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NAFTA at 17

Full Implementation Leads To Increased Trade and Integration

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Contents

Introduction	3
What Is NAFTA?	5
Overview of North American Market Integration	7
Economic Recovery Buoys NAFTA Agricultural Trade ..	13
NAFTA Trucking Issue Intersects With U.S. Agricultural Exports	15
Country-of-Origin Labeling and Livestock and Meat Trade ..	22
A North American Market for Grains, Oilseeds, and Related Products	23
Livestock and Animal Product Markets Experience Further Integration	28
A Highly Integrated Fruit and Vegetable Market	32
Integration of U.S.-Mexico Sugar and Sweetener Markets Reaches High Level	38
Multilateral Trade Liberalization Reshapes the Cotton, Textile, and Apparel Markets	40
What Does North America's Future Hold?	41
References	46
Appendix tables	59

Abstract

The North American Free Trade Agreement (NAFTA) is an integral part of the North American economy. Regional agricultural trade is now completely free of tariff and quota restrictions, with a few exceptions such as those related to Canadian supply management. During the course of NAFTA's implementation, the agricultural sectors of the member countries have become far more integrated, as is evidenced by increased trade in a wider range of agricultural products, substantial levels of cross-border investment, and important changes in consumption and production. Efforts to seek deeper regional integration will necessarily focus on increasing the fluidity of cross-border economic activity within the existing framework of NAFTA's free-trade area.

Keywords: North American Free Trade Agreement, NAFTA, Canada-U.S. Free Trade Agreement, CUSTA, Canada, Mexico, United States, trade, investment, trucking.

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Foreword

This is the seventh and final report on NAFTA's effects on U.S. agriculture and the rural economy to be submitted to the U.S. Congress in accordance with the North American Free Trade Agreement Implementation Act of 1993. The legislation requires that the Secretary of Agriculture submit a biennial report on this subject, starting in 1997 and ending in 2011. This edition covers economic and policy developments through 2010 and early 2011.

Introduction

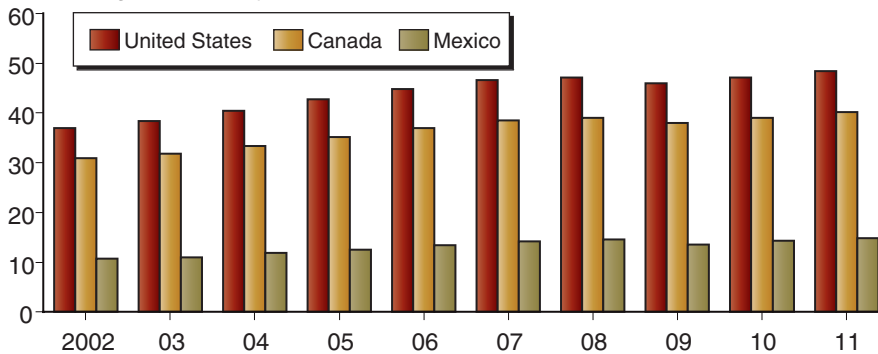
The North American Free Trade Agreement (NAFTA) is now an integral part of the North American economy. Roughly 3 years have passed since January 1, 2008, when the last transitional agricultural trade restrictions established by NAFTA were removed. That date marked the end of a 14-year process (1994-2007) in which NAFTA's member countries—Canada, Mexico, and the United States—gradually removed thousands of barriers to regional agricultural trade. Canada and the United States started to pursue agricultural trade liberalization in 1989 as part of the Canada-U.S. Free Trade Agreement (CUSTA), which was then folded into NAFTA, and Mexico implemented a number of unilateral agricultural trade reforms in the early 1990s (Rosenzweig Pichardo, 2000; Zahniser et al., 2004). Mexico and the United States have fully eliminated all tariffs and quantitative restrictions on agricultural goods, which to date is unique among U.S. trade agreements. When all of these initiatives are considered together, the NAFTA countries have completed a remarkable two decades of agricultural trade liberalization.

The third decade of free trade in North America has thus far been marked by challenges. First, the recent economic downturn affected each NAFTA country. All three countries experienced a contraction of per capita income in 2009, and after 2 years of modest economic growth, per capita incomes are expected to exceed their respective 2008 levels in 2011 (fig. 1). In 2010, regional agricultural trade showed signs of recovering from the slowdown, and this upturn is expected to continue during 2011 (USDA/ERS and USDA/FAS, 2010). Second, the Mexican Government imposed retaliatory import tariffs in March 2009 (and expanded their coverage in August 2010) on a number of agricultural and nonagricultural products from the United States in response to U.S. noncompliance with NAFTA's trucking provisions. These newly erected trade barriers have hindered some U.S. agricultural exports to Mexico, illustrating the importance of NAFTA's provisions to U.S. agricultural exporters and Mexican consumers. In March 2011, the U.S.

Figure 1

Per capita income in the NAFTA countries is expected to exceed its 2008 level in 2011

Purchasing-power-parity per capita GDP (current international 1,000 dollars)



2010 and 2011 are estimated. An international dollar is a hypothetical currency that is used as a means of comparing costs across countries using the U.S. dollar as a reference point.

Source: USDA, Economic Research Service using data from International Monetary Fund (2010).

and Mexican Governments unveiled an agreement in principle that holds the promise of resolving this dispute. Third, the Canadian and Mexican Governments are using the dispute settlement process at the World Trade Organization (WTO) to challenge U.S. requirements for country-of-origin labeling (COOL) as they pertain to live cattle and live hogs. Beef and pork are among the commodities covered by the requirements, and the United States imports live cattle from Canada and Mexico and live hogs from Canada in order to produce some of its beef and pork.

Despite these recent challenges, the integration of North America's agricultural markets as fostered by CUSTA and NAFTA will continue to be an enduring facet of economic life in the United States, Canada, and Mexico for the simple reason that market integration offers many tangible benefits. In general, it enables agricultural producers and consumers in the region to benefit more fully from their relative strengths and to respond more efficiently to changing economic conditions. For producers, it opens new territories for the sale of their output, possibly allowing for the further exploitation of economies of scale; however, it also opens the door to new competition from producers in locations that were formerly isolated by tariff and quota barriers. In addition, market integration gives producers access to potentially cheaper suppliers of inputs and creates new opportunities for foreign direct investment (FDI), as firms restructure their vertical and horizontal arrangements. For consumers, market integration gives them access to new varieties of food products and off-season supplies of fresh produce. Greater competition along the food supply chain is also likely to make food more affordable, thereby expanding consumer purchasing power.

In this edition of the NAFTA report, ERS examines the extent to which market integration has taken hold in North American agriculture, the effects of economic and policy challenges of the past several years on U.S. agricultural trade with Canada and Mexico, and efforts to facilitate the further integration of the region's agricultural sector. This report's assessment of market integration relies upon the framework first presented in the 2005 NAFTA report, and readers are invited to compare findings in this report with those in previous editions, which are available in the NAFTA, Canada, and Mexico Briefing Room of the ERS website (www.ers.usda.gov/briefing/nafta).

What Is NAFTA?

NAFTA is a comprehensive economic and trade agreement that establishes a free-trade area encompassing Canada, Mexico, and the United States. NAFTA is structured as three separate bilateral agreements, one between Canada and the United States, a second between Mexico and the United States, and a third between Canada and Mexico. The first accord is CUSTA, which took effect on January 1, 1989, and was subsumed by NAFTA. The second and third agreements are found in NAFTA itself, which took effect on January 1, 1994.

Tariff elimination for the items addressed by CUSTA concluded on January 1, 1998. However, CUSTA exempted certain agricultural products from U.S.-Canada trade liberalization: U.S. imports of dairy products, peanuts, peanut butter, cotton, sugar, and sugar-containing products and Canadian imports of dairy products, poultry, eggs, and margarine. Quotas that once governed bilateral trade in these commodities were redefined as tariff-rate quotas (TRQs)¹ to comply with the Uruguay Round Agreement on Agriculture (URAA), which took effect on January 1, 1995. NAFTA also exempted dairy and poultry products from Canada-Mexico trade liberalization. Over the years, Canada has been extremely reluctant to consider full trade liberalization of its dairy and poultry sectors, which are governed by supply management and protected by high over-quota tariffs—a long-standing position of Canada in its international trade negotiations.

Tariff elimination for the items addressed by NAFTA concluded on January 1, 2008. NAFTA did not exclude any agricultural products from U.S.-Mexico trade liberalization. Numerous restrictions on bilateral agricultural trade were eliminated immediately upon NAFTA's implementation, while others were phased out over periods of 4, 9, or 14 years. Trade restrictions on the last handful of agricultural commodities (such as U.S. exports to Mexico of corn, dry edible beans, and nonfat dry milk and Mexican exports to the United States of sugar, cucumbers, orange juice, and sprouting broccoli) were removed in 2008. Similar but not identical restrictions on Canada-Mexico trade also were removed at that time.²

NAFTA covers much more than tariffs and quotas. The agreement recognizes the right of each member country “to adopt, maintain or apply any sanitary or phytosanitary measure necessary for the protection of human, animal or plant life or health in its territory,” and like the URAA, NAFTA requires that sanitary and phytosanitary (SPS) measures be scientifically based, nondiscriminatory, and transparent, and that these measures restrict trade in a minimal fashion. NAFTA also established the NAFTA Committee on Sanitary and Phytosanitary Measures to facilitate technical cooperation between the NAFTA countries in developing, applying, and enforcing such measures. To fulfill these responsibilities, the NAFTA governments have engaged in a concerted effort to fine-tune their SPS measures in ways that facilitate trade.

Another important element of the agreement is the establishment of key principles regarding the treatment of foreign investors. These principles include a firm commitment from each NAFTA country to treat foreign investors from

¹A TRQ is a quota for a volume of imports at a generally low tariff. After the quantitative limit is reached, a higher tariff is applied to additional imports.

²While NAFTA's transition to regional free trade in agricultural products ended in 2008, at least one nonagricultural product has a transitional period longer than 14 years. In 2009, Mexico started to allow the importation of used cars from the United States, and this trade will not be free of tariff restrictions until 2018.

the other member countries no less favorably than it treats its own domestic investors. In addition, the accord prohibits the application of certain performance requirements on foreign investors, such as a minimum amount of domestic content in production. These provisions reinforce similar changes that Mexico made to its foreign investment laws prior to NAFTA.

Finally, NAFTA created several formal mechanisms for the resolution of disputes concerning the agreement's provisions for investment (Chapter 11) and financial services (Chapter 14), the application of national dumping and countervailing duty laws (Chapter 19), and the general interpretation and application of the agreement (Chapter 20). These mechanisms have provided a strong and orderly framework for addressing disputes involving such diverse topics as the Canadian Wheat Board (CWB), U.S. countervailing duties on live swine from Canada, Mexican antidumping duties on selected U.S. apples, Mexico's former sales tax on soft drinks and other beverages made from sweeteners other than cane sugar, NAFTA's provisions for cross-border trucking between the United States and Mexico, and whether Canada under NAFTA could legally apply the over-quota tariffs specified in the URAA to U.S. products. As of December 31, 2010, there were no active dispute settlement cases directly concerning agricultural products under Chapters 19 or 20 of NAFTA, although antidumping and countervailing duties are in effect on a handful of products traded among the NAFTA countries.

Overview of North American Market Integration

Market integration is the extent to which one or more formerly separated markets have combined to form a single market. Integration is visible in increased cross-border flows of goods, services, capital, and labor. Trade in goods consists of not only final consumer products but also intermediate inputs and raw materials, as firms reorganize their activities around regional markets for both inputs and outputs, spurred in part by greater FDI. In addition, decisionmakers in both the government and the private sector pursue a course of greater institutional and policy cooperation and coordination to encourage market integration.

Table 1 presents an overview of the current status of market integration in North American agriculture, using the framework established in ERS's 2005 NAFTA report (Zahniser, 2005). Most of North American agriculture features a *high* degree of integration, reflecting substantial flows of cross-border trade and investment and the removal of almost all major barriers to trade and investment, in large part due to NAFTA. Several agricultural sectors are marked by a *medium* degree of integration due to the presence of one or more significant barriers to trade and/or investment, even though cross-border trade and investment is underway. Examples include the U.S. and Canadian wheat markets (due to the CWB) and the markets affected by Mexico's retaliatory tariffs in conjunction with the trucking dispute. The degree of market integration is generally *low* in sectors that were excluded from CUSTA and NAFTA's project of agricultural trade liberalization or are subject to a major dispute, such as the U.S.-Mexico trucking issue.

Regional Agricultural Trade More Than Triples

Agricultural trade within the NAFTA region is recovering from the recent global economic downturn (fig. 2). The total value (exports and imports) of U.S. agricultural trade with Canada and Mexico reached about \$61.3 billion in 2010, compared with \$60.7 billion in 2008 and \$54.7 billion in 2009. Prior to the downturn, regional agricultural trade had enjoyed a long period of sustained growth with few interruptions. Even when accounting for the effects of the recent downturn, U.S. agricultural trade with Canada and Mexico has more than tripled since NAFTA's implementation in 1994. Increases of this proportion are also present in the volumes of many agricultural commodities traded among the NAFTA countries (app. tables 3-6).

Different methodologies used by ERS researchers to evaluate NAFTA's trade effects generate different estimates. Results of a computable general equilibrium (CGE) model focused on the trade policy changes of NAFTA's first 3 years indicate that U.S. agricultural exports to Canada and Mexico during 1994-96 were about 7 percent and 3 percent higher, respectively, than they would have been in the agreement's absence. Over the same period, U.S. agricultural imports from Canada and Mexico were about 5 percent and 3 percent higher, respectively (Crawford and Link, 1997). By contrast, results of a gravity model of U.S. agricultural exports during the period 1980-99

Table 1

NAFTA has advanced the integration of many aspects of North American agriculture

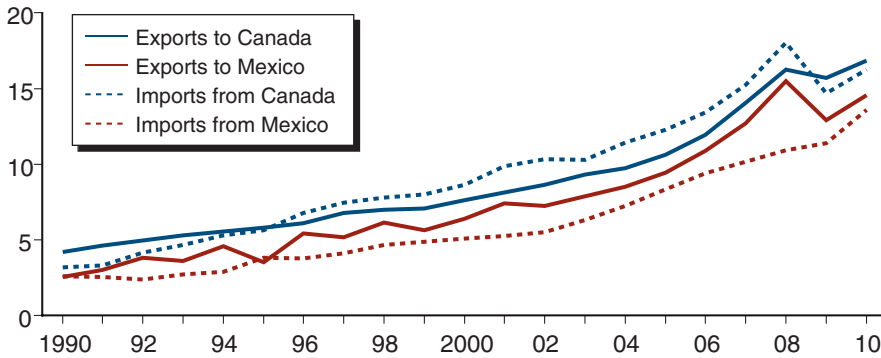
	General comments	U.S.-Mexico	U.S.-Canada
Grains and oilseeds	Important cross-border investments in grain milling. Sizable increases in U.S. exports to Mexico and Canadian exports to U.S. Expanded biofuel production increases demand for certain grains and oilseeds.	High degree of integration. Strong linkages between U.S. grain and oilseed farmers and Mexican hog and poultry producers. Mexican direct investment in U.S. baking and tortilla industries.	High degree of integration, except wheat (medium). Growing two-way trade encompasses bulk commodities, feed ingredients, and processed foods. Canadian Wheat Board still retains single-desk authority.
Livestock and animal products	U.S. and Canadian beef exporters regain access to many Asian markets following coordinated response by NAFTA governments to discoveries of bovine spongiform encephalopathy (BSE) in Canada and U.S. With the removal of most traditional barriers to trade (i.e., tariffs and quotas), progress in addressing the sanitary concerns of importing countries becomes crucial to further market integration.	High degree of integration regarding U.S. producers and Mexican market. U.S. exports to Mexico of beef, pork, and poultry meat all have doubled in volume during the NAFTA period. High degree of integration regarding Mexican producers and U.S. market in feeder cattle and beef; medium-to-low degree in other products. Mexican beef and pork exporters expand their participation in Asian markets.	High degree of integration in cattle, beef, hogs, and pork. Canadian hog exports to U.S. include feeder animals that are finished in the U.S. Sizable levels of two-way trade in beef. Low degree of integration in dairy and poultry, due to the exclusion of these sectors from trade liberalization under CUSTA and NAFTA.
Fruit and vegetables	Attention to food safety and coordination of phytosanitary measures are central to integration. Trade expansion is related to increased consumption of fresh produce, particularly in Canada and the U.S., on both seasonal and aggregate levels.	High degree of integration, with some exceptions (medium) due to trucking dispute. Large volumes of bilateral trade. U.S. growers benefit from ties to Mexican supermarkets. Fruit and Vegetable Dispute Resolution Corporation closed its Mexico office in 2007 due to lack of participation by Mexican buyers.	High degree of integration. Canadian consumers now have duty-free access to full range of U.S. produce. Canada has emerged as an important supplier of greenhouse vegetables to the U.S. Calls for Canada to institute a risk mitigation tool for produce buyers and sellers.
Sugar and sweeteners	Regional sugar and sweetener trade is complemented by trade in processed foods containing sweeteners.	High degree of integration. U.S. fructose exports to Mexico and Mexican sugar exports to U.S. flourish following implementation of NAFTA's sugar and sweetener provisions.	Low degree of integration. U.S. imports from Canada of sugar and sugar-containing products were exempted from trade liberalization under CUSTA and NAFTA.
Cotton, textiles, and apparel	WTO's Agreement on Textiles and Clothing has led to greater competition from China and other non-NAFTA countries.	High degree of integration. U.S. supplies cotton to Mexico, and Mexico supplies cotton textiles and apparel to U.S.	High degree of integration. U.S.-Canada textile and apparel trade continues, but Canada shifts away from importation and milling of cotton.
Processed foods	Sales of Canadian and Mexican affiliates of U.S. processed food companies still exceed U.S. processed food exports to those countries.	Medium degree of integration. Substantial U.S. investment in Mexico's food industry, with some Mexican investments in the U.S. food industry. Mexico's retaliatory tariffs discourage U.S. exports of soups, broths, and their preparations. Beer is Mexico's leading agricultural export to U.S.	High degree of integration. Substantial U.S. and Canadian direct investment in each other's processed food industries. Significant and growing intra-industry trade in intermediate and final food products.

Source: USDA, Economic Research Service.

Figure 2

U.S. agricultural trade with Canada and Mexico is recovering from the global economic downturn

U.S. dollars (billions)



Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Census Bureau, *Foreign Trade Statistics*, as cited by USDA/FAS (2011a).

associate CUSTA and NAFTA with a 74-percent increase in exports to Canada during 1989-99 and NAFTA with a 20-percent increase in exports to Mexico during 1994-99, although neither of these estimates are statistically significant (Zahniser et al., 2004). Expert assessments in ERS’s 2002 NAFTA report (Zahniser and Link, 2002) indicate that the agreement’s impact on U.S. agricultural trade varies by commodity and trade partner, with the biggest changes in trade occurring in the commodities that underwent the most significant reductions in tariff and nontariff barriers. Finally, the retaliatory tariffs applied to certain U.S. agricultural exports to Mexico in conjunction with the trucking dispute are shown in this report (discussed in the following paragraph) to have reduced the total value of these exports by about 27 percent.

In addition to increasing regional agricultural trade, NAFTA has helped to broaden the seasonal availability of fresh produce and to increase the variety of food products available to consumers.³ For instance, trade liberalization makes it easier for North American consumers to access fresh tomatoes throughout the year, given the existence of protected⁴ and open-field tomato production in each NAFTA country, which as a group have shipping seasons that cover the entire calendar year (Cook and Calvin, 2005). In an analysis of the changing composition of U.S. agricultural imports from Mexico, Jabara and Lynch (2006) find that Mexican agricultural products not imported by the United States in 1993 accounted for about 18 percent of U.S. agricultural imports from Mexico in 2005. Among the “new varieties” of imports identified by Jabara and Lynch are grape tomatoes and fresh avocados—products whose importation has benefited not only from trade liberalization under NAFTA but also from the introduction of a tomato variety from Taiwan (grape tomatoes) and more trade-oriented phytosanitary regulations (fresh avocados). Trade liberalization, trade-oriented phytosanitary standards, and the rapid development of the Mexican supermarket sector have given Mexican consumers much wider opportunities to purchase U.S. noncitrus fruit such as apples, pears, grapes, and peaches, to the point where Mexico has surpassed Canada to become the leading foreign market for U.S. apples. Similarly, liberalization of U.S.-Canada trade has given Canadians duty-free access to the full range of U.S. produce, facilitating U.S. exports of strawberries, cherries,

³Feenstra (2010a, 2010b) provides a full examination of the gains from trade associated with product variety.

⁴Protected agriculture is a term that refers to a variety of productive techniques, including greenhouses, row covers, drip irrigation, temperature controls, and the use of mulch, among others.

pears, carrots, lettuce, and potatoes, among other commodities, but all of these products were already familiar to Canadian consumers prior to CUSTA.

Net Effect on U.S. Agricultural Employment Is Probably Small

NAFTA's net impact on U.S. agricultural employment is likely to be small, in part because of the large size of the sector relative to agricultural trade with Canada and Mexico. While the United States had about 3.2 million farm operators in 2007, counting both primary and secondary operators,⁵ results from input-output analysis suggest that U.S. agricultural exports to Canada and Mexico supported only about 241,000 jobs throughout the U.S. economy in 2009.⁶ Two studies conducted early in the NAFTA period indicated that the agreement was not having a major effect on total U.S. agricultural employment (Crawford and Link, 1997; Schluter and Gale, 1996), a finding that is broadly consistent with a more recent study of NAFTA's impact on the U.S. economy as a whole (Arnold, 2003).

Productivity gains also help to explain why CUSTA and NAFTA's net impact on U.S. agricultural employment is small. Yield growth in soybeans, for instance, has been so strong over the past two decades that the additional quantities of soybeans, soybean meal, and soybean oil exported to Canada and Mexico during the CUSTA-NAFTA period easily could have been obtained without any increase in U.S. soybean area (Zahniser and Crago, 2009). In the U.S. fruit and vegetable sector, which has experienced greater import competition from both NAFTA and non-NAFTA countries, production of such import-competing crops as bell peppers and watermelons has increased during the NAFTA period, even though area harvested has declined (table 2). At the same time, U.S. producers of some crops, such as asparagus, have found it difficult to compete with imports, and both production and area harvested have declined. More information is needed about the rise of greenhouse production in the NAFTA countries, however, to conduct a full evaluation of trade liberalization's impacts on fruit and vegetable growers.⁷

Employment continues to decline in the U.S. textile and apparel sector, an agriculture-related industry in which the United States is less competitive because of the availability of cheaper labor in developing countries. Between 1993 and 2010, U.S. textile and apparel employment decreased from 1,662,000 to about 533,000 (USDOL/BLS, 1994, 2011). The start of this decline dates back to the 1970s, and the accord reinforced this long-term trend by fostering the development of a more integrated North American textile and apparel industry in which capital-intensive operations in the United States were complemented by labor-intensive operations in Mexico. Over the past decade, however, this industry has faced more intense competition from non-NAFTA countries such as China, Vietnam, Pakistan, and India with the implementation of the WTO's Agreement on Textiles and Clothing, and U.S. textile and apparel employment has declined further.

⁵The primary operator is the one "who is most responsible for running the farm," while the secondary operator—in many cases, the primary operator's spouse or other family member—assists the primary operator by helping to make farm business decisions and by providing additional resources, such as labor, management, capital, and farmland (Hoppe and Banker, 2010: p. 21).

⁶This figure is calculated by multiplying the trade multiplier for U.S. agricultural exports in 2008 (11,825 jobs per \$1 billion in exports) by the value of U.S. agricultural exports to Canada and Mexico in that year (about \$32.3 billion). As with all trade multipliers, care must be taken in the interpretation of the resulting estimate because it does not account for price changes or structural changes in the economy since 1997, the year for which the benchmark table was constructed. The ERS Agricultural Trade Multipliers (Edmondson, 2011) enable users to work with predefined multipliers and to create their own multipliers.

⁷Limited data are available on greenhouse production in the NAFTA countries. With respect to the United States, while the 2007 Agricultural Census provides some information about greenhouse production, previous censuses did not, and annual production statistics for many fruit and vegetables are limited to field production. In addition, methodological changes to the 2007 Agricultural Census enabled USDA's National Agricultural Statistics Service to count small farms with greater accuracy, so previous censuses may have missed some smaller growers.

Table 2

U.S. production of vegetables, melons, and fruit has undergone many changes during the NAFTA era

Crop	Area harvested		Change	Production		Change	Yield		Change
	1991-93	2007-09		1991-93	2007-09		1991-93	2007-09	
	<i>1,000 hectares</i>		<i>Percent</i>	<i>1,000 metric tons</i>		<i>Percent</i>	<i>Metric tons per hectare</i>		<i>Percent</i>
Vegetables and melons, 24 crops	735.7	702.9	-4.5	15,212	20,402	34.1	206.8	290.3	40.4
Asparagus ¹	35.3	13.5	-61.8	103	45	-56.3	29.2	33.4	14.3
Bell peppers ¹	26.0	21.2	-18.7	635	720	13.4	243.8	339.7	39.4
Broccoli ¹	43.1	51.4	19.1	521	890	70.9	120.8	173.2	43.4
Cauliflower ¹	22.8	14.8	-35.2	313	302	-3.5	137.4	204.4	48.8
Chile peppers ¹	n.a.	10.6	n.a.	n.a.	195	n.a.	n.a.	184.1	n.a.
Cucumbers	22.9	16.8	-26.5	448	412	-7.9	195.8	245.2	25.2
Onions ¹	57.6	62.3	8.3	2,752	3,473	26.2	478.2	557.2	16.5
Tomatoes	53.3	43.0	-19.3	1,623	1,469	-9.5	304.4	341.2	12.1
Watermelons	83.4	51.4	-38.4	1,657	1,776	7.2	198.7	345.7	74.0

Crop	Area harvested		Change	Production		Change	Yield		Change
	1991-93	2007-09		1991-93	2007-09		1991-93	2007-09	
	<i>1,000 hectares</i>		<i>Percent</i>	<i>1,000 metric tons fresh equivalent</i>		<i>Percent</i>	<i>Metric tons per hectare fresh equivalent</i>		<i>Percent</i>
Noncitrus fruit	808.8	820.4	1.4	14,944	15,960	6.8	n.a.	n.a.	n.a.
Apples	183.5	141.5	-22.9	4,648	4,278	-8.0	11.4	13.7	20.2
Cranberries	11.7	15.5	32.1	187	323	72.9	7.1	9.3	30.8
Cherries, sweet	18.4	33.7	82.9	149	279	87.3	3.8	3.9	3.1
Cherries, tart	19.6	14.2	-27.7	115	118	3.1	7.1	3.9	-44.7
Grapes	302.4	379.8	25.6	5,323	6,483	21.8	8.1	7.7	-4.3
Papayas ²	0.9	0.5	-42.6	29	15	-48.3	n.a.	12.3	n.a.
Peaches	72.2	49.7	-31.2	1,130	1,002	-11.4	7.5	9.1	22.4
Pears	28.3	23.5	-17.1	839	815	-2.8	13.2	15.5	17.1
Strawberries ³	19.9	22.2	11.4	621	1,176	89.3	13.9	23.6	69.6
Other noncitrus fruit	151.8	139.8	-7.9	1,903	1,471	-22.7	n.a.	n.a.	n.a.
Citrus fruit ⁴	359.1	340.3	-5.2	11,765	10,767	-8.5	n.a.	n.a.	n.a.
Oranges ⁵	261.5	264.7	1.2	8,412	8,287	-1.5	332	324	-2.3
Other citrus fruit	97.6	75.6	-22.5	3,352	2,480	-26.0	n.a.	n.a.	n.a.

n.a. = not available. Data are not collected for all States that might produce these crops.

¹Includes processing total for dual usage crops.

²Data for 2007-09 are for Hawaii only.

³Yields for 2007-09 are based on area harvested.

⁴Data for citrus fruit correspond to crop years 1990-91 to 1992-93 and 2007-08 to 2009-10 and do not include limes.

⁵Yield expressed in boxes per acre. A box of oranges from Arizona or California weighs 75 pounds, 85 pounds from Texas, and 90 pounds from Florida.

Source: USDA, Economic Research Service using data from USDA/NASS (2010a, 2010b, 2010c, 1994a, 1994b, 1993).

Processed Food Sector Features Substantial Levels of Foreign Investment

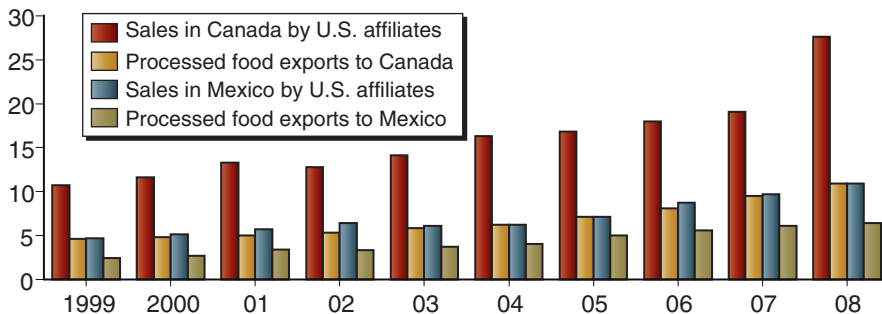
One of NAFTA’s main objectives was to “increase substantially investment opportunities in the territories of the Parties” (see Article 102 of the agreement), and in an effort to attract more FDI to the region, the accord instituted a number of key principles concerning the treatment of foreign investors, as was mentioned earlier. Unfortunately, changes in how the processed food sector is defined within U.S. FDI statistics, along with restrictions on disclosing certain data for individual firms, make it difficult to utilize U.S. statistics to evaluate changes in FDI in the North American processed food sector during the NAFTA period. Mexican statistics, however, indicate that Mexico’s food, beverage, and tobacco industries attracted net inflows of additional foreign investment totaling \$22.9 billion between January 2000 and September 2010 (Secretaría de Economía, Dirección General de Inversión Extranjera, 2010). Roughly half of this capital came from the United States.

U.S. firms account for most of the FDI in the North American processed food sector, which is currently defined in U.S. statistics not to include the beverage industry or production agriculture. In 2009, the U.S. direct investment position (on a historical-cost basis) in the Canadian processed food industry equaled \$5.0 billion, while the U.S. direct investment position in the Mexican processed food industry equaled \$2.5 billion in 2008 (app. table 6). In contrast, the Canadian and Mexican direct investment positions in the U.S. processed food industry were \$1.3 billion and \$3.0 billion, respectively. Firms located in the NAFTA region sometimes have potential buyers in all three NAFTA countries. For instance, in 2002 and 2008, the Mexican baking company Grupo Bimbo acquired some of the U.S. interests of a Canadian food conglomerate, George Weston Ltd, that once had been owned by U.S. companies, and in 2010, Grupo Bimbo purchased Sara Lee’s fresh bakery business for \$959 million. Food sales associated with U.S. direct investment in Canada and Mexico are substantial. In 2008, majority-owned affiliates of U.S. multinational food companies had sales of \$27.6 billion in Canada and \$10.9 billion in Mexico (fig. 3). Together, these sales were 123 percent larger than the value of U.S. processed food exports to Canada and Mexico.

Figure 3

Food sales by U.S.-owned affiliates in Canada and Mexico greatly exceed U.S. processed food exports to those countries

U.S. dollars (billions)



Note: Affiliate sales are those of nonbank majority-owned U.S. affiliates and do not include sales in the beverage industry.

Source: USDA, Economic Research Service using data from USDOC/BEA (2010c) (affiliate sales) and USDA/FAS (2011a) (processed food exports).

Economic Recovery Buoyants NAFTA Agricultural Trade

U.S. agricultural trade with the NAFTA countries experienced a partial recovery in 2010, owing to improved economic conditions within the region. For many commodities traded within the region, volumes increased and unit values rebounded, while U.S. exchange rates with the Canadian dollar and the Mexican peso returned to levels similar to those just before the world economic downturn. In 2010, the nominal value of U.S. agricultural exports to Canada and U.S. agricultural imports from Mexico surpassed the levels achieved in 2008, while U.S. agricultural exports to Mexico and U.S. agricultural imports from Canada increased but did not reach their 2008 levels.

A look back at 2009 reveals some of the mechanisms at work in the contraction and subsequent recovery of U.S. agricultural trade. The economic downturn had a pronounced impact on U.S. agricultural trade, lowering the demand for many commodities and prompting a short-term appreciation of the U.S. dollar during late 2008 and early 2009, as international investors sought a safe haven for their capital (Shane et al., 2009). Appreciation of the U.S. dollar made U.S. exports more expensive to foreign buyers, while increasing the affordability of imports to U.S. buyers. Under these more difficult economic conditions, total U.S. agricultural exports (to all countries) from 2008 to 2009 decreased by 14 percent to \$98 billion, while corresponding imports fell by 11 percent to \$72 billion.

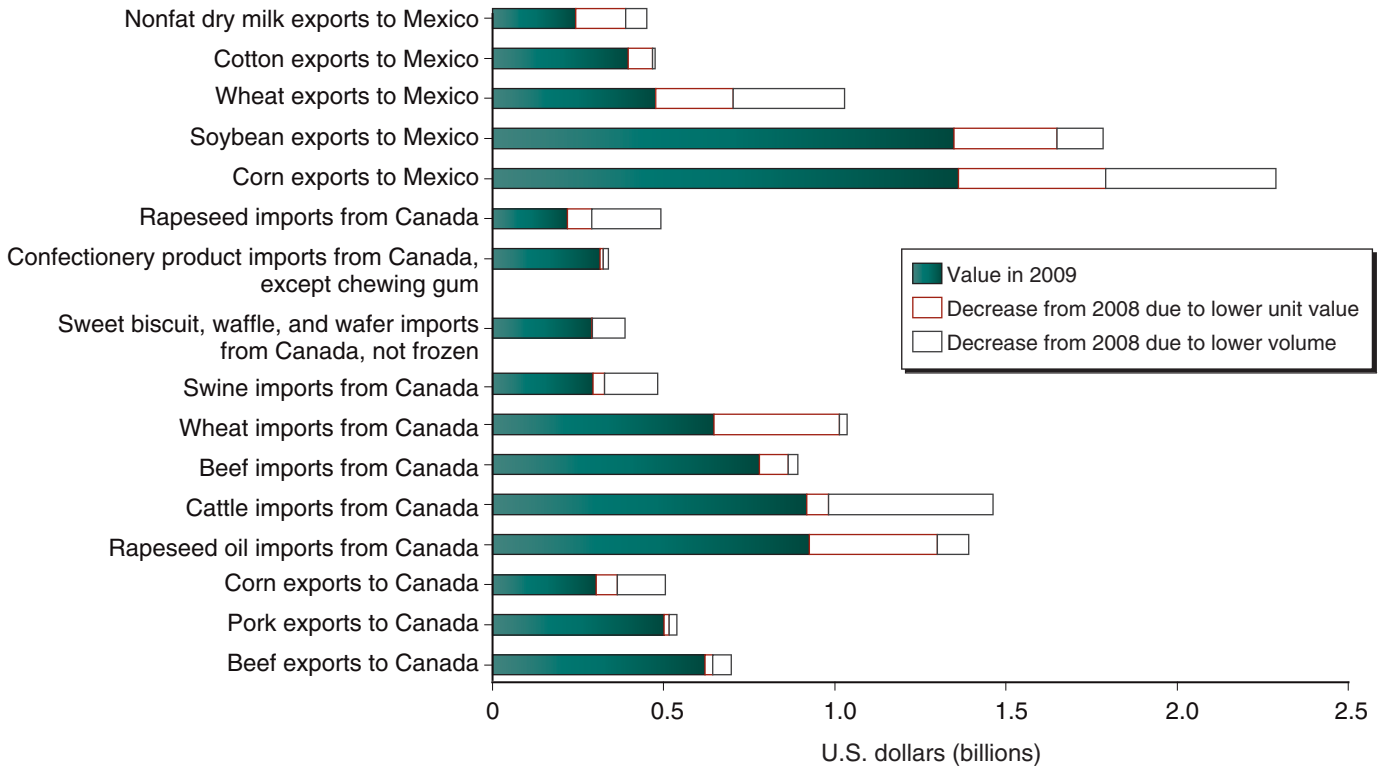
Agricultural trade among the NAFTA countries was not immune to these phenomena. In terms of nominal value, U.S. agricultural exports to Canada and Mexico decreased by 3 percent and 17 percent, respectively, between 2008 and 2009, and U.S. agricultural imports from Canada decreased by 18 percent. In contrast, U.S. agricultural imports from Mexico—led by continued growth in fruit and vegetable trade—increased by 3 percent.

At the commodity level, the changes in trade were more varied but consistent with this general pattern of contraction. Appendix table 1 lists the 10 leading commodities in each of the four trade flows that make up U.S. agricultural trade with its NAFTA partners: exports to Canada, imports from Canada, exports to Mexico, and imports from Mexico. Among these 40 items, 27 commodity flows experienced a decrease in trade value between 2008 and 2009. These decreases took one of three forms: a decrease in volume and unit value, a decrease in volume that more than offset an increase in unit value, and a decrease in unit value that more than offset an increase in trade volume.

Figure 4 illustrates the decrease in trade in 2009 for the 16 components of regional agricultural trade listed in appendix table 1 that experienced a decrease in both volume and unit value. For many of these commodities, lower prices (as reflected in lower unit values) accounted for a large portion of the decrease in total trade value. This was particularly true for grains and oilseeds. For example, the decrease in unit value accounted for 93 percent of the decline in U.S. wheat imports from Canada and 46 percent of the decline in U.S. corn exports to Mexico.

Figure 4

A drop in both volume and unit value lowered trade values of many commodities in 2009



Note: The data in this figure cover calendar years 2008 and 2009. The dark blue portion of each bar indicates the value of trade in 2009, while the sum of all three portions of the bar (dark blue, white with red outline, and white with blue outline) equals the value of trade in 2008.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Census Bureau, *Foreign Trade Statistics*, as cited by USDA/FAS (2011a).

NAFTA Trucking Issue Intersects With U.S. Agricultural Exports

In March 2011, the U.S. and Mexican Governments arrived at an agreement in principle for the establishment of a reciprocal, phased-in program that will authorize both Mexican and U.S. carriers to engage in cross-border, long-haul trucking operations under NAFTA. Two years prior, in March 2009, the Mexican Government had imposed retaliatory import tariffs on selected U.S. products in response to the U.S. cancellation of a demonstration project on NAFTA's trucking provisions. These tariffs, which were expanded and modified in August 2010, have adversely affected U.S. agricultural exports to Mexico, depressing the export volume and unit value of many of the targeted commodities. Once a final agreement is reached pursuant to the agreement in principle, the Mexican Government will gradually suspend the retaliatory tariffs—first by reducing them by 50 percent upon the signing of the final agreement and then by suspending the remaining 50 percent when the first Mexican carrier is granted operating authority under the program. Once the program is normalized, Mexico will terminate the retaliatory tariffs (White House, 2011; Secretaría de Economía, 2011).

Implementation of Trucking Provisions Turns Out To Be a Long Haul

The Omnibus Appropriations Act, 2009, signed into law by President Obama on March 11, 2009, ended funding for the demonstration project. Over the years, some persons had expressed concerns for U.S. highway safety and the job security of U.S. truckers if Mexican truckers were allowed to provide cross-border services of the type specified by NAFTA. Others called attention to the possible effects on the U.S.-Mexico economic relationship of not implementing NAFTA's trucking provisions as was originally agreed.

Prior to its cancellation, the demonstration project was a small step toward implementing NAFTA's trucking provisions. Specifically, the project "allowed up to 100 Mexico-domiciled motor carriers to operate beyond the U.S. border commercial zones and the same number of U.S. carriers to operate in Mexico" (USDOT/FMCSA, 2009a).⁸ The project was originally initiated in September 2007 for a 1-year term and then was extended for up to 2 more years "to ensure that it could produce sufficient data to evaluate its safety impact" (USDOC/ITA, 2010). Carriers participating in the demonstration project were not the only Mexico-domiciled carriers allowed to operate in the United States beyond these zones, however. Five carriers had received limited authority to do so prior to 1982 and were "grandfathered in" when the U.S. Congress enacted a moratorium on Mexico-domiciled carriers that year. In addition, a much larger number of majority U.S.-owned, Mexico-domiciled carriers had received limited authority before the Interim Final Rules implementing NAFTA's motor carrier provisions were issued in March 2002 (USDOT/FMCSA, 2009b; Downey, et al. 2008; NAFTA Arbitral Panel, 2001). These carriers are referred to as "certificated" in reference to their Certificates of Operation. An independent evaluation panel (Downey, et al., 2008) concluded that a total of 861 grandfathered or certificated Mexican carriers with 1,749 trucks were operating in the United States beyond the border commercial zones in 2008. By contrast,

⁸The border commercial zones extend from 3 to about 25 miles north of the U.S.-Mexico border and 75 miles north of the border in the State of Arizona (USDOT/FMCSA, 2009b: 4). The zone's width varies according to the size of particular U.S. municipalities and associated commercial zones (Downey et al., 2008: xi).

in 2010, a total of 8,030 Mexican carriers with 30,482 trucks had authority to operate only within the U.S. commercial zones (USDOT/FMCSA, 2010).

The United States had agreed as part of NAFTA to allow persons from Mexico to obtain operating authority to provide cross-border trucking services to or from the border States (California, Arizona, New Mexico, and Texas) by December 18, 1995, and to provide cross-border trucking services throughout the United States by January 1, 2000 [see the U.S. schedule in NAFTA's "Annex I: Reservations for Existing Measures and Liberalization Commitments (Chapters 11, 12, and 14)"]. In turn, Mexico agreed to provide access to persons from the United States interested in providing cross-border trucking services between the United States and Mexico according to a similar timetable. In most instances, transporting cargo by truck between the United States and Mexico currently requires at least three vehicles: "a long-haul service that transports the cargo from Mexico/United States to a place near the border, a short-haul drayage truck that moves the goods across the border, and a third truck that delivers the cargo to its final destination beyond the U.S.-Mexico border commercial zone" (Prozzi et al., 2008: 1-2).⁹

Retaliatory Tariffs Dampen Certain U.S. Agricultural Exports to Mexico

Nonresolution of the trucking dispute affects U.S. exporters and Mexican consumers because NAFTA's dispute resolution procedure allows the Mexican Government to suspend U.S. trade benefits of "equivalent effect" to the cross-border trucking provisions until the two countries settle the dispute. More than a decade ago, the Mexican Government won a decision regarding the trucking dispute at a NAFTA arbitration panel, following President Clinton's decision in December 1995 to postpone implementation of the agreement's trucking provisions. In February 2001, the panel's final report indicated that "the U.S. blanket refusal to review and consider for approval any Mexican-owned carrier application for authority to provide cross-border trucking service was and remains a breach" of U.S. obligations under NAFTA (NAFTA Arbitral Panel, 2001: p. 83), thereby authorizing retaliation should the dispute not be resolved.

Table 3 includes a list of the U.S. agricultural products covered by the original set of retaliatory tariffs published in March 2009 and the revised set published in August 2010. Prior to the enactment of these tariffs, all of these products had received duty-free treatment in Mexico as a result of NAFTA. Some of the retaliatory tariffs target nonagricultural products, but these are not listed in the table. The expanded list of agricultural commodities includes four tariff lines that corresponded to more than \$100 million each in U.S. agricultural exports to Mexico in 2008—the calendar year before the retaliatory tariffs were implemented:

- Fresh or chilled pork, bone-in (\$367 million);
- Fresh apples (\$221 million);
- Preparations for soups and broths, and prepared soups and broths (\$178 million); and
- Condiments other than soy sauce, ketchup, other tomato sauces, mustard meal, and prepared mustard (\$113 million).

⁹NAFTA's provisions for cross-border trucking services between the United States and Mexico do not apply to routes exclusively within either country. In other words, NAFTA does not require the United States to allow persons from Mexico to obtain operating authority to provide trucking services from one point in the United States to another, nor does it require Mexico to allow persons from the United States to obtain operating authority to provide trucking services from one point in Mexico to another.

Table 3

Mexico has applied retaliatory tariffs on over 50 U.S. agricultural products

Tariff line	Description	Tariff rate, effective:	
		March 18, 2009, to August 17, 2010	August 18, 2010 to present
		<i>Percent</i>	
0203.12.01	Meat of swine, legs, hams, and cuts thereof, bone-in, fresh or chilled	--	5
0203.22.01	Meat of swine, legs, hams, and cuts thereof, bone-in, frozen	--	5
0406.10.01	Fresh cheese (unripened or uncured), including that from whey cheese, and curd	--	25
0406.30.99	Processed cheese, not grated or powdered; excluding that product with a fat content less than or equal to 36 percent by weight and with an average fat content in dry extract greater than 48 percent, presented in packages larger than 1 kilogram	--	25
0406.90.04	Grana o Parmigiano-Reggiano cheese, with a fat content less than or equal to 40 percent by weight, and with a water content, in nonfat material, less than or equal to 47 percent by weight; Danbo, Edam, Fontal, Fontina, Fynbo, Gouda, Havarti, Maribo, Samsøe, Esrom, Italic, Kernhem, Saint-Nectaire, Saint-Paulin, or Taleggio cheese, with a fat content less than or equal to 40 percent by weight, and with a water content, of nonfat materials, greater than 47 percent and less than 72 percent by weight	--	20
0406.90.99	Cheese, not elsewhere specified or indicated	--	25
0604.91.02	Christmas trees, fresh	20	20
0703.10.01	Onions	10	10
0705.11.01	Iceberg lettuce	10	10
0710.40.01	Sweet corn	--	15
0802.12.01	Almonds, shelled	20	20
0802.50.01	Pistachios, fresh	--	20
0802.50.99	Pistachios, other	--	20
0804.10.01	Dates, fresh	20	20
0804.10.99	Dates, other	20	20
0805.10.01	Oranges, fresh or dried	--	20
0805.40.01	Grapefruit or pomelos, fresh or dried	--	20
0806.10.01	Grapes, fresh	45	20
0808.10.01	Apples, fresh	--	20
0808.20.01	Pears, fresh	20	20
0809.10.01	Apricots, fresh	--	20
0809.20.01	Cherries, fresh	--	20
0810.10.01	Strawberries, fresh	20	20
0813.30.01	Apples, dried	--	20
0813.50.01	Mixtures of dried fruit or nuts	20	20
1104.12.01	Oatmeal	--	10
1602.49.01	Cooked pork rinds	--	20
1704.10.01	Chewing gum, including those coated in sugar	--	20
1806.31.01	Chocolate or other food preparations containing cocoa, blocks, tablets, or bars, filled, less than or equal to 2 kilograms in mass	--	20
1806.32.01	Chocolate or other food preparations containing cocoa, blocks, tablets, or bars, not filled, less than or equal to 2 kilograms in mass	--	20

—continued

Table 3

Mexico has applied retaliatory tariffs on over 50 U.S. agricultural products—Continued

Tariff line	Description	Tariff rate, effective:	
		March 18, 2009, to August 17, 2010	August 18, 2010 to present
		<i>Percent</i>	
1902.19.99	Pasta, not containing egg, not cooked, filled, or otherwise prepared	10	10
2004.10.01	Potatoes, frozen	20	5
2005.40.01	Peas, prepared or preserved, except in vinegar or acetic acid, not frozen	20	20
2008.11.01	Peanuts, shelled	20	--
2008.11.99	Peanuts, with shell	20	20
2008.19.01	Almonds, prepared or preserved	20	20
2008.19.99	Nuts other than peanuts or almonds, prepared or preserved, including mixed nuts	20	20
2008.60.01	Cherries, prepared or preserved	20	20
2009.80.01	Fruit or vegetable juice, other than orange, grapefruit, other citric fruit, lime, pineapple, tomato, grape, or apple	20	20
2009.90.01	Mixtures of vegetable juice only	20	20
2009.90.99	Mixtures of fruit or vegetable juice, other than mixtures of vegetable juice only	20	20
2103.10.01	Soy sauce	20	20
2103.20.01	Ketchup	--	20
2103.90.99	Condiments, other than soy sauce, ketchup, other tomato sauces, mustard meal, and prepared mustard	20	20
2104.10.01	Prepared soups and broths and preparations for such foods	10	10
2106.90.06	Concentrates of juice from a single fruit or vegetable, enriched with vitamins or minerals	15	15
2106.90.07	Concentrates of juice from more than one fruit or vegetable, enriched with vitamins or minerals	15	15
2106.90.08	Food preparations not elsewhere specified or indicated, with a content of milk solids greater than 10 percent, in weight	15	15
2201.10.01	Mineral water	20	20
2204.10.99	Sparkling wine, other than champagne	20	20
2204.21.02	Red, rose, claret, or white wine, whose alcoholic strength by volume is up to 14 percent at a temperature of 20 degrees Celsius, in containers of clay, ceramics, or glass less than or equal to 2 liters	20	20
2206.00.99	Other fermented beverages or mixtures of fermented and non-alcoholic beverages, not elsewhere specified	20	20
2306.30.01	Sunflower seed meal and oilcake	15	15
2306.49.99	Rapeseed meal or oilcake, with a high content of erucic acid	15	15
2309.10.01	Dog or cat food, for retail sale	10	10

-- = not applicable.

Source: Unofficial author translation of Secretaría de Gobernación (2009, 2010).

The tariff rates now range from 5 to 25 percent. As part of the revised set of tariffs issued in August 2010, the Mexican Government lowered the retaliatory tariff rates on two agricultural commodities: fresh grapes (from 45 to 10 percent) and frozen potatoes (from 20 to 5 percent).

Sufficient data are available to consider the impact of Mexico's retaliatory tariffs during the first year that they were in effect. Table 4 provides data on the level of Mexican agricultural imports from the United States targeted by the tariffs from March 2009 to February 2010 and the average annual level of this trade during the 36 months prior to the tariffs' enactment (March 2006 to February 2009). The period of March 2009 to February 2010 roughly corresponds with the first 12 months of the retaliatory tariffs. Many of the targeted imports have declined in volume, unit value, and value since the imposition of the retaliatory tariffs. Only a portion of these changes may be attributed to the tariffs, however, as other factors, such as the contraction in Mexican demand associated with the global recession, also likely contributed to the decline. By subtracting the percentage decline experienced by those Mexican agricultural imports from the United States not covered by the retaliatory tariffs (5.5 percent) from the percentage decline experienced by those imports covered by the tariffs (32.6 percent), one can obtain a rough estimate of the retaliatory tariffs' impact. Thus, the tariffs reduced the total value of the targeted U.S. agricultural exports to Mexico during this period by an additional 27.1 percent, compared with the level during the previous 36 months, or about \$240 million.

Table 4

Mexico's retaliatory tariffs have had a pronounced effect on Mexican agricultural imports from the United States

Mexican agricultural imports from the United States		Value			Volume			Unit value		
HS Code	Product	Annual average, March 2006-February 2009	March 2009-February 2010	Change	Annual average, March 2006-February 2009	March 2009-February 2010	Change	Annual average, March 2006-February 2009	March 2009-February 2010	Change
		<i>Million dollars</i>		<i>Percent</i>	<i>Metric tons</i>		<i>Percent</i>	<i>Dollars per kilogram</i>		<i>Percent</i>
	Total	15,754.06	14,646.45	-7.0	--	--	--	--	--	--
	Not subject to retaliatory tariffs	14,866.86	14,048.33	-5.5						
	Subject to retaliatory tariffs	887.20	598.13	-32.6	--	--	--	--	--	--
06049102	Christmas trees, fresh	18.66	12.08	-35.3	23,324	21,341	-8.5	1.19	0.56	-53.0
07031001	Onions	36.09	18.75	-48.1	78,752	73,157	-7.1	0.41	0.26	-37.7
07051101	Iceberg lettuce	21.61	5.79	-73.2	49,596	20,414	-58.8	0.45	0.34	-24.2
08021201	Almonds, shelled	29.26	23.01	-21.4	5,347	6,396	19.6	5.63	3.51	-37.6
08041001	Dates, fresh	0.49	0.41	-15.3	345	281	-18.5	2.06	1.29	-37.7
08041099	Dates, other	0.23	0.25	10.0	67	69	2.4	5.45	4.88	-10.5
08061001	Grapes, fresh	65.83	16.38	-75.1	50,199	19,916	-60.3	1.38	0.79	-42.5
08082001	Pears, fresh	70.80	52.11	-26.4	72,831	71,968	-1.2	0.98	0.75	-23.1
08101001	Strawberries, fresh	27.31	13.94	-49.0	21,494	14,070	-34.5	1.83	1.38	-25.0
08135001	Mixtures of dried fruit or nuts	5.13	3.99	-22.1	910	708	-22.2	5.63	5.69	1.1
19021999	Pasta, not containing egg, not cooked, filled, or otherwise prepared	1.77	6.52	269.3	1,016	2,444	140.5	1.74	2.66	53.0
20041001	Potatoes, frozen	80.51	39.08	-51.5	82,595	39,593	-52.1	0.98	0.98	-0.1
20054001	Peas, prepared or preserved, except in vinegar or acetic acid, not frozen	0.44	0.25	-42.7	388	172	-55.7	1.17	1.47	24.9
20081101	Peanuts, shelled	3.24	7.33	126.0	1,260	3,686	192.7	2.79	2.00	-28.4
20081199	Peanuts, with shell	2.82	2.07	-26.7	1,216	839	-31.0	2.51	2.84	13.1
20081901	Almonds, prepared or preserved	2.28	3.47	52.4	306	582	90.1	7.70	6.16	-20.0
20081999	Nuts other than peanuts or almonds, prepared or preserved, including mixed nuts	67.58	39.23	-42.0	27,769	12,836	-53.8	2.51	3.11	23.9
20086001	Cherries, prepared or preserved	7.60	4.06	-46.6	3,059	1,665	-45.6	2.51	2.65	5.6
20098001	Fruit or vegetable juice, other than orange, grapefruit, other citric fruit, lime, pineapple, tomato, grape, or apple ¹	6.35	5.67	-10.7	3,406	1,975	-42.0	2.66	2.91	9.5
20099001	Mixtures of vegetable juice only ¹	0.23	0.32	35.8	112	110	-1.6	2.43	2.56	5.1
20099099	Mixtures of fruit or vegetable juice, other than mixtures of vegetable juice only ¹	12.21	11.82	-3.2	3,952	2,916	-26.2	3.15	3.99	26.8
21031001	Soy sauce	5.39	4.93	-8.4	4,202	3,661	-12.9	1.28	1.34	5.2
21039099	Condiments, other than soy sauce, ketchup, other tomato sauces, mustard meal, and prepared mustard	108.24	95.88	-11.4	54,496	47,566	-12.7	1.99	2.02	1.2

—continued

Table 4

Mexico's retaliatory tariffs have had a pronounced effect on Mexican agricultural imports from the United States—Continued

Mexican agricultural imports from the United States		Value			Volume			Unit value		
HS Code	Product	Annual average, March 2006-February 2009	March 2009-February 2010	Change	Annual average, March 2006-February 2009	March 2009-February 2010	Change	Annual average, March 2006-February 2009	March 2009-February 2010	Change
		<i>Million dollars</i>	<i>Percent</i>		<i>Metric tons</i>	<i>Percent</i>		<i>Dollars per kilogram</i>	<i>Percent</i>	
21041001	Prepared soups and broths, and preparations for such foods	183.88	146.79	-20.2	50,617	43,874	-13.3	3.65	3.35	-8.3
21069006	Concentrates of juice from a single fruit or vegetable, enriched with vitamins or minerals	0.60	0.28	-52.6	365	166	-54.4	3.53	3.27	-7.4
21069007	Concentrates of juice from more than one fruit or vegetable, enriched with vitamins or minerals	1.56	0.69	-56.0	376	223	-40.6	4.22	3.24	-23.3
21069008	Food preparations not elsewhere specified or indicated, with a content of milk solids greater than 10 percent in weight	11.03	13.36	21.1	2,436	3,387	39.1	4.54	4.02	-11.5
22011001	Mineral water ¹	2.35	3.32	41.2	9,632	13,859	43.9	0.29	0.24	-18.2
22041099	Sparkling wine, other than champagne ¹	0.74	0.81	9.0	233	254	9.0	3.16	4.48	41.6
22042102	Red, rose, claret, or white wine, whose alcoholic strength by volume is up to 14 percent at 20 degrees Celsius, in containers of clay, ceramics, or glass less than or equal to 2 liters ¹	5.64	5.05	-10.6	1,460	1,605	9.9	4.24	3.24	-23.7
22060099	Other fermented beverages or mixtures of fermented and non-alcoholic beverages, not elsewhere specified ¹	13.29	7.43	-44.1	7,747	4,947	-36.1	1.70	1.48	-12.6
23063001	Sunflower seed meal and oilcake	0.89	0.48	-46.0	4,564	1,950	-57.3	0.21	0.24	13.4
23064999	Rapeseed meal or oilcake with a high content of erucic acid	0.13	*	-100.0	406	*	-100.0	0.33	0.12	-63.6
23091001	Dog or cat food, for retail sale	93.02	52.57	-43.5	126,868	44,490	-64.9	0.78	1.19	53.3

Note: Table presents data only for those products subject to the retaliatory tariffs in effect from March 18, 2009, to August 17, 2010.

-- = not applicable.

* = less than \$5,000 in value and less than 500 kilograms in volume.

¹Volume measured in thousands of liters and unit value measured in dollars per liter.

Source: Mexico, Secretariat of Economy, as cited by Global Trade Information Services, Inc. (2011).

Country-of-Origin Labeling and Livestock and Meat Trade

In 2009, the United States adopted mandatory country-of-origin labeling (COOL) requirements for beef and pork, among other commodities. These requirements are relevant to U.S. agricultural trade with Canada and Mexico because the United States imports live cattle and live hogs from Canada and live cattle from Mexico for use in U.S. meat production. In 2010, these imports included 1.1 million head of cattle from Canada, 5.7 million hogs from Canada, and 1.2 million head of cattle from Mexico.

Mandatory COOL provides U.S. consumers with greater information about the geographic origin of their retail food purchases. COOL's implementation is the responsibility of USDA's Agricultural Marketing Service (AMS), and details of the COOL requirements are found in a final rule that took effect on March 16, 2009 (USDA/AMS, 2009). The rule requires U.S. retailers to provide COOL for muscle cuts of beef (including veal), lamb (including mutton), pork, chicken, and goat; ground meat (beef, lamb, pork, chicken, or goat); peanuts, pecans, ginseng, and macadamia nuts; and perishable agricultural commodities (i.e., fresh or frozen fruit and vegetables). These requirements are in addition to COOL requirements already in effect for wild and farm-raised fish and shell fish.

Several of the labeling categories specified by the final rule directly concern meat obtained from imported livestock. Muscle cuts of meat obtained from animals born and raised in a foreign country and then imported for immediate slaughter in the United States are to be labeled as "Product of Country X and the U.S.A." Muscle cuts obtained from animals born in a foreign country and then raised and slaughtered in the United States are to be labeled as "Product of U.S.A., Country X, and Country Y (as applicable)," where Country X (or Y) designate the country of birth. The countries may be listed in any order. Animals born, raised, and slaughtered in the United States and imported animals may be commingled during a single production day, and the resulting muscle cuts may also be labeled as "Product of U.S.A., Country X, and Country Y (as applicable)," with the countries listed in any order. For ground meat, the retailer is required to identify all countries where the product originated or all reasonably possible countries where the product may have originated.

The Canadian and Mexican Governments have raised concerns about U.S. COOL requirements and their impact on the North American market and are challenging the requirements at the WTO. In November 2009, a single panel was established to examine these complaints. The panel was composed in May 2010, and the first and second substantive meetings among the parties took place in September and December 2010, respectively, at the WTO headquarters in Geneva. At the request of the parties, these substantive meetings were open to public viewing. A final ruling is anticipated in 2011 (WTO, 2011a, 2011b).

A North American Market for Grains, Oilseeds, and Related Products

Creation of an integrated North American market in grains, oilseeds, and related products is one of NAFTA's major achievements. For Mexico, NAFTA marked a transformation from the strict administration of imports via licensing requirements and the provision of guaranteed prices to domestic producers of many field crops to a system featuring duty-free trade with the United States and Canada and a mix of domestic agricultural supports similar to those in the United States. For the United States and Canada, trade liberalization of grain and oilseeds under CUSTA and NAFTA primarily involved the elimination of minor tariffs on bilateral trade. The major exceptions to this pattern concern wheat and wheat products.

Rising Demand for Feed and Food Drives Integration

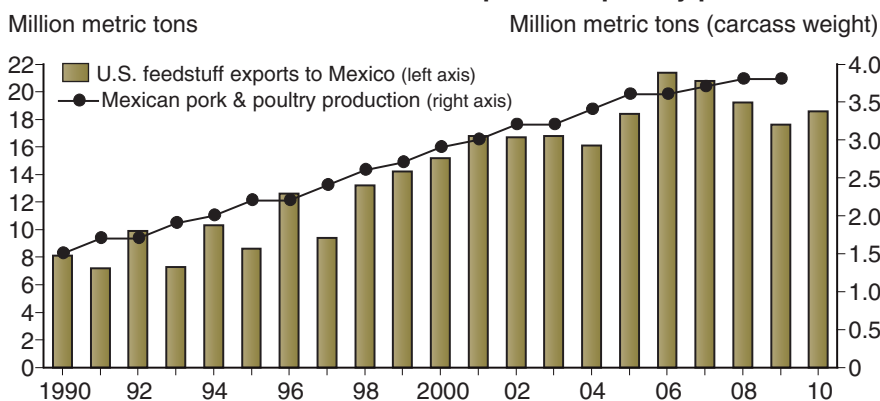
Rising demand for feed and food has created new opportunities for regional trade in grains and oilseeds. Poultry and hog producers in Mexico, for instance, rely heavily on U.S. feedstuffs as they seek to meet their country's growing demand for meat. As a result, U.S. exports to Mexico of feed grains, oilseeds, and related products have increased by 134 percent during the NAFTA period, averaging 19.5 million metric tons per year during 2006-10, compared with 8.3 million metric tons during 1989-92 (fig. 5).¹¹ Duty-free access to U.S. feedstuffs enables Mexican livestock producers to expand output, lower their costs of production, and compete more effectively with meat imports, and it has made possible a substantial increase in Mexican meat consumption. Between 1993 and 2010, per capita consumption of broiler meat in Mexico rose from 16 to 30 kilograms (an 86-percent increase), while per capita consumption of pork climbed from 10 to 16 kilograms (a 55-percent increase).¹² Canada's poultry and hog producers also utilize some U.S. feedstuffs—most notably corn and soybean meal—and expanded use of

¹¹The years 1989-92 are used as the pre-NAFTA period for purposes of comparison because U.S. corn exports to Mexico were unusually low in 1993, the last year prior to NAFTA's implementation.

¹²These calculations are made using consumption estimates from USDA/FAS (2011b) and population estimates from the USDOC/Census Bureau (2010).

Figure 5

U.S. feedstuffs are crucial to Mexican pork and poultry production



Note: In this graph, feedstuffs are defined as encompassing the commodity groupings of feed grains and products, feeds and fodders (excluding oilcake), and oilseeds and products.

Source: USDA, Economic Research Service using data from USDA/FAS (2011a) (exports) and (SAGARPA/SIAP) (2011b) (production).

corn by Canada's ethanol producers is boosting demand for corn, even though livestock numbers in Canada are decreasing (Gray, 2010). Canada also uses wheat to produce ethanol.

Feed ingredient trade among the NAFTA countries encompasses a diversity of products. For example, Mexican poultry producers estimated the following composition of their agricultural inputs during their 2010 marketing year: sorghum and yellow corn (63 percent), oilseeds and protein meals (20 percent), and other feed ingredients (17 percent), such as safflower, orthophosphate, calcium, and methionine (Unión Nacional de Avicultores, 2010; Flores, 2008: p. 17). A close examination of U.S. trade statistics (app. tables 2-5) reveals substantial levels of two-way trade between Canada and the United States in mixed feeds and mixed feed ingredients other than pet food, as well as of U.S. exports to Mexico of brewers' and distillers' dregs and waste. This latter category includes distiller's dried grains with solubles (DDGS), a co-product of ethanol production that is used to feed livestock.

The quadrupling of U.S. wheat and rice exports to Mexico during the NAFTA period has helped to limit a decrease in Mexican wheat consumption and boost Mexican rice consumption. Mexico's population grew from 90 to 112 million (25 percent) between 1993 and 2010, but the area planted with rice and wheat in Mexico is lower than it was during the early 1990s.¹³ In 2010, annual per capita wheat consumption in Mexico equaled about 56 kilograms, 8 percent lower than in 1993, while per capita rice consumption equaled about 7.3 kilograms, 35 percent higher than in 1993. In 2010, U.S. rice exports to Mexico reached about 807,000 metric tons, a level just short of the record high in 2009. Even though rice is a staple food for most lower-income families in Mexico, per capita rice consumption in the country is still low and Mexico continues to be a growth market for U.S. rice exporters (Juarez and Ford, 2010).

U.S. Corn Exports to Mexico More Than Quadruple in Volume

NAFTA has provided much of the legal framework for a tremendous expansion in U.S. corn exports to Mexico. Compared with their average annual volume during the decade prior to NAFTA (1984-93), these exports have more than quadrupled. The export volume for 2010, 9.7 million metric tons, included 7.9 million metric tons of conventional corn, 1.6 million metric tons of DDGS, and 160,000 metric tons of cracked corn, which consists of broken or ground kernels and is used as animal feed (fig. 6). U.S. corn exports (including cracked corn and DDGS) to Mexico accounted for 32 percent of Mexico's supply during 2005-09, compared with 14 percent during 1984-93. Yellow corn, used primarily as animal feed or to manufacture starch, makes up the bulk of U.S. corn exports to Mexico. White corn, used mainly to make tortillas and other corn-based foods, accounted for about 3 percent of these exports during 2005-09.

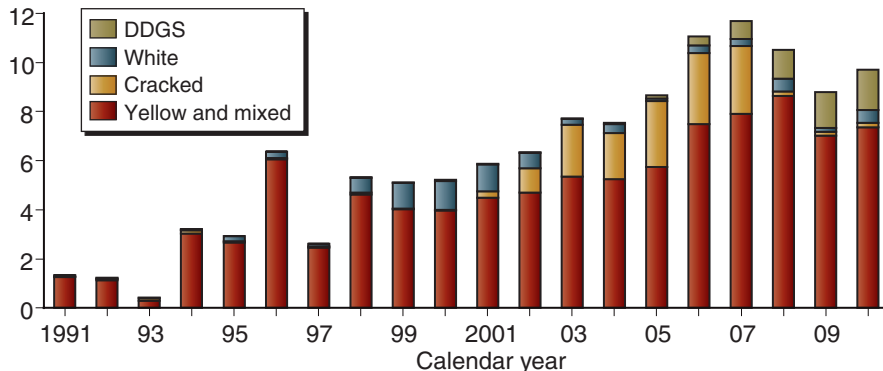
Prior to NAFTA, Mexico strictly regulated corn imports through the use of licensing requirements. As part of NAFTA, Mexico established a set of transitional duty-free TRQs for U.S. and Canadian corn that gradually expanded during the period 1994-2007 and were finally eliminated in 2008. These

¹³By comparison, Canada's population increased from 29 to 34 million (16 percent) between 1993 and 2010, while the U.S. population grew from 260 to 310 million (19 percent).

Figure 6

Distiller's dried grains with solubles complement U.S. corn exports to Mexico

Million metric tons



Note: DDGS = distiller's dried grains with solubles. Yellow and mixed corn exports are calculated by subtracting white corn exports from total corn exports. The harmonized tariff system defines DDGS and cracked corn (broken or ground kernels) as distinct commodities from corn.

Source: USDA, Economic Research Service using data from U.S. Department of Commerce, Census Bureau, *Foreign Trade Statistics*, as cited by USDA/FAS (2011a) (total corn and cracked corn exports), and USDA/AMS (1991-2005, 2006-11) (white corn exports).

TRQs were far too small to accommodate Mexico's growing demand for corn, and to remedy this constraint, the Mexican Government customarily issued import permits beyond the amount required by NAFTA at tariff rates far below the over-quota tariff allowed by NAFTA, particularly for yellow corn. Cracked corn was not covered by the transitional TRQs, and as recently as 2007, U.S. cracked corn exports to Mexico were as high as 2.7 million metric tons. With the end of NAFTA's transitional restrictions, Mexico's cracked corn imports have been replaced almost in their entirety by imports of conventional corn.

Mexican corn production has increased during the NAFTA period in response to rising demand. During 2005-09, average annual production was 61 percent higher than the corresponding average during 1984-93 (fig. 7). Much of this increase stems from the devotion of more irrigated land to corn and the cultivation on those lands of new hybrids that provide yields comparable to those in the United States. Rainfed cultivation of corn also has trended upward, due in part to yield improvements. Rainfed lands account for about 55 percent of Mexican corn production, and a year with unusually dry weather can negatively affect the country's total corn production, as was the case in Mexico's 2009 agricultural year.

Mexico currently prohibits the planting of genetically modified (GM) corn in its territory, but experimental trials of GM corn in Mexico have been underway since October 2009. Some Mexican corn farmers may already have planted GM varieties without official permission. In September 2008, SENASICA, Mexico's agency concerned with sanitary and phytosanitary conditions in the agrifood sector,¹⁴ announced that it had detected about 70 hectares of GM corn planted in the State of Chihuahua (SAGARPA, 2008). In January 2009, the Secretariat of the Commission for Environmental Cooperation (CEC)¹⁵ received a citizen submission from several agricultural and environmental organizations asserting that the Mexican Government

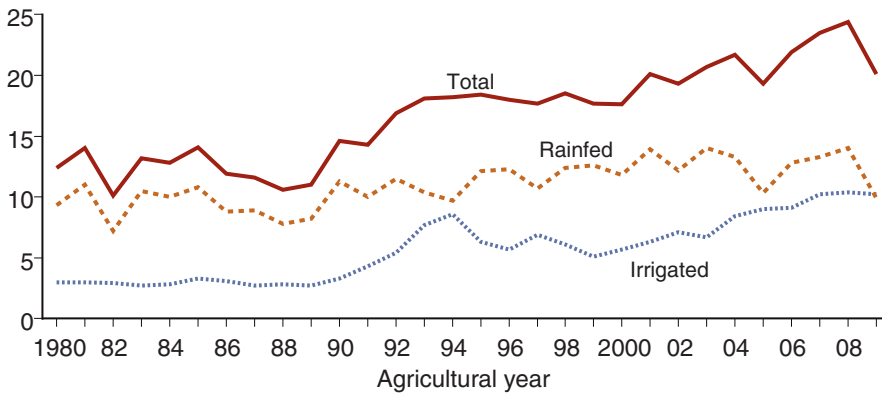
¹⁴SENASICA stands for the National Service for Animal and Plant Health, Food Safety, and Quality (Servicio Nacional de Sanidad, Inocuidad y Calidad Agroalimentaria). It is part of Mexico's Secretariat of Agriculture, Livestock, Rural Development, Fishing, and Food (SAGARPA—Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca, y Alimentación), and its responsibilities roughly correspond to those of USDA's Animal and Plant Health Inspection Service (APHIS) and Food Safety and Inspection Service (FSIS).

¹⁵The CEC is the international organization formed by the NAFTA countries in partial fulfillment of the North American Agreement for Environmental Cooperation, the environmental accord that accompanied NAFTA. Information about the CEC's activities is available on its website: www.cec.org.

Figure 7

Mexican corn production has increased during the NAFTA period

Million metric tons



Source: USDA, Economic Research Service using data from SAGARPA/SIAP (2011a).

is not effectively enforcing its laws concerning the control, inspection, and investigation of gene flow allegedly originating from GM corn in Chihuahua. The CEC Secretariat is not a court, but it is empowered to produce a Factual Record regarding citizen submissions on enforcement matters. In December 2010, the CEC concluded that the submission did not warrant the development of a factual record since assertions raised in the submission are subject to pending proceedings in Mexico.

Barriers Removed From U.S.-Canada Trade in Wheat and Wheat Products

CUSTA and NAFTA contributed to expanded U.S.-Canada trade in wheat and wheat products (see app. tables 4-5) by removing a number of significant barriers to this trade. The agreements eliminated the tariffs that formerly governed bilateral trade in wheat and wheat products, as well as Canada’s licensing requirements for the importation of U.S. wheat and wheat products and its subsidies for shipping grain to the United States through the Port of Vancouver, as part of Canada’s Western Grain Transportation Act (WGTA). Some of the tariffs in effect prior to CUSTA were fairly high. For instance, certain types of pasta traded between the two countries faced tariffs as high as 17.5 percent, and U.S. wheat flour exports to Canada were subject to a tariff that would have had an ad valorem equivalent of about 12 percent in 2010.

During the first 5 years of CUSTA (1989-93), U.S. wheat exports from Canada increased from an annual average of about 274,000 metric tons during 1984-88 to nearly 1.8 million metric tons in 1993. This increase was due not only to the trade policy changes fostered by CUSTA and NAFTA but also to new international trading rules within the URAA that required Canada to eliminate the WGTA’s transportation subsidies for moving grains from producing areas to the country’s export terminals. Removal of these subsidies encouraged less of an east-west orientation and more of a north-south orientation for Canadian wheat shipments.¹⁶ Exchange rates (a relatively weak Canadian dollar) also played an important role in increased U.S. demand for Canadian wheat during the 1990s. Today, wheat from Canada is a routine but small component of U.S. wheat supply. An annual average of 2.2

¹⁶In recent years, Canadian wheat exports have made much greater use of newly expanded seaports, such as Churchill on the Arctic Ocean.

million metric tons was imported from Canada during 2006-10, accounting for about 2 percent of the U.S. wheat supply.

Several factors continue to inhibit the integration of the North American market for wheat and wheat products. The wheat trading practices of the Canadian Wheat Board continue to be an issue of contention for the United States. The CWB is a shared governance marketing organization that operates as a national monopsony (i.e., single buyer) for wheat and barley produced in Alberta, Manitoba, Saskatchewan, and the Peace River District of British Columbia. For many years, the U.S. Government and the U.S. wheat industry have argued that the CWB “takes sales” from U.S. wheat producers through various noncommercial activities, including the cross-subsidization of sales among various buyers, the sale of wheat with higher protein content at the price of lower protein product, and the use of its special privileges, such as government support of its borrowing of funds, to generate a “financial cushion” to discount export prices (Goodloe, 2004; Schnepf, 2004).

Canada’s current government has sought to end the CWB’s status as the sole buyer and marketer of Canadian wheat and barley, with mixed results. In 2007, the government amended the Canadian Wheat Board Regulations and removed barley from the CWB’s single desk trading authority (Agriculture and Agri-food Canada, 2008). A Canadian federal court, however, reversed the government’s amendments, stating that any changes to barley or wheat marketing must be done through changes to legislation and not through changes to regulation. Skirmishes between the CWB and the Canadian Government continue on such issues as the legality of the CWB using its funding for its own advocacy campaigns and the definition of the CWB’s electorate. In January 2010, Canada’s Supreme Court left in place a government directive issued in 2006 that prohibits the CWB from spending funds “on advocating the retention of its monopoly powers” (Gray, 2010; Office of the Minister of the Agriculture and Agri-food and Minister for the Canadian Wheat Board, 2006). And, in May 2010, Canada’s agricultural minister introduced a bill in the House of Commons that would limit the CWB’s electorate to producers who had produced or were entitled to receive at least 40 tons of wheat, oats, barley, rye, flaxseed, rapeseed, and/or canola in the crop year in which the election takes place or the previous 2 crop years (Mahabir, 2010).

The CWB is not the only issue of concern in bilateral wheat trade. While many of the Canadian regulations that discriminated against U.S. grain at Canadian grain elevators and within the Canadian rail transportation system have been amended during the CUSTA-NAFTA period (e.g., Canada Grain Act, Canada Transportation Act, and removal of the Kernel Visual Distinguishability requirements), Canada continues to require that seed be registered for use in Canada. This regulation limits the ability of Canadian farmers to grow U.S. seed varieties.

Livestock and Animal Product Markets Experience Further Integration

Tariff elimination for the numerous livestock and animal products addressed by NAFTA concluded on January 1, 2008, with the removal of Mexico's TRQ on U.S. nonfat dry milk (NFDM). However, several U.S. animal product exports to Mexico—including pork and several categories of cheese—are now subject to retaliatory tariffs in conjunction with the trucking dispute (see table 3). Beyond the retaliatory tariffs, the opportunities for free trade to advance the integration of North America's livestock and animal product sectors are not yet exhausted, since NAFTA did not liberalize dairy and poultry trade between Canada and the United States or between Canada and Mexico. These exemptions stem from Canada's continued reluctance to abandon supply management in its dairy and poultry sectors. For those sectors where regional free trade in livestock and meat products already exists, the key to further integration lies primarily in greater coordination of sanitary regulations, more effective control of animal diseases, and the prevention of unsanitary conditions that could lead to trade restrictions.

U.S. Nonfat Dry Milk and Chicken Leg Quarters Gain Duty-Free Access to Mexico

Three aspects of North America's livestock and animal product markets have become more integrated in recent years. First, U.S.-Mexico dairy trade is now completely free of tariffs and quotas, except for selected categories of U.S. cheese covered by the retaliatory tariffs mentioned previously. NFDM is the leading U.S. dairy export to Mexico, and it was the only item among livestock and animal products subject to a 14-year, transitional TRQ under NAFTA. Elimination of this restriction has led to higher levels of U.S. NFDM exports to Mexico. In 2010, these exports equaled about 124,000 metric tons, compared with an annual average of 81,000 metric tons during 2003-07 (the last 5 years of the TRQ).

A second aspect of the livestock and meat sectors that has become more integrated recently is U.S. exports of chicken leg quarters (CLQs) to Mexico. A temporary safeguard TRQ on this trade expired at the same time as Mexico's TRQ on U.S. NFDM. However, the safeguard on CLQs was the result of a bilateral agreement signed by the U.S. and Mexican Governments in July 2003 and was not one of NAFTA's transitional restrictions. The end of the safeguard has allowed larger volumes of U.S. CLQs into the interior of Mexico. In 2010, Mexican imports of chicken legs, thighs, or legs and thighs in one piece (the category in the import data that includes CLQs) from the United States totaled 256,000 metric tons, compared with 173,000 metric tons in 2007, the last year of the safeguard (Secretaría de Economía, as reported by Global Trade Information Services, 2011). In February 2011, the Mexican Government launched an antidumping investigation concerning chicken legs and thighs imported from the United States (Secretaría de Economía, 2011b).

Cattle and Beef Sectors Continue Their Recovery From the BSE Discoveries of 2003

North America's cattle and beef sectors are a third aspect of the livestock and meat markets that has become more integrated in recent years. Establishment of greater control over the risk factors associated with bovine spongiform encephalopathy (BSE)¹⁷ has enabled the cattle and beef industries to recover, at least in part, from the economic disruptions that followed the discovery of this disease in Canada in May 2003 and in the United States in December 2003.¹⁸ In response to these discoveries, sanitary barriers were erected to prevent U.S. imports of Canadian cattle and beef, and many countries—including Mexico—imposed similar restrictions on imports from both Canada and the United States. In response, the NAFTA governments made a concerted effort over the next 4 years to coordinate their sanitary policies related to BSE, to upgrade international standards in this area, and to achieve the resumption of regional cattle and beef trade by gradually modifying their sanitary requirements for specific types of cattle and beef, usually based on the age of the animal.¹⁹ In addition, the U.S. and Canadian Governments have worked to regain market access to non-NAFTA countries that had imposed import bans on U.S. and Canadian beef following the BSE discoveries.

The cattle and beef markets of Canada and the United States are gradually resembling those that existed before the BSE discoveries. In 2010, beef production in Canada and the United States was about 1 percent and 5 percent below their respective levels in 2002 (USDA/FAS, 2010), while beginning-of-the-year stocks of Canadian beef cows in 2011 were 7 percent below their 2002 level (USDA/FAS, 2011b). Reopening the U.S. border to Canadian cattle less than 30 months of age in 2005 and to Canadian cattle 30 months of age or older in 2007 has facilitated the reduction of these inventories, which increased to unusually high levels during the period when the border was closed.

Ultimately, how well North American beef sells outside the NAFTA region will indicate the extent to which the industry has recovered following the BSE discoveries. In 2010, U.S. beef exports to non-NAFTA countries were about 15 percent lower than they were in 2002. U.S. and Canadian beef exporters are working to reestablish their previous sales volumes in Japan and South Korea, where they have lost market share to Australia and New Zealand. While U.S. beef exporters have regained limited access to the markets of both Japan and South Korea, South Korea's beef market is still closed to Canadian product, even though the World Organization for Animal Health (known by its historical French acronym, OIE) recognizes both the United States and Canada as having a controlled risk of BSE. In 2009, the Canadian Government requested consultations about South Korea's restrictions on Canadian beef at the WTO. When that step was unsuccessful in effecting a change, the case moved into dispute resolution. The final report is expected in April 2011. Interestingly, Mexico has established itself as a beef exporter since the BSE discoveries of 2003 in Canada and the United States. In 2010, Mexican beef exports totaled \$288 million, with about one-fifth of these sales going to Japan.

¹⁷BSE is a fatal neurological disease in adult cattle that is also a concern to human health. Some studies have linked the agent that causes BSE to a similar disorder in humans, most likely through the consumption of food ingredients obtained from BSE-infected cattle (USDA/APHIS, 2006a).

¹⁸A total of 17 animals in Canada have been discovered to have BSE since May 2003. The most recent Canadian discovery (February 2010) was a 71-month-old beef cow in Alberta (Canadian Food Inspection Agency, 2010). In the United States, a total of 3 animals have been discovered to have BSE since May 2003. The most recent U.S. discovery (February 2006) was an animal of about 10 years of age in Alabama (USDA/APHIS, 2008). No BSE discoveries have been reported for Mexico.

¹⁹Detailed summaries of these efforts are available in Zahniser and Crago (2009) and Zahniser (2007).

China is the largest potential market outside the NAFTA region for North American beef, by virtue of its large population and rapidly growing per capita income. In July 2010, Canada and China agreed on the process for regained access to the Chinese market for boneless beef obtained from animals under 30 months of age and for tallow for industrial use (Lupescu, 2010: p. 12). The required assessment of the Canadian system has not yet been completed by the Chinese, however, so the timeline for the actual resumption of trade is uncertain. Technical discussions between the U.S. and Chinese Governments about U.S. access to China's beef market are scheduled for 2011 (USDA/OC, 2010), and the Mexican Government also is engaged in negotiations for access to the Chinese beef market.

Mexico's Pork and Beef Sectors Take Greater Interest in Asian Markets

U.S. and Canadian beef and pork producers have been active in trade outside the NAFTA region for more than half a century, and Mexico's beef and pork producers have done so for the last decade. In 2010, Mexico exported about 58,000 metric tons of pork (\$275 million) and 72,000 metric tons of beef (\$288 million) (Secretaría de Economía, as cited by Global Trade Information Services, 2011) worldwide. About 90 percent of Mexico's pork exports and 42 percent of its beef exports went to either Japan or South Korea, while the remainder went almost entirely to the United States.

The Mexican Government has been instrumental in securing market access for Mexico's pork and beef exports, playing a role similar to that of the governments of the United States, Canada, and many other countries on behalf of their respective meat sectors. Building upon its access to the Japanese and South Korean markets, the Mexican Government is negotiating for greater access to the red meat markets of China and Singapore. And, in 2010, it reached an agreement with Russia to export beef to that country (San Juan and Williams, 2010).

Regionalization of Sanitary Standards Facilitates Meat Trade

Both NAFTA and the URAA require, when possible, the regionalization of trade-related sanitary and phytosanitary standards. In the case of livestock and animal product trade, regionalization of sanitary standards allows exports to flow from regions within a country that are free of dangerous animal diseases, even if those diseases are endemic in another part of that country. Once an outbreak of a specific animal disease is identified, the national government of the importing country makes a risk assessment to determine if trade restrictions can be defined along regional lines in such a way that international trade may continue. Recognition of a disease-free or low-risk region, however, does not guarantee that meat processors in that region will be allowed to export their product. Processors also must be certified by their national governments as being eligible to export and may be subject to audits by the government of the importing country.²⁰ Such audits sometimes result in the decertification of individual meat processing plants, either on a temporary or a permanent basis.

²⁰USDA's Food Safety and Inspection Service (FSIS) is responsible for ensuring that meat, poultry, and egg products imported to the United States are produced under standards equivalent to U.S. inspection standards and are safe, wholesome, unadulterated, and properly labeled and packaged. In the countries that are eligible to export such products to the United States, FSIS certifies and decertifies establishments that are allowed to participate in this trade, and it audits the inspection systems of those countries. FSIS's audit reports and lists of foreign establishments are available at: www.fsis.usda.gov/Regulations_&_Policies/index_of_certified_countries/index.asp.

Regionalization has helped to facilitate meat trade within the NAFTA region. For example, the definition of Canada as a minimal-risk region for BSE by U.S. regulators in 2004 led to the resumption of Canadian cattle and beef exports to the United States several years later. Regionalization also has enabled U.S. poultry meat exports to Mexico to continue largely uninterrupted in the face of localized outbreaks of low pathogenic avian influenza in specific counties in the State of Arkansas in 2008 (Flores, 2008: p. 11) and in the States of Minnesota, Kentucky, and Tennessee in 2009 (San Juan, 2009; Williams, 2009).

Mexican authorities also have worked with their U.S. counterparts to regionalize U.S. sanitary standards related to Classical Swine Fever (CSF) and Exotic Newcastle Disease (END)—an effort that has fostered modest levels of Mexican pork and poultry meat exports to the United States over the past decade. In 2010, U.S. imports of poultry meat and pork from Mexico equaled about \$12 million and \$14 million, respectively. As of October 2008, the United States recognized nine Mexican States to be free or at low risk of CSF and three Mexican States to be free of END (USDA/APHIS, 2008). Mexican authorities, however, assert that they have much wider geographic control over these two diseases. In January 2009, the Mexican Government declared its entire territory to be free of CSF, and as of February 1, 2011, it recognized all of Mexico except the Federal District and the States of Mexico and Oaxaca to be free of END (SAGARPA/SENASICA, 2011). However, the Mexican Government announced several recent detections of END in January and March 2011 involving a poultry fattening farm in the State of Baja California, a poultry breeding farm in the State of Hidalgo, and a zoo in Acapulco, Guerrero (OIE, 2011; Associated Press, 2011). By comparison, the United States considers CSF to have been eradicated within the United States and Canada; the last outbreak of END in the United States took place during 2002-03.

A Highly Integrated Fruit and Vegetable Market

Integration of North America's fruit and vegetable markets has generally been at a high level for a long time. Many aspects of regional fruit and vegetable trade have been free of tariffs and quotas for more than a decade, and with the removal of NAFTA's last set of agricultural trade restrictions in 2008, regional fruit and vegetable trade is now free of such obstructions, except for those products covered by the retaliatory tariffs associated with the trucking dispute. Food safety and phytosanitary standards continue to be issues of concern for produce trade in the NAFTA region.

Fruit and vegetable trade among the NAFTA countries has increased substantially since the agreement's implementation in 1994, and Mexican growers, in particular, have benefited from this expansion. Mexican fruit and vegetable exports to the United States have more than tripled during the NAFTA period, approaching \$7.1 billion in 2010. These exports have their roots in the development and growth over the past half century of a vibrant Mexican fruit and vegetable sector that is strongly oriented toward the U.S. market. Many of the U.S. import tariffs on Mexican produce in effect prior to NAFTA were designed on a seasonal basis (i.e., they were scheduled for the part of the year when domestic, in-season production was on the market). Some of these tariffs were quite high. For example, Mexican asparagus faced a seasonal tariff of 25 percent.

U.S. fruit and vegetable exports to Mexico have more than tripled since NAFTA's implementation, equaling about \$984 million in 2010. These exports have benefited from the rapid expansion of Mexico's supermarket sector over the past two decades. Prior to NAFTA, many U.S. producers already had procurement relationships with supermarket chains in Mexico, and new relations emerged between buyers and suppliers following the agreement's implementation (Tropp et al., 2002: p. ix). Today, high-quality transportation services are available to transport perishable products from the United States to destinations not only throughout Mexico but also beyond Mexico's southern border into Central America, although there is still room to improve the handling of frozen and refrigerated foods (McClellan, 2011). Several U.S. supermarket chains currently operate in Mexico. As of March 2011, Texas-based H-E-B had a total of 32 stores in the States of Coahuila, Guanajuato, Nuevo León, San Luis Potosí, and Tamaulipas (Supermercados Internacionales H-E-B, 2011), and Wal-Mart de México was operating 1,288 stores featuring grocery sales (Wal-Mart de México, 2011).

Completion of U.S.-Canada trade liberalization for fruit and vegetables, along with broader application of greenhouse technologies to Canadian vegetable production, has fostered greater integration between the fruit and vegetable markets of the two countries. Canada has emerged as an important supplier to the United States of fresh greenhouse tomatoes, peppers, and cucumbers, fresh-market mushrooms, and fresh and frozen potatoes (app. table 5). U.S. tariffs on Canadian fruit and vegetables were generally small prior to CUSTA, with the exception of fresh mushrooms, which faced restrictions with an ad valorem tariff equivalent of about 28 percent on a trade-weighted,

annual basis. U.S. growers have been active in the Canadian market for some time, particularly during the winter months. In 2010, U.S. fruit and vegetable exports to Canada approached \$4.3 billion.

U.S. Dry Bean Exports to Mexico Enter Fourth Year Without Tariff and Quota Restrictions

Dry beans are the main commodity among fruit and vegetables for which transitional restrictions under NAFTA were eliminated in 2008. For the period 1994-2007, NAFTA specified gradually restrictive TRQs for U.S. and Canadian exports to Mexico of dry beans belonging to the species *Phaseolus vulgaris*, or “common” beans, for short. Common beans encompass many varieties, including black, pinto, kidney, navy, Great Northern, small white, pink, cranberry, and small red beans. Under NAFTA, U.S. dry beans have become a larger and steadier portion of Mexico’s dry bean supply. Still, U.S. dry bean exports to Mexico continue to fluctuate because Mexican production varies based on the weather (fig. 8). In marketing year 2009/10 (September 2009 to August 2010), U.S. exports of dry common beans to Mexico equaled about 143,000 metric tons, compared with an annual average of 72,000 metric tons during marketing years 2002/03 to 2006/07 (the last 5 marketing years completely subject to the TRQ).²¹

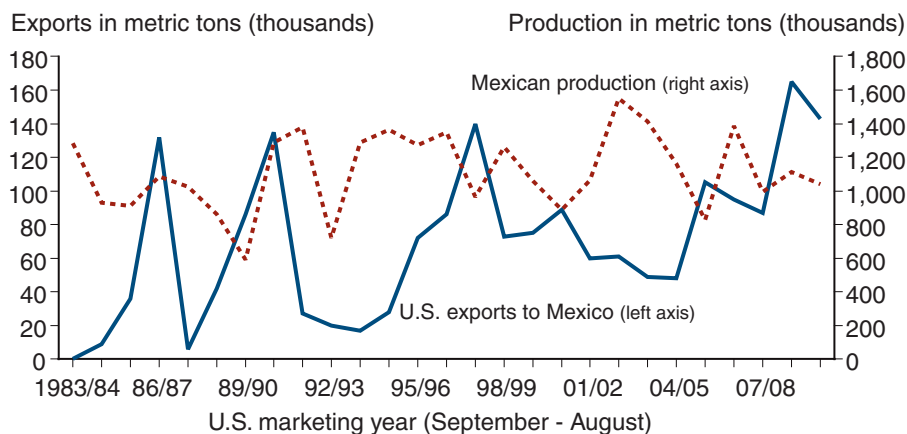
Importance of Imports to U.S. Food Supply Increases

As a result of the heightened integration of North America’s fruit and vegetable market, imports from the NAFTA countries have increased in their

²¹A recent ERS report co-authored with investigators from the Mexican agricultural secretariat (Zahniser et al., 2010) examines the outlook for the U.S. and Mexican dry bean sectors after the completion of NAFTA’s transition to free regional trade in dry beans.

Figure 8

U.S. dry beans make up a larger and steadier portion of Mexican supply



Note: The production statistics in this figure correspond to Mexico’s agricultural year, which is divided into two production cycles: fall/winter and spring/summer. For dry beans, Mexico’s 2009 agricultural year covers the crops planted from October 2008 to March 2009 (fall/winter 2008/09) and from April to September 2009 (spring/summer 2009). To compare U.S. exports with Mexican production, we matched U.S. marketing years and Mexican agricultural years so that the starting year of the marketing year is the same number that denotes the agricultural year. For instance, the U.S. marketing year 2009/10 is matched with Mexico’s 2009 agricultural year. This allows us to compare the quantities of U.S. and Mexican dry beans that are on the market at roughly the same time.

Source: USDA, Economic Research Service calculations based on data from USDA/FAS (2011a) and SAGARPA/SIAP (2011a).

share of the U.S. food supply. In 2008, Mexico and Canada supplied about 12 percent of the fresh or frozen fruit available in the United States and 15 percent of the available fresh or frozen vegetables. In 1990, these shares each equaled 6 percent. Changing diets and the development of off-season supplies of fresh produce outside the United States have fostered a shift in U.S. consumption away from processed fruits and vegetables and toward fresh produce. In 2008, fresh produce accounted for 49 percent of the U.S. fruit and vegetable supply (excluding juice), up from 45 percent in 1990.²²

Net imports (i.e., imports minus exports) provide further evidence of the increased reliance on imports to meet U.S. fruit and vegetable demand (table 5). Prior to NAFTA, net imports from Mexico exceeded 15 percent of the U.S. supply for a wide variety of produce, including fresh limes, fresh mangos, fresh papayas, fresh asparagus, bell peppers, broccoli and cauliflower for processing, chile peppers, fresh cucumbers, squash, and fresh tomatoes. Since NAFTA's implementation, several of these commodities—fresh limes, fresh papayas, watermelon, squash, and fresh tomatoes—increased by at least 10 percentage points in this measure. Net imports from Canada now account for a larger portion of the U.S. supply of bell peppers, fresh cucumbers, and fresh tomatoes than they did in the early 1990s.

²²The statistics in this paragraph were calculated using U.S. per capita food availability data from USDA/ERS (2010), and import data from U.S. Department of Commerce, Census Bureau, *Foreign Trade Statistics*, as cited by USDA/FAS (2011).

Table 5

Net imports from Mexico and Canada now account for a larger share of the availability of certain fruit and vegetables in the United States than they did before NAFTA

Commodity	Net imports divided by U.S. disappearance						Per capita use	
	From World		From Mexico		From Canada		Average, 1991-93	Average, 2007-09
	1991-93	2007-09	1991-93	2007-09	1991-93	2007-09		
Percent						Kilograms		
Selected fruit:								
Grapes, fresh ¹	15	24	4	8	-13	-8	3.4	3.7
Limes, fresh ¹	66	100	82	98	-3	0	0.4	1.1
Mangos, fresh ²	92	100	85	65	-2	0	0.4	0.9
Papayas, fresh	8	91	27	59	-9	-2	0.1	0.5
Strawberries, fresh	-8	-5	2	7	-9	-11	1.6	3.0
Watermelon	1	16	5	13	-5	-7	6.3	6.8
Selected vegetables:								
Asparagus, fresh	12	79	30	20	-13	-2	0.3	0.6
Bell peppers	5	45	13	20	-9	1	2.5	4.3
Broccoli and cauliflower, processing ³	66	90	45	47	0	0	1.4	1.4
Chile peppers	35	76	16	45	-3	-2	2.3	2.8
Cucumbers, fresh	28	54	31	40	-6	3	2.2	2.9
Onions, fresh	-20	3	7	4	-4	-2	7.4	9.3
Squash ⁴	23	48	19	41	-1	-1	1.7	1.9
Tomatoes, fresh	9	36	16	36	-7	0	7.1	8.6

¹For these commodities, marketing years 1990/91, 1991/92, and 1992/93 are compared with marketing years 2006/07, 2007/08, and 2008/09.

²Net imports also include mangosteens and guavas and some dried product.

³Exports are assumed to equal zero in the net import calculations.

⁴Squash exports are estimated as 5 percent of miscellaneous vegetable exports in the net import calculations.

Source: Author presentation of data from Lucier and Glaser (2010); Perez, Dohlmán, and Plattner (2010); and USDA, Foreign Agricultural Service (2011a) (trade data).

President Obama Signs the FDA Food Safety Modernization Act

In January 2011, President Obama signed into law the FDA Food Safety Modernization Act (FSMA), which makes a number of significant regulatory changes concerning fruit and vegetable production and trade. In the United States, the U.S. Food and Drug Administration (FDA) is the Federal agency with primary responsibility for ensuring the safety of domestic and imported fresh produce.²³ Article 712 of NAFTA recognizes the right of each member country to use sanitary and phytosanitary measures “in order to protect human, animal, or plant life or health in its territory,” as long as those measures are based on scientific principles, do not discriminate among the NAFTA partners, and are not trade restrictions in disguise.

The FSMA contains many provisions that are likely to affect U.S. agricultural trade with Canada and Mexico, four of which are discussed here. First, not later than 1 year after the FSMA’s enactment, the FDA is required to publish a notice of proposed rule-making to establish science-based minimum standards for the safe production and harvesting of those types of raw fruit and vegetables for which the FDA determines that such standards minimize the risk of serious adverse health consequences or death. The FDA is then required to adopt a final regulation to provide for minimum science-based standards for those fruit and vegetables. At times, the NAFTA governments and private-industry groups have adopted mandatory good agricultural practices (GAPs) in the field and good manufacturing practices (GMPs) in packing facilities as a way to address outbreaks of foodborne illnesses related to cross-border produce trade. Mexico’s SENASICA applied this approach to green onions at the behest of Mexican growers following the outbreaks of foodborne illness associated with green onions in 2003 (Calvin et al., 2004). A similar approach was instituted in 2005 following *Salmonella* outbreaks associated with Mexican cantaloupe in 2000, 2001, and 2002 (SAGARPA/SENASICA, 2008; FDA, 2008; and Green et al., 2006).²⁴

Second, the FSMA requires the FDA to target inspection resources by identifying high-risk facilities and allocate resources to the inspection of facilities and at ports of entry according to known safety risks. The term “facility” means a domestic facility or a foreign facility that is required to register under section 415 of the Federal Food, Drug, and Cosmetic Act. Risk factors specified by the FSMA for high-risk facilities include but are not limited to the known safety risks of the food in question, the compliance history of the facility, and the rigor and effectiveness of the facility’s hazard analysis and risk-based preventive controls. Risk factors specified for allocation of resources to inspect any article of food imported into the United States at ports of entry include but are not limited to the known safety risks of the countries through which the food is transported, the compliance history of the importer, the rigor and effectiveness of the importer’s activities to satisfy the requirements of the foreign supplier verification program, and the importer’s participation, or lack thereof, in the voluntary qualified importer program.

Third, the FSMA requires the FDA to implement more frequent inspections of both U.S. and foreign facilities. Domestic high-risk facilities must be inspected at least once during the first 5 years of the Act and at least once

²³The FDA is the Federal agency responsible for the safety of all food products, except for meat, poultry, and some aspects of eggs, which are the domain of USDA’s Food Safety and Inspection Service.

²⁴U.S. cantaloupe imports from Mexico have been slow to return to their previous levels, as Mexican growers either concentrated on their domestic market or shifted to other crops. In 2010, U.S. cantaloupe imports from Mexico equaled about 28,000 metric tons, compared with 197,000 metric tons in 1999.

during each 3-year period that follows. Domestic facilities not deemed to be of high risk must be inspected at least once during the first 7 years of the Act and at least once during each 5-year period that follows. With respect to foreign facilities, the FSMA requires the FDA to inspect not fewer than 600 facilities during the first year of the Act, and during each of the next 5 years, not fewer than twice the number of foreign facilities inspected in the previous year. In order to work more closely with foreign regulatory authorities, the FDA has already positioned staff in about a dozen foreign locations, including a post in Mexico City opened in 2009 as part of its Latin American Office (FDA, 2009).

Fourth, to avoid placing an undue burden on smaller farms and food producers, the FSMA provides an exemption for direct farm marketing from some of its new provisions and implementing regulations. To qualify for this exemption in a given calendar year, a farm must meet both of the following conditions: (1) during the previous 3-year period, the average annual monetary value of the food sold by such farm directly to qualified end-users during such period exceeded the average annual monetary value of the food sold by such farm to all other buyers during such period; and (2) the average annual monetary value of all food sold during such period was less than \$500,000, adjusted for inflation. The term “qualified end-users” with respect to a food is defined by the FSMA to mean (1) the consumer of the food; or (2) a restaurant or retail food establishment located in the same State as the farm or not more than 275 miles from the farm.

The Search for Risk-Mitigating Tools for Regional Produce Trade Continues

In 1999, a group of produce and transportation companies from each NAFTA country formed the Fruit and Vegetable Dispute Resolution Corporation (DRC), a private, nonprofit organization whose mission is “to provide the North American produce trade with harmonized standards, procedures and services necessary to avoid and resolve commercial disputes in a timely, cost-effective manner” (DRC, 2010b).²⁵ The original concept of a North American dispute resolution mechanism for regional produce trade was inspired by the Perishable Agricultural Commodities Act (PACA) of 1930, which was enacted to promote fair trading practices in the U.S. fruit and vegetable industry. Under PACA, sellers must ship the quantity and quality of produce specified in their contracts, and buyers must accept shipments that meet contract specifications.

One of the DRC’s major achievements is a multistep dispute resolution system that begins with preventative activities and cooperative problem-solving and then proceeds gradually to more binding measures. In addition, the DRC offers assistance to its members on a fee-for-service basis in disputes with nonmembers (DRC, 2008). Gómez and Rizwan (2010) find that the DRC has facilitated produce transactions within the NAFTA region and has provided an improved setting for resolving disputes in the fruit and vegetable trade—particularly in Canada, where the pre-existing licensing and arbitration system suffered from some deficiencies. According to Gómez and Rizwan, the DRC addressed 1,285 disputes from 2000 to 2010 involving produce with a total nominal value of nearly \$32 million. About 60 percent of these

²⁵The DRC was established in response to Article 707 of NAFTA, which called for an advisory committee on private commercial disputes regarding agricultural goods.

disputes stemmed from differences between the buyer and seller about the quality of the delivered produce.

U.S. and Canadian firms currently make up the majority of the DRC's members, while the organization's Mexican membership primarily consists of exporters rather than importers. In 2007, the DRC closed its office in Mexico, citing the country's lack of infrastructure for destination inspection and limited interest among Mexican wholesalers and retailers (DRC, 2007). This low level of interest may also reflect the relative size of U.S. fresh or frozen fruit and vegetable exports to Mexico, which averaged about \$619 million per year during 2008-10, compared with an annual average of \$5.6 billion of corresponding imports from Mexico.

Even with the DRC in place, Canada still does not have a statute that effectively protects produce suppliers from buyers that default on their payment obligations. In contrast, Canadian suppliers to U.S. firms are protected by the PACA Trust provisions. In March 2010, the Canadian Government established a Federal-Provincial task force to assess the extent of payment problems in the Canadian produce industry and to explore options for risk mitigation tools in the Canadian marketplace. Recommendations on possible tools are expected by mid-2011. The task force was created in response to requests from the U.S. and Canadian private sectors as well as from the U.S. Government. The North American Trade Committee (NATC), a trilateral entity made up of industry organization representatives from each NAFTA country, has expressed support for the creation of financial risk mitigation provisions in Canada similar to the mechanisms available under the PACA Trust (North American Trade Committee, 2011).

Integration of U.S.-Mexico Sugar and Sweetener Markets Reaches High Level

Integration of the U.S. and Mexican markets for sugar and other sweeteners has reached a high level, following the start of bilateral free trade in these products in fiscal year (FY) 2008. The foundation for this development was laid in 2006, when the U.S. and Mexican Governments settled a protracted dispute about how to implement NAFTA's provisions for sugar and sweeteners. Since then, trade in sugar and fructose between the two countries has increased significantly (fig. 9). Imports from Mexico accounted for about 8 percent of the U.S. sugar supply during FYs 2008-10, compared with a negligible share prior to NAFTA.²⁶ Meanwhile, high-fructose corn syrup (HFCS) has gained greater acceptance among Mexican manufacturers of soft drinks and processed foods, although the United States still uses more HFCS on a per capita basis than does Mexico. In FY 2010, Mexico's per capita domestic sweetener use included an estimated 13 kilograms of HFCS, compared with 23 kilograms for the United States (Haley and McConnell, 2010: p. 13). The high cost of sugar relative to HFCS is an important driver of increased Mexican use of HFCS. By contrast, integration of the U.S. and Canadian sugar markets remains at a low level because CUSTA exempted U.S.-Canada sugar trade from the process of regional trade liberalization. Nevertheless, the U.S. and Canadian markets for processed foods are highly integrated, and many processed foods traded between the two countries contain sweeteners (app. tables 4-5).

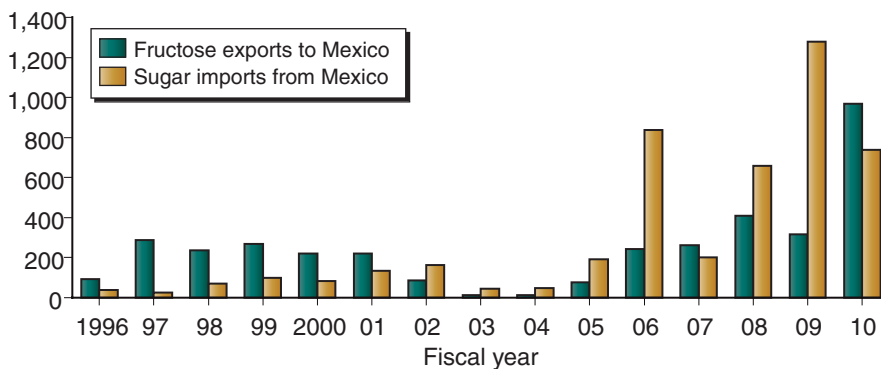
Access to the integrated U.S.-Mexico sugar market by other countries has two control points—one in Washington, DC, and one in Mexico City—as both the U.S. and Mexican Governments have the option of announcing sugar import quotas beyond the minimum amounts required by their multilateral commitments at the WTO and their free-trade agreements other than NAFTA. Since FY 2008, USDA has twice increased the raw sugar TRQ

²⁶The figure of 8 percent is calculating using the import and domestic use data in Haley (2011a).

Figure 9

Resolution of the U.S.-Mexico sugar and sweetener dispute has allowed for substantial trade in sugar and fructose

1,000 metric tons



Fructose is defined to include high-fructose corn syrup (HFCS) and crystalline fructose.

Source: USDA, Economic Research Service using data from USDA/FAS (2011a) (sugar imports) and Haley (2011b) (fructose exports).

beyond the United States' international commitments—in April and July 2010. Meanwhile, the Mexican Government's recent practice has been to pursue a less restrictive sugar import policy than required by its international obligations, with the expressed intention of assuring an affordable domestic supply. For calendar year 2010, Mexico announced duty-free import quotas for sugar totaling 350,000 metric tons. In contrast, Mexico's minimum WTO quota for sugar and sugar-containing products is 183,800 metric tons, subject to a 50-percent tariff. Because of NAFTA's rules of origin, sugar traded between the United States and Mexico must originate in one of the two countries to qualify for duty-free status. It would be possible for Mexico to export more of its domestic sugar production to the United States by consuming more sugar imported from non-NAFTA countries, but this would come at the risk of depressing the prices received by Mexican sugar producers and exporters.

Resolution of Chapter 11 Cases on Mexico's HFCS Tax

The World Bank's International Centre for Settlement of Investment Disputes (ICSID) has resolved one of the last remaining issues associated with the U.S.-Mexico sugar and sweetener dispute, the validity of a sales tax formerly levied by the Mexican Government on soft drinks and other beverages containing any sweetener other than cane sugar. In November 2007, August 2009, and September 2009, ICSID arbitral panels rendered awards in three separate cases to U.S. firms that had contested the tax. These challenges took place in accordance with procedures outlined in Chapter 11 of NAFTA, which governs the treatment of investors by member countries, and as a group, required more than 5 years to adjudicate. The awards in these cases are reportedly quite large, reflecting the potential size of the sweetener market in Mexico: \$33.5 million plus interest to be shared by Archer Daniels Midland Company and Tate and Lyle Ingredients Americas, Ltd. (World Bank/ICSID, 2011), a reported \$58.4 million to Corn Products International, and a reported \$77.3 million to Cargill, Incorporated (Frankel, 2009).²⁷

²⁷Details about these cases are available on the ICSID website (<http://icsid.worldbank.org>), although the decisions and awards for each case have not yet been published.

Multilateral Trade Liberalization Reshapes the Cotton, Textile, and Apparel Markets

North America's cotton, textile, and apparel markets became highly integrated during NAFTA's first decade, as a pattern of specialization emerged in which the United States supplies raw cotton and some intermediate inputs to Mexican textile and apparel producers and Mexico exports some of its textile and apparel output to the United States. This pattern still persists, but to a much lesser extent because of the WTO's Agreement on Textiles and Clothing. This multilateral trade agreement gave China, Vietnam, Pakistan, India, and other non-NAFTA countries much broader access to the North American market, effectively diminishing the preferential access that Mexico's textile and apparel sector previously had enjoyed in the United States and Canada.

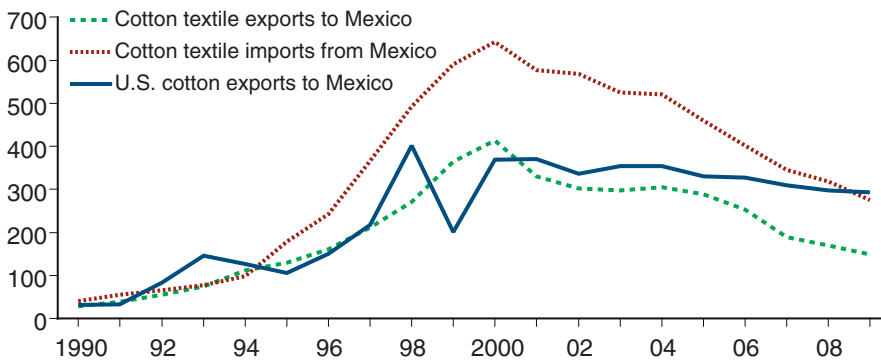
Since 2000, U.S. cotton exports to Mexico have declined at a slower rate than U.S.-Mexico trade in cotton textiles (fig. 10), while Honduras, a member country of the Central America-Dominican Republic-United States Free Trade Agreement (CAFTA-DR), has surpassed Mexico as the leading destination for U.S. exports of cotton textiles. Four other CAFTA-DR countries—the Dominican Republic, El Salvador, Guatemala, and Nicaragua—are in the third and fourth, sixth, and seventh positions.²⁸ This suggests that some of the U.S. partnerships with Mexican textile and apparel manufacturers have shifted to the CAFTA-DR region, even though Mexico's remaining textile and apparel firms continue to rely on U.S. cotton. Meanwhile, China, Pakistan, and India have surpassed Mexico as suppliers of cotton textiles to the United States. Canada is no longer among the leading exporters of cotton textiles to the United States and has largely shifted away from the importation and milling of cotton.

²⁸Costa Rica, the other member country of CAFTA-DR, was the 20th-leading destination of U.S. cotton textile exports in 2009.

Figure 10

U.S. cotton exports to Mexico are declining at a slower rate than bilateral trade in cotton textiles

Thousand metric tons



Source: USDA, Economic Research Service using data from USDOC/Census Bureau (2010) (textile trade) and USDA/FAS (2011a) (cotton exports).

What Does North America's Future Hold?

The implementation periods established by NAFTA have expired, and the task of eliminating duties and quantitative restrictions as specified by the agreement has been completed. While NAFTA created a number of mechanisms to promote further integration, as described below, the agreement does not contain broad policy directives calling for greater integration once regional trade liberalization has been achieved. Thus, the NAFTA governments are working within the existing framework of the free-trade area as they strive to increase the fluidity of cross-border economic activity—an approach that they have pursued throughout NAFTA's existence.²⁹

For instance, the NAFTA governments have long been aware of the importance of regulatory coordination to agricultural trade, and they have fine-tuned many of their sanitary, phytosanitary, and other regulatory measures in ways that have increased opportunities for new trade. In April 2010, USDA's FSIS and SAGARPA's SENASICA announced the signing of a "terms of reference" document that focuses on ensuring food safety and protecting public health in both the United States and Mexico. This document outlines matters of equivalence, audit procedures, eligibility for exporting establishments, and communication channels between the two agencies (USDA/FSIS, 2010). Other examples over the past 17 years include phytosanitary rules that allow for fresh Hass avocados to be imported from Mexico, the coordinated campaign by all three countries to seek a harmonized approach to mitigating the risks associated with BSE, and the sharing of scientific studies and administrative evaluations among pesticide regulators and scientists (Green et al., 2006). Many of these efforts have taken place within formal organizational structures such as the NAFTA Committee on Sanitary and Phytosanitary Measures, while others have occurred at the working level between NAFTA governments.³⁰

The NAFTA governments also have made adjustments to the agreement's rules of origin in ways that facilitate agricultural trade. In a preferential trade agreement such as NAFTA, rules of origin determine whether a product originated from the area covered by the agreement and thus qualifies for its preferential tariff, which in NAFTA's case is usually duty-free status. Since 2003, the NAFTA Working Group on Rules of Origin (WGRO) has developed four rounds of liberalizing changes to the accord's rules of origin that have been implemented by the NAFTA governments. Some of these changes directly apply to agriculture. For instance, modifications issued in 2009 allow for certain crushed or ground spices produced in the NAFTA region to qualify for duty-free status even when they were obtained from spices (not crushed or ground) sourced outside the NAFTA region (USITC, 2009). In January 2011, the NAFTA Free Trade Commission instructed the WGRO to begin implementation of the fourth round of changes to the agreement's rules of origin and to consider the possibility of a fifth round (USTR, 2011a).

One aspect of the NAFTA relationship that might change in the future is the set of activities fostered by the labor agreement that accompanied NAFTA—the North American Agreement on Labor Cooperation (NAALC).³¹ Discussions have taken place among the NAFTA governments about how to improve the NAALC's implementation. Effective August 20, 2010, the

²⁹Actions that would build upon NAFTA are sometimes referred to as "NAFTA Plus." Meilke, Rude, and Zahniser (2009) examine this subject in greater detail.

³⁰From 2005 to 2009, the NAFTA governments channeled some of their efforts toward regulatory coordination through the Security and Prosperity Partnership (SPP), a trilateral effort intended to increase the security and enhance the prosperity of the NAFTA countries through greater cooperation and information sharing. The SPP, however, is no longer being utilized as a structure for such activities.

³¹The NAALC's website (www.naalc.org) provides information about the organization's activities.

Washington, DC, offices of the Secretariat of the Commission for Labor Cooperation, the international organization created by the NAALC, were temporarily closed, and the U.S. and Mexican labor secretaries and the Canadian labor minister have directed the three National Administrative Offices of the NAALC “to provide a report not later than February 21, 2011, with recommendations as to the form and nature of the operations of the Secretariat” (Secretariat of the Commission for Labor, 2010).

The functioning of the North American free-trade area will also be affected by policy responses to issues that are completely separate from NAFTA. Two agriculture-related examples are border security and immigration. Complying with border security requirements sometimes creates challenges for companies participating in regional agricultural trade. In a survey of 80 major Canadian firms that export food to the United States, Murata (2010) discovered that about 70 of them encountered compliance costs associated with modifications and enhancements to security measures following the events of September 11, 2001, and that 17 of the firms were unable to provide the same level of customer service as before. Despite these challenges, 60 of the firms indicated that their exports to the United States had increased during the first decade of the 21st century. In the context of heightened security concerns over the last several years along the U.S.-Mexico border, USDA’s APHIS and Mexico’s SENASICA have made temporary changes to the locations and hours of operation of inspection points for the importation of live animals into the United States (Williams, 2010; Lozano and Williams, 2010).

Efforts to improve the functioning of border institutions are sometimes constrained by concerns about national sovereignty. For example, in 2007, the U.S. and Canadian Governments ended several years of negotiations about moving the U.S. border inspection facility located on the Buffalo, NY, side of the Peace Bridge to a more spacious location on the Canadian side of the bridge because a number of issues related to national sovereignty could not be resolved (USGAO, 2008: p. 4). The Buffalo, NY, Customs District accounted for 16 percent of U.S. agricultural imports from Canada in 2009.

In the area of immigration, broader opportunities for foreign-born workers to work legally in U.S. agriculture could help to assure the availability of labor for the sector while offering potential migrants an alternative to entering the United States illegally, an activity that is fraught with many dangers. In 2010, the number of hired laborers employed by U.S. agriculture ranged from 612,000 in January to 885,000 in July, according to quarterly estimates (USDA/NASS 2011). Certain labor-intensive sectors of U.S. agriculture, such as horticultural production, rely heavily on foreign-born workers, and roughly half of the hired labor force in U.S. crop agriculture is believed to be undocumented (Carroll et al., 2009).

The Federal Government already operates a program for foreign-born farm workers who are not permanent residents of the United States called the H-2A Temporary Agricultural Worker Program. Its participation levels are small relative to the number of unauthorized immigrants working in U.S. agriculture; in FY 2009, the U.S. Department of Labor (USDOL) certified 86,014 positions for the H-2A program (USDOL/ETA, 2010: p. 30). While there are no annual limits to the number of H-2A workers who may enter the country, other aspects of the program limit its use by agricultural employers.

Since the H-2A Program is only for temporary or seasonal workers, dairy, livestock, and nursery operations are largely precluded from participating. In addition, some prospective employers may be discouraged by the application process and other requirements of the program, such as the requirement to pay H-2A workers the highest of the Federal or State minimum wage, the prevailing hourly or piece rate, the agreed-upon collective bargaining rate, or the adverse effect wage rate (AEWR), as determined by USDOL.

Where Are North America's New Agricultural Markets?

Each NAFTA country is seeking more open trading relationships with non-NAFTA countries as it searches for new markets for its agricultural and nonagricultural products. Currently, all three NAFTA governments are negotiating additional regional and bilateral trade agreements—thereby building upon their extensive network of existing agreements—and participating in the Doha Development Round of multilateral trade negotiations at the WTO. For the United States, one of the main regional initiatives underway is the Trans-Pacific Partnership (TPP), an effort to foster greater economic integration in the Asia-Pacific Region that currently engages eight other “like-minded” countries: Australia, Brunei Darussalam, Chile, Malaysia, New Zealand, Peru, Singapore, and Vietnam (USTR, 2011b). In addition, three trade agreements signed by the United States with Colombia, Panama, and South Korea have not yet been submitted to the U.S. Congress for its approval.

This interest in markets outside the NAFTA region reflects both the tremendous progress that has been made toward removing trade barriers within the NAFTA region and the degree to which changes in the world's demographics and economics have altered the NAFTA region's relative importance. According to the U.S. Census Bureau's *International Database*, the world's population is projected to grow from 6.9 billion to 8.3 billion over the next 20 years (2011-31), with 93 percent of the total increase corresponding to non-NAFTA countries. Two regions are expected to account for a combined 79 percent of the projected increase: (1) Asia (excluding the Near East), due to the large size of its current population, and (2) Sub-Saharan Africa, due to its fast rate of projected population growth.³² In addition, several Asian countries are projected to have average annual growth rates in real per capita income in excess of 5 percent over the next 20 years, well above the average rates projected for the United States (1.77 percent), Canada (1.65 percent), and Mexico (2.08 percent) (USDA/ERS, 2010). For these reasons, agricultural producers in North America should be expected to increase their efforts to serve markets outside the NAFTA region. The recent attention paid by pork and beef exporters in each NAFTA country to Asian markets and the efforts of each NAFTA country to negotiate additional trade agreements with non-NAFTA countries exemplify this trend.

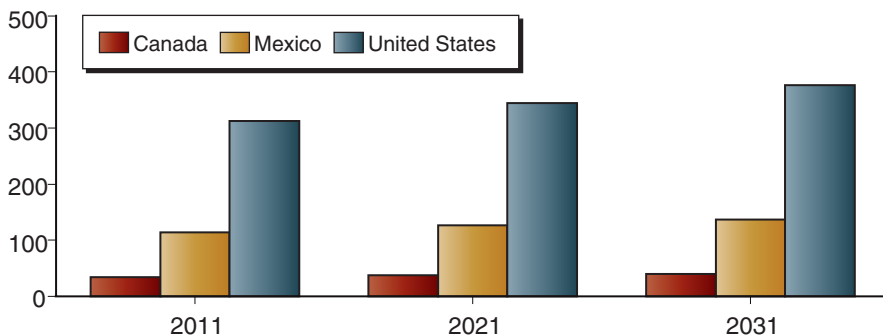
Still, the projections also indicate that the NAFTA region will be a growing market. Among the NAFTA countries, the United States is expected to have the largest increase in population over the next two decades by virtue of the size of its current population and its projected rate of population growth relative to Canada and Mexico (fig. 11). Between 2011 and 2031, the region's population is projected to increase by about 91 million—63 million

³²See the USDOC/Census Bureau (2010) for a list of the countries defined as part of these regions.

Figure 11

The total population of the NAFTA region is projected to increase by 91 million over the next two decades

Millions of persons



Source: USDA, Economic Research Service using USDOC/Census Bureau (2010).

in the United States, 22 million in Mexico, and 5 million in Canada.³³ This anticipated population growth heightens the attractiveness of the U.S. market, particularly to domestic producers and to Canadian and Mexican producers, who are proximate and enjoy duty-free access because of CUSTA and NAFTA.

Population growth rates in each NAFTA country are projected to decelerate over the next 20 years (table 6). For Canada, this deceleration will be particularly sharp and will place that country alongside the European Union as one of the world’s few major agricultural exporters that will have little to no population growth in the coming decades. As a result, the importance of exports to Canada’s agricultural sector will become even stronger, as Canada’s ability to generate exportable surpluses of agricultural products will be somewhat enhanced.

As population growth slows, the population of each NAFTA country will age. Among the NAFTA countries, Mexico is projected to have the largest increase in median age of population over the next two decades—from 27 years in 2011 to 34 years in 2031 (table 6). This aging of Mexico’s population is likely to have ramifications throughout the Mexican economy, many of which are relevant to food demand. In a study of Mexico’s demographic trends, Jackson (2005) notes that the number of dependents (children plus persons over age 65) per 100 working-age adults in Mexico is projected to decline from the current level of roughly 80 to a record low of 65 in 2030 and then start to increase as Mexicans retire in larger numbers. According to the same study, this demographic dividend, albeit brief, may diminish pressures on social service budgets, facilitate higher savings rates and larger investments in education, foster a shift toward more capital-intensive economic activities, and decrease the “push” factors behind international migration—all factors that could lead to higher rates of economic growth. This, in turn, could lead to higher levels of food spending per person, as such spending tends to rise with household income within countries and with per capita income across countries (Frazão et al., 2008).

³³The individual numbers for the United States, Canada, and Mexico add up to 90 million due to rounding.

Table 6

Many demographic changes are expected in the NAFTA region over the next 20 years

Country	Total midyear population			Annual population growth rate			Median age, midyear		
	2011	2021	2031	2011	2021	2031	2011	2021	2031
	<i>Millions</i>			<i>Percent</i>			<i>Years</i>		
United States	313	345	377	0.96	0.93	0.85	36.9	37.8	38.8
Canada	34	37	39	0.79	0.67	0.46	41.0	42.9	44.5
Mexico	114	126	136	1.10	0.90	0.66	27.1	30.6	34.2

Source: USDA, Economic Research Service using data from USDOC/Census Bureau 2010).

George Earle Buckle, editor of *The Times* (of London) newspaper during the late 19th and early 20th centuries, once wrote: “To simplify complications is the first essential of success.” Over the past two decades, CUSTA and NAFTA simplified numerous complications by removing thousands of tariffs, quotas, import licensing requirements, and other policy measures that formerly distorted agricultural trade among the United States, Canada, and Mexico. These actions facilitated a dramatic increase in cross-border economic activity in which each NAFTA country participated, as economic agents (i.e., producers, intermediaries, and consumers) throughout the region responded more efficiently to market signals. While greater clarity in economic signaling in itself does not provide answers to the region’s future challenges, it can provide a setting for better decisionmaking and, one hopes, the foundation for greater prosperity.

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Many of the largest components of U.S. agricultural trade with the NAFTA countries decreased between 2008 and 2009

Country	Value			Volume			Unit value		
	2008	2009	Change	2008	2009	Change	2008	2009	Change
	<i>Million dollars</i>		<i>Percent</i>	<i>1,000 metric tons</i>		<i>Percent</i>	<i>Dollars per kilogram</i>		<i>Percent</i>
U.S. agricultural exports to Canada	16,253	15,725	-3	--	--	--	--	--	--
Beef and veal	698	622	-11	142	131	-8	4.92	4.76	-3
Pork	539	501	-7	161	154	-4	3.36	3.25	-3
Dog or cat food, retail sale	494	485	-2	354	294	-17	1.40	1.65	18
Lettuce, fresh	379	399	5	306	287	-6	1.24	1.39	12
Pastry, cake, bread, and pudding	356	364	2	143	145	2	2.50	2.51	0
Corn	506	303	-40	2,628	1,900	-28	0.19	0.16	-17
Prepared food from swelling or roasting of cereal or cereal products	209	271	30	102	126	23	2.05	2.16	6
Strawberries, fresh	252	270	7	97	105	9	2.74	2.67	-2
Orange juice	264	263	0	284	253	-11	0.93	1.04	12
Chickens, fresh or frozen	242	254	5	114	113	-1	2.12	2.25	6
Other	12,315	11,993	-3	--	--	--	--	--	--
U.S. agricultural imports from Canada	18,009	14,710	-18	--	--	--	--	--	--
Rapeseed oil	1,391	926	-33	1,081	1,009	-7	1.29	0.92	-29
Cattle and calves	1,463	918	-37	1,581	1,061	-33	924.90	864.90	-6
Beef and veal	893	780	-13	287	278	-3	3.11	2.81	-10
Pork	724	677	-7	280	296	6	2.58	2.28	-11
Wheat	1,036	647	-38	2,377	2,322	-2	0.44	0.28	-36
Potatoes, frozen	650	647	-1	775	748	-4	0.84	0.86	3
Swine	482	295	-39	9,348	6,365	-32	51.60	46.40	-10
Sweet biscuits, waffles, and wafers, not frozen	388	290	-25	104	78	-24	3.75	3.71	-1
Confectionery products, except chewing gum	338	314	-7	130	129	0	1.19	1.11	-7
Rapeseed	493	219	-55	963	567	-41	0.51	0.39	-24
Other	10,151	8,997	-11	--	--	--	--	--	--
U.S. agricultural exports to Mexico	15,508	12,932	-17	--	--	--	--	--	--
Corn	2,289	1,362	-41	9,153	7,160	-22	0.25	0.19	-24
Soybeans	1,784	1,348	-24	3,550	3,281	-8	0.50	0.41	-18
Beef and veal	872	743	-15	242	201	-17	3.60	3.70	3
Pork	458	542	18	249	332	33	1.84	1.63	-11
Soybean meal	557	524	-6	1,447	1,323	-9	0.38	0.40	3
Wheat	1,028	478	-53	2,804	1,921	-31	0.37	0.25	-32
Sorghum	349	419	20	1,549	2,451	58	0.23	0.17	-24
Cotton	475	397	-16	298	293	-2	1.60	1.36	-15
Rice	353	343	-3	778	826	6	0.45	0.42	-8
Nonfat dry milk	452	244	-46	133	114	-14	3.41	2.14	-37
Other	6,891	6,533	-5	--	--	--	--	--	--

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Many of the largest components of U.S. agricultural trade with the NAFTA countries decreased between 2008 and 2009—Continued

Country	Value			Volume			Unit value		
	2008	2009	Change	2008	2009	Change	2008	2009	Change
	<i>Million dollars</i>		<i>Percent</i>	<i>1,000 metric tons</i>		<i>Percent</i>	<i>Dollars per kilogram</i>		<i>Percent</i>
U.S. agricultural imports from Mexico	10,907	11,373	4	--	--	--	--	--	--
Beer	1,567	1,520	-3	1,585	1,521	-4	0.99	1.00	1
Tomatoes, fresh	1,143	1,126	-2	988	1,047	6	1.16	1.08	-7
Avocados, fresh or dried	497	574	16	235	301	28	2.12	1.91	-10
Peppers, fresh	566	509	-10	525	541	3	1.08	0.94	-13
Sugar, cane or beet	407	509	25	920	1,019	11	0.44	0.50	13
Cattle and calves	298	381	28	703	941	34	424.50	405.00	-5
Confectionery products	356	350	-2	218	190	-13	1.63	1.84	13
Biscuits and wafers	315	326	3	145	146	1	2.18	2.24	3
Grapes, fresh	225	286	27	134	114	-15	1.67	2.51	50
Cucumbers, fresh	248	238	-4	411	448	9	0.60	0.53	-12
Other	5,284	5,554	5	--	--	--	--	--	--

-- = not available.

Source: USDA, Economic Research Service using data from USDOC, Census Bureau, *Foreign Trade Statistics*, as cited by USDA/FAS (2011a).

Selected U.S. agricultural exports to Mexico, 1991-93 versus 2008-10

	Value			Volume			Unit value		
	Annual average		Change	Annual average		Change	Annual average		Change
	1991-93	2008-10		1991-93	2008-10		1991-93	2008-10	
	<i>Million dollars</i>	<i>Percent</i>	<i>1,000 metric tons</i>	<i>Percent</i>	<i>Dollars per kilogram</i>	<i>Percent</i>			
Total	3,475	14,339	313	--	--	--	--	--	--
Animals and animal products	1,183	3,864	227	--	--	--	--	--	--
Beef and veal	171	755	342	58	201	247	2.97	3.75	26
Beef variety meats	48	147	207	41	81	97	1.18	1.82	55
Pork	68	591	770	32	322	905	2.15	1.84	-14
Pork variety meats	46	152	230	62	131	111	0.73	1.16	59
Nonfat dry milk	55	343	523	33	124	275	1.64	2.77	69
Chickens, fresh or frozen	68	294	332	74	364	392	0.92	0.81	-12
Tallow, inedible	41	237	479	113	328	191	0.36	0.72	98
Turkeys, fresh or frozen	66	236	257	46	133	189	1.42	1.77	25
Cheese	14	164	1,031	5	42	669	2.62	3.90	49
Whey, fluid or dried	12	124	927	--	--	--	--	--	--
Flours, meals, and pellets of meat or meat offal, unfit for human consumption, and greaves (cracklings)	18	59	222	66	104	57	0.28	0.57	106
Bovine hides, whole ¹	110	59	-46	2,415	1,355	-44	45.43	44.00	-3
Tallow, edible	33	54	66	89	72	-19	0.37	0.75	105
Cattle and calves ²	115	36	-69	179	29	-84	680.57	1,225.00	80
Other	318	612	93	--	--	--	--	--	--
Grains and feeds	897	4,187	367	6,507	16,147	148	0.14	0.26	88
Corn	104	1,732	1,566	914	8,068	783	0.12	0.22	85
Brewers' or distillers' dregs and waste	2	263	14,847	15	1,431	9,508	0.11	0.18	64
Cracked corn	13	47	261	68	173	155	0.22	0.27	25
Wheat, unmilled	78	692	787	563	2,387	324	0.14	0.29	110
Sorghum	427	393	-8	3,949	2,092	-47	0.11	0.19	74
Rice	42	336	701	175	807	361	0.25	0.42	69
Malt, not roasted	13	182	1,336	59	314	434	0.28	0.58	106
Mixed feeds or mixed feed ingredients, excluding pet foods	37	70	88	179	77	-57	0.21	0.91	336
Dog or cat food, for retail sale	5	47	820	6	41	553	0.81	1.13	40
Other	176	425	141	--	--	--	--	--	--
Fruits and preparations, excluding juice	81	445	448	143	433	203	0.57	1.03	80
Apples, fresh	34	202	495	68	212	212	0.52	0.96	85
Pears, fresh	17	56	233	33	62	88	0.51	0.90	77
Other	30	187	513	--	--	--	--	--	--
Nuts and preparations	33	180	438	22	66	199	1.51	2.72	80
Vegetables and preparations	96	517	440	--	--	--	--	--	--
Dry common beans	15	102	568	26	140	434	0.58	0.73	25
Potatoes, frozen	7	60	806	10	64	549	0.69	0.93	35
Tomatoes, fresh	8	63	685	14	43	216	0.58	1.46	151
Other	66	292	343	--	--	--	--	--	--

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Selected U.S. agricultural exports to Mexico, 1991-93 versus 2008-10—Continued

	Value			Volume			Unit value		
	Annual average		Change	Annual average		Change	Annual average		Change
	1991-93	2008-10		1991-93	2008-10		1991-93	2008-10	
	<i>Million dollars</i>	<i>Percent</i>		<i>1,000 metric tons</i>	<i>Percent</i>		<i>Dollars per kilogram</i>	<i>Percent</i>	
Oilseeds and products	633	2,728	331	2,489	5,749	131	0.25	0.47	86
Soybeans	400	1,542	285	718	3,473	384	0.23	0.44	91
Soybean meal	68	528	677	313	1,384	342	0.23	0.38	68
Soybean oil	13	216	1,565	27	212	686	0.47	1.02	115
Other	152	441	191	--	--	--	--	--	--
Tobacco, unmanufactured	*	75	35,261	*	13	24,591	3.75	5.64	50
Cotton, excluding linters	118	493	318	87	302	247	1.42	1.64	15
Essential oils	21	83	288	2	6	197	10.46	13.86	32
Mixtures of odoriferous substances for use in food and beverage industry	2	53	2,141	*	4	1,396	8.46	12.66	50
Other	19	30	57	--	--	--	--	--	--
Seeds, field and garden	108	248	130	181	90	-50	0.76	2.74	261
Sugar and tropical products	154	766	399	--	--	--	--	--	--
Fructose syrup, containing more than 50 percent by weight of fructose, NESOI	5	215	4,115	17	683	4,037	0.31	0.32	0
Chocolate and preparations	47	161	243	16	49	205	2.92	3.27	12
Glucose or glucose syrup	5	108	1,911	18	281	1,446	0.37	0.38	4
Sugar, cane or beet	44	96	116	116	179	54	0.36	0.54	50
Other	52	186	260	--	--	--	--	--	--
Other horticultural products	60	511	754	--	--	--	--	--	--
Soups, broths, and preparations thereof, dried	18	154	747	9	58	510	1.91	2.67	40
Other	42	357	757	--	--	--	--	--	--
Beverages, excluding juices	51	148	188	--	--	--	--	--	--
Beer from malt ³	12	85	583	22	114	410	0.55	0.74	35
Other	39	63	62	--	--	--	--	--	--
Other	40	94	134	--	--	--	--	--	--

Unit value is calculated as the average of the annual unit values for the 3 years in the period specified.

-- = not available.

* Less than \$500,000 in average value and less than 500 metric tons in average volume.

¹Volume is measured in thousands of pieces, and unit value is measured in dollars per piece.

²Volume is measured in thousands of head, and unit value is measured in dollars per head.

³Volume is measured in millions of liters, and unit value is measured in dollars per liter.

Source: USDA, Economic Research Service using data from USDOC, Census Bureau, *Foreign Trade Statistics*, as cited by USDA/FAS (2011a).

Selected U.S. agricultural imports from Mexico, 1991-93 versus 2008-10

	Value			Volume			Unit value		
	Annual average		Change	Annual average		Change	Annual average		Change
	1991-93	2008-10		1991-93	2008-10		1991-93	2008-10	
	<i>Million dollars</i>	<i>Percent</i>	<i>1,000 metric tons</i>	<i>Percent</i>	<i>Dollars per kilogram</i>	<i>Percent</i>			
Total	2,542	11,953	370	--	--	--	--	--	--
Animals and animal products	408	786	93	--	--	--	--	--	--
Cattle and calves ¹	377	401	6	1,104	955	-14	342.67	420.00	23
Beef and veal	2	146	7,166	1	27	4,039	3.51	5.40	54
Other	29	239	725	--	--	--	--	--	--
Grains and feeds	51	668	1,207	--	--	--	--	--	--
Biscuits and wafers ²	16	337	2,031	11	156	1,338	1.46	2.16	49
Prepared foods obtained from swelling or roasting of cereal flakes or products, with or without sugar	4	100	2,655	2	32	1,217	1.47	3.09	111
Pastry, not elsewhere specified or indicated	13	63	403	8	31	277	1.52	2.03	34
Other	32	231	628	--	--	--	--	--	--
Fruits and preparations	322	2,118	558	586	2,194	274	0.45	1.07	134
Avocados, fresh or dried	1	521	51,258	1	267	47,616	1.85	1.95	6
Avocados, processed	12	80	553	6	40	601	2.16	2.02	-7
Grapes, fresh	59	325	451	40	132	231	1.47	2.46	67
Strawberries, fresh	15	162	981	12	79	562	1.28	2.04	60
Strawberries, frozen	18	73	297	23	58	154	0.80	1.25	57
Watermelons, fresh	18	205	1,037	89	408	358	0.20	0.50	154
Limes, fresh or dried	20	160	687	87	349	303	0.23	0.46	95
Mangoes, fresh ³	63	136	117	80	194	142	0.79	0.78	0
Blackberries, mulberries, and loganberries, fresh	*	114	208,420	*	36	65,315	1.45	5.35	268
Raspberries, fresh	*	83	529,349	*	12	229,067	2.93	6.71	130
Papayas, fresh	4	62	1,432	7	108	1,359	0.53	0.57	8
Grapefruit, prepared or preserved	3	53	1,769	3	28	956	1.10	1.94	77
Other	108	145	34	--	--	--	--	--	--
Fruit juices	40	182	356	147	486	230	0.29	0.37	28
Orange juice	22	113	412	97	342	253	0.23	0.33	41
Other	18	69	287	--	--	--	--	--	--
Nuts and preparations	55	221	300	17	74	327	3.35	2.97	-11
Pecans	53	189	254	14	53	274	4.02	3.58	-11
Other	2	32	1,660	--	--	--	--	--	--
Vegetables and preparations	923	3,787	310	--	--	--	--	--	--
Tomatoes, fresh	229	1,252	447	312	1,138	265	0.73	1.10	50
Peppers, fresh	120	563	369	124	569	359	0.97	0.99	2
Cucumbers, fresh	73	250	242	179	452	153	0.41	0.55	35
Squash, fresh	60	204	240	83	248	198	0.72	0.82	15
Onions, fresh	92	189	105	178	202	14	0.52	0.94	79
Broccoli, frozen	89	181	103	133	180	36	0.67	1.01	50

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Selected U.S. agricultural imports from Mexico, 1991-93 versus 2008-10—Continued

	Value			Volume			Unit value		
	Annual average		Change	Annual average		Change	Annual average		Change
	1991-93	2008-10		1991-93	2008-10		1991-93	2008-10	
	Million dollars	Percent	1,000 metric tons	Percent	Dollars per kilogram	Percent			
Vegetables and preparations—continued									
Asparagus, fresh	29	169	484	21	69	230	1.39	2.44	76
Lettuce, fresh	4	89	2,327	8	102	1,106	0.44	0.87	98
Cauliflower and broccoli, fresh	4	79	2,004	13	105	689	0.28	0.75	170
Soups and sauces	--	57	--	--	48	--	--	1.19	--
Other	223	754	238	--	--	--	--	--	--
Sugar and related products									
Sugar, cane or beet	1	544	45,835	3	955	36,166	0.82	0.57	-31
Confectionery products	23	366	1,520	15	203	1,293	1.54	1.80	17
Other	12	47	306	--	--	--	--	--	--
Cocoa and cocoa products									
	20	341	1,624	14	168	1,133	1.69	2.04	21
Coffee and coffee products									
Coffee, arabica, not roasted, not decaffeinated	25	161	538	17	53	213	1.48	3.01	104
Instant coffee, not flavored, not decaffeinated, packaged for retail sale	1	87	12,743	*	13	5,341	4.85	6.59	36
Other	253	83	-67	--	--	--	--	--	--
Spices and herbs									
	41	60	46	28	41	46	1.45	1.46	1
Beverages, excluding fruit juices									
Beer ⁴	145	1,559	975	179	1,562	772	0.82	1.00	22
Carbonated soft drinks ⁴	15	152	911	19	256	1,246	0.80	0.59	-26
Other nonalcoholic beverages ⁴	6	84	1,283	8	113	1,306	0.76	0.74	-2
Other	10	61	512	--	--	--	--	--	--
Oilseeds and oilseed products									
	38	98	160	32	62	97	1.14	1.58	39
Other horticultural products									
Yeasts	10	61	495	7	22	226	1.52	2.78	82
Other	42	73	73	--	--	--	--	--	--
Other									
	108	413	283	--	--	--	--	--	--

* = Imports average less than \$500,000 in value and/or less than 500 metric tons in volume.

-- = not available.

¹Volume is measured in thousands of head, and unit value is measured in dollars per head.²Includes sweet biscuits, waffles, wafers, pastries, cake, and bread, among other products.³Data for 1991-92 also include guavas and mangoes.⁴Volume is measured in millions of liters, and unit value is measured in dollars per liter.Source: USDA, Economic Research Service using data from USDOC, Census Bureau, *Foreign Trade Statistics*, as cited by USDA/FAS (2011a).

Selected U.S. agricultural exports to Canada, 1991-93 versus 2008-10

	Value			Volume			Unit value		
	Annual average		Change	Annual average		Change	Annual average		Change
	1991-93	2008-10		1991-93	2008-10		1991-93	2008-10	
	<i>Million dollars</i>	<i>Percent</i>	<i>1,000 metric tons</i>	<i>Percent</i>	<i>Dollars per kilogram</i>	<i>Percent</i>			
Total	4,954	16,278	229	--	--	--	--	--	--
Animals and animal products	909	2,610	187	--	--	--	--	--	--
Beef and veal	363	677	86	87	137	58	4.19	4.93	18
Pork	29	545	1,764	9	159	1,597	3.14	3.43	9
Chickens, fresh or frozen	85	261	206	42	115	173	2.03	2.26	11
Poultry meats, prepared or preserved	54	177	231	12	43	248	4.33	4.11	-5
Sausage, other than chicken and turkey	23	88	280	5	20	295	4.56	4.39	-4
Preparations for infant use, retail sale	4	85	1,863	1	23	2,062	4.05	3.75	-7
Eggs	31	73	136	--	--	--	--	--	--
Whey, fluid or dried	10	52	421	--	--	--	--	--	--
Puddings ready for immediate consumption	4	69	1,664	3	48	1,716	1.49	1.45	-3
Cattle and calves ¹	36	14	-62	71	35	-51	511.60	389.00	-24
Other	269	568	111	--	--	--	--	--	--
Grains and feeds	759	4,100	440	--	--	--	--	--	--
Dog or cat food, retail sale	146	491	237	142	301	112	1.04	1.63	58
Corn	60	350	487	600	2,024	238	0.10	0.17	71
Brewing or distilling dregs and waste	2	139	7,475	14	878	6,027	0.13	0.16	23
Pastry, cake, bread, and pudding	101	378	273	62	149	142	1.65	2.53	54
Prepared food from swelling or roasting of cereal or cereal products	36	250	603	19	117	527	1.91	2.14	12
Mixes and doughs	31	216	594	27	128	368	1.15	1.69	47
Rice	56	167	198	142	225	58	0.39	0.74	88
Stuffed, canned, and other prepared pasta	30	157	428	14	70	399	2.16	2.24	4
Mixed feeds or mixed feed ingredients, excluding pet food	84	141	67	145	148	2	0.59	0.95	60
Cookies, waffles, and wafers	48	142	195	25	59	136	1.64	2.41	47
Corn chips and similar crisp snack foods	11	108	898	6	29	362	1.76	3.71	111
Other bread, pastry, cake, biscuits, and bakery wares, excluding pizza and quiche	8	102	1,105	5	36	689	1.88	2.87	53
Pasta, uncooked ²	21	80	284	19	62	216	1.08	1.31	21
Wheat flour	3	53	1,740	10	105	920	0.27	0.50	83
Pizza and quiche	11	50	342	3	14	307	3.28	3.56	9
Other	111	376	239	--	--	--	--	--	--
Fruits and preparations, excl. juice	711	1,772	149	872	1,201	38	0.82	1.48	80
Strawberries, fresh	51	270	433	36	104	191	1.41	2.59	83
Grapes, fresh	117	183	56	112	98	-13	1.05	1.87	79
Apples, fresh	58	145	152	76	131	73	0.76	1.11	45
Oranges, fresh or dried	80	125	56	155	156	1	0.55	0.80	46
Cherries, fresh	15	111	641	7	25	245	2.14	4.48	110
Raspberries, blackberries, mulberries, and loganberries, fresh	4	92	2,055	7	25	244	0.58	3.64	525
Peaches, fresh	46	73	60	50	47	-4	0.93	1.54	66

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Selected U.S. agricultural exports to Canada, 1991-93 versus 2008-10—Continued

	Value			Volume			Unit value		
	Annual average		Change	Annual average		Change	Annual average		Change
	1991-93	2008-10		1991-93	2008-10		1991-93	2008-10	
	<i>Million dollars</i>	<i>Percent</i>	<i>1,000 metric tons</i>	<i>Percent</i>	<i>Dollars per kilogram</i>	<i>Percent</i>			
Fruits and preparations, excl. juice—continued									
Watermelons, fresh	25	67	165	78	136	74	0.37	0.50	33
Other	314	705	124	--	--	--	--	--	--
Fruit juices³									
Orange juice ³	83	259	213	155	260	68	0.54	1.00	86
Mixtures of fruit juices, unfermented, not fortified with vitamins or minerals	8	69	792	11	51	384	0.75	1.36	82
Other	66	188	186	--	--	--	--	--	--
Wine³									
	42	242	479	32	58	83	1.28	4.16	224
Nuts and preparations									
Almonds, fresh or dried	30	94	213	9	20	127	3.37	4.62	37
Peanuts, shelled, not oilstock	38	79	110	43	79	83	0.89	1.01	13
Popcorn, microwaveable	--	60	--	--	33	--	--	1.79	--
Other	61	225	266	--	--	--	--	--	--
Vegetables and preparations									
	918	2,321	153	--	--	--	--	--	--
Lettuce, fresh	109	393	259	254	292	15	0.43	1.35	212
Tomatoes, fresh	114	137	21	137	107	-22	0.83	1.28	55
Carrots, fresh	26	119	368	71	103	45	0.36	1.16	223
Tomato sauces, other than ketchup	36	126	255	35	119	243	0.90	1.06	18
Potatoes, fresh ⁴	62	97	56	179	203	13	0.36	0.48	34
Potatoes, frozen	1	78	5,608	1	77	5,511	0.99	1.00	2
Potato chips	24	60	146	10	18	81	2.48	3.36	36
Other sauces and preparations	25	97	282	17	40	138	1.51	2.43	61
Onions and shallots, fresh	42	95	124	103	136	31	0.41	0.70	71
Peppers, fresh	45	84	89	69	57	-17	0.68	1.49	120
Broccoli, fresh	41	72	76	72	66	-9	0.57	1.10	94
Cauliflower, fresh	32	72	127	44	73	66	0.72	0.98	36
Celery, fresh	36	56	57	96	94	-1	0.37	0.60	60
Spinach, fresh or chilled	9	55	487	12	24	99	0.76	2.24	195
Other	316	780	147	--	--	--	--	--	--
Oilseeds and products									
	322	1,450	350	961	2,449	155	0.33	0.59	78
Soybean meal	151	421	178	625	1,196	91	0.24	0.35	45
Soybeans	37	129	247	154	324	111	0.24	0.40	68
Soybean oil	8	64	726	15	54	270	0.53	1.18	124
Rapeseed	8	90	1,079	29	233	703	0.26	0.38	47
Rapeseed oil	2	135	7,777	3	147	5,656	0.74	0.92	24
Vegetable fats and oils and their fractions, hydrogenated, inter-esterified, reesterified, or elaidinized	6	87	1,385	5	60	1,085	1.16	1.45	24
Protein substances	16	62	285	6	12	87	2.58	5.34	107
Sunflower oil	5	61	1,041	9	53	486	0.59	1.16	97
Other	89	402	352	--	--	--	--	--	--

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Selected U.S. agricultural exports to Canada, 1991-93 versus 2008-10—Continued

	Value			Volume			Unit value		
	Annual average		Change	Annual average		Change	Annual average		Change
	1991-93	2008-10		1991-93	2008-10		1991-93	2008-10	
	<i>Million dollars</i>	<i>Percent</i>		<i>1,000 metric tons</i>	<i>Percent</i>		<i>Dollars per kilogram</i>	<i>Percent</i>	
Cotton, excluding linters	61	4	-93	37	3	-93	1.62	1.73	6
Essential oils	48	317	554	4	24	499	11.48	13.27	16
Mixtures of odoriferous substances for use in food and beverage industry	33	290	770	3	21	680	12.28	13.77	12
Other	15	27	77	--	--	--	--	--	--
Seeds, field and garden	67	206	208	39	80	106	1.73	2.59	50
Corn seed, excluding sweet corn seed	10	95	853	8	28	250	1.25	3.40	172
Other	57	111	95	--	--	--	--	--	--
Sugar and tropical products	396	1,550	292	--	--	--	--	--	--
Coffee, roasted, not decaffeinated	44	374	742	9	70	700	5.14	5.37	4
Sugar confections and sweetmeats without cocoa	61	246	301	30	76	158	2.07	3.23	56
Confectionery containing cocoa	51	153	200	17	36	113	2.38	4.25	78
Cocoa preparations in bulk form	18	108	496	8	40	379	2.22	2.73	23
Food preparations containing cocoa other than confectionery, put up for retail sale	2	98	4,492	0	23	4,418	1.43	4.36	205
Tea, including herbal tea	22	82	270	4	14	226	5.20	1.93	-63
Glucose and glucose syrup	24	71	194	63	159	154	0.39	0.45	15
Cocoa butter	12	54	367	3	13	355	4.18	4.27	2
Other	160	363	126	--	--	--	--	--	--
Other horticultural products	322	1,450	350	961	2,449	155	0.33	0.59	78
Starches, excluding wheat and corn starch	22	69	218	36	81	125	0.63	0.86	37
Mixed condiments and mixed seasonings	13	68	401	4	23	455	2.65	2.94	11
Soups, broths, and other preparations, not based on fish or other seafood, not dried	5	67	1,191	3	32	879	1.64	2.12	29
Other	132	799	505	--	--	--	--	--	--
Nursery and greenhouse products	110	200	83	--	--	--	--	--	--
Beverages excluding juices	109	414	278	--	--	--	--	--	--
Beer made from malt ³	20	118	488	39	106	173	0.57	1.12	95
Preparations for the manufacture of beverages	44	83	91	8	20	144	5.34	4.20	-21
Carbonated soft drinks	9	68	641	16	100	529	0.62	0.69	10
Other nonalcoholic beverages	24	127	419	29	160	456	0.85	0.79	-7
Other	12	18	45	--	--	--	--	--	--
Other	45	14	-70	--	--	--	--	--	--

-- = not available.

¹Volume is measured in thousands of head, and unit value is measured in dollars per head.²Excludes canned pasta and stuffed pasta.³Volume is measured in millions of liters, and unit value is measured in dollars per liter.⁴Excludes seed potatoes.Source: USDA, Economic Research Service using data from USDOC, Census Bureau, *Foreign Trade Statistics*, as cited by USDA/FAS (2011a).

Selected U.S. agricultural imports from Canada, 1991-93 versus 2008-10

	Value			Volume			Unit value		
	Annual average		Change	Annual average		Change	Annual average		Change
	1991-93	2008-10		1991-93	2008-10		1991-93	2008-10	
	<i>Million dollars</i>	<i>Percent</i>	<i>1,000 metric tons</i>	<i>Percent</i>	<i>Dollars per kilogram</i>	<i>Percent</i>			
Total	4,044	16,320	304	--	--	--	--	--	--
Animals and animal products	1,784	4,201	136	--	--	--	--	--	--
Beef and veal	283	873	208	121	287	137	2.34	3.04	30
Cattle and calves ¹	802	1,144	43	1,127	1,235	10	706.63	926.00	31
Pork	368	756	105	177	294	66	2.08	2.57	24
Swine ¹	82	380	363	854	7,153	738	65.47	53.00	-19
Confectionery (including gum) containing synthetic sweetening agents instead of sugar	--	156	--	--	24	--	--	6.48	--
Chicken, fresh or frozen	1	114	11,183	1	41	6,168	1.52	2.77	82
Mink furskins ²	22	68	209	1,071	1,675	56	20.57	40.51	97
Chicken sausages and similar products	--	51	--	--	12	--	--	4.10	--
Bovine hides and skins, whole ³	65	37	-43	1,625	821	-49	39.80	65.07	64
Grains and feeds	759	4,100	440	--	--	--	--	--	--
Wheat, excluding seed	154	731	374	1,268	2,297	81	0.12	0.32	163
Bread, pastry, cakes, biscuits, and puddings	146	595	307	77	249	221	2.00	2.85	43
Oats, unmilled	54	368	583	576	1,730	200	0.10	0.21	117
Grains, rolled or flaked, of oats	1	62	4,981	4	111	2,685	0.30	0.56	85
Groats and meal of oats	3	56	1,927	11	128	1,091	0.26	0.44	68
Sweet biscuits, waffles, and wafers, not frozen	17	396	2,171	8	106	1,170	2.19	3.75	71
Sweet biscuits, waffles, and wafers, frozen	*	125	74,368	*	53	76,028	3.37	2.37	-30
Mixes and doughs	14	246	1,644	12	149	1,126	1.22	1.66	35
Prepared food from swelling or roasting cereal flakes or products	48	177	271	27	76	181	1.76	2.32	32
Malt, not roasted	3	186	6,114	13	311	2,337	0.24	0.60	153
Barley, unmilled	46	134	189	474	469	-1	0.10	0.29	189
Dog or cat food, retail sale	46	114	147	67	59	-12	0.69	1.94	180
Mixed feeds or mixed feed ingredients, excluding bird feed and pet food	44	106	142	166	143	-14	0.26	0.74	183
Cereals other than corn, grain form, precooked or otherwise prepared, not frozen	*	94	74,122	*	37	82,547	1.39	2.54	83
Pasta and noodles ⁴	12	93	658	12	40	223	0.99	2.32	134
Wheat or meslin flour	13	83	552	46	123	169	0.11	0.65	489
Corn, unmilled	27	56	103	284	272	-4	0.10	0.21	111
Prepared food from unroasted cereal flakes or mixtures of roasted and unroasted flakes or swelled cereals	14	56	296	8	26	239	1.86	2.17	17
Stuffed, canned, or other prepared pasta	7	50	673	6	12	116	1.27	4.17	228
Other	110	373	240	--	--	--	--	--	--

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Selected U.S. agricultural imports from Canada, 1991-93 versus 2008-10—Continued

	Value			Volume			Unit value		
	Annual average		Change	Annual average		Change	Annual average		Change
	1991-93	2008-10		1991-93	2008-10		1991-93	2008-10	
	<i>Million dollars</i>	<i>Percent</i>	<i>1,000 metric tons</i>	<i>Percent</i>	<i>Dollars per kilogram</i>	<i>Percent</i>			
Fruits and preparations, excluding juice	71	409	478	100	195	95	0.72	2.10	191
Blueberries, frozen	10	99	940	6	36	542	1.72	2.78	62
Blueberries, fresh	10	56	453	9	18	113	1.17	3.06	162
Cranberries, fresh	12	52	352	17	38	125	0.70	1.39	100
Other	40	202	410	--	--	--	--	--	--
Fruit juices⁴	10	51	422	16	60	275	0.62	0.86	39
Vegetables and preparations	195	2,002	925	--	--	--	--	--	--
Potatoes, frozen	54	641	1,096	99	738	647	0.54	0.87	61
Potatoes, fresh ⁵	33	129	293	189	398	110	0.17	0.32	93
Tomatoes, fresh	5	273	4,889	4	131	3,009	1.36	2.09	53
Peppers, fresh	5	192	3,559	3	76	2,878	2.10	2.51	20
Cucumbers, fresh	3	89	2,487	4	62	1,595	0.94	1.42	52
Mushrooms, fresh or chilled	3	74	2,458	2	23	1,210	1.68	3.24	93
Tomato ketchup	*	54	62,960	*	56	50,054	0.69	0.97	41
Other	92	551	500	--	--	--	--	--	--
Sugar and related products	193	677	251	--	--	--	--	--	--
Confectionery products, except chewing gum	29	335	1,036	18	131	625	1.64	2.55	55
Maple syrup, including blends with sugar	28	144	407	12	24	105	2.49	6.10	145
Glucose and glucose syrup	15	59	288	69	174	152	0.22	0.34	54
Chewing gum	30	53	75	17	25	53	1.80	2.06	15
Other	89	86	-3	--	--	--	--	--	--
Cocoa and cocoa products	148	759	415	78	245	213	1.89	3.10	63
Chocolate in blocks, slabs, or other bulk form, not containing butterfat or other milk solids	33	231	597	25	87	252	1.35	2.66	97
Chocolate in blocks or slabs of 4.5 kilograms or more, containing butterfat or other milk solids	17	109	521	8	44	487	2.32	2.47	6
Confectionery, filled, not containing peanuts, peanut butter, or peanut paste	--	77	--	--	19	--	--	3.97	--
Other	97	342	253	--	--	--	--	--	--
Coffee and coffee products	33	197	495	6	25	330	5.79	7.98	38
Coffee, roasted, not decaffeinated, in retail containers weighing 2 kilograms or less	3	142	4,023	1	17	2,338	4.84	8.20	69
Other	30	54	83	--	--	--	--	--	--
Tea and mate, including herbal tea	24	94	301	37	55	48	0.67	1.72	157
Preparations of tea or mate containing over 10 percent by dry weight of sugar	--	59	--	--	52	--	--	1.12	--
Other	--	36	--	--	--	--	--	--	--

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Selected U.S. agricultural imports from Canada, 1991-93 versus 2008-10—Continued

	Value			Volume			Unit value		
	Annual average		Change	Annual average		Change	Annual average		Change
	1991-93	2008-10		1991-93	2008-10		1991-93	2008-10	
	<i>Million dollars</i>	<i>Percent</i>		<i>1,000 metric tons</i>	<i>Percent</i>		<i>Dollars per kilogram</i>	<i>Percent</i>	
Spices and herbs	21	82	297	60	79	32	0.35	1.04	201
Mustard seeds	15	57	273	55	62	14	0.28	0.92	228
Other	5	25	365	--	--	--	--	--	--
Beverages, excluding fruit juices	196	366	87	--	--	--	--	--	--
Beer made from malt ⁶	148	234	59	262	320	22	0.57	0.73	29
Preparations for beverages	5	60	1,066	4	25	508	1.24	2.06	67
Other	43	72	67	--	--	--	--	--	--
Oilseeds and products	318	2,271	615	1,221	4,065	233	0.26	0.56	116
Rapeseed oil	151	1,120	643	297	1,061	257	0.50	1.06	109
Rapeseed	13	312	2,331	55	692	1,161	0.25	0.45	77
Rape or colza seed oilcake	67	303	354	520	1,550	198	0.21	0.20	-5
Soybeans	21	127	516	96	302	216	0.22	0.42	96
Flaxseed	24	87	262	130	147	13	0.19	0.59	216
Other	43	322	653	--	--	--	--	--	--
Seeds, field and garden	50	183	267	73	167	128	0.68	1.10	61
Nursery stock, bulbs, etc.	85	243	187	--	--	--	--	--	--
Other horticultural products	82	493	503	--	--	--	--	--	--
Soups, broths, and preparations, not dried, not based on fish or seafood	5	98	1,892	4	74	1,954	1.68	1.33	-21
Yeasts	16	70	349	18	54	195	0.84	1.28	52
Other	61	325	431	--	--	--	--	--	--
Other	78	36	146	--	--	--	--	--	--

* Less than \$500,000 in value and 500 kilograms in volume.

-- = not available.

¹ Volume is measured in thousands of head, and unit value is measured in dollars per head.² Volume is measured in thousands of furskins, and unit value is measured in dollars per furskin.³ Volume is measured in thousands of pieces, and unit value is measured in dollars per piece.⁴ Excludes stuffed pasta and canned pasta.⁵ Excludes seed potatoes.⁶ Volume is measured in millions of liters, and unit value is measured in dollars per liter.Source: USDA, Economic Research Service using data from USDOC, Census Bureau, *Foreign Trade Statistics*, as cited by USDA/FAS (2011a).

Foreign direct investment within the NAFTA region's food industry

Origin/destination	Food and kindred products										
	1994	1995	1996	1997	1998						
	<i>Million dollars</i>										
U.S. direct investment in Canada	4,021	4,498	4,265	4,649	4,985						
U.S. direct investment in Mexico	2,660	2,929	3,579	4,484	4,723						
Canadian direct investment in the U.S.	5,877	7,199	7,764	10,087	6,684						
Mexican direct investment in the U.S.	(D)	(D)	(D)	306	1,092						
	Food industry										
	1999	2000	2001	2002	2003	2004	2005	2006	2007	2008	2009
	<i>Million dollars</i>										
U.S. direct investment in Canada	3,693	3,431	3,421	4,153	3,964	2,821	2,718	2,998	4,393	4,456	4,973
U.S. direct investment in Mexico	1,281	1,427	1,250	2,159	2,134	2,203	2,790	2,610	2,835	2,549	(D)
Canadian direct investment in the U.S.	1,088	1,405	984	983	922	1,175	2,109	1,235	1,253	1,081	1,365
Mexican direct investment in the U.S.	1,060	1,058	1,102	(D)	(D)	1,934	3,043	(D)	(D)	1,934	3,043

Note: Kindred products refers primarily to beverages. Data indicate investment position on a historical-cost basis.

(D) = Suppressed in order to avoid disclosure of data of individual companies

Source: USDA, Economic Research Service using data from USDOC/BEA (2010a, 2010b).