

## **U.S.-MEXICO AGRICULTURAL TRADE DURING THE NAFTA ERA**

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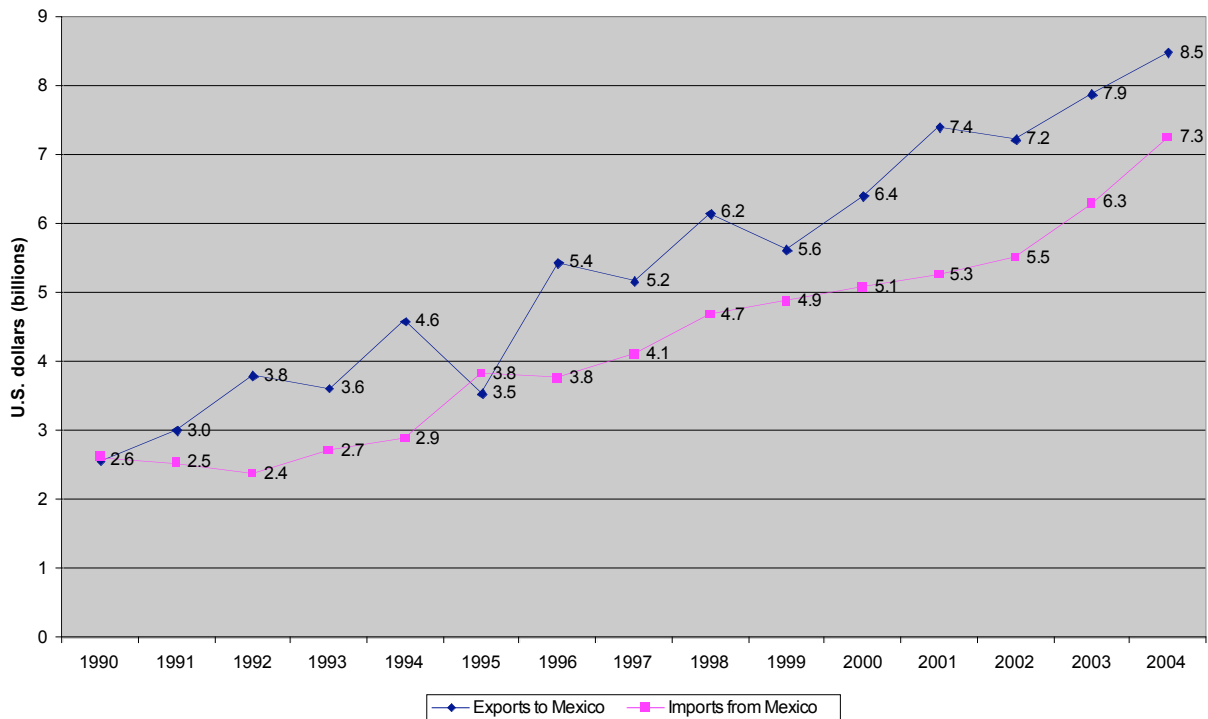
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## Introduction

The agricultural markets of Mexico and the United States are undergoing a long-term process of integration—a process that has intensified over the past 12 years (1994-2005) with the implementation of the North American Free Trade Agreement (NAFTA). Not only is U.S. agricultural trade with Mexico on a clear upward trend (fig. 1), but firms are reorganizing their activities around continental markets for both inputs and outputs.

**Figure 1—Rising U.S.-Mexico agricultural trade is just one sign of increased market integration in North America**



Source: USDA, *Foreign Agricultural Trade of the United States Database*.

Trade liberalization under NAFTA is just one factor behind the integration of North American agriculture. To encourage this trend, decisionmakers in both government and the private sector have pursued greater institutional and policy coordination. Structural changes

within specific agricultural sectors also have facilitated cross-border linkages, as have continued population growth and sustained periods of economic expansion, which have boosted consumer demand and forced new economic arrangements within the agricultural, processed food, and retail food industries. But while integration characterizes much of agriculture, it is lagging in individual sectors. Disputes concerning sugar and sweetener trade have left many formidable trade barriers in place, and the framework that would allow the many undocumented workers from Mexico who currently work in U.S. agriculture to perform these tasks legally does not exist at this time.

This paper takes stock of key developments that have taken place in U.S.-Mexico agricultural trade since NAFTA's implementation and identifies the role that the agreement has played in these developments. Some of the paper's observations also apply to U.S. agricultural trade with Canada, which is also a signatory to NAFTA.<sup>1</sup> The paper is organized as follows. The next section provides a brief overview of U.S.-Mexico agricultural trade, and then the paper continues with a series of commodity-specific examples. The paper concludes with a discussion of what steps could be taken to facilitate further integration of U.S. and Mexican agriculture.

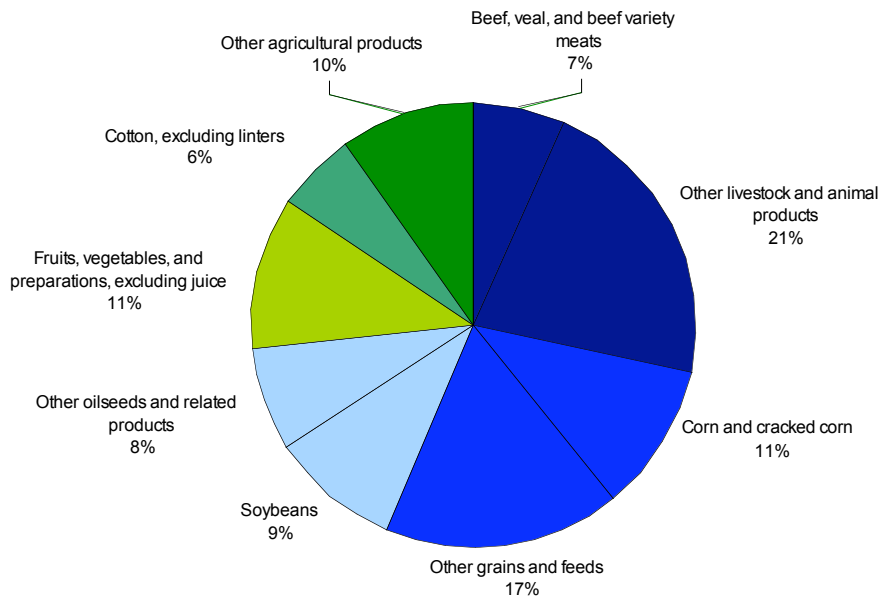
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<sup>1</sup> Readers who are interested in this aspect of North American integration are invited to consult other readings on this subject (Doan, et al., 2005; Hahn, et al., 2005; Haley, 2004; Zahniser, June 2005 and February 2005).

## Trade Overview

In many ways, the composition of U.S.-Mexico agricultural trade is similar to its composition before NAFTA. U.S.-Mexico agricultural trade continues to be largely complementary in composition, meaning that the United States generally exports different commodities to Mexico than it imports from Mexico. Grains, oilseeds, meat, and related products make up about three-fourths of U.S. agricultural exports to Mexico in terms of value (fig. 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.

**Figure 2—Grains, oilseeds, meat, and related products made up about three-fourths of U.S. agricultural exports to Mexico in 2004**



Data are for calendar year 2004, when U.S. agricultural exports to Mexico equaled \$8.5 billion.

Source: USDA, Foreign Agricultural Trade of the United States Database.

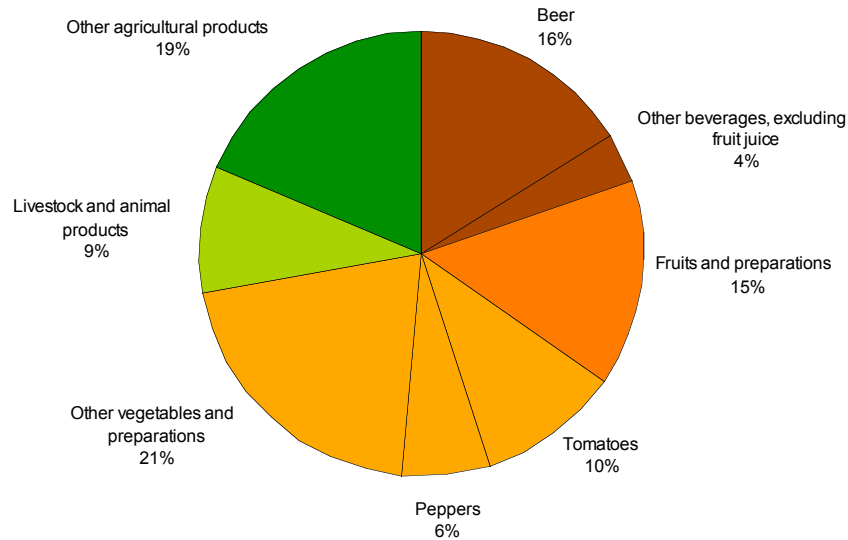
In recent years, the most noticeable change in the composition of U.S. agricultural exports to Mexico has been a sharp decline in the share that corresponds to livestock and animal products: 28 percent in 2004, compared with 34 percent during 1991-93. This development is due to Mexico's imposition of trade restrictions on imports of U.S. cattle following the discovery of a single case of bovine spongiform encephalopathy (BSE) in the State of Washington in December 2003.<sup>2</sup> The NAFTA governments are working together to remove sanitary restrictions on cattle trade that are no longer deemed necessary. In March 2005, the NAFTA governments signed a trilateral agreement to establish a basis for the further harmonization of standards related to trade in bovine products, and the U.S. and Mexican governments are currently working to establish certification requirements that would allow the resumption of breeding cattle exports to Mexico (Trejo, 2005: 13).

On the import side, roughly three-fourths of U.S. agricultural imports from Mexico in terms of value consist of beer, vegetables, and fruit (fig. 3). Fruit and vegetable imports are closely tied to Mexico's expertise in producing a wide range of produce, along with a favorable climate whose growing season largely complements that of the United States. Successful efforts to market specific brands of Mexican beer in the United States have made that commodity Mexico's leading agricultural export to the United States. In 2004, U.S. beer imports from Mexico surpassed \$1 billion, compared with just \$163 million in 1993.

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<sup>2</sup> A cow in Texas, destroyed in November 2004, was also determined to have had BSE (USDA/APHIS, 2005).

**Figure 3—Nearly three-fourths of U.S. agricultural imports from Mexico in 2004 consisted of beer, fruits, or vegetables**



Data are for calendar year 2004, when U.S. agricultural imports from Mexico equaled \$7.3 billion.

Source: USDA, Foreign Agricultural Trade of the United States Database.

How does California fit within this picture? Foreign markets are, of course, extremely important to California agriculture, with exports accounting for about one-fourth of cash receipts in 2003. In that year, California's agricultural exports to the world totaled \$7.5 billion, with \$452 million (6 percent) of this amount going to Mexico. Although California supplied just 6 percent of total U.S. agricultural exports to Mexico, the state accounted for a large share of certain commodities exported to Mexico (table 1). Virtually all of the almonds, table grapes, raisins, fresh peaches and nectarines, fresh strawberries, plums, apricots, and garlic exported by the United States to Mexico come from California.

**Table 1: California and U.S. agricultural exports to Mexico, 2003**

Commodity	California exports to Mexico	U.S. exports to Mexico	California exports to Mexico as share of U.S. exports to Mexico	California exports to Mexico as share of California farm income
	<i>U.S. dollars (millions)</i>		<i>Percent</i>	
<b>Total agricultural exports</b>	452	7,879	6	2
Dairy products	181	259	70	4
Cotton	57	425	13	8
Table grapes	35	36	99	2
Processed tomatoes	28	31	91	5
Almonds	21	20	103	1
Peaches and nectarines	17	13	132	5
Lettuce	14	20	71	1
Flowers and nursery	10	26	39	0
Strawberries	10	10	100	1
Beef	9	604	1	–
Oranges, fresh and juice	8	12	69	–
Pears	7	44	16	11
Plums	6	6	98	7
Tomatoes, fresh	5	8	59	1
Potatoes	4	8	52	2
Apricots	4	4	97	14
Onions	4	11	37	2
Wine	3	4	79	–
Garlic	3	3	112	2
Kiwi	2	2	81	10
Peppers	2	3	72	1
Carrots	2	3	70	0
Raisins	2	2	100	–
Other products	17	6,327	0	–

Note: In several instances, the reported value of California's exports exceeds the reported value of U.S. exports. Possible causes include rounding of the California data, updating of the U.S. data, and methodological differences between the two data series.

Sources: California exports: AIC/C DFA (2004); U.S. exports: USDA, Foreign Agricultural Trade of the United States database.

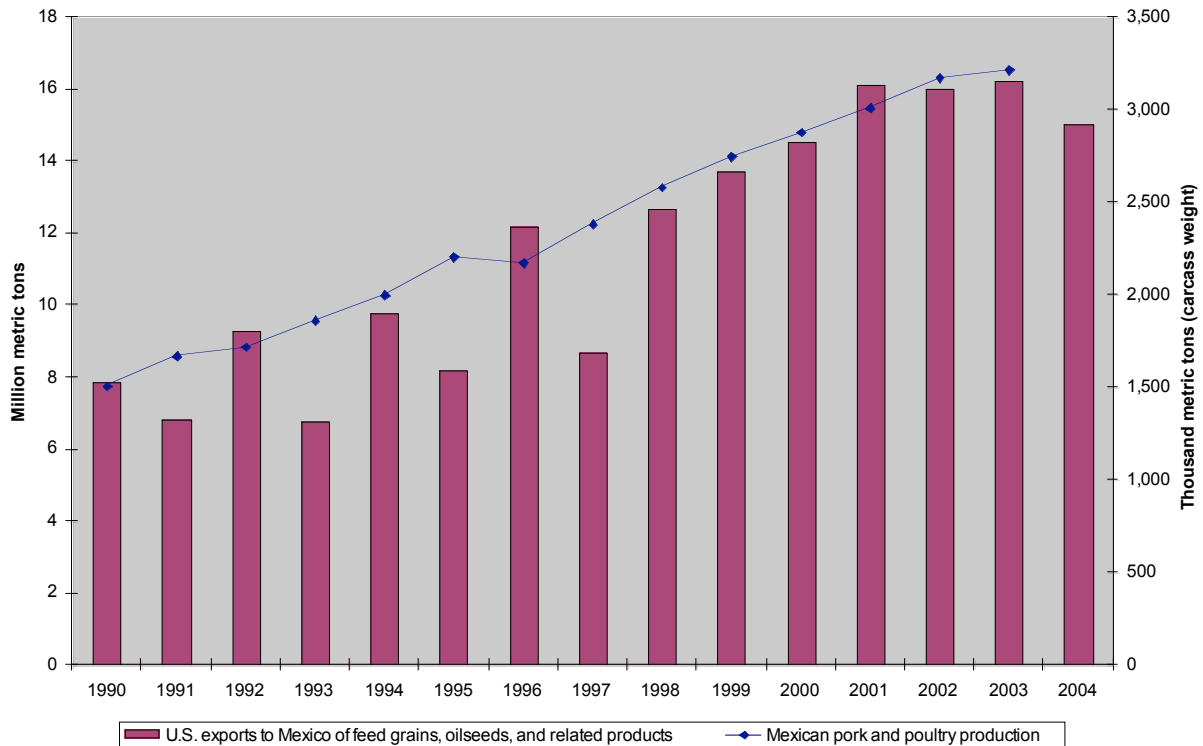
Several of the commodities that California exports to Mexico—including table grapes, strawberries, and fresh tomatoes—are also important Mexican agricultural exports to the United States. For these commodities, U.S. exports to Mexico and U.S. imports from Mexico tend to

occur at different times of the year, and U.S. imports from Mexico overlap somewhat with the beginning of California harvests. California also leads the nation in the production of several commodities that it does not export to Mexico but that Mexico exports to the United States. Examples include avocados, peppers, squash, onions, and asparagus.

### **Grains and Oilseeds**

The past 12 years (1994-2005) have seen a rapid integration of the U.S. and Mexican grain and oilseed markets. U.S. grain and oilseed exports to Mexico have more than doubled during the NAFTA period (fig. 4), with the agreement providing much of the legal framework for this trade. Prior to NAFTA, Mexico regulated the importation of grains and oilseeds by requiring import licenses for corn, wheat, and barley and by applying tariffs as high as 20 percent to U.S. grains and oilseeds. Since 2003, U.S. grains and oilseeds have enjoyed tariff- and quota-free status in Mexico, except for corn, which is scheduled under NAFTA to do so starting on January 1, 2008. Trade liberalization has freed grain importers to make purchasing decisions more on the relative merits of individual commodities. In this context, corn has replaced sorghum as the leading U.S. grain export to Mexico in terms of volume.

Figure 4—U.S. feedstuffs are crucial to Mexican pork and poultry production



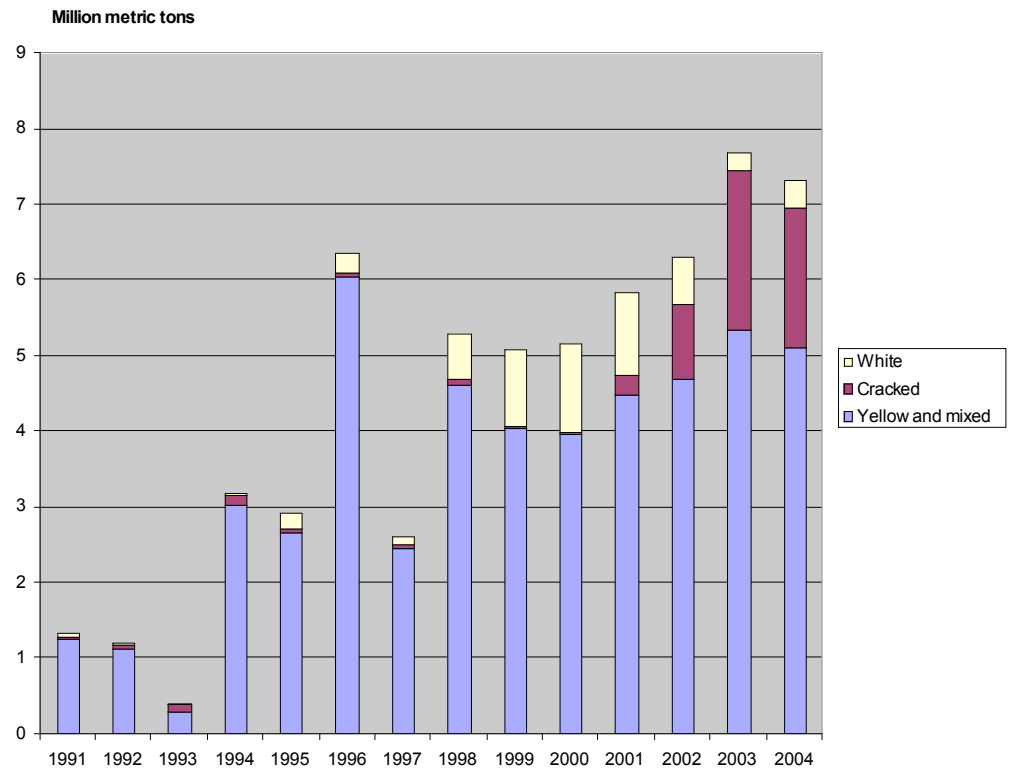
Sources: USDA, Foreign Agricultural Trade of the United States database (exports) and Secretaría de Agricultura, Ganadería, Desarrollo Rural, Pesca, y Alimentación, Servicio de Información y Estadística Agroalimentaria y Pesquera (production).

Rising demand for meat in Mexico has driven sustained growth of Mexico’s hog and poultry industries, which in turn has been the primary catalyst for the expansion of U.S. grain and oilseed exports to Mexico. These industries, in their efforts to expand output and lower production costs, rely heavily on U.S. grains and oilseeds. Imports account for roughly half of the feed ingredients used by Mexican poultry producers. Thanks in part to imported feedstuffs, meat consumption in Mexico has increased substantially. On a per capita basis, broiler consumption rose 67 percent between 1993 and 2005, while pork consumption climbed by 49 percent (USDA/FAS, 2005).

With the completion of NAFTA's implementation, Mexico's grain market is likely to experience further integration with the United States. NAFTA allows Mexico to apply a transitional tariff-rate quota to U.S. corn until 2008. Throughout much of the NAFTA period, however, Mexico has pursued a more liberal trade policy than the agreement requires, particularly with respect to yellow corn, so that the country can benefit more fully from the integrated grain market. With the end of the transitional restrictions, the composition of U.S. grain exports to Mexico is likely to shift even further toward corn and away from sorghum.

Yellow corn, which is used in Mexico primarily for animal feed or the manufacture of corn starch, makes up the bulk of U.S. corn exports to Mexico (fig. 5). In recent years, the United States also has exported to Mexico large quantities of cracked corn, which consists of broken or ground kernels and is used as animal feed. NAFTA treats cracked corn as a distinct commodity from corn, and cracked corn from the United States has enjoyed duty-free status in Mexico since 2003. Once NAFTA's corn provisions are fully implemented, exports of cracked corn to Mexico are expected to be almost entirely replaced by more conventional exports of yellow corn.

**Figure 5—U.S. corn exports to Mexico still consist primarily of yellow corn**



Note: Yellow and mixed corn exports are calculated by subtracting white corn exports from total corn exports. Cracked corn (broken or ground kernels) is defined as a distinct commodity from corn. Like yellow corn, it is primarily used as animal feed.

Sources: USDA, Foreign Agricultural Trade of the United States database (total corn and cracked corn exports) and USDA, Agricultural Marketing Service, *Grain and Feed Weekly Summary Statistics*, various issues (white corn exports).

Mexico is also a potential market for U.S. white corn, used in Mexico to produce tortillas and other corn-based foods. But the Mexican Government has encouraged the domestic production of white corn by providing marketing payments to certain commercial producers. As a result, U.S. white corn exports to Mexico have declined sharply since 2000. Moreover, the Mexican Congress has mandated the application of NAFTA’s over-quota tariff to white corn. This tariff, 36.3 percent for 2006, is much higher than the 2 or 3 percent that was applied during much of NAFTA’s first 12 years.

## **Livestock and Animal Products**

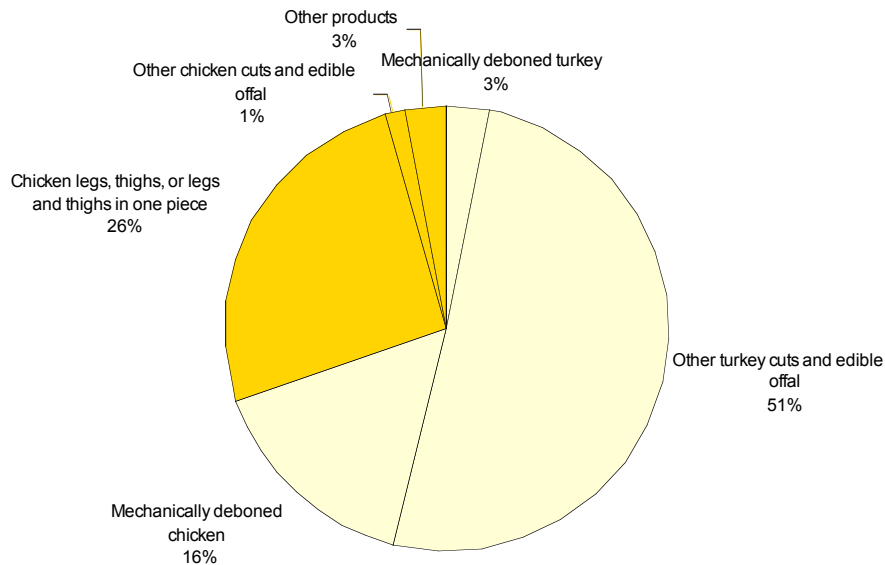
With the sweeping away of tariff and quota barriers among the NAFTA partners, industrial restructuring has become one of the main drivers of integration in the U.S. and Mexican livestock and animal product industries. Prior to NAFTA, Mexico restricted the importation of livestock and animal products from the United States through the use of tariffs as high as 25 percent and import licenses for poultry. Imports of U.S. cattle and beef, however, already received tariff-free treatment during the years immediately before NAFTA, except for a brief period from late 1992 to the end of 1993. Since 2003, U.S. livestock and animal products have enjoyed tariff- and quota-free status in Mexico, except for chicken leg-quarters, which are subject to a temporary tariff-rate quota until January 1, 2008, in order to give the Mexican poultry industry more time to adjust to integration.

For Mexican hog producers, the opening of their market to competition from the United States (and Canada) coincided with heightened pressures to expand and consolidate. Although Mexican pork production has increased by more than 35 percent during the NAFTA period, imports accounted for about 31 percent of Mexican pork consumption in 2005, compared with 6 percent in 1996 (USDA/FAS, 2005). Rising imports and economic restructuring have provided the context for several allegations of dumping concerning U.S. pork exports to Mexico, as well as the imposition of antidumping duties on U.S. hogs from early 1999 to May 2003.

The Mexican poultry industry also is undergoing significant internal changes. Three firms account for about half of the industry's output (Flores, July 2005: 12) and have captured the lion's share of consumption growth over the past decade. The largest of these producers is a Mexican firm, while the second- and third-largest are affiliates of U.S. corporations. So far, Mexico's poultry industry has faced less direct competition from the United States than has its

hog industry. About 70 percent of Mexican poultry imports from the United States consist of either turkey meat or mechanically deboned meat (MDM), neither of which is produced in large quantities in Mexico (fig. 6).

**Figure 6—In 2004, about 70 percent of U.S. poultry meat exports to Mexico (in terms of value) consisted of commodities that Mexico does not produce in large quantities**



Source: Mexican Secretariat of Economy, as reported by Global Trade Information Services, Inc. (2005).

Ties between the U.S. and Mexican dairy industries reflect the adoption of new business strategies by international dairy companies. Nonfat dried milk continues to be the leading U.S. dairy export to Mexico, but a multinational company from outside the NAFTA region, New Zealand’s Fonterra, now serves as the marketing agent for much of these exports, through its partnership with Dairy Farmers of America, the largest farmer-owned dairy cooperative in the United States (Blayney and Gehlhar, 2005: 34-35). Some California producers are actively involved in this partnership, through their association with Dairy Farmers of America. In

addition, Mexican dairy companies have attracted net inflows of over \$1 billion in foreign direct investment (FDI) between January 1999 and June 2005 (Secretaría de Economía, 2005). About three-fourths of these investments were directed to the manufacture of condensed, evaporated, or powdered milk.

Mutual agreement on sanitary regulations is critical to the further integration of North America's livestock and animal product markets. Consistent with the principle specified by NAFTA and the World Trade Organization that sanitary and phytosanitary standards should be applied on a regional level, when possible, the NAFTA countries have sometimes allowed livestock and meat imports from areas that are free of problematic animal diseases, even if the disease in question is present in other parts of the exporting country. For example, sanitary concerns have traditionally limited Mexico's ability to export pork and poultry to the United States. In the future, such exports may grow to significant quantities, as the United States has recognized Mexican advances in controlling Classical Swine Fever and Exotic Newcastle Disease on a regional basis. Mexico is already an important supplier of pork to Japan, where sanitary standards are tightly defined and strictly enforced.

The discoveries of BSE in Canada and the United States in 2003 and 2004 have presented a serious challenge to integration. At present, there is an almost complete worldwide ban on imports of U.S. and Canadian cattle, but the NAFTA countries now allow imports of U.S. and Canadian boneless beef from cattle less than 30 months of age, and the United States and Japan signed an agreement that would allow for the exportation of U.S. beef from cattle less than 20 months of age (USDA/OC, 2005). Such animals are considered to have a minimal risk of transmitting BSE. In 2004, U.S. beef exports to Mexico approached 107,000 metric tons, compared with 39,000 metric tons in 1993, despite an interruption in trade due to the first BSE

discovery in the United States. The United States also imports cattle from Mexico, primarily feeder calves. About one-fourth of these imports enter at a single port in Santa Teresa, New Mexico (Skaggs, Acuña, Torrell, and Southard, 2004). Texas or New Mexico is the initial destination for most of the cattle that enter at Santa Teresa, but some animals imported through this port are shipped as far as Washington, Iowa, and Mississippi.

### **Fruit and Vegetables**

An integrated market comprising numerous production areas enables agriculture to respond on a year-round basis to rising consumer demand for perishable fruits and vegetables. With territory that stretches northward beyond the Arctic Circle and southward well past the Tropic of Cancer, the NAFTA region features multiple zones for fruit and vegetable production with growing seasons that are scattered across the calendar year. Additional suppliers in Costa Rica, Guatemala, Ecuador, Peru, Chile, and other countries south of Mexico help to assure a year-round supply of certain commodities.

To obtain produce from a regionally diverse group of suppliers at different times of the year, the fruit and vegetable industries in Mexico and the United States have developed an elaborate network of cross-border relationships that includes lending, technology transfers, marketing agreements, and joint ventures, among other organizational forms. In the integrated berry industry, for example, joint ventures and alliances among independent growers in different countries have precluded the need for firms to own productive operations in more than one country, although such examples do exist. During 2002-04, Mexico actually experienced a net outflow of foreign direct investment in fruit, vegetable, and flower production in the amount of

\$69 million (Secretaría de Economía, 2005). This suggests that Mexican investors have been buying some Mexico-based operations from foreigners.

Climate does not completely determine production patterns. For instance, year-round production of greenhouse tomatoes is technologically feasible in all three NAFTA countries, but many growers produce greenhouse tomatoes only at certain times of the year, when their costs of production are more competitive. While climatological considerations are still important, site locations and technological packages are generally selected to lessen the costs associated with specific marketing windows, and these decisions take place within a strategic context in which competitors are almost constantly re-evaluating the situation and revising their decisions (Cook and Calvin, 2005).

A major result of this integration is that imports from Mexico have become more important to U.S. fruit and vegetable consumption. Mexican fruit and vegetable exports to the United States have more than doubled during the NAFTA period, and the share of Mexican produce in U.S. consumption of fresh or frozen fruit and vegetables has increased from 5 percent in 1993 to 7 percent in 2003. Imports also have facilitated a shift away from processed fruit and vegetables and toward fresh produce. In 2003, fresh produce (from all countries, including the United States) accounted for 47 percent of U.S. fruit and vegetable consumption, up from 44 percent in 1993.<sup>3</sup>

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 2). Prior to NAFTA, net imports (from all countries) already exceeded 65 percent of U.S. consumption for fresh limes, fresh mangos, and broccoli and cauliflower for processing. Since NAFTA's

implementation, fresh papayas have joined the group of commodities where net imports exceed 65 percent of consumption. Except for broccoli and cauliflower, the United States has limited commercial production of the above mentioned commodities. However, several commodities that are produced in substantial quantities in the United States—including fresh asparagus, cucumbers, eggplant, fresh squash, and fresh tomatoes—also have experienced a noteworthy increase in net imports’ share of consumption during the NAFTA period. Mexico is the leading foreign supplier of all these commodities, except for fresh asparagus, where Peru is the leader.

**Table 2—Net imports now account for a larger proportion of U.S. consumption of certain fruits and vegetables**

Commodity	Net imports divided by consumption		Per capita use	
	1991-93	2002-04	Average, 1991-93	Average, 2002-04
	<i>Percent</i>		<i>Kilograms</i>	
Selected fruits:				
Fresh grapes <sup>1</sup>	15	23	3.4	3.6
Fresh limes <sup>1</sup>	66	100	0.4	0.9
Fresh mangos <sup>2</sup>	92	100	0.4	0.9
Fresh papayas	8	85	0.1	0.4
Fresh strawberries	-8	-6	1.6	2.3
Watermelon	1	3	6.3	6.1
Selected vegetables:				
Asparagus, fresh	12	59	0.3	1.0
Bell peppers	5	20	2.5	3.1
Broccoli and cauliflower, processing	66	78	1.4	1.3
Cucumbers	28	45	2.2	2.9
Onions, fresh	-20	0	7.4	9.1
Squash, fresh	23	39	1.7	2.0
Tomatoes, fresh	9	29	7.1	8.9

<sup>1</sup> Information is reported for 1990/91, 1991/92, and 1992/93 marketing years instead of calendar years 1991-93 and for the 2002/03, 2003/04, and 2004/05 marketing years instead of calendar years 2002-04.

<sup>2</sup> Trade data for 1991-92 also include mangoes and guavas.

Sources: Lucier and Jerardo (2005); Pollack and Perez (2005).

<sup>3</sup> The figures in this paragraph were calculated using USDA’s Foreign Agricultural Trade of the United States database, ERS’s macroeconomic database (USDA/ERS, August 2005), and ERS’s per capita food consumption system (USDA/ERS, 2004).

U.S. produce also is becoming more important to Mexico. Fresh fruit and vegetable exports to Mexico have doubled in value and increased 70 percent in volume since NAFTA's implementation, with apples, pears, and grapes leading the way. Trade liberalization under NAFTA has played a crucial role in this development. Prior to the agreement, Mexico required import licenses for table grapes, and most tariffs applied to U.S. product equaled 20 percent. In contrast, U.S. tariffs on Mexican produce prior to NAFTA were generally quite small. Exceptions to this characterization include the 20-percent tariff on watermelon and the 25-percent tariff that was applied to asparagus on a seasonal basis.

Another factor that has helped U.S. fruit and vegetable exports to Mexico is the rapid expansion of Mexico's supermarket sector. Many U.S. producers already had well-established procurement relationships prior to NAFTA with the multinational supermarket chains that operate in Mexico, and new relations have been forged between buyers and suppliers since the agreement's implementation (Tropp, Skully, Link, and Málaga, 2002: ix). Through advanced procurement and distribution systems, supermarkets are able to exercise greater control over the supply of fresh produce, "reducing handling, speeding delivery, and ... reducing post-harvest losses and shrinkage" (Pacific Economic Cooperation Council, 2005: 16).

Several U.S. supermarket operators are active in Mexico. In 1997, the Texas supermarket chain H-E-B opened its first store in northern Mexico, and today, it has about 20 stores there. Representatives of the U.S. and Mexican stores sometimes sit down together with suppliers and jointly buy fresh produce, thereby sharing the associated transaction costs (H-E-B, 2005). Wal-Mart has been present in Mexico since 1991 and at last count was operating 756 stores in that country, many of which contain full-service supermarkets (Wal-Mart de Mexico, 2005). Not surprisingly, Wal-Mart is the leading operator of supermarkets in both countries. Despite these

developments, many Mexicans still prefer to buy fresh fruit and vegetables from traditional food outlets such as *centrales de abasto* (public markets), *tiendas de abarrotes* (“mom and pop” shops), and *tianguis* (mobile street vendors) (Schwentenius and Gómez, 2002). In 2004, traditional food retailers accounted for an estimated 72 percent of fresh produce sales in Mexico (Acosta Tapia, 2005).

Producer groups have played an important role in addressing frictions generated by rising trade. For example, produce companies from the three NAFTA countries have formed the Fruit and Vegetable Dispute Resolution Corporation (DRC). This private, nonprofit organization has created a multistep dispute resolution system that begins with preventative activities and cooperative problem-solving and then proceeds gradually to more binding measures. To date, the DRC has been most active in issues concerning Canada and the United States. Further development of an independent, third-party inspection system in Mexico might enable the DRC to play a broader role concerning U.S. exports to Mexico (Green, et al., 2005: 6).

In addition, producer groups have successfully used negotiations to address allegations of dumping. In cases involving U.S. apple exports to Mexico and Mexican tomato exports to the United States, producer groups have agreed to the suspension of antidumping investigations for long periods in exchange for a minimum price for the commodity in question. Suspension agreements, however, address only a small fraction of the trade remedy cases concerning agricultural trade within North America.

To ensure that producers in importing countries are not exposed to undue risks to plant health, appropriate phytosanitary measures need to be established. To this end, the U.S. and Mexican governments have worked to establish phytosanitary standards for a number of fruit and vegetables. Rules established by USDA’s Animal and Plant Health Inspection Service (APHIS)

to allow the importation of fresh Hass avocados from certain municipalities in the Mexican State of Michoacán form one of the more prominent examples of this work. Producers are required to follow strict sanitary procedures and are subject to a series of APHIS inspections during the growing, packing, and exporting processes. When the rule was initially put into effect in 1997, imports were subject to a number of geographic and seasonal restrictions in the United States. Since January 2005, however, such avocados have been allowed to enter all U.S. States except California, Florida, and Hawaii on a year-round basis, and in 2007, imports will be allowed to enter the remaining three States as well. With these rules in place, imports of fresh avocados from Mexico increased from 4,000 metric tons in 1997 to 39,000 in 2004.

Establishment of phytosanitary protocols for bilateral fruit and vegetable trade requires painstakingly detailed work that often stretches across several years. The avocado rule mentioned above required 4 years of extensive bilateral technical negotiations and another 2 years to make the journey from proposed rule to final rule (Green, et al., 2005). Another case concerns efforts by U.S. producers to secure a systems approach without fumigation for exporting stone fruit to Mexico. Such an approach is viewed as superior to fumigation, which adversely affects the quality, appearance, and shelf life of the fruit. For more than a decade, U.S. and Mexican authorities have worked on an almost annual basis to establish phytosanitary workplans for stone fruit trade, with varying results. In 2004, the lack of a systems approach workplan for California stone fruit forced exporters to fumigate their product, which was the pest mitigation measure agreed under a previous workplan (Flores, April 2005).

Integration of formerly national fruit and vegetable markets also requires that exporters meet the food safety standards of other countries. Over the past several years, U.S. and Mexican authorities have worked to establish a framework that would allow for the broader resumption of

U.S. cantaloupe imports from Mexico. In November 2002, the U.S. Food and Drug Administration (FDA) issued an Import Alert on all Mexican cantaloupe, effectively banning all such imports from Mexico. This action followed 3 successive years (2000, 2001, and 2002) in which outbreaks of *Salmonella* associated with the consumption of contaminated cantaloupe from Mexico occurred in Canada and the United States. Strong epidemiological evidence linked the outbreaks of 2001 to two deaths in California (Green, et al., 2005).

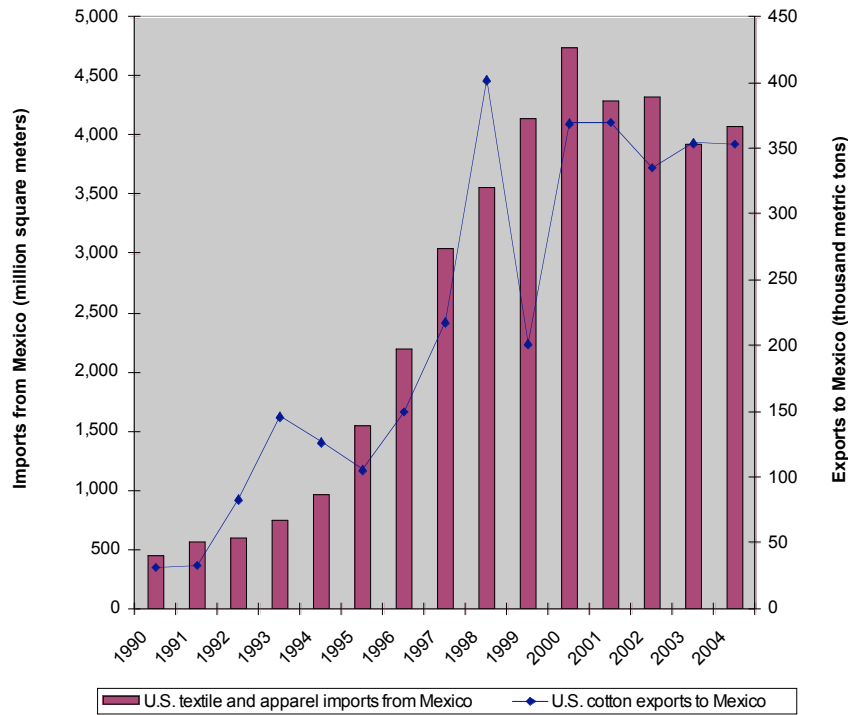
Since the imposition of the countrywide Import Alert, the FDA has exempted several growers from this ban, and in October 2005, it signed a memorandum of understanding with the Mexican agricultural secretariat's National Service of Health, Safety, and Agri-food Quality (SENASICA) that allows for the differentiated treatment of prospective Mexican cantaloupe exporters, based on their past food safety performance (SAGARPA/SENASICA, 2005). Efforts by Mexican growers to respond to the growing demand of Mexican consumers for safer food products are likely to further integrate the U.S. and Mexican fruit and vegetable sectors.

### **Cotton, Textiles, and Apparel**

North America's textile and apparel industry became tightly integrated during the latter half of the 1990s, as a division of labor emerged in which the United States supplies raw cotton, yarn, and fabric to Mexican textile and apparel producers and Mexico exports some of its textile and apparel output to the United States (fig. 7). California's cotton producers are active participants in this arrangement, exporting \$57 million of cotton to Mexico in 2003 (AIC/CDFIA, 2004). NAFTA has played a key role in this industrial restructuring through its strict rules of origin, which limit the extent to which textile and apparel producers outside the NAFTA region

are able to take advantage of the trade liberalization that has occurred within the region as part of the agreement.

**Figure 7—U.S. textile and apparel imports from Mexico have declined sharply in the face of heightened competition from China and other non-NAFTA countries**



Source: U.S. Department of Commerce, Office of Textiles and Apparel (textile and apparel imports), and USDA, Foreign Agricultural Trade of the United States database (cotton exports.)

Further trade liberalization at the global level, however, is causing the linkages between U.S. cotton growers and Mexican textile and apparel firms to weaken. Implementation of the World Trade Organization’s Agreement on Textiles and Clothing (ATC) has dissolved the complex tangle of quotas that formerly restricted international textile and apparel trade, giving countries outside NAFTA much broader access to the U.S. market. As a result, Mexican producers are struggling, particularly against competition from China. Between 2000 and 2004, Mexican textile and apparel exports to the United States dropped from \$9.7 billion to \$7.8 billion, although the volume of these exports stabilized in 2004 (U.S. Department of Commerce,

Office of Textiles and Apparel, 2005). Throughout this period of change, brokers have been able to find paying customers for U.S. cotton, even though a smaller proportion of those sales are now destined for Mexico.

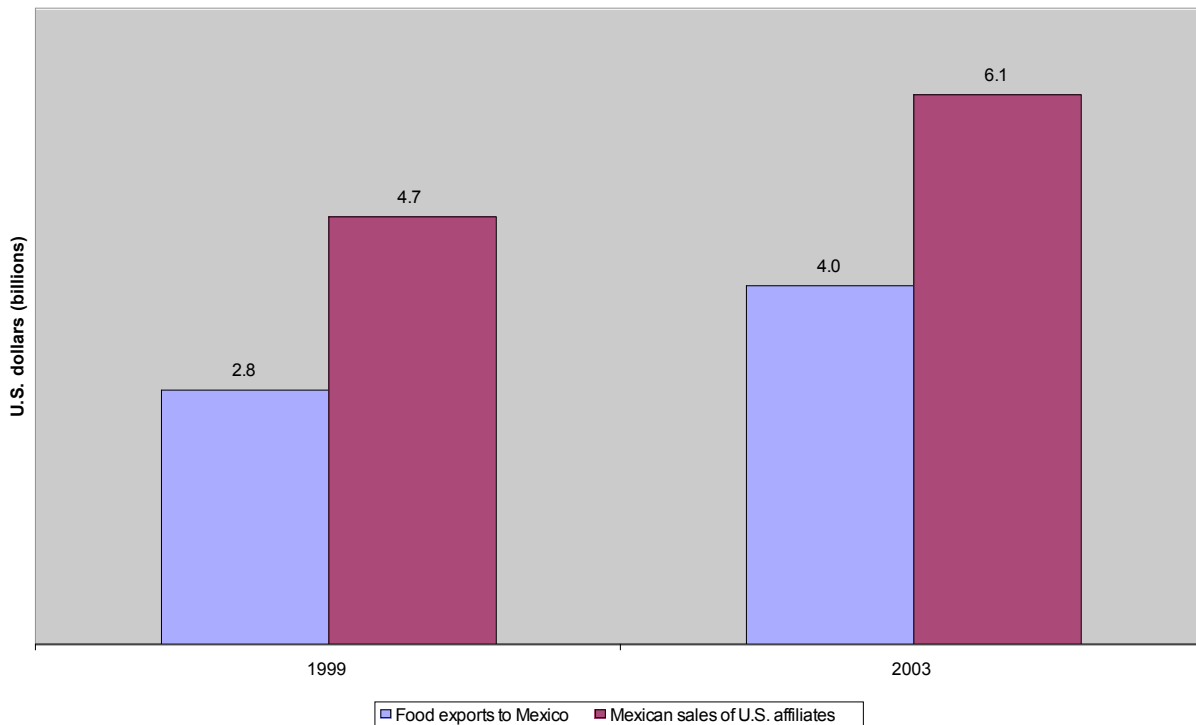
### **Processed Foods**

Integration is not limited to trade in raw products. The U.S. and Mexican processed food industries are increasingly interwoven, with substantial cross-border investments and growing flows of intra-industry trade in such intermediate and final food products as meats, canned fruit and vegetables, frozen fruit and vegetables, chocolate and cocoa products, and malt beverages. Further increases in per capita income in Mexico, along with additional improvements to the country's transportation and retail systems, are likely to advance the integration of U.S. and Mexican processed food markets even further.

NAFTA is widely believed to have fostered additional foreign direct investment (FDI) in Mexico's processed food industries (Burfisher, Robinson, and Thierfelder, 2002; Vollrath, 2003; Worth, 1998). The agreement contains important provisions designed to facilitate FDI, including the equal treatment of domestic and foreign investors and the prohibition of applying certain performance requirements to foreign investors, such as a minimum amount of domestic content in production. These provisions reinforce similar changes that Mexico made to its foreign investment laws prior to NAFTA. Due in part to these reforms, the Mexican processed food industry has attracted a substantial amount of FDI during the NAFTA period. Between January 1999 and June 2005, for instance, Mexico's food, beverage, and tobacco sectors received net inflows of \$7.2 billion in FDI (Secretaría de Economía, 2005). Fifty-three percent of this capital came from the United States and 33 percent came from the European Union.

Investments made by multinational food companies in Mexico translate into a high volume of sales. Most U.S. multinational food companies operating in Mexico are “market servers,” meaning that their Mexican operations focus primarily on the Mexican market (Doan, et al., 2005). In 2003, sales in Mexico by majority-owned affiliates of U.S. multinational food companies reached nearly \$6.1 billion (fig. 8). This amount is 53 percent larger than the value of U.S. processed food exports to Mexico for that year. Major U.S. brands are sold throughout Mexico, and some Mexican brands are prominent in the United States, giving consumers throughout the region access to a wider variety of products.

**Figure 8—Food sales of U.S.-owned affiliates in Mexico greatly exceed processed food exports to Mexico**



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 (August 2005) (affiliate sales) and USDA/ERS (November 2005) (exports).

Mexico's food companies also have made important cross-border investments. In 2004, the stock of Mexican direct investment in the U.S. processed food industry (excluding beverages and production agriculture) equaled about \$900 million, compared with nearly \$2.3 billion of U.S. direct investment in the Mexican processed food industry (U.S. Department of Commerce, Bureau of Economic Analysis, September 2005 and October 2005).<sup>4</sup> Several Mexican food companies have U.S. operations that rival their Mexican operations in terms of size and importance. One such example is Gruma, the world's largest producer of corn flour and tortillas. For the last several years, its U.S. operations have accounted for more than half of the company's total corporate sales. Another example is GIBSA (Grupo Bimbo), Mexico's largest baking company. It has purchased several bread-baking enterprises in the western United States, including the western division of Weston Foods, Mrs. Baird's Bread in Texas, and several large firms in California. GIBSA is now the third largest baker in the world, with roughly a 5 percent share of the U.S. market for bakery products.

### **Further Integration is Possible**

With the completion of NAFTA's implementation less than 2 years away, many people are thinking about what steps could facilitate further integration. Several proposals would move NAFTA in the direction of becoming a common market. Examples include: a common currency (Tweeten, 2000), unified inspection and certification procedures (Canadian Council of Chief Executives, 2003), shared agricultural policies (as proposed by Mexico's National Agreement for

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<sup>4</sup> The stock of Mexican direct investment in the U.S. processed food industry for 2004 is not reported to protect the confidentiality of individual companies. The estimate of \$900 million was obtained by subtracting the amount of Mexican direct investment reported for U.S. manufacturing industries other than food from the total amount of Mexican direct investment in U.S. manufacturing.

the Countryside [SAGARPA, 2003]), and a continental labor market.<sup>5</sup> These are all intriguing long-term possibilities, and while they may be ahead of their time today, it is important to remember that NAFTA seemed out of the question not that long ago.

One approach that is already underway is to pursue free-trade agreements with other trade partners. All three NAFTA governments have completed a number of free-trade agreements with countries outside NAFTA, most of which contain meaningful agricultural provisions, and they are actively negotiating additional agreements of this type. Interestingly, each NAFTA country has secured a free-trade agreement with Chile, an outcome that is similar to what would have resulted had Chile formally joined NAFTA.

Two smaller efforts tailored specifically to agriculture could also increase market integration. The first concerns the application of trade remedies, such as antidumping duties (ADs) and countervailing duties (CVDs). Although NAFTA created a dispute-resolution mechanism in which national trade remedy decisions can be appealed before binding arbitration panels, the agreement generally preserves the autonomy of each member country to implement its own trade remedy laws. Given that commodity prices are volatile and sometimes fall below the costs of production, some observers have suggested that the current approach to allegations of dumping is inappropriate for agriculture (Knutson, Loyns, and Ochoa, 2002: 393). Canada and Chile have pursued an innovative course with respect to trade remedies by exempting *all* of their bilateral trade from ADs, as part of the Canada-Chile Free Trade Agreement. Less sweeping reforms could include the specification of higher standards for the imposition of ADs and CVDs among the NAFTA countries and mandatory facilitated dialogue among the adverse parties prior to the administrative review of any AD/CVD case (Wainio, Young, and Mielke, 2003).

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<sup>5</sup> In addition, fellow conference participant Gary Hufbauer has recently co-authored an assessment of NAFTA that contains an extensive set of recommendations for deepening economic relations among the NAFTA countries

The second area in which smaller constructive efforts could advance market integration is regulatory coordination. Over the past 12 years, the NAFTA countries have fine-tuned many of their sanitary, phytosanitary, and other regulatory measures so that they do not unnecessarily hinder trade. These efforts often involve highly technical matters and are not widely heralded, but they have paid off in numerous small reforms that have opened doors to new trading opportunities. Examples include: the rules that allow for the importation of fresh Hass avocados from Mexico; U.S. and Mexican efforts to resolve food safety concerns regarding Mexican cantaloupe; the concerted and coordinated campaign by all three NAFTA countries to seek a harmonized approach to the mitigation of risks associated with BSE; the creation of contingency plans in case of another outbreak of potato wart in Canada; and the sharing of scientific studies and administrative evaluations among pesticide regulators and expert scientists in the NAFTA governments (Green, et al., 2005).

Through the Security and Prosperity Partnership of North America, signed by the leaders of the NAFTA countries in March 2005, the governments of North America have made a commitment to an even more ambitious agenda of regulatory coordination, featuring common approaches to food safety, greater coordination and information-sharing among testing laboratories, and increased cooperation with respect to the regulation of agricultural biotechnologies. Achieving these objectives will require a high degree of cooperation and coordination among the three governments, and if successful, the partnership is likely to serve as a model for similar endeavors in the future.

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(Hufbauer and Schott, 2005).

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Table 1—Selected U.S. agricultural exports to Mexico, 1991-93 versus 2002-04

	Value		Change	Volume		Change	Unit value		Change
	Annual average		Percent	Annual average		Percent	for period		Percent
	1991-93	2002-04		1991-93	2002-04		1991-93	2002-04	
	<i>U.S. dollars (millions)</i>			<i>Metric tons (thousands)</i>		<i>U.S. dollars per kilogram</i>			
<b>Total</b>	3,476	7,866	126	—	—	—	—	—	—
<b>Animals and animal products</b>	1,186	2,191	85	—	—	—	—	—	—
Beef and veal	171	524	206	58	169	191	2.95	3.11	5
Beef variety meats	48	241	402	41	126	206	1.17	1.92	64
Pork	68	257	278	32	148	363	2.13	1.73	-18
Pork variety meats	46	103	124	62	109	75	0.74	0.95	28
Turkeys, fresh or frozen	66	125	90	46	100	117	1.43	1.25	-13
Nonfat dry milk	55	113	105	33	65	97	1.67	1.73	4
Chickens, fresh or frozen	68	103	51	74	179	142	0.92	0.58	-37
Tallow, inedible	41	102	150	113	256	127	0.36	0.40	10
Bovine hides, whole	110	66	-40	—	—	—	—	—	—
Cattle and calves <sup>1</sup>	115	33	-72	179	43	-76	642.46	753.21	17
Other	398	524	32	—	—	—	—	—	—
<b>Grains and feeds</b>	896	2,228	149	6,507	15,171	133	0.14	0.15	7
Com	104	646	521	914	5,510	503	0.11	0.12	3
Wheat, unmilled	78	401	414	563	2,581	358	0.14	0.16	12
Sorghum	427	369	-13	3,949	3,346	-15	0.11	0.11	2
Cracked com	13	230	1,673	68	1,649	2,325	0.19	0.14	-27
Rice	42	142	238	175	742	324	0.24	0.19	-20
Dog or cat food, for retail sale	5	56	1,021	6	102	1,599	0.83	0.55	-34
Other	227	383	69	832	1,241	49	0.27	0.31	13
<b>Fruits and preparations, excl. juice</b>	81	233	188	143	341	138	0.57	0.68	21
Apples, fresh	34	70	107	68	116	71	0.50	0.61	21
Other	47	163	246	75	225	200	0.63	0.72	15
<b>Nuts and preparations</b>	33	86	159	22	45	106	1.51	1.90	26
<b>Vegetables and preparations</b>	150	638	325	—	—	—	—	—	—
Soups, broths, and preparations thereof, dried	15	206	1,268	7	75	966	2.13	2.73	28
Other	135	432	220	—	—	—	—	—	—
<b>Oilseeds and products</b>	633	1,403	122	2,489	5,049	103	0.25	0.28	9
Soybeans	400	851	113	718	3,560	396	0.56	0.24	-57
Soybean meal	68	144	112	313	617	97	0.22	0.23	7
Soybean oil	13	80	513	27	154	471	0.48	0.52	7
Other	152	328	116	1,431	718	-50	0.11	0.46	330
<b>Cotton, excluding linters</b>	117	413	253	87	348	300	1.34	1.19	-12
<b>Essential oils</b>	21	55	162	2	6	183	10.39	9.59	-8
<b>Seeds, field and garden</b>	109	221	103	181	389	115	0.60	0.57	-5
<b>Sugar and tropical products</b>	155	216	39	—	—	—	—	—	—
Chocolate and preparations	47	67	43	16	26	62	2.91	2.58	-11
Other	108	148	37	—	—	—	—	—	—
<b>Beverages, excluding juices</b>	51	74	44	—	—	—	—	—	—
<b>Other</b>	77	195	154	—	—	—	—	—	—

<sup>1</sup> Volume is measured in thousands of head, and unit value is measured in dollars per head.

Source: USDA, Foreign Agricultural Trade of the United States database

Table 2—Selected U.S. agricultural imports from Mexico, 1991-93 versus 2002-04

	Value		Change	Volume		Change	Unit value		Change
	Annual average		Percent	Annual average		Percent	for period		Percent
	1991-93	2002-04		1991-93	2002-04		1991-93	2002-04	
	<i>U.S. dollars (millions)</i>		<i>Metric tons (thousands)</i>		<i>U.S. dollars per kilogram</i>				
<b>Total</b>	2,542	6,360	150%	—	—	—	—	—	—
<b>Animals and animal products</b>	408	546	34%	—	—	—	—	—	—
Cattle and calves <sup>1</sup>	377	438	16%	1,104	1,142	3%	0.34	0.38	12%
Other	31	108	248%	—	—	—	—	—	—
<b>Grains and feeds</b>	51	258	405%	—	—	—	—	—	—
Biscuits and wafers <sup>2</sup>	16	137	768%	11	84	679%	1.46	1.63	11%
Other	35	121	242%	—	—	—	—	—	—
<b>Fruits and preparations</b>	322	930	189%	586	1,245	112%	0.55	0.75	36%
Grapes, fresh	59	212	259%	40	113	181%	1.48	1.88	28%
Mangoes, fresh <sup>3</sup>	63	93	48%	80	179	124%	0.79	0.52	-34%
Limes, fresh	20	92	356%	87	252	191%	0.23	0.37	57%
Watermelons, fresh	18	67	273%	89	198	122%	0.20	0.34	68%
Strawberries, fresh	15	60	302%	12	41	239%	1.25	1.48	18%
Avocados, processed	12	56	357%	6	32	460%	2.16	1.76	-18%
Avocados, fresh	1	50	4856%	1	34	5902%	1.81	1.49	-17%
Papayas, fresh	4	52	1185%	7	79	959%	0.54	0.66	21%
Other	147	299	104%	278	398	43%	0.53	0.75	43%
<b>Nuts and preparations</b>	55	105	90%	17	45	161%	3.16	2.30	-27%
Pecans	53	94	76%	14	34	140%	3.78	2.76	-27%
Other	2	11	501%	3	12	248%	0.54	0.94	73%
<b>Vegetables and preparations</b>	923	2,391	159%	—	—	—	—	—	—
Tomatoes, fresh	229	687	200%	312	762	144%	0.73	0.90	23%
Peppers, fresh	120	373	210%	124	342	176%	0.97	1.09	13%
Cucumbers, fresh	73	223	206%	179	337	88%	0.41	0.66	63%
Squash, fresh	60	167	179%	83	196	136%	0.72	0.85	18%
Onions, fresh	92	125	36%	178	172	-4%	0.52	0.73	41%
Broccoli, frozen	89	114	28%	133	142	7%	0.67	0.80	20%
Asparagus, fresh	29	71	145%	21	37	76%	1.38	1.92	39%
Other	231	631	173%	—	—	—	—	—	—
<b>Sugar and related products</b>	35	290	717%	23	268	1055%	1.53	1.08	-29%
Confectionery products	23	215	850%	15	150	928%	1.55	1.43	-8%
Sugar, cane or beet	1	37	3058%	3	88	3227%	0.45	0.43	-5%
Other	12	38	223%	—	—	—	—	—	—
<b>Cocoa and cocoa products</b>	20	76	283%	14	47	244%	1.46	1.62	11%
<b>Coffee and coffee products</b>	279	168	-40%	182	100	-45%	1.53	1.67	9%
<b>Beverages, excluding fruit juices</b>	170	1,294	661%	—	—	—	—	—	—
Beer <sup>4</sup>	145	1,078	644%	179	1,195	568%	0.81	0.90	11%
Carbonated soft drinks <sup>4</sup>	15	104	590%	19	186	877%	0.79	0.56	-29%
Other	10	112	1022%	—	—	—	—	—	—
<b>Other</b>	279	303	9%	—	—	—	—	—	—

<sup>1</sup>Volume is measured in thousands of head, and unit value is measured in dollars per head.

<sup>2</sup>Includes sweet biscuits, waffles, wafers, pastries, cake, and bread, among other products.

<sup>3</sup>Data for 1991-92 also include guavas and mangosteens.

<sup>4</sup>Volume is measured in millions of liters, and unit value is measured in dollars per liter.

Source: USDA, Foreign Agricultural Trade of the United States database