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NAFTA at 15

Building on Free Trade

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Abstract

Implementation of the agricultural provisions of the North American Free Trade Agreement (NAFTA) has drawn to a close. In 2008, the last of NAFTA's transitional restrictions governing U.S.-Mexico and Canada-Mexico agricultural trade were removed, concluding a 14-year project in which the member countries systematically dismantled numerous barriers to regional agricultural trade. During the implementation period, the agricultural sectors of Canada, Mexico, and the United States have become much more integrated. Agricultural trade within the free-trade area has grown dramatically, and Canadian and Mexican industries that rely on U.S. agricultural inputs have expanded. U.S. feedstuffs have facilitated a marked increase in Mexican meat production and consumption, and the importance of Canadian and Mexican produce to U.S. fruit and vegetable consumption is growing.

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

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Foreword

This is the sixth 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. 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 2008, and it does not address Mexico's recent imposition of compensatory tariffs on selected U.S. exports, including some agricultural products, in March 2009.

Introduction

Implementation of the North American Free Trade Agreement (NAFTA) is now complete. On January 1, 2008, the last transitional agricultural trade restrictions established by NAFTA were removed, marking an end to a 14-year process in which Canada, Mexico, and the United States—the member countries of NAFTA—gradually removed thousands of barriers to regional agricultural trade. As a result, the NAFTA countries' agricultural economies are increasingly behaving as one market. Regional agricultural trade is growing across an increasingly broad range of products, additional cross-border investments are taking place in the region's processed food industry, changes in commodity prices are felt across international borders, and food safety issues in the NAFTA region sometimes have cross-border dimensions. U.S.-Mexico agricultural trade is continuing to grow for almost all commodities covered by the last set of transitional restrictions, even for products that were previously shielded by small barriers. Between 2007 and 2008, the value of this trade tended to rise more than the volume in percentage terms due to higher prices.

The opportunities for free trade to advance the integration of North American agriculture are not completely exhausted; a handful of agricultural commodities traded between Canada and the United States (and between Canada and Mexico) were exempted from NAFTA's liberalization push. Nevertheless, because NAFTA has established a free-trade area for almost all agricultural products traded among the member countries, efforts to further integrate North American agriculture must logically focus on issues other than conventional trade barriers (i.e., tariffs and quotas). Many of these efforts could involve regulatory coordination in food safety and sanitary/phytosanitary standards.

This edition of the NAFTA report assesses the extent to which market integration has taken hold in North American agriculture, with an emphasis on developments over the past several years, including the elimination of NAFTA's last set of agricultural trade restrictions. Some analysis in this report utilizes the framework presented in the 2005 NAFTA report, and readers are invited to compare this report with 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, the Canada-U.S. Free Trade Agreement (CUSTA), took effect on January 1, 1989, and was subsumed by NAFTA. The second and third agreements are embodied 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 a number of 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. The 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.

[1]A TRQ is a quota for a volume of imports at a favorable tariff. After the quantitative limit is reached, a higher tariff is applied on additional imports.

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 a handful of agricultural commodities (such as U.S. exports to Mexico of corn, dry common 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 restrictions on Canada-Mexico trade also were removed at that time.

Table 1 identifies the main restrictions lifted from U.S.-Mexico agricultural trade in 2008. With respect to U.S. exports to Mexico, corn and dry common beans were the most prominent commodities covered by the last set of restrictions. These crops are traditional staples of the Mexican diet, and they are cultivated in Mexico by a heterogeneous group of producers, ranging from very small-scale farmers with less than 5 hectares (about 12 acres) of farmland to large commercial operations. To facilitate adjustment to free trade, NAFTA established transitional TRQs for these commodities that gradually became less restrictive over a 14-year period (1994-2007). These TRQs, along with additional actions taken by the Mexican Government, allowed for a substantial amount of trade growth during the transition to free trade.

With respect to U.S. imports from Mexico, the main commodity of interest has been sugar, where the U.S. domestic support program for sugar presented challenges for implementation. In July 2006, Mexico and the United States forged an agreement that paved the way for free trade in sugar and sweeteners between the two countries, starting in 2008 (Haley, 2006). Most of the U.S. tariffs on Mexican produce that were removed in 2008 had ad valorem values of 2 percent or less and thus had a limited impact on trade and

Table 1

The last tariff and quota barriers to U.S.-Mexico agricultural trade were removed on January 1, 2008

Commodity	Transitional restriction for 2007	Value			Volume		
		2007	2008	Change	2007	2008	Change
		Mil. U.S. dollars		*Percent*	*1,000 metric tons*		*Percent*
U.S. exports to Mexico							
Total, commodities listed		2,696	3,303	23	--	--	--
Nonfat dry milk	Duty-free quota of 58,741 metric tons; over-quota tariff equaled the greater of 11.8 percent or $98 per metric ton	260	452	74	77	133	72
Dry common beans	Duty-free quota of 73,427 metric tons; over-quota tariff equaled the greater of 11.8 percent or 4 cents per kilogram	53	76	43	79	99	25
Corn	NAFTA specified a duty-free quota of 3,671,334 metric tons; the over-quota tariff equaled the greater of 18.2 percent or 1.7 cents per kilogram. However, Mexico applied a lower tariff in the neighborhood of 1-3 percent to yellow corn and provided an additional duty-free quota of 1.3 million metric tons (850,000 metric tons of yellow corn and 450,000 metric tons of white corn) to corn from any country.	1,496	2,289	53	8,204	9,153	12
Corn plus cracked corn	U.S. cracked corn exports to Mexico have been duty-free since 2003	2,011	2,338	16	10,964	9,335	-15
Sugar, cane or beet	Duty-free quota of at least 7,258 metric tons, raw value[1]	100	85	-15	202	171	-15
High fructose corn syrup	Duty-free quota of at least 250,000 metric tons during FY 2007 and at least 175,000 metric tons during the first 3 months of FY 2008[1]	151	192	27	329 (dry basis)	421 (dry basis)	28
Chicken leg quarters[2]	Duty-free quota of 104,600 metric tons plus duty-free access to border region; over-quota tariff of 19.8 percent[3]	120	160	33	117	140	20
U.S. imports from Mexico							
Total, commodities listed		831	1,043	26	--	--	--
Sprouting broccoli	Tariff of 1.67 percent, January 1 to May 31; otherwise duty-free	46	61	32	78	88	12
Cucumbers, fresh	Tariff of 0.44 cents per kilogram, March 1 to May 31 and October 1 to November 30; otherwise duty-free	379	248	-35	381	411	8
Asparagus, fresh	Tariff of 1.1 percent if entered during the month of January and 1.67 percent if entered between February 1 and June 30; otherwise duty-free	113	145	29	52	59	13
Cantaloupe, fresh	Tariff of 2.33 percent, May 16 to July 31 and September 16 to November 30; otherwise duty-free	9	12	42	10	20	108

—Continued

Table 1

The last tariff and quota barriers to U.S.-Mexico agricultural trade were removed on January 1, 2008—Continued

Commodity	Transitional restriction for 2007	Value			Volume		
		2007	2008	Change	2007	2008	Change
		Mil. U.S. dollars		*Percent*	*1,000 metric tons*		*Percent*
U.S. imports from Mexico—Continued							
Melons other than cantaloupe, watermelon, Ogen, and Galia	Tariff of 2.33 percent, June 1 to November 30; otherwise duty-free	57	53	-8	85	88	3
Sugar, cane or beet	Duty-free quota of up to 250,000 metric tons (raw value) for FY 2007; duty-free quota of at least 175,000 metric tons for first 3 months of FY 2008[1]	104	401	285	242	952	293
Orange juice[4]							
--Frozen	Tariff, 1.572 cents per liter	118	120	2	255	311	22
--Not concentrated and not made from a juice with a degree of concentration of 1.5 or more	Tariff, 0.353 cents per liter	6	4	-40	8	9	5

FY = Fiscal Year. The Federal Government's fiscal year runs from October through September. FY 2007 began on October 1, 2006, and ended on September 30, 2007.

[1]These amounts were specified as part of a bilateral agreement in July 2006.

[2]January to November trade data for legs, thighs, or thighs and legs in one piece, the closest tariff line that corresponds to chicken leg quarters.

[3]This restriction was specified as part of a bilateral agreement in January 2003.

[4]Trade volumes are expressed in millions of liters.

Sources: NAFTA tariff schedule; USDA, Foreign Agricultural Service (2009); and Secretariat of Economy, as cited by Global Trade Information Services (2009) (chicken leg quarter trade data).

production. These low ad valorem values reflected the transitional staging of gradual tariff reductions over time in order to facilitate adjustment to free trade. The tariff on U.S. frozen orange juice imports from Mexico, however, had an ad valorem value of about 8 percent in 2007.

NAFTA covers much more than tariffs and quotas. The agreement also establishes key principles regarding the treatment of foreign investors, including a commitment from each NAFTA country to treat investors from other member countries no less favorably than its own domestic investors. In addition, the accord prohibits the imposition of certain performance requirements, such as a minimum amount of domestic content in production, on foreign investors. These provisions reinforce similar changes that Mexico made to its foreign investment laws prior to NAFTA.

NAFTA clearly 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." Like the URAA, NAFTA requires that sanitary and phytosanitary (SPS) measures are scientifically based, nondiscriminatory, and transparent, and that these measures restrict trade in a minimal fashion. The NAFTA Committee on Sanitary and Phytosanitary Measures facilitates technical cooperation between the NAFTA countries in developing, applying, and

enforcing such measures. NAFTA governments have fine-tuned their SPS measures throughout the NAFTA period in order to facilitate trade. NAFTA also created several formal mechanisms for the resolution of disputes concerning the agreement's investment and services provisions, the application of national dumping and countervailing duty laws, and the general interpretation and application of the agreement.

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 evident in increased cross-border flows of goods, services, capital, and labor. Trade in goods consists not only of 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 foreign direct investment (FDI). In addition, both government and private sector decision-makers pursue greater institutional and policy coordination to encourage market integration.

Technological and institutional advancements in transportation and communications clearly spur this process. Geographic areas that once seemed remote become easily accessible, and are ultimately integrated economically. Also key to market integration is the elimination of policies—tariffs, quotas, import licensing, limits on the amount of foreign ownership in a particular firm or industry, and the differential treatment of foreign and domestic investors—that hinder international trade and investment. All of these policies were common in North America prior to CUSTA and NAFTA.

The benefits of market integration are many. In general, market integration enables agricultural producers and consumers throughout the newly integrated region to benefit more fully from their relative strengths and to respond more efficiently to changing economic conditions. For producers, market integration opens new sales territories, sometimes enabling further exploitation of economies of scale. It gives producers access to potentially cheaper inputs and creates new opportunities for FDI. But market integration also exposes producers to new competition from producers in formerly isolated locations. For consumers, market integration provides access to new varieties of food products and offseason supplies of fresh fruits and vegetables and may lead to faster income growth. Greater competition is also likely to make food more affordable, thereby expanding consumer purchasing power.

Following the framework established in the 2005 NAFTA report, this report defines three levels of market integration—*high*, *medium*, and *low*—and classifies the level of integration that currently exists across North American agriculture, as follows:

- ***A high degree of market integration.*** Virtually all of the major barriers to trade and investment (tariffs, quotas, investment restrictions, etc.) have been removed. Any remaining requirements, such as SPS standards, generally allow for substantial cross-border flows of trade and investment and are consistent with the country's obligations under its international trade agreements. Reaching a high degree of market integration in a particular sector comes with large flows of trade and investment, sometimes featuring intra-industry trade (trade in both directions within a particular industry). It also comes with structural changes in agricultural and food industries necessary for accommodating these new economic arrangements.

- ***A medium degree of market integration.*** One or more significant barriers to trade and/or investment linger. Examples other than tariffs and quotas include transportation and logistical problems in specific geographic areas. In a sector with a medium degree of market integration, trade, production, or consumption often have already changed substantially, but there is a perception that removing additional barriers will result in further economic change.
- ***A low degree of market integration.*** Markets are clearly prevented from integrating due to the presence of one or more significant barriers to trade and/or investment. In some instances, these barriers may be viewed as appropriate. For example, science-based SPS standards that ensure the health and safety of the public or protect farms and ranches from the spread of damaging animal and plant diseases may inhibit integration in certain cases. Few sectors in North American agriculture exhibit a low degree of integration due to policy reasons, thanks in part to NAFTA and the efforts of its member governments.

Table 2 presents an overview of the current status of market integration in North American agriculture and how it has changed over the past 15 years. The degree of market integration clearly varies across agriculture. Within a given agricultural sector, the level of integration often varies by trading partner and the direction of trade between a particular pair of trading partners. For instance, the U.S. and Canadian poultry industries have experienced little integration due to the exclusion of U.S.-Canada poultry trade from trade liberalization under CUSTA and NAFTA. At the same time, sanitary concerns have shaped U.S.-Mexico poultry trade so that it consists primarily of U.S. exports to Mexico.

Trade

U.S. agricultural trade with Canada and Mexico has more than tripled since the start of NAFTA's implementation in 1994 (fig. 1). Determining how much of this increase should be attributed to CUSTA and NAFTA, however, is not an easy task for several reasons. First, the trade barriers dismantled by the agreements vary greatly by commodity and trade partner. Second, NAFTA's establishment of an economic policy environment conducive to cross-border business provides additional stimulus to regional agricultural trade beyond that obtained from the removal of tariffs and quotas. Third, factors other than CUSTA and NAFTA (for example, population and economic growth, exchange-rate movements, and advances in agricultural technologies, communication, transportation, and logistics) affect the size, direction, and composition of North American agricultural trade.

Most economic analysis of NAFTA's trade effects has focused on the United States and Mexico, largely because U.S.-Canada trade liberalization was well underway by the time of NAFTA's negotiation. An assessment prepared for the Congressional Budget Office of NAFTA's impact on U.S.-Mexico trade suggests that the impact has risen gradually with the agreement's implementation (Arnold, 2003). The study estimated that NAFTA boosted U.S. exports to Mexico (agricultural and nonagricultural) by 11.3 percent in 2001 and U.S. imports from Mexico by 7.7 percent. Given the value of bilateral agricultural trade in 2001, these percentages would correspond to an additional $751 million in agricultural exports to Mexico and an additional $376 million in agricultural imports from Mexico in that year alone.

Table 2

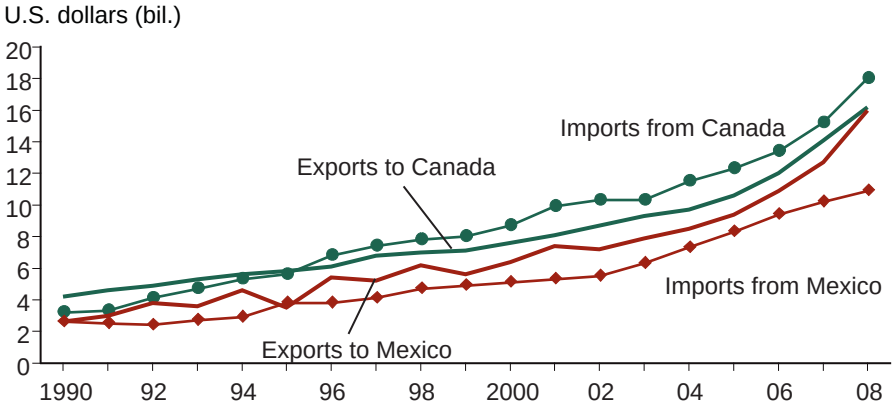
NAFTA has advanced the integration of many aspects of North American agriculture

	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. NAFTA's restrictions on U.S. corn exports to Mexico ended in 2008. Strong linkages between U.S. grain and oilseed farmers and Mexican hog and poultry producers. Mexican investment in U.S. baking and tortilla industries.	High degree of integration, except for 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	Coordinated response by NAFTA governments to discoveries of Bovine Spongiform Encephalopathy (BSE) in Canada and U.S. illustrates integration of cattle and beef industries. 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 the Mexican market. U.S. exports to Mexico of beef, pork, and poultry meat all have doubled in volume during the NAFTA period. Second- and third-largest chicken producers in Mexico are affiliates of U.S. firms. Medium degree of integration regarding Mexican producers and the U.S. market, except feeder cattle (high). U.S. recognition of Mexican progress in controlling certain animal diseases has facilitated moderate level of Mexican pork and poultry meat exports to United States.	High degree of integration in cattle, beef, hogs, and pork. Expanded Canadian hog exports to U.S. include larger proportion of feeder animals that are completed in U.S. Growing two-way trade in cattle and 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. Large volumes of bilateral trade. U.S. growers benefit from ties to Mexican supermarkets. Mexican cantaloupe exports to U.S. remain low. Fruit and Vegetable Dispute Resolution Corporation closes its Mexico office.	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 tomatoes, cucumbers, and peppers to the U.S., in addition to fresh and frozen potatoes.
Sugar and sweeteners	Regional trade in sugar and other sweeteners is complemented by trade in processed foods containing sweeteners.	Medium degree of integration. U.S. and Mexico resolve long-standing dispute and implement 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.
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. Specialization in which U.S. supplies cotton to Mexico and Mexico supplies cotton textiles and apparel to United States.	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. Beer is Mexico's leading agricultural export to the United States.	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/ERS.

Figure 1

U.S. agricultural trade with its NAFTA partners has more than tripled since the agreement's implementation in 1993



Source: USDA, Foreign Agricultural Service (2009).

NAFTA has enabled the United States and Mexico to benefit more fully from complementary agricultural trade. Grains, oilseeds, meat, and related products make up about three-fourths of U.S. agricultural exports to Mexico in terms of value, while beer, vegetables, and fruit account for roughly 70 percent of U.S. agricultural imports from Mexico (app. tables 1 and 2). Mexico does not produce enough grains and oilseeds to meet internal demand, so the country's food and livestock producers import sizable volumes of these commodities to make value-added products, primarily for the domestic market. In turn, U.S. fruit and vegetable imports from Mexico are closely tied to Mexico's expertise in producing a wide range of produce, along with its favorable climate and a growing season that largely complements the U.S. growing season. Successful efforts to market specific brands of Mexican beer in the United States have made that product Mexico's leading agricultural export to the United States. In 2008, U.S. beer imports from Mexico approached $1.6 billion, compared with just $163 million in 1993.

In contrast, U.S.-Canada agricultural trade is marked by a substantial amount of intra-industry trade, particularly in value-added products (app. tables 3 and 4). Within the broad category of grains and feeds, for instance, intra-industry trade encompasses numerous processed foods—including dog and cat food for retail sale; mixes and dough; pastries, cake, bread, and pudding; breakfast cereal; and uncooked pastas. Beef and pork are prominent examples of intra-industry trade outside the grain and feed sector. Trade liberalization under CUSTA and NAFTA has facilitated the expansion of intra-industry trade, especially in wheat products and beef (Zahniser and Link, 2002). The two agreements also give Canadian consumers much freer access to U.S. and Mexican fresh produce. In 2008, U.S. fruit and vegetable exports to Canada approached $4.0 billion, with fresh produce accounting for nearly three-quarters of this amount.

Employment

Input-output analysis suggests that U.S. agricultural exports to Canada and Mexico supported about 243,000 jobs throughout the U.S. economy in 2006.[2] This number is quite small when compared with the size of the U.S.

[2]This figure is calculated by multiplying the trade multiplier for U.S. agricultural exports in 2006 (10,657 jobs per $1 billion in exports) by the value of U.S. agricultural exports to Canada and Mexico in that year ($22.8 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 Multiplier (Edmondson, 2007) enables users to work with predefined multipliers and to create their own multipliers.

workforce (about 142 million) (U.S. Department of Labor, Bureau of Labor Statistics, 2007) and the number of U.S. farm operators (3.2 million, counting both primary and secondary operators) (Hoppe et al., 2007: p. 15). NAFTA's net impact on U.S. agricultural employment is also likely to be small. One computable general equilibrium model indicated that U.S. rural employment in 1996 was 0.7 percent larger than it would have been in the absence of CUSTA and NAFTA (Crawford and Link, 1997). An input-output analysis of similar vintage concluded that there was "little net impact on [U.S.] employment" associated with NAFTA agricultural trade (Schluter and Gale, 1996). These results, although dated, are broadly consistent with a more recent study of NAFTA's impact on the U.S. economy as a whole, which indicated that the agreement had contributed several hundredths of 1 percent to U.S. gross domestic product (Arnold, 2003).

Strong productivity growth, coupled with the sheer size of U.S. agriculture, helps explain why CUSTA and NAFTA's impact on U.S. agricultural employment is so small. As an example, consider the U.S. soybean sector, for which export sales to Canada and Mexico combined have more than tripled during the CUSTA-NAFTA period. In terms of soybean equivalent, U.S. exports to Canada and Mexico of soybeans, soyoil, and soymeal increased from an annual average of 87 million bushels during marketing years (MYs) 1983/84-1987/88 to 313 million bushels during MYs 2003/04-2007/08—an increase of 258 percent. Average yields increased by 30 percent over the same period—from 31 to 41 bushels per acre. When this increase is multiplied by the average number of soybean acres harvested during MYs 1983/84-1987/88, one gets an additional 586 million bushels of soybeans—more than enough to cover the additional 226 million bushels of soybeans, soyoil, and soymeal exported to Canada and Mexico.

Employment continues to decline in the U.S. textile and apparel sector, an agriculture-related industry in which the United States is less competitive due to the availability of cheaper labor in developing countries. Between 1993 and 2007, U.S. textile and apparel employment decreased from 1,662,000 to less than 750,000 (U.S. Department of Labor, Bureau of Labor Statistics, 1994, 2008). The start of this decline predates NAFTA by almost two decades, but 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. This integrated industry has faced intense competition from China, Vietnam, and other countries outside NAFTA with the implementation of the WTO's Agreement on Textiles and Clothing.

Foreign Investment

More than 15 years after the start of NAFTA's implementation, Mexico's agricultural, food, beverage, and tobacco industries continue to attract additional FDI. According to Mexican statistics, these industries received net inflows of $17.2 billion in additional foreign investment between January 1999 and June 2008 (Secretaría de Economía, Dirección General de Inversión Extranjera, 2008). Roughly half of this capital came from the United States. U.S. statistics indicate that U.S. firms are responsible for most of the FDI in the North American processed food sector, which does not include the beverage industry or production agriculture. In 2007, the stock of U.S. direct investment in the

Canadian and Mexican processed food industries equaled $4.1 billion and $2.3 billion, respectively (app. table 5). The stock of Canadian and Mexican direct investment in the U.S. processed food industry was $3.1 billion for Canada in 2007 and $1.0 billion for Mexico in 2001.[3] U.S. authorities do not routinely report similar statistics for the beverage industry and production agriculture, mainly to protect the confidentiality of individual companies and producers.

Food sales in Canada and Mexico associated with U.S. direct investment are substantial. In 2005, Canadian and Mexican affiliates (majority-owned) of U.S. multinational food companies had sales of U.S. $16.3 billion and U.S. $7.1 billion, respectively. Together, these sales are 77 percent larger than the value of U.S. processed food exports to Canada and Mexico (fig. 2). Major U.S. brands of finished products are sold in Canada and Mexico, and some Canadian and Mexican brands are prominent in the United States, giving consumers in the region access to a wider variety of products. In intermediate product markets, U.S. direct investment plays an important role in Canadian and Mexican flour milling, grain trading, and meat processing. Through direct investments in the other NAFTA countries, several large companies from Canada and Mexico have reinvented themselves as larger, stronger, and more viable firms. In some instances, the resulting operations outside the home country rival the operations in the home country in size and importance (Doan et al., 2005).

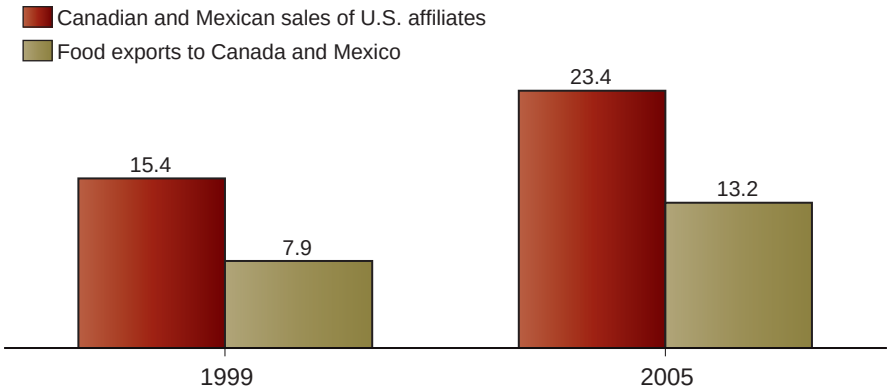
Agricultural Policy

NAFTA generally preserves the autonomy of each member country to define and implement its own domestic agricultural policies, and the member countries are exercising this authority as they make changes to their farm programs. In Canada, the agricultural ministers of the national, provincial, and territorial

Figure 2

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

U.S. dollars (bil.)



Notes: Affiliate sales are those of nonbank majority-owned U.S. affiliates and do not include sales in the beverage industry. Food exports consist of those products that made up SIC 20 of the old Standard Industrial Classification system, minus the following beverages: fluid milk; malt beverages; wines, brandy, and brandy spirits; distilled and blended liquors; and bottled and canned soft drinks and carbonated waters.

Sources: U.S. Department of Commerce, Bureau of Economic Analysis (2006) (affiliate sales) and USDA, Economic Research Service (exports).

[3]The stock of Mexican direct investment in the U.S. processed food industry for 2002-07 is suppressed in order to avoid the disclosure of data of individual companies. Also, U.S. statistics on the stock of foreign investment and Mexican statistics on the flow of foreign investment are not directly comparable, since they measure different concepts (stock versus flow) and do not cover the same sectors of the economy.

governments endorsed a new framework called "Growing Forward" for their country's agricultural policies in July 2008.[4] In Mexico, the Government has retained much of the existing structure of its agricultural programs (direct supports, target income, and incentives for the acquisition of equipment and infrastructure), while increasing the real size of its agricultural secretariat's budget by 12 percent in 2007 and 4 percent in 2008.[5] In the United States, the Food, Conservation, and Energy Act of 2008 (2008 Farm Act) provides the legal framework for many U.S. farm programs through 2012.[6]

Despite the many unique features of each country's agricultural programs, some aspects of the member countries' farm policies have moved together during the NAFTA period. For instance, each country provides its farmers with countercyclical income support when commodity prices (or net farm revenue, in the case of Canada) fall below a certain level. In recent years, commodity prices have been sufficiently high that the United States and Mexico did not provide countercyclical support for certain crops. Revenue-based farm support is common to both U.S. and Canadian agricultural policies. As part of Growing Forward, Canada has replaced its previous subsidized savings account program with a suite of 4 risk management programs focusing on income stabilization for margin declines greater than 15 percent, a subsidized savings account program for smaller margin declines, production insurance, and additional assistance in response to natural disasters. As part of the 2008 Farm Act, the United States has initiated its own revenue-based countercyclical program called the Average Crop Revenue Election (ACRE) program. This optional program, which will be available starting in the 2009 crop year, is an alternative to receiving countercyclical payments. Participants must also agree to reduce their direct payments by 20 percent and marketing loan assistance payments by 30 percent on enrolled farms.

[4]For details, see Agriculture and Agri-Food Canada's website at http://www4.agr.gc.ca/AAFC-AAC/display-afficher.do?id=1200339470715&lang=e.

[5]The real rates of increase were calculated using the secretariat's budget allocations (in nominal pesos) and the implicit price indices from INEGI (2008).

[6]The ERS website provides a detailed side-by-side comparison of the 2008 and 2002 Farm Acts at http://www.ers.usda.gov/farmbill/2008/.

Rising Demand Drives Integration of Grain and Oilseed Markets

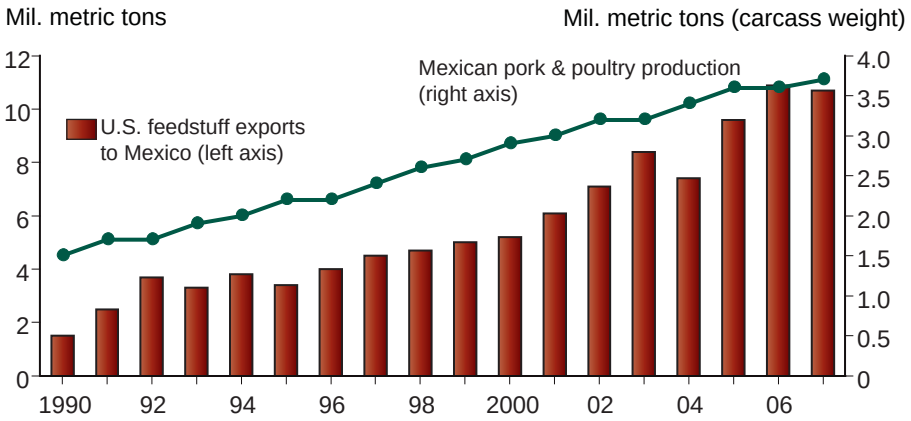
Rising demand for feed and food has been a powerful driver of market integration in North America, creating new opportunities for regional trade in grains, oilseeds, and related products. In this broad category, U.S. exports to Mexico, Canadian exports to the United States, and U.S. exports to Canada have all increased by 150 percent or more since NAFTA's implementation (app. tables 1-4). With the elimination of NAFTA's TRQ on U.S. corn exports to Mexico, all regional trade in grains and oilseeds is now free of tariff and quota barriers, and the Mexican and U.S. markets for these commodities have achieved a high degree of integration—comparable to what exists between Canada and the United States.

Poultry and hog producers in Mexico 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 roughly 150 percent during the NAFTA period, approaching 20 million metric tons in 2008 (fig. 3).[7] U.S. feedstuffs enable Mexican livestock producers to expand output, lower their costs of production, and compete more effectively with meat imports, and they have made possible a substantial increase in Mexican meat consumption. Between 1993 and 2008, per capita consumption of broiler meat rose from 16 to 29 kilograms (a 79-percent increase), while per capita pork consumption climbed from 10 to 15 kilograms (a 42-percent increase).[8] Canada's poultry and hog producers also utilize some U.S. feedstuffs—most notably corn and soybean meal—and expanded use of corn by Canada's ethanol producers is boosting U.S. corn exports to Canada (Dessureault, 2008: p. 5).

Feed ingredient trade among the NAFTA countries encompasses a diversity of products. For example, Mexican poultry producers identified the following

Figure 3

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 ans products, feeds and fodders (excluding oilcake), and oilseeds and products.

Sources: USDA, Foreign Agricultural Service (2009) (exports); Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca, y Alimentación, Servicio de Información Agroalimentaria y Pesquera (SAGARPA/SIAP) (2009b) (production).

[7]The 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.

[8]These calculations are made using consumption estimates from USDA, Foreign Agricultural Service (2009), and population estimates from the U.S. Department of Commerce, Bureau of the Census (2008).

composition of their feed imports during the 2007 marketing year: sorghum and yellow corn (60 percent), oilseeds and protein meals (23 percent), and other feed ingredients such as safflower, orthophosphate, calcium, and methionine (17 percent) (Flores, 2008: p. 17). A close examination of U.S. trade statistics (app. tables 1-4) 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 distillers' dried grains with solubles (DDGS), a co-product of ethanol production that is used to feed livestock.

Growing food demand in Mexico has fostered greater integration of the U.S. and Mexican markets for wheat and rice. Since 1993, Mexico's population has grown from 90 to 110 million (22 percent), but the area devoted to rice and wheat production in Mexico is roughly the same now as it was in the early 1990s.[9] In this context, the quadrupling of U.S. wheat and rice exports to Mexico since NAFTA's initial implementation has enabled Mexican wheat consumption to remain steady and Mexican rice consumption to grow. In 2008, annual per capita wheat consumption in Mexico equaled about 60 kilograms—roughly the same level as in 1993. Meanwhile, per capita rice consumption climbed from 5.4 to 7.5 kilograms (39 percent) between 1993 and 2008. Mexico continues to be a growth market for U.S. rice; U.S. rice exports to Mexico established a new calendar-year record of 891,000 metric tons in 2008. Rice is an affordable staple food for middle- and lower income households in Mexico (Juarez et al., 2008: p. 5), and per capita rice consumption is still relatively low.

[9]By comparison, Canada's population has increased from 29 to 33 million (14 percent) during the NAFTA period, while the U.S. population has grown from 260 to 304 million (17 percent).

Corn

NAFTA has provided much of the legal framework for a tremendous expansion in U.S. corn exports to Mexico. These exports have nearly quadrupled, compared with their average annual level during the decade prior to NAFTA (1984-93). The export volume for 2008—9.3 million metric tons—included 182,000 metric tons of cracked corn, which consists of broken or ground kernels and is used as animal feed. Cracked corn was not covered by the transitional restrictions that Mexico used to regulate conventional corn imports, and U.S. cracked corn has enjoyed unrestricted access to the Mexican market since 2003. 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 are being replaced almost in their entirety by imports of conventional corn. Counting cracked corn, U.S. corn exports to Mexico now equal about 40 percent of Mexican production, compared with 15 percent during 1984-93.

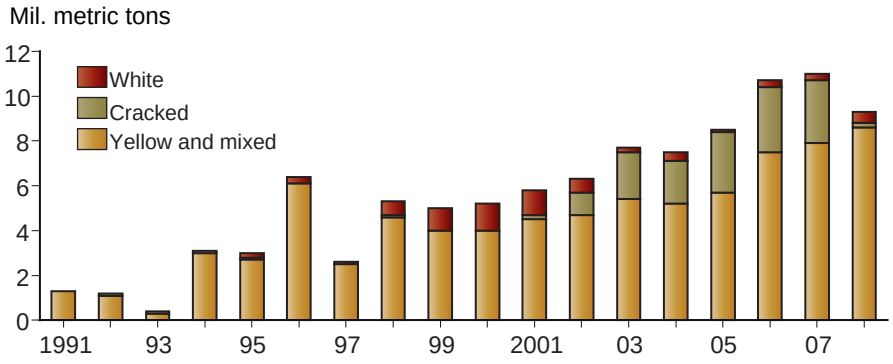
The Mexican Government pursued a more liberal transitional policy for corn than NAFTA required, which resulted in a faster integration of the grain market. The NAFTA TRQs for U.S. corn were far too small to accommodate Mexico's growing demand for this grain. For example, NAFTA's duty-free quota for U.S. corn for 2007 was less than 3.7 million metric tons. To remedy this constraint, Mexico customarily issued import permits beyond the amount required by NAFTA, particularly for the yellow corn favored by Mexican livestock and starch producers, at tariff rates far below the over-quota tariff allowed by NAFTA.

Yellow corn, which is used primarily in Mexico as animal feed or to manufacture starch, makes up the bulk of U.S. corn exports to Mexico (fig. 4). White corn, used mainly to make tortillas and other corn-based foods for direct human consumption, accounts for less than 5 percent of these exports. Diversification of the Mexican diet has dampened white corn consumption in Mexico. Between 1995 and 2008, annual per capita consumption of tortillas dropped from nearly 120 kilograms to roughly 80 kilograms (Arreola, 2008). In this context, U.S. white corn exports to Mexico declined almost without interruption between 2000 and 2007. In 2008, however, these exports reached 528,000 metric tons, their highest level since 2002.

The opening of Mexico's corn market does not mean that Mexican corn production has declined during the NAFTA period. Instead, production has increased by 73 percent, compared with its average annual level during 1984-93 (fig. 5). In Mexico's 2007 agricultural year (October 2006 to March 2008), Mexican corn production reached 23.5 million metric tons—an all-time record. 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

Figure 4

U.S. corn exports to Mexico consist primarily of yellow corn

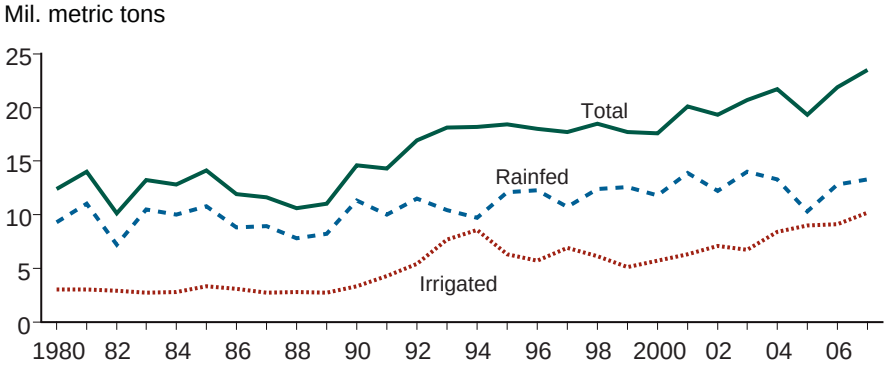


Note: Yellow and mixed corn exports are calculated by subtracting white corn exports from total corn exports. The harmonized tariff system defines cracked corn (broken or ground kernels) as a distinct commodity from corn.

Sources: USDA, Foreign Agricultural Service (2009) (total corn and cracked corn exports); USDA, Agricultural Marketing Service (1991-2005, 2006-08) (white corn exports).

Figure 5

Mexican corn production, agricultural years 1980-2007



Source: Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca, y Alimentación, Servicio de Información y Estadística Agroalimentaria y Pesquera (SAGARPA/SIAP) (2009a).

yields comparable to those in the United States. Rainfed production of corn also has tended to increase during the NAFTA era, due in part to yield improvements. Over the last several years, Mexico's corn sector has demonstrated some responsiveness to high international corn prices. Between agricultural years 2006 and 2007, irrigated area planted with corn increased by 6 percent, and rainfed area planted with corn increased by 3 percent.

Mexico currently prohibits the planting of genetically modified (GM) corn in its territory, although rules issued in March 2008 to implement the country's biosecurity law outline a regulatory process that will consider GM corn varieties for experimental and commercial planting (Juárez, 2008). A few Mexican corn farmers may already have started to plant GM varieties. In September 2008, Mexico's food safety agency—SENASICA[10]—announced that it had detected about 70 hectares of GM corn planted in the Mexican State of Chihuahua (SAGARPA, 2008a). In January 2009, the Secretariat of the Commission for Environmental Cooperation (CEC)[11] received a citizen submission from several agricultural and environmental organizations asserting that the Mexican Government is not effectively enforcing its environmental 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.

[10]SENASICA 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).

[11]The 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.

National Policies and Further Integration

Certain national policies continue to affect the integration of North America's grain and oilseed markets. The activities of the Canadian Wheat Board (CWB) provide a prime example. The CWB is a shared governance marketing organization that operates a national monopsony (e.g. 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. These activities include 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. In 2007, the Government amended the Canadian Wheat Board Regulations (CWBR) and removed barley from the CWB's single-desk trading authority. This action followed a government-held plebiscite of barley farmers in 2006 in which 48 percent of the plebiscite's participants indicated that they wanted the freedom to select whether the CWB or another entity would market their product, 38 percent desired to "retain the single desk," and 14 percent asked that the CWB "have no role in marketing barley" (Agriculture and Agrifood Canada, 2008). The CWB challenged the Canadian Government's amendments in federal court. The court reversed the Government's amendments, stating that any changes to barley or wheat marketing must be done through changes to legislation and not through regulations. The CWB has continued to frustrate the Canadian

Government's efforts to reduce its authority and is still under no obligation to provide marketing alternatives for barley other than the single desk.

Two aspects of U.S. policies have drawn criticism in recent years for their impacts on North America's grain and oilseed markets. First, U.S. support of biofuel production is perceived as placing upward pressure on the prices of grains and oilseeds and hence the cost of foods whose production relies on these commodities. For instance, in a speech delivered to Mexican cattle producers in June 2008, Mexico's agricultural secretary called on countries to change their policies and use less grain for ethanol production, noting the stresses that high grain prices place on cattle and poultry producers (SAGARPA, 2008b). Trostle (2008) underscores that a wide range of factors were responsible for the tightening of world grain and oilseed markets, including not only greater global demand for biofuel feedstocks but also adverse weather conditions in some producing regions, increased input costs, and export restrictions by some grain and oilseed producing countries. Analysis presented by Glauber (2008) estimates that increased use of corn for ethanol production and soybean oil for biodiesel production, above levels in marketing year (MY) 2005/06, raised the price of corn by 24 cents per bushel (9 percent) in MY 2006/07 and 65 cents per bushel (18 percent) in MY 2007/08. Estimated increases in the price of soybeans were 18 cents per bushel (3 percent) for MY 2006/07 and $1.75 per bushel (21 percent) for MY 2007/08.

Second, U.S. domestic agricultural supports have been criticized because of the perception that these supports place downward pressure on agricultural commodity prices, bolster U.S. agricultural exports, and are inconsistent with U.S. commitments under the URAA. In December 2007, requests for WTO dispute resolution panels in separate cases initiated by the Governments of Canada and Brazil resulted in a decision to form a single panel on the subject of U.S. domestic agricultural supports, although the panel has not yet been established. Similarly, many Mexican critics of NAFTA have cited U.S. farm programs as part of a pattern of unfair competition. In return, the Mexican Government has raised its direct support of the country's commercially oriented grain and oilseed farmers.

Livestock and Animal Product Markets Undergo 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 transitional tariff-rate quota (TRQ) on U.S. nonfat dry milk (NFDM). However, the opportunities for free trade to advance the integration of North America's livestock and animal product sectors are not yet exhausted, since the agreement did not liberalize dairy and poultry trade between Canada and the United States or between Canada and Mexico. These exemptions are largely due to 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

U.S.-Mexico dairy trade is now completely free of tariffs and quotas, following the dismantling of Mexico's TRQ on U.S. NFDM. Nonfat dry milk is the leading U.S. dairy export to Mexico, and it is the only item among livestock and animal products that was subject to a 14-year, transitional TRQ under NAFTA. Elimination of this restriction is expected to lead to increased U.S. NFDM exports to Mexico (Nawn and Hernandez, 2008a: p. 3). In 2008, these exports equaled about 133,000 metric tons, which exceeds the previous record of 109,000 metric tons established in 2005. A Mexican parastatal company purchases about 60 percent of Mexico's NFDM supply (including imports) in order to sell reconstituted milk to poor families at subsidized prices (Nawn and Trejo, 2007: p. 13).

Also, a temporary safeguard TRQ on U.S. exports of chicken leg quarters (CLQs) to Mexico 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 is expected to allow larger volumes of U.S. CLQs into Mexico. From January to November 2008, Mexican imports from the United States of chicken legs, thighs, or legs and thighs in one piece (the category in the import data that includes CLQs) reached 140,000 metric tons, compared with 117,000 metric tons during the first 11 months of 2007 (Secretaría de Economía, as reported by Global Trade Information Services, 2009).

Chicken leg quarters may seem to be an odd focus for a temporary import restriction, but the safeguard reflected the traditional orientation of Mexico's poultry sector. Mexican consumers tend to prefer whole fresh chickens (including live birds) over chicken cuts, and much of Mexico's poultry industry focuses on supplying this demand. Thus, greater availability of CLQs could entice some consumers to buy more leg quarters and fewer whole birds. Together, chicken legs, thighs, or legs and thighs in one piece account for about

one-fifth of Mexican imports of U.S. poultry meat (fig. 6). Given its historical emphasis on whole chickens, the Mexican poultry industry does not produce large quantities of either turkey meat or mechanically deboned meat (MDM), a key ingredient in sausages and cold cuts. Instead, Mexico imports these commodities, which make up about two-thirds of the country's poultry meat imports from the United States.

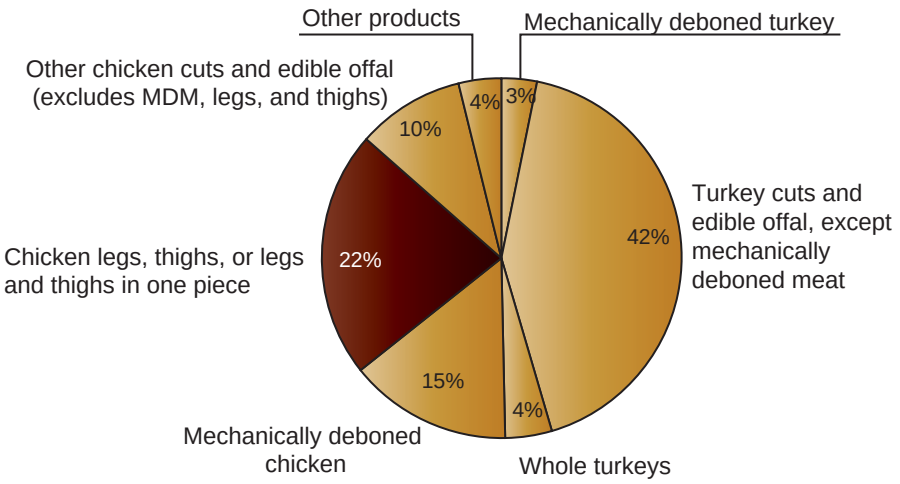
Integration Recovers from the BSE Discoveries of 2003

North America's cattle and beef sectors have become more integrated in recent years. Establishment of greater control over the risk factors associated with bovine spongiform encephalopathy (BSE) has enabled the cattle and beef industries to recover, at least in part, from the economic disruptions that followed the North American discoveries of this disease in 2003. BSE 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). When BSE was discovered in Canada in May 2003 and in the United States in December 2003,[12] sanitary barriers were erected to prevent Canada-U.S. trade in cattle and beef, and many countries—including Mexico—imposed similar restrictions on imports from Canada and the United States. Since then, the NAFTA countries have worked together to coordinate sanitary policies related to BSE, to upgrade international standards in this area, and to achieve the resumption of cattle and beef trade.

In May 2007, the World Organization for Animal Health (known by its historical acronym, OIE) recognized Canada and the United States as having controlled risk status for BSE. Mexico received the same recognition in May 2008. Controlled risk status means that a country (or designated region

Figure 6

In 2007, chicken legs, thighs, or legs and thighs in one piece made up about one-fifth of Mexican imports of U.S. poultry meat, in terms of value



Source: Secretaría de Economía, as reported by Global Trade Information Services (2009).

[12]A total of 15 animals in Canada have been discovered to have BSE since May 2003. The most recent Canadian discovery (November 2008) was a 7-year-old dairy cow in British Columbia. 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. No BSE discoveries have been reported for Mexico. The websites of USDA's Animal and Plant Health Inspection Service and the Canadian Food Inspection Agency offer detailed information about developments related to BSE in their respective countries.

within a country) has met stringent conditions regarding the identification and management of risk factors, surveillance for the disease, the destruction of animals found to have BSE, and demonstration that neither meat-and-bone meal nor greaves from ruminants have been fed to ruminants.[13] As the NAFTA countries worked to achieve controlled risk status, they gradually modified their sanitary barriers in ways that allowed specific types of cattle and beef trade to resume. For U.S. regulators, many of these efforts took place within the framework of a final rule implemented in December 2004 that defined minimal risk regions for BSE and designated Canada as the first such region to hold that status.

Many of the remaining sanitary barriers to regional cattle and beef trade concern exports to Mexico. The Mexican Government continues to require that beef imports from the United States and Canada come from animals less than 30 months of age. Despite this requirement, U.S. beef exports to Mexico in 2008 exceeded their quantity in 2002. Mexico also continues to restrict cattle imports from the United States and Canada to purebred breeding animals and to registered U.S. dairy heifers less than 24 months of age.[14] In 2008, U.S. cattle exports to Mexico were roughly 49,000 head, compared with 106,000 head in 2002.

The cattle and beef markets of Canada and the United States have re-equilibrated to the resumption of bilateral trade, and in some ways now resemble the pre-BSE situation. In 2008, Canadian and U.S. beef production was about 2 percent below 2002 levels (USDA/FAS, 2008). Midyear inventories of Canadian beef cows have steadily declined since 2005, and were comparable in 2008 to their level in 2002 (Myles, 2008: p. 4). After the U.S. border was closed to Canadian cattle, Canada experienced unusually high cattle inventories for several years. The subsequent reopening of the border to Canadian cattle less than 30 months of age in 2005 and to Canadian cattle 30 months or older in 2007 has facilitated the reduction of these inventories.

Ultimately, how well North American beef sells outside the NAFTA region will indicate now much the industry has recovered from the BSE discoveries. Although U.S. beef exports to Canada and Mexico in 2008 exceeded their 2002 levels, total U.S. beef exports were 24 percent below 2002 levels. 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. The OIE recognizes Australia and New Zealand as having a negligible risk of BSE. 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 (Canadian Food Inspection Agency, 2008a). Interestingly, Mexico has established itself as a beef exporter since the BSE discoveries of 2003. In 2007, Mexican beef exports totaled $148 million, with about one third of these sales going to Japan and South Korea.

Regionalization Facilitates Mexican Pork and Poultry Meat Exports

Regionalization of trade-related sanitary standards has allowed for the emergence of moderate pork and poultry meat exports from Mexico to the United States. Both NAFTA and the URAA require, when possible, the regionalization of sanitary and phytosanitary standards. In the case of livestock and

[13]Greaves are the "protein-containing residue obtained after the partial separation of fat and water during the process of rendering," according to the glossary of the Terrestrial Animal Health Code. See OIE's website (www.oie.int) for a complete explanation of the requirements for controlled risk status.

[14]See Nawn and Hernandez (2008b: pp. 12-13) for more complete lists of the bovine product imports allowed by and prohibited by Mexico.

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. In addition to facilitating Mexican pork and poultry meat exports to the United States, regionalization has enabled the continuation of U.S. poultry meat exports to Mexico, despite an outbreak of low-pathogenic avian influenza in Arkansas in June 2008 (Flores, 2008: p. 11).

Throughout the NAFTA period, the Mexican Government has worked with Mexico's hog and poultry industries to gain firmer control of Classical Swine Fever (CSF) and Exotic Newcastle Disease (END). At the same time, Mexican authorities have worked with their U.S. counterparts to regionalize U.S. sanitary standards related to these diseases. As of October 2008, the United States considered nine Mexican States—Baja California, Baja California Sur, Campeche, Chihuahua, Nayarit, Quintana Roo, Sinaloa, Sonora, and Yucatán—to be free of or at low risk of CSF and three Mexican States—Campeche, Quintana Roo, and Yucatán—to be free of END (USDA, Animal and Plant Health Inspection Service, 2008).[15] Under specific conditions, the United States also permits the importation of fresh poultry meat and other poultry products from Sinaloa and Sonora, even though it does not recognize these States as being free of END. However, no Mexican facility is currently certified by USDA's Food Safety and Inspection Service (FSIS) to export Mexican poultry to the United States. Only U.S. product that undergoes further processing may be re-exported to the United States.

These efforts have facilitated the establishment of a moderate level of Mexican pork and poultry meat exports to the United States over the past 6-7 years. Previously, the United States imported very little pork or poultry meat from Mexico due to sanitary restrictions, even though the United States had eliminated its tariffs on Mexican pork and poultry meat immediately upon NAFTA's implementation in 1994. U.S. poultry meat imports from Mexico—that is, U.S. poultry meat that has undergone further processing in Mexico—equaled $19 million in 2008, while U.S. pork imports from Mexico surpassed $24 million. By comparison, Mexico is a major exporter of pork to Japan, with exports totaling $206 million in 2007 (Secretaría de Economía, as reported by Global Trade Information Services, 2009).

U.S. recognition of a disease-free or low-risk region does not guarantee that meat processors in that region will be allowed to export to the United States, nor does recognition by a foreign country of a disease-free or low-risk region in the United States guarantee that U.S. meat processors in that region will be allowed to export to that particular country. Processors must be certified by their national governments as being eligible to export. In addition, processors must be approved by the importing country's government and may be subject to audits by that government.[16] Audits of foreign meat processors by individual NAFTA governments sometimes result in the decertification of individual meat processing plants, either on a temporary or a permanent basis.

[15]Since 2009, the Mexican Government has considered its entire territory to be free of CSF.

[16]USDA'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: http://www.fsis.usda.gov/Regulations_&_Policies/index_of_certified_countries/index.asp.

Country-of-Origin Labeling and Livestock and Meat Trade

Concerns about how mandatory country-of-origin labeling (COOL) by the United States could affect the integration of North America's livestock and meat sectors were at the center of Canadian and Mexican requests for WTO consultations on this subject. Several aspects of North America's livestock and meat sectors—including Mexican and U.S. cattle production and Canadian and U.S. hog production—have been integrated for some time. Mexico has exported feeder cattle to the United States on a regular basis for almost a quarter century (Mitchell et al., 2001). In 2008, U.S. cattle imports from Mexico equaled about 703,000 head, most of which were feeder animals. Similarly, Canada exports large numbers of live hogs to the United States—about 9.3 million in 2008—primarily for finishing and slaughter. For the past several years, Canadian hog exports to the United States have accounted for about 8 percent of commercial hog slaughter in the United States, compared with 1 percent when CUSTA was first implemented in 1989.[17]

[17]Haley (2005, 2004) analyzes the factors that led to the integration of the Canadian and U.S. hog industries. Key and McBride (2008, 2007) document structural changes in the U.S. industry that have complemented this process.

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). Details of the COOL requirements are found in a final rule, published on January 15, 2009, that took effect on March 16, 2009 (USDA/AMS, 2009). The final 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, which stem from amendments in the 2002 and 2008 Farm Acts to the Agricultural Marketing Act of 1946, are in addition to COOL requirements already in effect for wild and farm-raised fish and shellfish.

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. Muscle cuts from animals born, raised, and slaughtered in the United States that are commingled during a production day with muscle cuts obtained from imported animals are to be labeled in the same fashion. 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.

NAFTA and several WTO agreements recognize the right of member countries to apply COOL requirements to imports from other member countries.[18] Nevertheless, in December 2008, Canada and Mexico requested consultations with the United States at the WTO after expressing concerns that the U.S. COOL requirements are inconsistent with U.S. obligations under international trade agreements. Requesting consultations is the first step in the WTO's dispute settlement process. In its request, Canada

[18]NAFTA's text uses the term "country of origin marking" to refer to COOL, while some of the WTO agreements use terms such as "origin marking" or "mark of origin."

emphasized that the category denoting muscle cuts of U.S. origin in the interim final rule (from animals born, raised, and slaughtered in the United States) is defined in such a way that excludes "beef or pork derived from livestock that is exported to the United States for feed or immediate slaughter" (WTO, 2008: p. 1). In January 2009, however, Canada indicated its satisfaction with changes made between the interim final rule and the final rule, noting that "the final regulations will allow for more flexibility on labeling requirements … for meat from animals of American and Canadian origin that are brought together during a production run" (Foreign Affairs and International Trade Canada, 2009). Mexico has stated that it will continue its challenge to U.S. COOL at the WTO.

An Integrated Fruit and Vegetable Market

North America's fruit and vegetable markets have generally been highly integrated for a long time. Many aspects of regional fruit and vegetable trade have been free of tariffs and quotas for a decade or longer, and with the removal of NAFTA's last set of agricultural trade restrictions, regional fruit and vegetable trade is now completely free of such obstructions. Continued attention to food safety and phytosanitary standards by the private sector and further regulatory coordination and institutional support by the NAFTA governments are crucial to the maintenance of this high level of integration and to the assistance of growers and shippers who wish to participate in cross-border trade.

Fruit and vegetable trade among the NAFTA countries has increased substantially since the agreement's implementation in 1994. Mexican fruit and vegetable exports to the United States have more than tripled during the NAFTA period, approaching $5.6 billion in 2008. 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. The last step in phasing out U.S. tariffs toward Mexican fruit and vegetables took place in 2008. Most of the last restrictions of this type were applied on a seasonal basis and were small in value (see table 1).

U.S. fruit and vegetable exports to Mexico have more than tripled since NAFTA's implementation, surpassing $1.0 billion for the first time in 2008. These exports have benefited from the rapid expansion of Mexico's supermarket sector over the past two decades. Several U.S. supermarket operators are active in Mexico. The Texas supermarket chain H-E-B had 28 stores in northern Mexico as of March 2009 (Supermercados Internacionales HEB, 2009), and Wal-Mart de México was operating 760 stores with grocery sales as of February 2009 (Wal-Mart de Mexico, 2009). Still, many Mexicans prefer to buy fresh produce at traditional food outlets such as centrales de abasto (public markets), tiendas de abarrotes (mom and pop shops), and tianguis (mobile street vendors) (Schwentesius and Gómez, 2002). In 2004, traditional food retailers accounted for an estimated 72 percent of fresh produce sales in Mexico (Acosta Tapia, 2005).

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, fresh peppers, and fresh cucumbers, as well as fresh-market mushrooms and fresh and frozen potatoes (app. table 4). U.S. tariffs on Canadian vegetables were generally small prior to CUSTA, with the important exception of fresh mushrooms, which faced seasonal restrictions with an ad valorem tariff equivalent of nearly 29 percent on a trade-weighted, annual basis. U.S. growers have been active participants in the Canadian market for some time. In 2008, U.S. fruit and vegetable exports to Canada approached $4 billion. Eliminating the remaining tariffs on U.S.-Canada trade has given Canadians tariff-free access to the full range of U.S. produce—facilitating U.S. exports of strawberries, cherries, pears, carrots, lettuce, and potatoes.

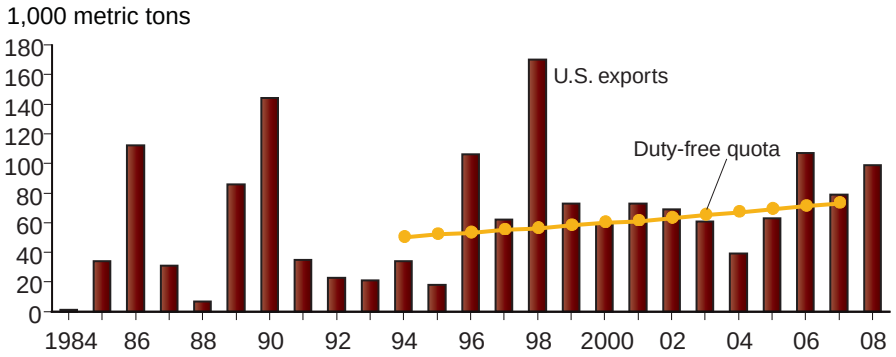
Even well-established aspects of regional agricultural trade can benefit from further regulatory coordination. A case in point is U.S.-Canada potato trade. To improve the efficiency of this trade, the United States and Canada established the Technical Arrangement Regarding Trade in Potatoes, which took effect on November 1, 2007, and is being phased in over a 3-year period. The main elements of the arrangement are: (1) mutual recognition of U.S. and Canadian standards and certification procedures related to quality grade standards of imported potatoes, (2) changes to the administrative process used by Canada to waive regulatory requirements for grade, packaging, and labeling when there is evidence of a potato shortage, (3) progressive elimination of U.S. funding to spot-check Canadian potatoes at northeastern U.S. border crossings, and (4) initiation of U.S. rulemaking to propose import requirements allowing entry of Canadian potatoes of a greater variety of sizes or colors.

Tariff and Quota Restrictions End for U.S. Dry Common Bean Exports to Mexico

Dry beans are the main commodity among fruit and vegetables whose transitional restrictions under NAFTA were eliminated in 2008. Over 1994-2007, NAFTA specified gradually less 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. Other varieties of U.S. and Canadian dry beans—such as garbanzo, lima, blackeye, and Adzuki—have enjoyed duty-free access to the Mexican market since 1994. NAFTA has enabled U.S. dry beans to become a steadier portion of Mexico's supply, but dry bean exports to Mexico continue to fluctuate because Mexican production varies greatly according to weather conditions (fig. 7). In 2008, U.S. exports of dry common beans to Mexico equaled about 99,000 metric tons.

Figure 7

U.S. dry common bean exports to Mexico, 1984-2008



Note: Data for 1989-2008 measure common beans only, while the preceding data cover all dry beans.

Sources: USDA, Foreign Agricultural Service (2009) and NAFTA tariff schedule.

Increased Importance of Imports to the U.S. Food Supply

A major result of the heightened integration of North America's fruit and vegetable market is that imports from the NAFTA countries have become more important to the U.S. food supply. In 2007, Mexico and Canada supplied about 11 percent of the fresh or frozen fruit available in the United States and 13 percent of the available fresh or frozen vegetables. In 1990, these shares each equaled 6 percent. Changing diets and the development of offseason 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 2007, fresh produce accounted for 48 percent of U.S. fruit and vegetable supply, up from 45 percent in 1990 (USDA, Economic Research Service, 2009; USDA, Foreign Agricultural Service, 2009).

Net imports (i.e., imports minus exports) provide another indicator of the increased reliance on imports to supply U.S. fruit and vegetable consumption (table 3). Prior to NAFTA, net imports from Mexico exceeded 15 percent of 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, fresh cucumbers, squash, and fresh tomatoes. Since NAFTA's implementation, a number of these commodities—fresh limes, fresh papayas, watermelon, bell peppers, squash, and fresh tomatoes—have experienced an

Table 3

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 disappearance	
	from World		from Mexico		from Canada			
	1991-93	2005-07	1991-93	2005-07	1991-93	2005-07	Average, 1991-93	Average, 2005-07
	Percent						*Kilograms*	
Selected fruit:								
Grapes, fresh[1]	15	25	4	8	-13	-8	3.4	3.7
Limes, fresh[1]	66	100	82	98	-3	-1	0.4	1.1
Mangos, fresh[2]	92	100	85	68	-2	0	0.4	0.9
Papayas, fresh	8	90	27	64	-9	-2	0.1	0.5
Strawberries, fresh	-8	-4	2	6	-9	-10	1.6	2.8
Watermelon	1	11	5	15	-5	-7	6.3	7.0
Selected vegetables:								
Asparagus, fresh	12	71	30	32	-13	-3	0.3	0.5
Bell peppers	5	26	18	48	-10	0	2.5	3.2
Broccoli and cauliflower, processing[3]	66	83	49	44	1	0	1.4	1.3
Cucumbers, fresh	28	49	31	42	-6	3	2.2	2.9
Onions, fresh	-20	2	7	4	-4	-2	7.4	9.5
Squash[4]	23	40	19	35	-1	-1	1.7	2.1
Tomatoes, fresh	9	31	16	31	-7	0	7.1	9.1

[1]For these commodities, marketing years 1990/91, 1991/92, and 1992/93 are compared with marketing years 2004/05, 2005/06, and 2006/07.

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

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

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

Sources: Prepared by USDA Economic Research Service using data from Lucier and Dettman (2008); Pollack and Perez (2008); and USDA, Foreign Agricultural Service (2009) (trade data).

increase of at least 10 percentage points in this measure. Due to investment and expanded use of greenhouse technologies, net imports from Canada now account for a larger portion of U.S. supply of bell peppers, fresh cucumbers, and fresh tomatoes than they did in the early 1990s. Mexico is following a similar technological path, which is resulting in rising shipments to the United States of fresh vegetables such as tomatoes and peppers grown under cover. Most of these imports are seasonal, occurring during the cool months when U.S. production is lower but demand remains strong.

Integration of Fruit and Vegetable Sectors Depends on Food Safety

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 U.S. Food and Drug Administration (FDA) is the Federal agency with primary responsibility for ensuring the safety of domestic and imported fresh produce.[19] In 2008, FDA reported to the U.S. Government Accountability Office (2008) that competing priorities such as counterterrorism and responding to outbreaks of foodborne illnesses had caused it to delay key safety activities related to fresh produce and to provide limited oversight of domestic and imported fresh produce.

[19]FDA is the Federal agency responsible for the safety of all food products, except for meat and poultry, which are the domain of USDA's Food Safety and Inspection Service (FSIS).

Integration of formerly separate national fruit and vegetable markets requires that the correct incentives be in place in each NAFTA country, as well as any other country that supplies produce to the NAFTA region, so that individuals and firms throughout the supply chain adopt appropriate food safety practices. Because some participants in the supply chain do not make the investments necessary to implement additional safety standards, one approach that is being pursued is the adoption of mandatory good agricultural practices (GAPs) in the field and good manufacturing practices (GMPs) in packing operations. Mexico's SENASICA applied this approach to green onions following outbreaks of foodborne illness associated with green onions in 2003 (Calvin et al., 2004). A similar approach was instituted in 2005 concerning the entry of Mexican cantaloupe to the United States, following the *Salmonella* outbreaks associated with Mexican cantaloupe in 2000, 2001, and 2002 (SAGARPA/SENASICA, 2008; U.S. Food and Drug Administration, 2008; Green et al., 2006). U.S. cantaloupe imports from Mexico have been slow to resume, however, as Mexican growers either concentrated on their domestic market or shifted to other crops. In 2008, U.S. cantaloupe imports from Mexico equaled 20,000 metric tons, compared with 197,000 metric tons in 1999.

Discussion in the United States revolves around whether GAPs and GMPs should be voluntary or mandatory. In 2007, handlers of leafy greens grown in California implemented a voluntary marketing agreement in which participants agreed to sell California product only from growers who can demonstrate through mandatory government audits that they follow accepted food safety practices. The marketing agreement has nearly 120 members, representing nearly all of California's volume of leafy greens (California Leafy Green Handlers Marketing Agreement, 2008). In contrast, the United

Fresh Produce Association adopted a set of principles declaring that for food safety standards to be credible with consumers, the standards must be mandatory and subject to sufficient Federal oversight (United Fresh Produce Association, 2007). Moreover, the association emphasized that such safety standards "must be consistent and applicable to all produce grown anywhere in the United States, or imported into the country."

The stakes of not ensuring the adoption of appropriate food safety practices throughout the supply chain are extremely high. Determining the cause of foodborne illness is usually a slow process, and the outbreak is often over and the product in question consumed or discarded by the time the source of the contamination is identified (Calvin, 2007). Even if the foodborne illness is ultimately traced to just a single producer, all growers of the same commodity—and even growers of other commodities—may suffer from lost sales and shaken consumer confidence during the course of the investigation. The outbreak of salmonellosis caused by *Salmonella Saintpaul* and associated with jalapeños and Serrano peppers from Mexico in 2008 illustrates these points. The first case of human illness associated with this outbreak was reported in April 2008, while the serotype of *Salmonella* associated with the outbreak was not traced to any facility in the supply chain until July 2008. Moreover, the investigation of the outbreak initially focused on U.S. and Mexican fresh tomatoes, rather than jalapeños and Serrano peppers.

Fruit and Vegetable Dispute Resolution Corporation

In an effort to create innovative structures for the resolution of commercial disputes involving the regional fruit and vegetable market, a group of produce and transportation companies from each NAFTA country formed the Fruit and Vegetable Dispute Resolution Corporation (DRC). The DRC is 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" (Fruit and Vegetable Dispute Resolution Corporation, 2008a).[20] One of the DRC's major achievements is a multi-step dispute resolution system that begins with preventative activities and cooperative problem-solving and then proceeds gradually to more binding measures. However, the DRC has found it difficult to involve buyers in Mexico in this system, an institutional change that could improve the integration of U.S. growers within the Mexican market. 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 (Fruit and Vegetable Dispute Resolution Corporation, 2007). Currently, U.S. and Canadian firms make up the vast majority of the DRC's members, and the DRC's Mexican membership primarily consists of exporters rather than importers.

[20]The DRC was established in 1999 in response to Article 707 of NAFTA, which called for an advisory committee on private commercial disputes regarding agricultural goods.

Resolution of U.S.-Mexico Sugar and Sweetener Dispute Facilitates Trade

Integration of the U.S. and Mexican markets for sugar and sweeteners has reached a medium level, following a period of many years when the U.S. and Mexican Governments disputed how best to implement NAFTA's provisions for these products. This issue was finally resolved in 2006, when the two governments reached an agreement that paved the way for bilateral free trade in sugar and sweeteners starting in 2008. Because this dispute was resolved recently, this report describes integration between the U.S. and Mexican sugar and sweetener markets as being at a medium level, even though there is substantial sugar and sweetener trade between the two countries and some trade in processed foods containing sweeteners (app. table 1-2). Integration of the U.S. and Canadian sugar markets remains at a low level because CUSTA exempted U.S.-Canada sugar trade from regional trade liberalization. However, the Canadian and U.S. markets for processed foods are highly integrated, and many processed foods traded between the two countries contain sugar or other sweeteners (app. tables 3-4).

One of the few remaining issues from the U.S.-Mexico sugar and sweetener dispute concerns a sales tax that Mexico levied for several years on soft drinks and other beverages that contain any sweetener other than cane sugar. This policy had the effect of stifling Mexico's domestic market for high-fructose corn syrup (HFCS) and reducing U.S. HFCS exports to Mexico to a trickle (fig. 8). The World Bank's International Centre for Settlement of Investment Disputes (ICSID) continues to hear two claims against the Mexican Government by U.S. firms that allegedly were harmed by the tax.[21] These challenges are taking place in accordance with procedures outlined in Chapter 11 of NAFTA, which governs the treatment of investors by member countries.

[21]Procedural details about these cases are available on the ICSID website (http://icsid.worldbank.org).

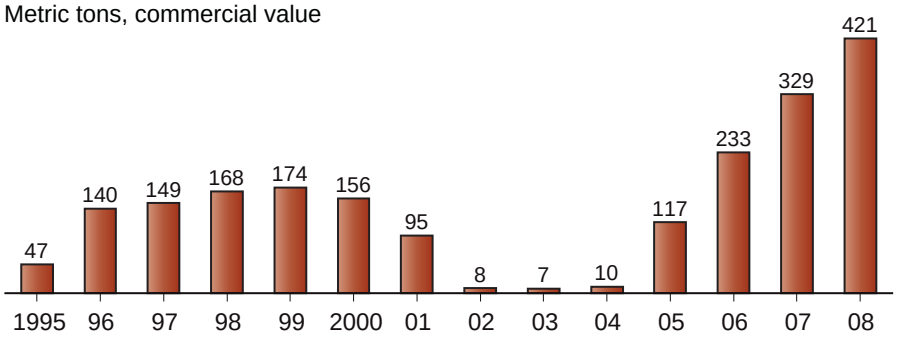
2008 Farm Act and U.S.-Mexico Sugar and Sweetener Trade

The 2008 Farm Act contains several provisions related to sugar and sweetener trade with Mexico. First, the Act requires the Secretary of Agriculture to

Figure 8

U.S. high fructose corn syrup exports to Mexico are reaching new heights with the resolution of the sugar and sweetener dispute

Metric tons, commercial value



Source: USDA, Foreign Agricultural Service (2009).

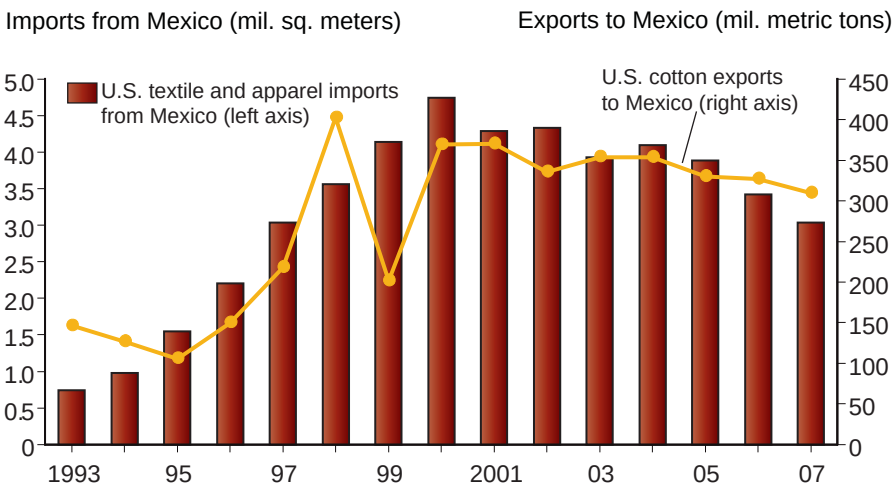
collect information on production, consumption, stocks, and trade of sugar in Mexico, including U.S. sugar exports to Mexico and publicly available information on Mexican production, consumption, and trade of high-fructose corn syrups. These data must be published in each edition of USDA's monthly *World Supply and Demand Estimates*. Second, the Act retains the provision from the 2002 Farm Act that the Federal Government must operate the U.S. sugar program at no net cost to the Government. To this end, the Secretary of Agriculture is required to purchase sugar (that is eligible for human consumption) that would otherwise be forfeited to the Commodity Credit Corporation. This sugar must either be sold to eligible bioenergy producers or disposed of using other specified means. This program is only to be implemented, however, in those years when the Secretary determines that it is necessary to avoid government costs.

Multilateral Liberalization Reaches 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 to Mexican textile and apparel producers and Mexico exports some of its textile and apparel output to the United States (fig. 9). However, full implementation of the WTO's Agreement on Textiles and Clothing at the end of 1994 has given China, Vietnam, and other non-NAFTA countries much broader access to the North American market. As a result, North America's textile and apparel industry has faced heightened competition from these countries. Between 2000 and 2007, Mexican textile and apparel exports to the United States fell from $9.7 billion to $5.6 billion (U.S. Department of Commerce, Office of Textiles and Apparel, 2008), and U.S. textile and apparel employment declined from 1.2 million workers to less than 750,000 (U.S. Department of Labor, Bureau of Labor Statistics, 2008). Canada is still active in regional textile and apparel trade, but it has largely shifted away from the importation and milling of cotton.

Figure 9

U.S. textile and apparel imports from Mexico have declined sharply since 2000 in the face of heightened competition from non-NAFTA countries



Sources: U.S. Department of Commerce, Office of Textiles and Apparel (textile and apparel imports); and USDA, Foreign Agricultural Service (2008) (cotton exports).

What's Next?

Removal of NAFTA's last transitional trade restrictions presents an intriguing challenge to Canada, Mexico, and the United States. Because the architects of NAFTA avoided creating strong supranational institutions that could have deepened the economic relationship fostered by the agreement, the member countries will have to exercise their national autonomy, either individually or in concert, if and when they take additional actions to maintain or increase the integration of their markets. Actions that would build upon NAFTA are sometimes referred to as "NAFTA Plus."[22] There are many ideas about what could constitute NAFTA Plus, and these may be divided into two possible approaches that are not necessarily mutually exclusive.

One possible approach is for the member countries to move toward a higher form of economic integration. To be clear, the NAFTA countries have not made any decision or commitment to pursue this type of approach, nor are they under any obligation to do so. In his pioneering work, Balassa (1961) viewed a customs union—a free-trade area with a common set of external tariffs—as the next step after a free-trade area and before a common market in the process of economic integration.[23] A customs union would eliminate the possibility that differences in external tariffs distort decisionmaking by the private sector. However, reaching consensus on common external tariffs may be difficult. Each member country has preferential trade agreements other than NAFTA, and some differences in the NAFTA countries' most-favored-nation (MFN)[24] tariffs are large (table 4).

[22]Meilke, Rude, and Zahniser (2007) examine this subject in further detail. The following discussion of customs unions is drawn from Zahniser, Meilke, and Rude (2009).

[23]A common market is a customs union with the additional features of free movement of labor and capital.

[24]As WTO members, each NAFTA country is generally required to apply its MFN tariffs to all other WTO members. Important exceptions to the MFN obligation include preferential trade agreements and special access for developing countries.

Table 4
Selected most-favored-nation tariffs of the NAFTA countries, 2008

Product	Canada	United States	Mexico
		Percent	
Hams (fresh or chilled, not processed)	Free	Free	20.0
Butter	298.5*	35.3*	20.0
Cheddar cheese	245.5*	24.0*	125.0
Durum wheat	0.4**	1.3	67.0
Corn	Free	0.4	Free
Barley	0.4**	0.4	115.0
Potatoes	1.0	1.8	245.0
Apples	Free	Free	20.0
Raspberries	Free	Less than 0.05	20.0
Soybeans	Free	Free	3.8
Rapeseed	Free	1.2	Free
Raw sugar (cane or beet, solid form, not containing added flavoring or coloring)	9.3	91.5*	73.5
Crude soy oil	4.5	19.1	10.0
Crude rapeseed oil	6.0	6.4	10.0
Malt extract	8.5**	9.6	17.0
Uncooked pasta (not containing egg, not stuffed)	1.2	Free	10.0
Strawberry jam	12.5	2.2	51.0
Peanuts (shelled)	Free	131.8*	Free

* = Over-quota tariff; ** = In-quota tariff. Some tariffs were converted to ad valorem equivalents using unit import values and other trade data, as compiled by Global Trade Information Services, Inc.

Sources: Canada Border Services Agency, Mexico Secretariat of Economy, and U.S. International Trade Commission.

Common external tariffs would enable the NAFTA countries to eliminate the agreement's rules of origin. In a preferential trade agreement such as NAFTA, rules of origin determine whether a product has 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. NAFTA's rules of origin are not a major impediment to regional agricultural trade since most of the agricultural products traded among the NAFTA countries are produced using inputs from the NAFTA countries. Nevertheless, compliance with these rules imposes an administrative cost on firms participating in NAFTA trade. These firms must complete NAFTA certificates of origin and ensure that they seek preferential tariff treatment only for qualified products.

Since 2003, the NAFTA Working Group on Rules of Origin has crafted multiple incremental changes to the agreement's rules of origin that have been implemented by the NAFTA governments. A handful of these changes directly apply to agriculture. For instance, one provision allows the regional content of certain cranberry juice mixtures to be determined on the basis of transaction value or net cost, rather than volume. Whether these steps eventually lead to a North American customs union remains to be seen, however, since they do not involve the establishment of common external tariffs.

A second possible approach would be for the NAFTA countries to take actions that build upon or "upgrade" the existing free-trade area but fall short of elevating NAFTA to a customs union or a common market. One idea for upgrading NAFTA is to strengthen the labor and environmental agreements that accompanied NAFTA.[25] This idea was mentioned during a meeting between Mexican President Calderón and then President-Elect Obama in January 2009 (Associated Press, 2009; Gillman, 2009) as well as during President Obama's visit to Ottawa and meeting with Canadian Prime Minister Harper in February 2009.

Within the framework of upgrading NAFTA, additional efforts focused on regulatory coordination and farm labor could strengthen the integration of regional agricultural markets. The NAFTA governments have long been aware of the importance of regulatory coordination to agricultural trade. Over the past 15 years, they have fine-tuned many of their sanitary, phytosanitary, and other regulatory measures in ways that have opened doors to new trading opportunities. Examples 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 the NAFTA Committee on Sanitary and Phytosanitary Measures, the Food and Agricultural Working Group of the Security and Prosperity Partnership of North America (SPP),[26] and other NAFTA-related entities.

In 2008, the number of hired laborers employed by U.S. agriculture ranged from 594,000 in January to 828,000 in July, according to quarterly estimates (USDA, National Agricultural Statistics Service, 2008). Certain labor-intensive sectors of U.S. agriculture, such as horticultural production, rely heavily on foreign-born workers, including many from Mexico, and roughly half of the hired labor force in U.S. crop agriculture is believed to be undocumented

[25]The two agreements are the North American Agreement on Labor Cooperation and the North American Agreement for Environmental Cooperation. The websites of the Commission for Labor Cooperation (http://www.naalc.org) and the Commission for Environmental Cooperation (http://www.cec.org) provide extensive information about the activities fostered by these agreements.

[26] The SPP is a trilateral effort intended to increase the security and enhance the prosperity of the NAFTA countries through greater cooperation and information sharing. See the SPP's U.S. website (http://www.spp.gov) for more information on this partnership.

(Carroll et al., 2005: p.7). The Federal Government currently operates a program called the H-2A Temporary Agricultural Worker Program, but participation in the program traditionally has been small, even though there are no annual limits to the number of H-2A workers who may enter the country. In fiscal year 2007, the United States issued a total of 50,791 H-2A visas. Canada operates a program for farmworkers from Mexico and the Caribbean countries called the Seasonal Agricultural Worker Program (SAWP). Roughly 15,000 workers participate in SAWP each year.

Whatever actions the NAFTA governments take to foster further regional economic integration, it is clear that the agricultural sectors of Canada, Mexico, and the United States are far more integrated today than they were 15 years ago, and that this closer relationship has provided tangible economic benefits to each member country. Further integration will require a high degree of cooperation among the NAFTA governments, as well as recognition of the simple fact that the economic well-being of the NAFTA countries is now closely intertwined.

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Appendix table 1

Selected U.S. agricultural exports to Mexico, 1991-93 versus 2006-08

	Value			Volume			Unit value		
	Annual average		Change	Annual average		Change	Annual average		Change
	1991-93	2006-08		1991-93	2006-08		1991-93	2006-08	
	Mil. U.S. dollars		*Percent*	*1,000 metric tons*		*Percent*	*U.S. dollars/kilo*		*Percent*
Total	3,475	13,200	280	--	--	--	--	--	--
Animals and animal products	1,183	3,749	217	--	--	--	--	--	--
Beef and veal	171	773	352	58	204	252	2.97	3.79	28
Beef variety meats	48	474	888	41	170	316	1.18	2.77	135
Pork	68	402	491	32	218	580	2.15	1.84	-14
Pork variety meats	46	138	200	62	114	84	0.73	1.21	65
Nonfat dry milk	55	285	419	33	93	180	1.64	2.97	81
Turkeys, fresh or frozen	66	223	238	46	138	200	1.42	1.62	14
Chickens, fresh or frozen	68	220	224	74	258	249	0.92	0.86	-7
Tallow, inedible	41	177	332	113	303	168	0.36	0.59	62
Whey, fluid or dried	12	150	1,138	--	--	--	--	--	--
Cheese	14	124	755	5	32	480	2.62	3.84	47
Bovine hides, whole[1]	110	65	-41	2,415	1,201	-50	45.43	54.27	19
Tallow, edible	33	57	76	89	127	43	0.37	0.45	22
Lard	16	53	223	35	64	86	0.39	0.79	103
Cattle and calves[2]	115	23	-80	179	21	-88	680.57	1,155.73	70
Other	320	584	83	--	--	--	--	--	--
Grains and feeds	897	3,989	345	6,507	18,010	177	0.14	0.22	61
Corn	104	1,618	1,456	914	8,385	817	0.12	0.19	64
Cracked corn	13	321	2,371	68	1,945	2,761	0.22	0.20	-9
Wheat, unmilled	78	693	788	563	2,515	347	0.14	0.27	94
Sorghum	427	329	-23	3,949	1,988	-50	0.11	0.18	63
Rice	42	266	534	175	843	382	0.25	0.31	27
Brewing or distilling dregs and waste	2	140	7,879	15	755	4,969	0.11	0.17	53
Malt, not roasted	13	103	709	59	302	415	0.28	0.33	17
Dog or cat food, for retail sale	5	74	1,362	6	77	1,123	0.81	0.98	21
Other	213	444	108	758	1,201	58	--	--	--
Fruits and preparations, excluding juice	81	404	398	143	388	171	0.57	1.04	82
Apples, fresh	34	168	395	68	177	160	0.52	0.94	83
Pears, fresh	17	57	243	33	64	92	0.51	0.90	77
Grapes, fresh	5	54	1,022	5	40	689	0.91	1.33	46
Other	26	125	386	37	107	190	--	--	--
Nuts and preparations	33	176	429	22	71	222	1.51	2.48	64
Pecans	13	66	414	6	17	174	2.02	3.84	90
Other	21	111	437	16	54	241	1.31	2.33	78
Vegetables and preparations	96	463	384	--	--	--	--	--	--
Potatoes, frozen	7	77	1,078	10	88	792	0.69	0.49	-29
Dry common beans	15	66	337	26	96	266	0.58	0.68	16
Other	74	319	332	--	--	--	--	--	--
Oilseeds and products	633	2,292	262	2,489	6,288	153	0.25	0.37	44
Soybeans	400	1,284	221	718	3,653	409	0.23	0.35	52
Soybean meal	68	457	572	313	1,597	410	0.23	0.29	28
Soybean oil	13	162	1,147	27	176	552	0.47	0.84	77
Cottonseed, excluding seed	23	70	200	119	325	172	0.20	0.22	14
Other	128	319	149	1,312	538	-59	--	--	--

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Appendix table 1

Selected U.S. agricultural exports to Mexico, 1991-93 versus 2006-08—Continued

	Value			Volume			Unit value		
	Annual average		Change	Annual average		Change	Annual average		Change
	1991-93	2006-08		1991-93	2006-08		1991-93	2006-08	
	Mil. U.S. dollars		*Percent*	*1,000 metric tons*		*Percent*	*U.S. dollars/kilo*		*Percent*
Cotton, excluding linters	118	437	270	87	312	258	1.42	1.41	-1
Essential oils	21	80	275	2	7	237	10.46	11.91	14
Seeds, field and garden	108	200	85	181	90	-51	0.76	2.30	202
Sugar and tropical products	154	584	280	--	--	--	--	--	--
Chocolate and preparations	47	131	180	16	46	183	2.92	2.87	-2
Sugar, cane or beet	44	87	96	116	174	50	0.36	0.50	40
Fructose syrup, containing more than 50 percent by weight of fructose, NESOI	5	112	2,104	17	349	2,013	0.31	0.31	0
Glucose or glucose syrup	5	78	1,361	18	229	1,161	0.37	0.34	-8
Other	52	175	238	--	--	--	--	--	--
Other horticulutural products	60	605	911	--	--	--	--	--	--
Soups, broths, and preparations thereof, dried	18	171	838	9	60	532	1.91	2.85	49
Other	42	435	943	--	--	--	--	--	--
Beverages, excluding juices	51	118	130	--	--	--	--	--	--
Beer[3]	12	76	514	22	111	394	0.55	0.69	25
Other	39	41	7	--	--	--	--	--	--
Other	40	103	156	--	--	--	--	--	--

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

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

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

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

Source: USDA, Foreign Agricultural Service (2009).

Appendix table 2

Selected U.S. agricultural imports from Mexico, 1991-93 versus 2006-08

	Value			Volume			Unit value		
	Annual average		Change	Annual average		Change	Annual average		Change
	1991-93	2006-08		1991-93	2006-08		1991-93	2006-08	
	Mil. U.S. dollars		*Percent*	*1,000 metric tons*		*Percent*	*U.S. dollars/kilo*		*Percent*
Total	2,542	10,153	299	--	--	--	--	--	--
Animals and animal products	408	740	81	--	--	--	--	--	--
Cattle and calves[1]	377	433	15	1,104	1,017	-8	0.34	0.43	24
Beef and veal	2	93	4,523	1	17	2,450	3.51	5.57	59
Other	29	214	639	--	--	--	--	--	--
Grains and feeds	51	509	895	--	--	--	--	--	--
Biscuits and wafers[2]	16	283	1,690	11	139	1,184	1.46	2.03	39
Prepared foods obtained from swelling or roasting of cereal flakes or products, with or without sugar	4	51	1,303	2	18	631	1.47	2.63	79
Other	32	174	450	--	--	--	--		--
Fruits and preparations	322	1,758	446	586	1,858	217	0.45	0.92	101
Avocados, fresh or dried	1	374	36,781	1	188	33,397	1.85	1.93	5
Avocados, processed	12	66	437	6	41	619	2.16	1.61	-25
Grapes, fresh	59	213	261	40	123	208	1.47	1.72	17
Limes, fresh or dried	20	154	660	87	329	280	0.23	0.47	100
Watermelons, fresh	18	146	712	89	369	314	0.20	0.39	99
Mangoes, fresh[3]	63	142	125	80	197	146	0.79	0.72	-8
Strawberries, fresh	15	125	737	12	68	468	1.28	1.84	44
Strawberries, frozen	18	60	230	23	50	117	0.80	1.21	51
Blackberries, mulberries, and loganberries, fresh	*	80	224,887	*	21	101,615	1.45	3.96	173
Papayas, fresh	4	52	1,196	7	90	1,107	0.53	0.58	11
Other	111	345	211	--	--	--	--	--	--
Fruit juices	40	173	335	147	436	196	0.29	0.39	35
Orange juice	22	102	361	97	259	167	0.23	0.38	64
Other	18	71	303	50	178	252	0.35	0.40	14
Nuts and preparations	55	177	221	17	56	222	3.35	3.16	-6
Pecans	53	157	194	14	39	175	4.02	4.05	1
Other	2	20	1,021	--	--	--	--	--	--
Vegetables and preparations	923	3,336	261	--	--	--	--		--
Tomatoes, fresh	229	1,007	340	312	927	197	0.73	1.09	48
Peppers, fresh	120	553	361	124	493	298	0.97	1.12	16
Cucumbers, fresh	73	319	337	179	385	115	0.41	0.84	105
Squash, fresh	60	201	235	83	231	178	0.72	0.87	21
Onions, fresh	92	170	84	178	186	4	0.52	0.92	75
Broccoli, frozen	89	149	67	133	163	23	0.67	0.91	36
Asparagus, fresh	29	126	335	21	53	152	1.39	2.37	71
Lettuce, fresh	4	51	1,301	8	73	765	0.44	0.69	56
Other	227	759	235	--	--	--	--	--	--
Sugar and related products	35	676	1,805	--	--	--	--	--	--
Confectionery products	23	351	1,450	15	221	1,415	1.54	1.58	3
Sugar, cane or beet	1	294	24,732	3	678	25,648	0.82	0.43	-47
Other	12	31	165	--	--	--	--	--	--

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Appendix table 2

Selected U.S. agricultural imports from Mexico, 1991-93 versus 2006-08—Continued

	Value			Volume			Unit value		
	Annual average		Change	Annual average		Change	Annual average		Change
	1991-93	2006-08		1991-93	2006-08		1991-93	2006-08	
	Mil. U.S. dollars		*Percent*	*1,000 metric tons*		*Percent*	*U.S. dollars/kilo*		*Percent*
Cocoa and cocoa products	20	164	729	14	114	740	1.69	1.42	-16
Coffee and coffee products	279	283	2	182	89	-51	1.53	3.19	108
Coffee, arabica, not roasted, not decaffeinated	25	146	482	17	56	227	1.48	2.64	78
Instant coffee, not flavored, not decaffeinated, packaged or retail sale	1	64	9,313	*	11	8,152	4.85	5.87	21
Other	253	73	-71	--	--	--	--	--	--
Spices and herbs	41	52	27	28	36	29	1.45	1.44	-1
Beverages, excluding fruit juices	170	1,914	1,026	--	--	--	--	--	--
Beer[4]	145	1,587	994	179	1,613	801	0.82	0.98	20
Carbonated soft drinks[4]	15	157	947	19	274	1,341	0.80	0.57	-28
Other	10	170	1,598	--	--	--	--	--	--
Oilseeds and oilseed products	38	84	122	32	62	97	1.14	1.34	17
Other	160	287	79	--	--	--	--	--	--

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

[1]Volume is measured in thousands of head, and unit value is measured in dollars per head.

[2]Includes sweet biscuits, waffles, wafers, pastries, cake, and bread, among other products.

[3]Data for 1991-92 also include guavas and mangosteens.

[4]Volume is measured in millions of liters, and unit value is measured in dollars per liter.

Source: USDA, Foreign Agricultural Service (2009).

Appendix table 3

Selected U.S. agricultural exports to Canada, 1991-93 versus 2006-08

	Value			Volume			Unit value		
	Annual average		Change	Annual average		Change	Annual average		Change
	1991-93	2006-08		1991-93	2006-08		1991-93	2006-08	
	Mil. U.S. dollars		*Percent*	*1,000 metric tons*		*Percent*	*U.S. dollars/kilo*		*Percent*
Total	4,954	14,084	184	--	--	--	--	--	--
Animals and animal products	909	2,270	150	--	--	--	--	--	--
Beef and veal	363	571	57	87	118	36	4.19	4.83	15
Pork	29	475	1,522	9	141	1,401	3.14	3.37	7
Chickens, fresh or frozen	85	215	152	42	107	153	2.03	1.99	-2
Poultry meats, prepared or preserved	54	165	207	12	42	237	4.33	3.94	-9
Preparations for infant use, retail sale	4	71	1,544	1	22	2,028	4.05	3.17	-22
Eggs	31	62	98	--	--	--	--	--	--
Mink furskins, raw, whole, with or without head, tail, or paws[1]	17	57	245	1,633	1,753	7	10.13	32.57	221
Whey, fluid or dried	10	57	462	--	--	--	--	--	--
Puddings ready for immediate consumption	4	54	1,283	3	42	1,480	1.49	1.30	-13
Cattle and calves [2]	36	12	-68	71	40	-44	511.60	334.93	-35
Other	275	532	93	--	--	--	--	--	--
Grains and feeds	759	2,701	256	1,658	5,129	209	0.47	0.52	11
Dog or cat food, retail sale	146	435	199	142	328	131	1.04	1.33	28
Corn	60	359	502	600	2,337	290	0.10	0.15	47
Pastry, cake, bread, and pudding	101	313	208	62	129	109	1.65	2.42	47
Prepared food from swelling or roasting of cereal or cereal products	36	214	502	19	102	446	1.91	2.11	10
Mixes and doughs	31	177	467	27	112	312	1.15	2.11	83
Stuffed, canned, and other prepared pasta	30	130	339	14	62	340	2.16	2.11	-2
Rice	56	129	130	142	243	71	0.39	0.53	34
Mixed feeds or mixed feed ingredients, excluding pet food	84	122	46	145	88	-39	0.59	1.39	134
Cookies, waffles, and wafers	48	119	147	25	53	112	1.64	2.24	37
Corn chips and similar crisp snack foods	11	92	752	6	29	365	1.76	3.14	78
Other bread, pastry, cake, biscuits, and bakery wares, excluding pizza and quiche	8	83	883	5	32	607	1.88	2.60	38
Brewing or distilling dregs and waste	2	65	3,439	14	405	2,722	0.13	0.14	6
Pasta, uncooked[3]	21	62	196	19	53	174	1.08	1.16	7
Other	125	400	219	439	1,155	163	0.29	0.35	21
Fruits and preparations, excl. juice	711	1,549	118	872	1,145	31	0.82	1.35	65
Strawberries, fresh	51	228	350	36	90	152	1.41	2.52	78
Grapes, fresh	117	168	43	112	95	-15	1.05	1.77	69
Apples, fresh	58	142	145	76	133	75	0.76	1.06	39
Oranges, fresh or dried	80	102	27	155	144	-7	0.55	0.71	30
Cherries, fresh	15	97	550	7	21	191	2.14	4.65	118

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Appendix table 3

Selected U.S. agricultural exports to Canada, 1991-93 versus 2006-08—Continued

	Value			Volume			Unit value		
	Annual average		Change	Annual average		Change	Annual average		Change
	1991-93	2006-08		1991-93	2006-08		1991-93	2006-08	
	Mil. U.S. dollars		*Percent*	*1,000 metric tons*		*Percent*	*U.S. dollars/kilo*		*Percent*
Fruits and preparations, excl. juice—Continued									
Peaches, fresh	46	71	56	50	50	2	0.93	1.42	53
Raspberries, blackberries, mulberries, and loganberries, fresh	4	63	1,387	7	21	191	0.58	2.92	403
Watermelons, fresh	25	63	148	78	133	70	0.37	0.47	27
Other	314	614	95	351	457	30	0.90	1.34	50
Fruit juices[4]	156	475	204	267	490	84	0.59	0.97	65
Orange juice[4]	83	256	209	155	302	95	0.54	0.84	57
Mixtures of fruit juices, unfermented, not fortified with vitamins or minerals	8	67	759	11	55	420	0.75	1.22	63
Other	66	153	132	101	133	32	0.65	1.15	76
Wine[4]	42	199	375	32	69	118	1.28	2.86	122
Nuts and preparations	129	421	226	72	180	149	1.78	2.35	32
Almonds, fresh or dried	30	99	232	9	19	115	3.37	5.17	54
Peanuts, raw	45	69	53	51	78	53	0.92	0.87	-5
Other	54	252	368	12	82	593	4.56	3.08	-32
Vegetables and preparations	918	2,080	126	--	--	--	--	--	--
Lettuce, fresh	109	360	229	254	313	23	0.43	1.15	167
Tomatoes, fresh	114	151	33	137	122	-11	0.83	1.24	49
Carrots, fresh	26	116	356	71	107	50	0.36	1.09	203
Tomato sauces, other than ketchup	36	105	196	35	106	207	0.90	0.99	10
Potatoes, fresh[5]	62	90	45	179	177	-2	0.36	0.51	44
Potatoes, frozen	1	69	4,952	1	85	6,037	0.99	0.82	-17
Peppers, fresh	45	89	98	69	63	-9	0.68	1.42	110
Onions and shallots, fresh	42	79	86	103	129	25	0.41	0.61	49
Broccoli, fresh	41	72	75	72	72	-1	0.57	1.00	77
Cauliflower, fresh	32	56	75	44	63	44	0.72	0.87	21
Celery, fresh	36	51	42	96	95	-1	0.37	0.53	42
Other	374	843	125	--	--	--	--	--	--
Oilseeds and products	322	1,174	265	961	2,531	163	0.33	0.41	23
Soybean meal	151	367	143	625	1,407	125	0.24	0.26	8
Soybeans	37	92	147	154	287	87	0.24	0.31	29
Soybean oil	8	71	816	15	80	450	0.53	0.88	67
Rapeseed	8	72	845	29	260	794	0.26	0.27	5
Rapeseed oil	2	63	3,593	3	75	2,850	0.74	0.91	23
Vegetable fats and oils and their fractions, hydrogenated, inter-esterified, reesterified, or elaidinized	6	65	1,019	5	50	880	1.16	1.28	10
Protein substances	16	64	297	6	14	129	2.58	4.53	76
Sunflower oil	5	57	953	9	55	511	0.59	1.02	73
Other	89	323	264	116	303	161	0.77	1.07	39

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Appendix table 3

Selected U.S. agricultural exports to Canada, 1991-93 versus 2006-08—Continued

	Value			Volume			Unit value		
	Annual average		Change	Annual average		Change	Annual average		Change
	1991-93	2006-08		1991-93	2006-08		1991-93	2006-08	
	Mil. U.S. dollars		*Percent*	*1,000 metric tons*		*Percent*	*U.S. dollars/kilo*		*Percent*
Cotton, excluding linters	61	28	-54	37	21	-45	1.62	1.44	-11
Essential oils	48	297	513	4	23	466	11.48	13.18	15
Mixtures of odoriferous substances for use in food and beverage industry	33	274	722	3	20	637	12.28	13.75	12
Other	15	23	53	1	3	104	11.76	8.81	-25
Seeds, field and garden	67	177	164	39	75	94	1.73	2.35	36
Sugar and tropical products	396	1,337	238	--	--	--	--	--	--
Coffee, roasted, not decaffeinated	44	298	572	9	58	568	5.14	5.11	-1
Sugar confections and sweetmeats without cocoa	61	157	155	30	58	97	2.07	2.70	30
Confectionery containing cocoa	51	129	152	17	30	80	2.38	4.24	78
Cocoa preparations in bulk form	18	97	431	8	39	367	2.22	2.50	13
Food preparations containing cocoa other than confectionery, put up for retail sale	2	84	3,843	0	20	3,985	1.43	4.15	190
Cocoa butter	12	70	502	3	15	434	4.18	4.68	12
Glucose and glucose syrup	24	69	185	63	180	187	0.39	0.38	-1
Tea, including herbal tea	22	69	209	4	11	152	5.20	6.20	19
Other	160	365	127	--	--	--	--	--	--
Other horticultural products	173	868	403	--	--	--	--	--	--
Starches, excluding wheat and corn starch	22	70	222	36	98	172	0.63	0.72	15
Mixed condiments and mixed seasonings	13	55	305	4	19	364	2.65	2.85	8
Other	137	743	441	--	--	--	--	--	--
Nursery and greenhouse products	110	193	77	--	--	--	--	--	--
Beverages excluding juices	109	314	187	--	--	--	--	--	--
Beer made from malt[4]	20	89	345	39	101	159	0.57	0.89	55
Preparations for the manufacture of beverages	44	69	59	8	16	92	5.34	4.42	-17
Carbonated soft drinks	9	51	450	16	75	371	0.62	0.67	7
Other	37	105	187	--	--	--	--	--	--
Other	45	3	-93	--	--	--	--	--	--

[1]Volume is measured in thousands of furskins, and unit value is measured in dollars per furskin.

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

[3]Excludes canned pasta and stuffed pasta.

[4]Volume is measured in millions of liters, and unit value is measured in dollars per liter.

[5]Excludes seed potatoes.

Source: USDA, Foreign Agricultural Service (2009).

Appendix table 4

Selected U.S. agricultural imports from Canada, 1991-93 versus 2006-08

	Value			Volume			Unit value		
	Annual average		Change	Annual average		Change	Annual average		Change
	1991-93	2006-08		1991-93	2006-08		1991-93	2006-08	
	Mil. U.S. dollars		*Percent*	*1,000 metric tons*		*Percent*	*U.S. dollars/kilo*		*Percent*
Total	4,044	15,562	285	--	--	--	--	--	--
Animals and animal products	1,784	4,599	158	--	--	--	--	--	--
Beef and veal	283	885	213	121	283	133	2.34	3.13	34
Cattle and calves[1]	802	1,296	62	1,127	1,339	19	706.63	971.07	37
Pork	368	803	118	177	320	81	2.08	2.51	21
Swine[1]	82	572	595	854	9,372	997	65.47	61.00	-7
Confectionery (including gum) containing synthetic sweetening agents instead of sugar	--	169	--	--	29	--	--	5.90	--
Chicken, fresh or frozen	1	101	9,855	1	37	5,576	1.52	2.67	76
Mink furskins[2]	22	54	146	1,071	1,509	41	20.57	35.87	74
Bovine hides and skins, whole[3]	65	43	-34	1,625	909	-44	39.80	47.57	20
Other	160	677	323	--	--	--	--	--	--
Grains and feeds	759	3,661	382	--	--	--	--	--	--
Wheat, excluding seed	154	609	295	1,268	2,211	74	0.12	0.27	121
Bread, pastry, cakes, biscuits, and puddings	146	541	270	77	218	182	2.00	2.48	24
Oats, unmilled	54	371	589	576	1,908	231	0.10	0.19	95
Grains, rollled or flaked, of oats	1	57	4,606	4	105	2,547	0.30	0.54	79
Sweet biscuits, waffles, and wafers, not frozen	17	356	1,943	8	106	1,179	2.19	3.35	53
Mixes and doughs	14	246	1,644	12	164	1,253	1.22	1.51	23
Prepared food from swelling or roasting cereal flakes or products	48	164	243	27	70	158	1.76	2.33	33
Malt, not roasted	3	122	3,972	13	277	2,072	0.24	0.42	78
Barley, unmilled	46	112	142	474	460	-3	0.10	0.21	117
Dog or cat food, retail sale	46	110	139	67	75	13	0.69	1.53	120
Mixed feeds or mixed feed ingredients, excluding bird feed and pet food	44	105	140	166	173	4	0.26	0.61	133
Pasta and noodles[4]	12	91	644	12	47	281	0.99	1.95	97
Sweet biscuits, waffles, and wafers, frozen	*	93	55,441	*	45	65,804	3.37	2.04	-25
Wheat or meslin flour	13	80	528	46	151	231	0.11	0.55	399
Cereals other than corn, grain form, precooked or otherwise prepared, not frozen	*	94	25,744	*	40	14,414	1.39	2.39	72
Other	160	511	219	--	--	--	--	--	--
Fruits and preparations, excluding juice	71	422	496	100	200	101	0.72	2.10	191
Blueberries, frozen	10	135	1,313	6	34	518	1.72	3.94	129
Blueberries, fresh	10	55	445	9	15	74	1.17	3.74	220
Other	51	232	353	85	151	76	0.60	1.54	157
Vegetables and preparations	195	1,863	854	--	--	--	--	--	--
Potatoes, frozen	54	607	1,033	99	774	683	0.54	0.78	45
Potatoes, fresh[5]	33	118	260	189	394	108	0.17	0.30	8
Tomatoes, fresh	5	264	4,726	4	122	2,802	1.36	2.16	59
Peppers, fresh	5	170	3,154	3	68	2,530	2.10	2.53	21
Cucumbers, fresh	3	81	2,268	4	53	1,350	0.94	1.53	63
Mushrooms, fresh or chilled	3	71	2,371	2	23	1,216	1.68	3.12	86
Tomato ketchup	*	57	66,550	*	67	9,684	0.69	0.85	24
Other	92	494	438	--	--	--	--	--	--

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Appendix table 4

Selected U.S. agricultural imports from Canada, 1991-93 versus 2006-08—Continued

	Value			Volume			Unit value		
	Annual average		Change	Annual average		Change	Annual average		Change
	1991-93	2006-08		1991-93	2006-08		1991-93	2006-08	
	Mil. U.S. dollars		*Percent*	*1,000 metric tons*		*Percent*	*U.S. dollars/kilo*		*Percent*
Sugar and related products	193	667	246	--	--	--	--	--	--
Confectionery products, except chewing gum	29	339	1,048	18	128	607	1.64	2.65	61
Maple syrup, including blends with sugar	28	136	378	12	28	141	2.49	4.93	98
Chewing gum	30	52	74	17	29	72	1.80	1.84	2
Other	105	140	34	--	--	--	--	--	--
Cocoa and cocoa products	148	731	395	78	296	278	1.89	2.49	31
Chocolate in blocks or slabs of 4.5 kilograms or more, containing butterfat or other milk solids	17	188	978	8	99	1,219	2.32	1.95	-16
Chocolate in blocks, slabs, or other bulk form, not containing butterfat or other milk solids	33	161	384	25	80	222	1.35	2.00	48
Confectionery, filled, not containing peanuts, peanut butter, or peanut paste	--	85	--	--	22	--	--	3.88	--
Other	97	297	207	46	96	107	--	--	--
Coffee and coffee products	33	133	302	6	22	290	5.79	5.97	3
Coffee, roasted, not decaffeinated, in retail containers weighing 2 kilograms or less	3	89	2,489	1	15	1,939	4.84	6.19	28
Other	30	43	47	5	8	57	--	--	--
Tea and mate, including herbal tea	24	73	212	37	47	27	0.67	1.56	134
Spices and herbs	21	63	204	60	88	46	0.35	0.72	107
Beverages, excluding fruit juices	196	424	117	--	--	--	--	--	--
Beer made from malt[6]	148	284	92	262	380	45	0.57	0.75	32
Preparations for the manufacture of beverages	5	58	1,031	4	31	653	1.25	1.87	49
Carbonated soft drinks[6]	28	50	79	41	91	121	0.67	0.56	-16
Other	15	32	116	--	--	--	--	--	--
Oilseeds and products	318	1,839	479	1,221	3,941	223	0.26	0.45	75
Rapeseed oil	151	848	463	297	853	187	0.50	0.95	88
Rapeseed	13	305	2,275	55	776	1,314	0.25	0.38	49
Rape or colza seed oilcake	67	238	256	520	1,628	213	0.21	0.14	-31
Flaxseed	24	74	209	130	154	19	0.19	0.48	158
Soybeans	21	62	203	96	167	75	0.22	0.35	64
Other	43	311	628	123	363	195	0.35	0.86	147

—Continued

Appendix table 4

Selected U.S. agricultural imports from Canada, 1991-93 versus 2006-08—Continued

	Value			Volume			Unit value		
	Annual average		Change	Annual average		Change	Annual average		Change
	1991-93	2006-08		1991-93	2006-08		1991-93	2006-08	
	Mil. U.S. dollars		*Percent*	*1,000 metric tons*		*Percent*	*U.S. dollars/kilo*		*Percent*
Seeds, field and garden	50	181	263	73	186	155	0.68	0.98	43
Nursery stock, bulbs, etc.	85	274	224	--	--	--	--	--	--
Other horticultural products	82	434	431	--	--	--	--	--	--
Soups, broths, and preparations, not dried, not based on fish or seafood	5	108	2,104	4	66	1,732	1.68	1.70	2
Yeasts	16	59	277	18	50	174	0.84	1.16	38
Other	61	267	336	--	--	--	--	--	--
Other	190	694	265	--	--	--	--	--	--

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

[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, Foreign Agricultural Service (2009).

Appendix table 5

Foreign direct investment within the NAFTA region's food industry

	Food and kindred products					Food industry								
Origin/destination	1994	1995	1996	1997	1998	1999	2000	2001	2002	2003	2004	2005	2006	2007
	U.S. million dollars													
U.S. direct investment in Canada	4,021	4,498	4,265	4,649	4,985	3,693	3,431	3,421	4,153	3,964	2,821	2,718	3,065	4,145
U.S. direct investment in Mexico	2,660	2,929	3,579	4,484	4,723	1,281	1,427	1,250	2,159	2,134	2,203	2,790	2,448	2,317
Canadian direct investment in the U.S.	5,877	7,199	7,764	10,087	6,684	1,088	1,405	984	983	922	1,175	2,109	2,205	3,106
Mexican direct investment in the U.S.	(D)	(D)	(D)	306	1,092	1,060	1,058	1,102	(D)	(D)	(D)	(D)	(D)	(D)

Note: Kindred products refers primarily to beverages.

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

Sources: U.S. Department of Commerce, Bureau of Economic Analysis (2008a, 2008b).