mexico	Mexican imports from the United States
Stone, ceramic, and glass products (68-70) (million dollars)	391.8	143.5
Category A (percent)	59.2	32.6
Category B (percent)	.2	23.0
Category B+ (percent)	0	(2)
Category B6 (percent)	.6	3.6
Category C (percent)	5.1	29.0
Category C+ (percent)	3.8	0
Category C8 (percent)	.7	(2)
Category C10 (percent)	.6	0
Category C15 (percent)	10.9	0
Category D (percent)	19.0	0
Base metals (72-83) (million dollars)	1,254.2	1,014.5
Category A (percent)	56.7	10.4
Category B (percent)	3.7	12.2
Category B+ (percent)	0	(2)
Category C (percent)	28.4	53.8
Category D (percent)	11.3	23.6
Category - (percent)	(2)	0
Nonelectrical machinery (84) (million dollars)	2,038.7	2,615.5
Category A (percent)	68.7	46.0
Category B (percent)	6.6	30.6
Category B+ (percent)	0	.2
Category C (percent)	1.8	23.2
Category D (percent)	22.9	0
Electrical machinery (85) (million dollars)	7,097.6	1,333.4
Category A (percent)	84.8	42.3
Category B (percent)	5.8	25.9
Category C (percent)	4.0	31.2
Category D (percent)	5.4	0
Category XX (percent)	0	.7
Motor vehicles (87) (million dollars)	4,093.3	657.6
Category A (percent)	79.4	11.6
Category B (percent)	14.6	29.4
Category BA (percent)	5.6	6.0
Category C (percent)	(2)	20.1
Category Ca (percent)	0	32.9
Category D (percent)	.3	0
Other transportation equipment (86, 88-89) (million dollars)	36.9	170.6
Category A (percent)	35.0	77.8
Category C (percent)	0	18.5
Category D (percent)	65.0	3.6
Instruments and precision manufactures (90-92) (million dollars)	681.0	460.1
Category A (percent)	97.2	72.4
Category B (percent)	(2)	11.6
Category C (percent)	0	13.8
Category C+ (percent)	(2)	0
Category D (percent)	2.8	0
Category XX (percent)	0	2.1

See footnotes at end of table.

Table F-1—Continued
Staged tariff reductions under NAFTA for U.S. trade with Mexico, by specified sectors (HTS chapters)[1]

Sector and category	U.S. Imports from Mexico	Mexican Imports from the United States
Furniture (94) (million dollars)	653.5	118.5
Category A (percent)	70.0	19.8
Category B (percent)	29.3	17.1
Category B6 (percent)	.2	2.5
Category C (percent)	0	26.5
Category C+ (percent)	.5	0
Category Cm (percent)	0	34.1
Other (66, 67, 71, 93, 95-99) (million dollars)	1,647.4	380.5
Category A (percent)	24.4	29.2
Category B (percent)	.1	11.3
Category B6 (percent)	.3	4.0
Category C (percent)	0	50.6
Category C12 (percent)	.1	0
Category D (percent)	75.1	4.9
Total trade (million dollars)	28,892.9	14,245.5
Category A (percent)	53.8	31.0
Category B (percent)	8.5	17.4
Category C (percent)	23.1	31.8
Category C+ (percent)	.7	1.4
Category D (percent)	13.9	17.9
Other (percent)	([2])	.5

[1] U.S. imports from Mexico include those entered under the maquiladora program (see note No. 2 below). Mexican imports from the United States do not include imports into the maquiladora sector. Therefore, the Mexican import data are substantially lower than reported U.S. exports to Mexico, which include shipments to the maquiladora sector.
[2] Less than 0.05 percent.

Note No. 1: The phaseout schedules for the staging codes, assuming NAFTA enters into force on January 1, 1994, are generally as follows: code A—immediate, full duty elimination; code B—duties removed in five equal annual stages beginning January 1, 1994; code BA—duties removed in five annual stages; code BP—duties removed in three annual stages beginning on January 1, 1997; code By—duties removed in five equal annual stages from a base of 5 percent beginning January 1, 1994; code B+—duties removed in seven stages, the first on January 1, 1994, then annually beginning January 1, 1996; code B8—duties removed in two equal stages on January 1, 1998, and January 1, 2001; code C—duties removed in 10 equal annual stages beginning January 1, 1994; code CQ—sets quota amounts that may enter Mexico duty-free each calendar year beginning January 1, 1994 (tariffs for above-quota shipments are subject to code C schedule); code CM—duties removed in three stages on January 1, 1994, 1998, and 2003; code C8—duties removed in eight annual stages beginning January 1, 1994; code C10—duties removed in nine stages, the first on January 1, 1994, then annually beginning January 1, 1996; code C12—duties removed in three stages, on January 1, 1994, 2000, and 2005; code C+—duties removed in 15 annual stages beginning January 1, 1994; code C15—duties removed in 13 stages, the first on January 1, 1994, then annually beginning January 1, 1997; code N—section 22 cotton item covered in the agriculture tariff schedule; and code D—duty-free prior to the agreement and will remain so after the effective date.

Note No. 2: U.S. imports from Mexico in category D (currently duty-free) are principally those imports entered under duty-free most-favored-nation (MFN) rates. It should be noted that there are duty-free imports from Mexico under other tariff provisions, such as the Generalized System of Preferences (GSP) and those relating to the maquiladora program. Under this program, U.S. components enter Mexico duty-free for processing or assembly and the processed or otherwise manufactured products enter the United States on a preferential basis with only the value added in Mexico subject to duty. U.S. imports from Mexico under the maquiladora program are dutiable under HTS headings 9802.00.60 and 9802.00.80, formerly known as the 806.30 and 807.00 provisions. In 1990, U.S. imports from Mexico under these provisions amounted to $13.0 billion, of which $6.5 billion, or 50 percent of the total, entered duty-free (i.e., the value of the U.S. components). The duty-free portion of these shipments accounted for about 22 percent of total U.S. imports from Mexico in 1990. U.S. imports from Mexico under the GSP in 1990 totaled almost $2.7 billion, or 9 percent of the total, and are generally included in staging category A. Altogether, about 45 percent of the total value of U.S. imports from Mexico entered duty-free that year.

Source: Calculated from data of the Office of the United States Trade Representative and the U.S. Department of Agriculture (USDA). U.S. imports from Mexico are official U.S. statistics and Mexican imports from the United States are official Mexican statistics for 1990. In general, the negotiators used annual data for 1990 to measure the overall balance of the staged tariff reductions under NAFTA. USDA data on the staged tariff reductions for agriculture (HTS chapters 1, 2, and 4-24) are based on 1991 trade; USITC staff applied these figures to 1990 agricultural trade in order to calculate the overall balance for all sectors.

APPENDIX G
METHODOLOGY FOR SECTOR-LEVEL ANALYSES

This appendix describes the methodology used in the sector-level analyses of the North American Free-Trade Agreement (NAFTA). The trade, employment, and production effects reported for the industrial and agricultural sectors were based on a quantitative analysis using partial equilibrium models constructed by Commission staff, while those reported for the energy and service sectors were based on a qualitative assessment by Commission staff. In addition, investment effects for all sectors were based on qualitative assessments. The methodology for both quantitative and qualitative analyses focuses mainly on the reductions in trade barriers between the United States and Mexico because the United States and Canada already participate in the U.S.-Canada Free-Trade Agreement.

Quantitative Analysis

The analyses of the industrial and agricultural sectors were based, in part, on a partial equilibrium framework. U.S. and Mexican products are treated as imperfect substitutes in both the U.S. and Mexican markets. In imperfect-substitute models, consumers distinguish explicitly between imported and domestic products.[1]

In this analysis, U.S. domestic output and Mexican imports are considered imperfect substitutes for each other in U.S. domestic demand. Therefore, each of these products has a separate market in which equilibrium prices and quantities are established. The U.S. market for U.S. domestic production is depicted by the following constant-elasticity demand and supply equations:

(1) $$Q_d = k_1 P_d^{\varepsilon_{dd}} P_m^{\varepsilon_{dm}}$$

(2) $$Q_d = k_2 P_d^{e_d}$$

where the subscripts d and m refer to the U.S. domestic product and Mexican imports, respectively. Equation (1) gives U.S. demand for U.S. domestic output; equation (2) gives supply of U.S. domestic output. Q_d and P_d are the equilibrium quantity and price for the U.S. product, and P_m is the equilibrium price for Mexican imports. ε_{ij} —i.e., ε_{dd} and ε_{dm} — is the uncompensated elasticity of demand for good i with respect to price j. e_d is the elasticity of supply for the U.S. domestic product. k_1 and k_2 are constant terms.

The U.S. market for Mexican imports is depicted by the following constant elasticity demand and supply curves:

(3) $$Q_m = k_3 P_d^{\varepsilon_{md}} P_m^{\varepsilon_{mm}}$$

(4) $$Q_m = k_4 P_m^{e_m}$$

In equations (3) and (4), Q_m is the equilibrium quantity for Mexican imports. The demand and supply elasticities are similar to those described in equations (1) and (2); however, the demand and supply curves in (3) and (4) are import demand and supply curves.[2]

In this partial equilibrium model, the elimination of U.S. import restraints on Mexican goods results in a reduction in the price of these goods paid by U.S. consumers. As a result, consumers purchase more Mexican goods, and the demand faced by producers of imperfectly substitutable U.S. products declines. U.S. suppliers respond to the reduction in demand by lowering both production and prices. The magnitude of the effect of trade liberalization on U.S. import prices and

[1] The imperfect-substitutes assumption is common in applied research in international trade. For further discussion of this assumption and its implications, see P.S. Armington, "A Theory of Demand for Products Distinguished by Place of Production," *IMF Staff Papers*, Mar. 1969; and U.S. International Trade Commission, *The Economic Effects of Significant U.S. Import Restraints, Phase I: Manufacturing* (investigation No. 332-262), USITC publication 2222, Oct. 1989.

[2] The demand and supply for imports from all other countries could also be depicted. USITC staff assumed that the supply curve for imports from all other countries is perfectly horizontal, a standard assumption in many trade liberalization analyses. This implies no price change for these imports, and, as a result, we can omit this market.

quantities of Mexican goods is a function of the size of the duty-rate change,[3] the Mexican import demand and supply elasticities, and Mexico's share of the U.S. market. The magnitude of the effect on the price and quantity of the U.S. domestic product is a function of the Mexican import price change, the U.S. demand and supply elasticities, and the cross-price elasticity between the U.S. and Mexican product. The cross-price elasticity, in turn, will depend on the elasticity of substitution between U.S. and Mexican products and the U.S. market share of Mexican imports. In addition, we also estimate the effect of liberalization on U.S. employment. Employment changes in the U.S. sector are a function of the change in U.S. domestic output.[4]

In the case of U.S. export industries, a similar approach is followed. North American—i.e., U.S. and Canadian—exports and Mexican products are considered imperfect substitutes for each other in Mexican domestic demand.[5] The Mexican market for North American exports is depicted by the following constant-elasticity demand and supply equations:

$$Q_n = k_5 P_n^{\varepsilon_{nn}} \tag{5}$$

$$Q_n = k_6 P_n^{e_n} \tag{6}$$

where the subscript n refers to exports from North America. Q_n and P_n are the equilibrium quantity and price for North American exports. ε_{nn} is the elasticity of (uncompensated) Mexican import demand for North American products.[6] e_n is the elasticity of export supply to Mexico for North American producers. k_5 and k_6 are constant terms. The elimination of Mexican import restraints results in a decrease in the price paid by Mexican consumers for North American goods and an increase in North American exports to Mexico. No estimates are made of the effects of NAFTA on Mexico's domestic industries. The magnitude of the effect of Mexican trade liberalization on North American export prices and quantities is a function of the size of the duty-rate change[7], the North American export demand and supply elasticities, and the U.S. share of the Mexican market.

These partial equilibrium models employ data on production, consumption, and trade as well as estimates of market behavior parameters (substitution, demand, and supply elasticities). In most cases, production, consumption, and trade data were obtained from both U.S. and Mexican Government and industry sources. The market behavior parameters were obtained from a number of sources. For some of the sectors, elasticities of substitution were based on original empirical estimates by the staff.[8] Estimates of all other parameters were based on estimates used by other U.S. Government agencies and academics in previous assessments of NAFTA and in other assessments of overall trade policy.[9] Upper bound estimates of supply and substitution elasticities were selected to obtain upper bound estimates of changes in equilibrium prices and quantities.

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[3] In the case of nontariff barriers (NTBs), the price and quantity effects will be a function of the change in the size of the tariff equivalent rather than the duty-rate change.

[4] We assume that changes in employment are proportionately related to changes in output. This assumption may overstate employment changes in the agricultural sector since this sector has a considerable amount of fixed resources, such as farm labor and land, that can be used to produce additional output without hiring additional labor.

[5] In the case of the Mexican domestic market, we consider North American exports since trade liberalization measures will apply to both U.S. and Canadian exports.

[6] In the Mexican market, we assume that the Mexican domestic supply and the import supply curve for Mexican imports from the rest of the world are horizontal. In this case, there will be no price changes for products from these two sources, and we can omit these markets.

[7] In the case of NTBs, the price and quantity effects will be a function of the change in the size of the tariff equivalent rather than the duty-rate change.

[8] USITC, *Estimated Elasticities of Substitution for Analysis of a North American Free Trade Area*, by Kenneth A. Reinert and Clinton R. Shiells, staff research study 19, 1992.

[9] Elasticities of substitution for agricultural products were taken from U.S. Department of Agriculture, Economic Research Service, *Data Base for a Computable General Equilibrium Model of the Agricultural Sectors of the United States and Mexico and their Interactions*, by Mary Burfisher, Karen Thierfelder, and Kenneth Hanson, staff report No. AGES 9225, Oct. 1992; and Robert Feenstra and Andrew Rose, "Trade with Mexico and Water Use in California Agriculture," paper presented at a conference on NAFTA, Brown University, Oct. 18-19, 1991. Demand and supply elasticities for agricultural and manufacturing sectors were taken from Jaime de Melo and David Tarr, *A General Equilibrium Analysis of U.S. Foreign Trade Policy* (Cambridge, MA: MIT Press, 1992); and USITC, *The Economic Effects of Significant U.S. Import Restraints, Phase I: Manufacturing*, USITC publication 2222.

The empirical estimates of the elasticity of substitution that were applied to the model showed that Mexican imports substituted equally with both U.S. products and imports from the rest-of-world. This equality resulted from the assumptions and broad data categories that were employed to empirically estimate the elasticity of substitution.[10] Therefore, for certain products such as frozen orange juice and electronic equipment, it is likely that Mexican imports would be better substitutes with imports from the rest-of-world than with U.S. production. For these products, the model will tend to overstate the displacement of U.S. production and employment caused by NAFTA.

For the analysis, tariffs were obtained from the actual agreement. However, where appropriate, the Commission used the effective rate of duty on U.S. imports from Mexico rather than the nominal rate, to account for the significant amount of trade that enters duty free under the Generalized System of Preferences and at reduced rates under the maquiladora program. Under this program U.S. components enter Mexico duty-free for processing or assembly and the processed or otherwise manufactured products return to the United States on a preferential basis with only the Mexican value-added portion subject to duty. Tariff-equivalents of nontariff barriers (NTBs) that were based primarily on the tariffication of prior nontariff import restraints were also obtained, in most cases, from the actual agreement.

The effect of a NAFTA is analyzed in two separate simulations. In the first step, U.S. tariffs and the tariff equivalents for U.S. NTBs facing Mexico are removed while holding all other factors constant.[11] This simulation provides estimates of the expected decline in U.S. shipments and employment as well as the potential increase in Mexican imports into the U.S. market.

In the second step, a similar exercise is conducted whereby Mexican tariffs and the tariff equivalents for Mexican NTBs are removed while holding all other factors constant.[12] Estimates are provided of the expected increase in United States production and employment and subsequent exports to the Mexican market. For both simulations, short-run and long-run estimates of NAFTA are provided. Short-run adjustments are defined as those that would occur within 1 year and long-run adjustments are defined as those that would occur after the complete phase-in of NAFTA.

As noted above, separate partial equilibrium models were used to estimate, on the one hand, the effect of removing U.S. trade barriers on import-competing industries, and, on the other hand, the effect of removing Mexican trade barriers on U.S. export industries. This two-step method was employed for two reasons. The first is the high degree of product differentiation between imports and exports in United States-Mexico trade. In addition, because trade data are reported for composite product categories, the U.S. and Mexican product mix can be substantially different within a category. These reasons are supported by original empirical research conducted by the Commission staff.[13] The use of a single, integrated partial equilibrium model would have been appropriate only in the case where U.S. and Mexican imports and exports within a given product category were identical.

Qualitative Analysis

While the trade, production, and employment effects for the industrial and agricultural sectors were based, in part, on the model results, the effects on the energy and services sectors were based on a qualitative assessment using the following indicators to identify the magnitude of the likely effect of NAFTA on investment, trade, production, and employment:

minor (increase or decrease)	a change of 5 percent or less
modest (increase or decrease)	a change of 6 to 15 percent
considerable (increase or decrease)	a change of 16 percent or more

[10] For further discussion on the method used to estimate the elasticities of substitution, see Reinert and Shiells, *Estimated Elasticities*.

[11] Most important, Mexican tariffs and NTBs are held constant. Additionally, all other factors—for example, foreign debt, interest rates, the costs associated with such factors as environmental compliance and infrastructure improvements, etc.—are held constant in both the United States and Mexico.

[12] Most important, U.S. tariffs and NTBs are held constant. Additionally, all other factors—for example, foreign debt, interest rates, the costs associated with such factors as environmental compliance and infrastructure improvements, etc.—are held constant in both the United States and Mexico.

[13] Reinert and Shiells found that the elasticity of substitution between U.S. and Mexican products was relatively low. See Reinert and Shiells, *Estimated Elasticities*, for further discussion.

The partial equilibrium models were developed primarily to analyze the removal of tariffs or NTBs that are measured by tariff-equivalent estimates. However, certain elements of NAFTA, such as the elimination of trade-balancing requirement in the automotive sector, and rules-of-origin requirements in the computer, automotive, and textiles sectors, were not captured by the models. In addition, for some of the industrial and agricultural sectors, important market factors unique to those sectors cannot be captured adequately by the partial equilibrium models. The sugar sector, for example, cannot be analyzed using the models described above, because of special factors such as changes in government price-support programs in both the Mexican and U.S. sectors as well as liberalization under NAFTA of quotas on imports of downstream products in the sugar-containing products sector. Finally, the model does not incorporate potential increases in Mexican investment resulting from NAFTA. A qualitative assessment was made in addition to or in lieu of the quantitative model estimates in those sectors where such special factors were deemed important. The qualitative analysis was based on extensive interviews with experts in trade, industry, government, and academia; oral testimony and written submissions to the Commission; and Commission staff expertise.