



# North American Beef and Cattle Trade: A Current Perspective

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# North American Beef and Cattle Trade: A Current Perspective

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Implementation of the North American Free Trade Agreement (NAFTA) in 1994 played a large role in the increase in total agricultural trade between the United States, Canada, and Mexico. In recent years, however, questions have arisen about changes in the U.S. beef and cattle industries that have occurred since the implementation of NAFTA. This report will address the net positions of the United States, Canada, and Mexico in global and regional markets and illustrate some recent trends in beef and cattle trade among the three countries. All values are reported in U.S. dollars. The sources of data presented in the tables and figures in this report are shown in Appendix A.

## WORLD TRADE – 2001

According to the World Trade Organization (2002), total world trade of merchandise and services in 2001 was valued at \$15,501.3 billion. Overall, the world had \$7,615 billion in exports and \$7,886.3 billion in imports in 2001. It was the first year in almost two decades that world trade decreased from the previous year, which is attributed to declines in major industrial country markets and East Asian economies. The effects of September 11, 2001, also had repercussions on global stock markets, consumer confidence, trade, and worldwide economic growth.

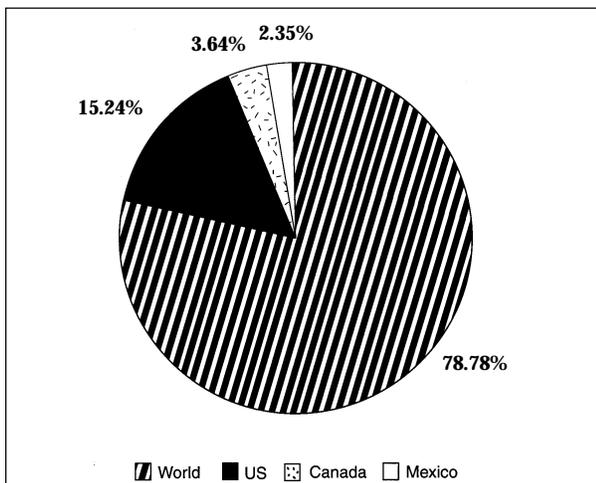
The United States accounted for 15.24% of total world trade and was the leading

exporter and importer of merchandise in 2001 with \$730.8 billion in exports and \$1,180.2 billion in imports. The United States was also the leader in commercial services with exports of \$263.4 billion and imports of \$187.7 billion. Canada accounted for 3.64% of total world trade while Mexico generated 2.35% of total world trade in 2001. Canada's total trade was \$564.2 billion, \$295.5 billion in exports and \$268.7 billion in imports. Mexico had total trade of \$363.7 billion, \$171 billion in exports and \$192.7 billion in imports. The distribution of total 2001 world trade between the United States, Canada, Mexico, and the rest of the world is shown in fig. 1 and table 1.

The total value of world agricultural trade in 2001 was \$547.5 billion (table 2), which amounted to 4.56% of all world merchandise exports and imports of \$12.6 trillion in that year. Agricultural trade attributable to the United States was 24.09% of the world agricultural trade total in 2001 (fig. 2). The value of U.S. agricultural trade in 2001 was \$138.42 billion, of which \$70.02 billion were exports and \$68.4 billion were imports. By comparison, Canada was responsible for 8.55%, and Mexico accounted for 3.81% of world agricultural trade in 2001. Canada had exports of \$33.57 billion and imports of \$15.55 billion. Mexico's exports totaled \$9.07 billion, while its imports totaled \$12.79 billion.

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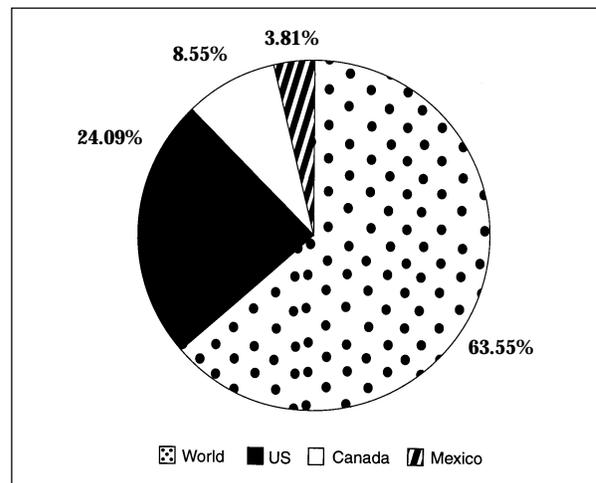
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**Fig. 1. 2001 Total Value of All World Trade (Exports and Imports)**

**Table 1. 2001 Total Value of All World Trade (Exports and Imports)**

United States	\$	2,362.1
Canada	\$	564.2
Mexico	\$	363.7
World	\$	12,211.3
Total	\$	15,501.3



**Fig. 2. 2001 Total Value of World Agricultural Trade (Exports and Imports)**

**Table 2. 2001 Total Value of World Agricultural Trade (Exports and Imports)**

United States	\$	138.4
Canada	\$	49.1
Mexico	\$	21.9
World	\$	365.1
Total	\$	574.5

## NORTH AMERICAN BEEF AND CATTLE TRADE

### NAFTA Implications

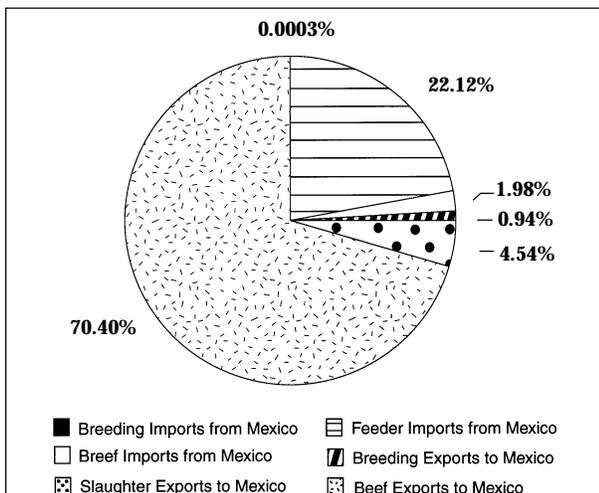
Beef and cattle trade between the United States, Mexico, and Canada has increased since NAFTA was implemented in the 1990s. Some of the most dramatic increases are evident in the export of beef from the United States to Mexico and cattle from the United States to Canada. The Restricted Northwest Feeder Project<sup>2</sup> recently has increased exports of feeder cattle from northern U.S. states to Canada under reduced sanitary requirements

during the fall and winter months.

Prior to NAFTA, purebred breeding and dairy cattle were imported into the United States with no duties, and the United States had a tariff of only 2.2 cents per kilogram on all other cattle. Beef imports were treated in a similar fashion with a 2-cent-per-pound tax on imports (Zahniser and Link 2002). Mexico and Canada were exempt from the U.S. Meat Import Law<sup>3</sup>. By 1994, the small U.S. tariffs were completely eliminated under both NAFTA and the 1989 Canadian-U.S. Free Trade Agreement (Zahniser and Link 2002).

<sup>2</sup>The restrictions of this project state that "restricted feeders" that originate from approved states may be exported to Canada during the fall and winter months (Oct. 1 – March 31) without test, having only a USDA Certificate of Veterinary Inspection. The imported animals are treated for anaplasmosis following their arrival and are then permitted to move without restriction. To qualify to export, states must be officially free of bovine brucellosis and tuberculosis and be classified by Canada as low risk for bluetongue.

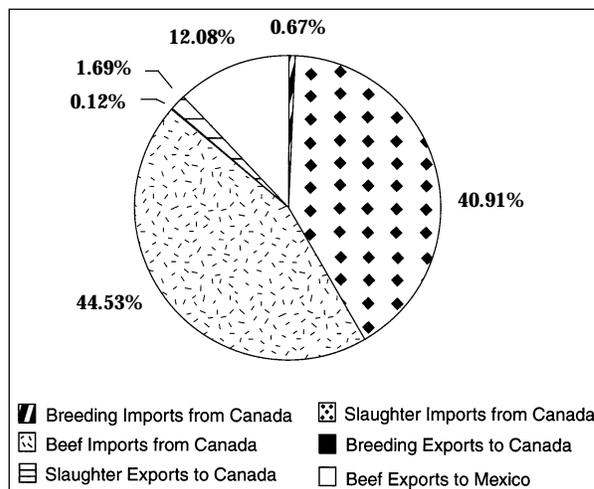
<sup>3</sup>The U.S. Meat Import Law was a result of the Meat Import Act of 1979. This act required the President of the United States to impose import quotas on fresh, chilled, and frozen beef, veal, mutton, and goat if the Secretary of Agriculture estimates that annual imports will exceed a basic import level, calculated each year based on a production adjustment factor and a counter cyclical factor. This Act was repealed in 1995 and replaced with a Tariff Rate Quota for countries other than Canada and Mexico.



**Fig. 3. 2002 Total Value of U.S.-Mexico Beef and Cattle Trade**

**Table 3. 2002 Total Value of U.S.-Mexico Beef and Cattle Trade**

Breeding Imports from Mexico	\$	4,420
Feeder Imports from Mexico	\$	300,495,602
Beef Imports from Mexico	\$	26,833,152
Breeding Exports to Mexico	\$	12,802,403
Slaughter Exports to Mexico	\$	62,027,241
Beef Exports to Mexico	\$	956,267,976
Total	\$	1,358,430,794



**Fig. 4. 2002 Total Value of U.S.-Canada Beef and Cattle Trade**

**Table 4. 2002 Total Value of U.S.-Canada Beef and Cattle Trade**

Breeding Imports from Canada	\$	18,404,241
Slaughter Imports from Canada	\$	1,127,772,028
Beef Imports from Canada	\$	1,227,607,233
Breeding Exports to Canada	\$	3,391,037
Slaughter Exports to Canada	\$	46,600,643
Beef Exports to Canada	\$	332,985,906
Total	\$	2,756,761,088

Canada maintained an import policy that was similar to that of the United States during the years prior to NAFTA. It allowed purebred and breeding cattle to be imported tax-free and charged a 2.2-cent per kilogram duty on all other cattle. Elimination of the tax on cattle imported into Canada from the United States began in 1989, with taxes on both Mexican and U.S. imports eliminated by 1994. The U.S. Meat Import Act was repealed as of Jan. 1, 1995. Canada repealed its Meat Import Act in 1994.

Prior to the implementation of NAFTA, Mexico had 15% taxes on non-breeding cattle, 20% on fresh beef, and 25% on frozen beef. All these tariffs were eliminated in 1994. There was

also a 20% tax on offal<sup>4</sup> that was phased out in a nine-year period that ended on Jan. 1, 2003 (Zahniser and Link 2002).

#### United States - Mexico Agricultural and Beef-Cattle Trade

Agricultural trade between the United States and Mexico has nearly doubled from \$7.48 billion since the implementation of NAFTA, due to reductions in trade barriers and increased economic growth in the two countries (USDA/FAS 2003). The total value of agricultural trade between the United States and Mexico was \$13.74 billion in 2002 (USDA/FAS 2003). Trade in beef and cattle between the United States and Mexico

<sup>4</sup>Offal – edible organs of livestock including cattle, swine, sheep, and goats.

was well established long before NAFTA was implemented (Mitchell 2000) and had a total value of \$1.36 billion in 2002. It is difficult to discern the effects of NAFTA on U.S.-Mexico beef and cattle trade due to drought, changes in the Mexican economy and new export regulations in Mexico, which have occurred since the treaty was implemented. In 1995, severe drought and the devaluation of the Mexican peso forced many Mexican producers to liquidate their cattle herds and quickly ship large numbers of feeder cattle into the U.S. market. This resulted in a spike in feeder cattle imports to the United States from Mexico, which is commonly attributed to NAFTA but was due to a number of simultaneous events (Mitchell et al. 2001).

Fig. 3 shows a breakdown of 2002 U.S.-Mexico beef and cattle trade by major product category. In 2002, approximately 70% of U.S.-Mexico beef and cattle trade consisted of beef moving from the United States to Mexico. Feeder cattle moving from Mexico to the United States accounted for 22.12% of all beef-cattle trade between the two countries and represented 816,456 animals valued at \$300.5 million (table 3). United States imports of beef from Mexico, and U.S. breeding and slaughter cattle exported to Mexico, are a small part of total beef and cattle trade between the United States and Mexico.

### **United States-Canada Agricultural and Beef-Cattle Trade**

Agricultural trade between the U.S. and Canada has also grown since the implementation of NAFTA. This growth has been almost as significant as the growth in U.S.-Mexico trade, increasing from \$10.85 billion in 1994 to \$19.01 billion in 2002.

The Canadian beef and cattle industries are very similar to those in the United States,

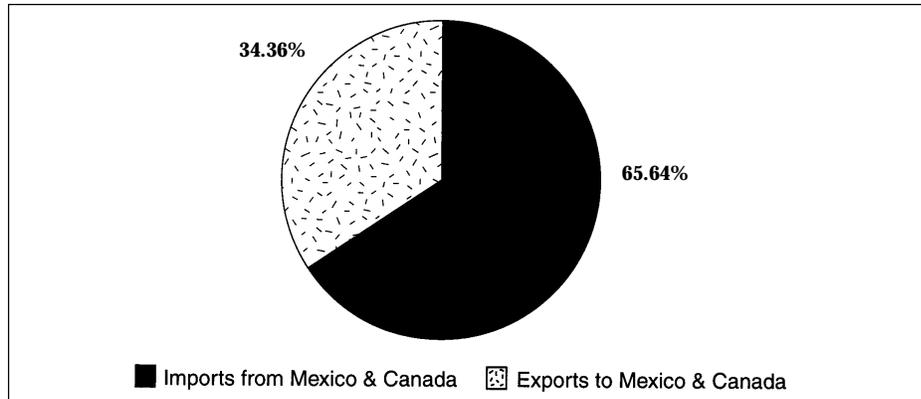
which has facilitated U.S.-Canada beef and cattle trade in both the pre- and post-NAFTA periods. The U.S. meat grading system differs from the one used in Canada and, because the U.S. Department of Agriculture (USDA) graded beef receives higher premiums, many Canadian producers ship cattle into the United States for slaughter so that they may receive the USDA grade (Zahniser and Link 2002). In 2002, total U.S.-Canada beef and cattle trade was valued at \$2.76 billion (table 4). Fig. 4 shows that, in 2002, beef imports to the United States from Canada comprised 44.53% of total beef-cattle trade between the two countries. Slaughter cattle imports from Canada accounted for 40.91% of the total value. Beef moving from the United States to Canada comprises approximately 12% of the total value of bilateral beef-cattle trade, while exports of U.S. slaughter and breeding cattle to Canada and U.S. imports of Canadian breeding cattle are small percentages of total U.S.-Canada beef-cattle trade.

In 2002, the total value of U.S. beef and cattle trade with Canada and Mexico was \$4.12 billion. Fig. 5 shows that the United States was a net importer of beef and cattle products from Mexico and Canada in 2002. Table 5 shows that the United States has had net importer status for beef and cattle products from Mexico and Canada for the past five years (USDA/FAS 2003).

### **Beef Trade**

The United States is the world's largest producer of beef<sup>5</sup> (USDA/ERS 2003). The top four export markets for U.S. beef in 2001 were Japan, Mexico, South Korea, and Canada. In 2002, however, Mexico overtook Japan and became the largest export market (USMEF 2003). Beef trade in North America was greatly influenced by the reduction in

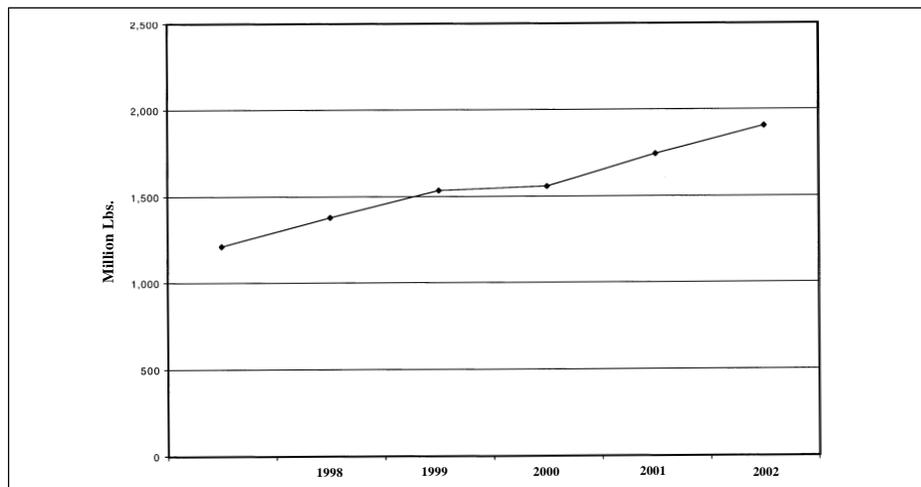
<sup>5</sup>This includes all beef and veal reported in metric tons in the FATUS (Foreign Agricultural Trade of the United States) commodity aggregations. Fresh and frozen beef and veal include carcasses and half carcasses and processed and not processed bone in and boneless cuts. Prepared and preserved beef and veal includes sausages, salted, dried, smoked, cured, and pickled meat, as well as corned beef and other preparations.



**Fig. 5. 2002 Total Value of U.S. Beef and Cattle Trade with Canada and Mexico**

**Table 5. Total Value of U.S. Beef and Cattle Trade with Canada and Mexico 1998-2002**

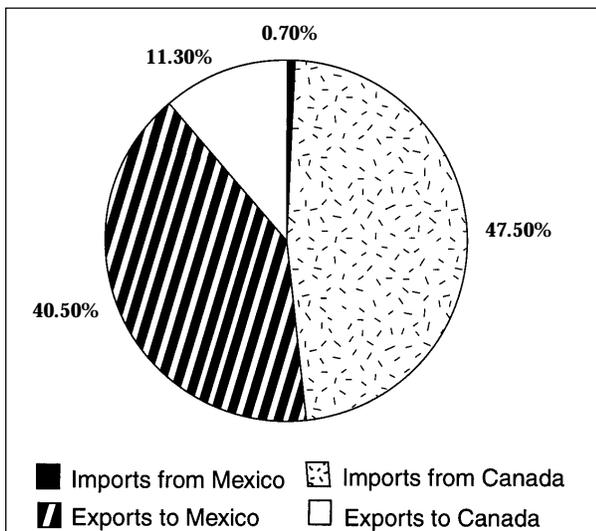
	Imports from Mexico & Canada	Exports to Mexico & Canada	Total
1998	\$ 2,028,586,930	\$ 1,101,676,570	\$ 3,130,263,500
1999	\$ 2,093,125,508	\$ 1,151,297,071	\$ 3,244,422,579
2000	\$ 2,291,224,247	\$ 1,350,442,059	\$ 3,641,666,306
2001	\$ 2,718,309,042	\$ 1,479,126,705	\$ 4,197,435,747
2002	\$ 2,701,116,676	\$ 1,414,075,206	\$ 4,115,191,882



**Fig. 6. Total U.S. Beef Trade 1997-2002 (Exports and Imports)**

**Table 6. Total U.S. Beef Trade 1997-2002 (Exports and Imports)**

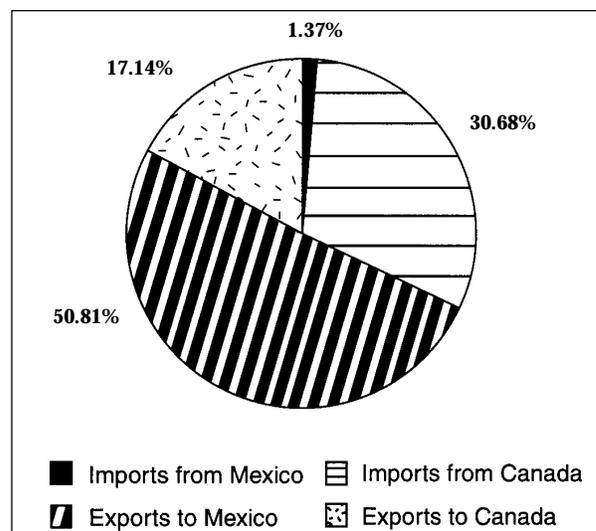
	Million Pounds	Value (Incl. Hides)
1997	1,211.77	\$ 1,636,885,577
1998	1,379.69	\$ 1,838,441,401
1999	1,534.67	\$ 2,077,136,704
2000	1,559.37	\$ 2,228,886,635
2001	1,744.34	\$ 2,477,851,663
2002	1,904.75	\$ 2,543,694,267



**Fig. 7. 2002 Total Value of U.S. Beef Trade with Mexico and Canada (Imports and Exports)**

**Table 7. Total Value of U.S. Beef Trade with Mexico and Canada (Million Pounds)**

Imports from Mexico	13.36
Imports from Canada	904.69
Exports to Mexico	771.39
Exports to Canada	215.32
<b>Total</b>	<b>1,904.75</b>



**Fig. 8. 2002 Total Value of U.S. Beef Cattle Hide Trade with Mexico and Canada (Imports and Exports)**

**Table 8. Total Value of U.S. Cattle Hide Trade with Mexico and Canada**

Imports from Mexico	\$	2,741,976
Imports from Canada	\$	61,580,643
Exports to Mexico	\$	101,985,012
Exports to Canada	\$	34,407,492
<b>Total</b>	<b>\$</b>	<b>200,715,123</b>

tariff rates and policy changes that resulted from NAFTA (Zahniser and Link 2002).

Beef exported out of the United States is primarily grain-finished, high-quality beef, while imports of beef into the United States are primarily grass-fed beef that is processed into ground beef (Brunke 2002a). Most imports of beef into the United States come from Canada. Australia is the second largest source of beef imported into the United States, followed by New Zealand, Argentina, and Brazil (USDA/FAS 2003). Imports from Mexico are relatively insignificant when compared with imports from these other countries.

Overall U.S. beef trade with Mexico and Canada increased from 1,211.77 million pounds in 1997 to 1,904.78 million pounds in 2002 (fig. 6). Total beef trade including

hides was \$2.5 billion in 2002, an increase of \$906.7 million from 1997 (table 6).

Beef exports to Mexico showed the most significant growth of 438.84 million pounds or 132% (from 332.55 million pounds to 771.39 million pounds) over the period from 1997-2002. Beef imports from Canada also increased, by 264.68 million pounds (41%), during this period. Imports of beef from Mexico experienced slight growth of 4.69 million pounds (54%) from 1997 to 2002 while exports of beef to Canada actually decreased 15.22 million pounds (6%) from 230.54 in 1997 to 215.32 in 2002.

The distribution of United States beef trade with Mexico and Canada is shown in fig. 7 and table 7. Imports of beef from Canada comprised slightly less than half of all U.S. beef trade with Canada and Mexico

in 2002. Exports to Mexico accounted for approximately 40% of the 2002 total, followed by exports to Canada (11.30% of the total value). Imports of beef from Mexico were negligible in 2002.

### **Cattle Hide Trade**

Trade in cattle hides is also an important part of U.S. beef and cattle trade. Hides are bilaterally traded with both Canada and Mexico (table 8). In 2002, hide exports to Canada were \$34.4 million while imports from Canada totaled \$61.6 million.

The most significant trade in hides consists of exports to Mexico; it is assumed that these hides are exported for manufacture into shoes and clothing, which may then be sent back to the United States, shipped to other countries, or consumed domestically. The value of these exports in 2002 was almost \$102 million, accounting for half of the annual U.S. cattle hide trade (fig. 8). At \$2.7 million, 2002 hide imports from Mexico amounted to a little over 2% of the value of hide exports to Mexico.

### **Live Cattle Trade**

Trade of live cattle between the United States, Canada, and Mexico primarily consists of three classes of animals: slaughter cattle, feeder calves, and breeding cattle. Reasons for cattle movement across borders in North America can be attributed to several factors: relative size and affluence of beef markets, relative availability of grain supplies and pastures for cattle feeding, location of feed lots and closer, more available slaughter facilities. Cattle are often imported into the United States, slaughtered, and the meat sent back across the borders to Mexico and Canada (Brunke 2002b).

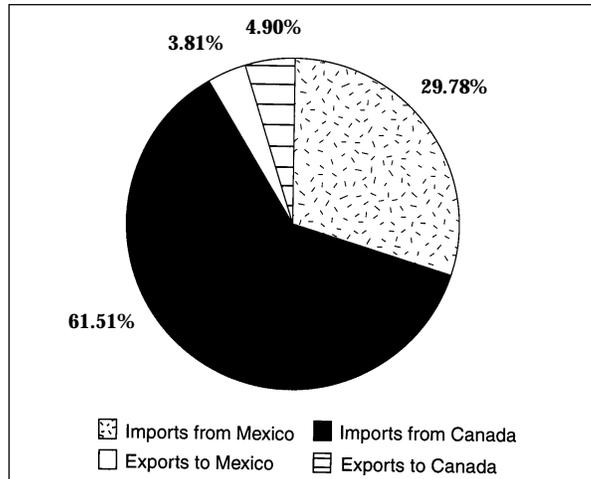
The United States is a net importer of live cattle, however it imports from and exports to both Canada and Mexico. These countries make ideal trading partners because of their proximity and the similarity of their cattle and beef sectors to those in the

United States (Brunke 2002b). The beef animals produced in the northern states of Mexico are primarily the English breeds or crosses demanded by the U.S. cattle-feeding industry. In 2002 U.S. live cattle trade with Mexico and Canada had a total value of \$1.57 billion (table 9). Imports from Canada of 1.87 million head accounted for 61.51% of total trade in 2002 (fig. 9).

Live cattle trade numbers can vary from year to year as a result of the cyclical pattern the market follows. Shipment of cattle to Mexico in the post-NAFTA period has fluctuated greatly due to several factors including a weakening of the Mexican peso relative to the U.S. dollar and a severe drought in Mexico. Currency devaluation and drought have plagued producers throughout the history of U.S.-Mexico cattle trade. The drought also caused U.S. imports of live cattle from Mexico to increase steadily, more than doubling from 669,409 head in 1997 to 1,222,569 head in 2000; however, imports decreased 33.2% to 816,460 head in 2002 (fig. 10). These imports were valued at \$300.5 million (Table 10) (USDA/FAS 2003).

Live cattle exports from the United States to Canada increased from 41,195 head in 1997 to 349,732 head in 2000, but went down to 134,215 head in 2002 (fig. 11 and table 11). Part of the 2000 increase was a result of Canada's Northwest Cattle Project, which has facilitated import of feeder cattle to Canadian feedlots (USDA/FAS 2002).

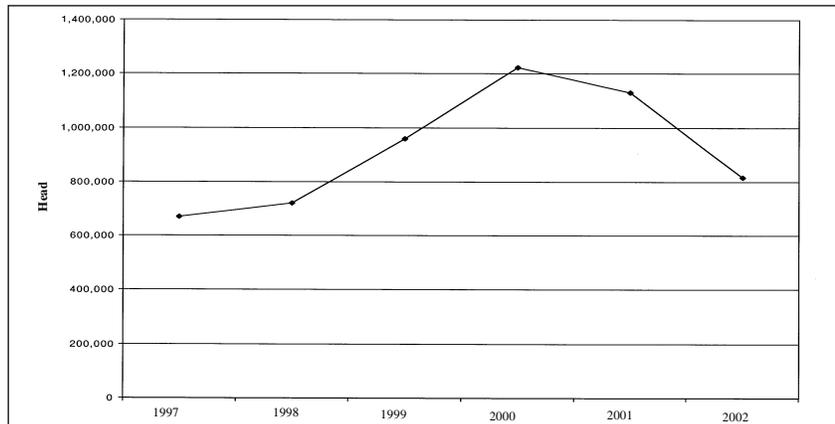
Exports and imports of breeding cattle play a role in North American live cattle trade. The majority of this trade consists of U.S. imports of breeding animals from Canada; in 2002, the United States imported 17,300 head of Canadian breeding cattle worth \$18.4 million (fig. 12). There are also significant exports of purebred beef and dairy cattle from the United States to Mexico; in 2002, 10,888 head were exported with a total value of \$12.8 million (table 12).



**Fig. 9. 2002 Total Value of U.S. Live Cattle Trade with Mexico and Canada (Imports and Exports)**

**Table 9. 2002 Total U.S. Live Cattle Trade with Mexico and Canada**

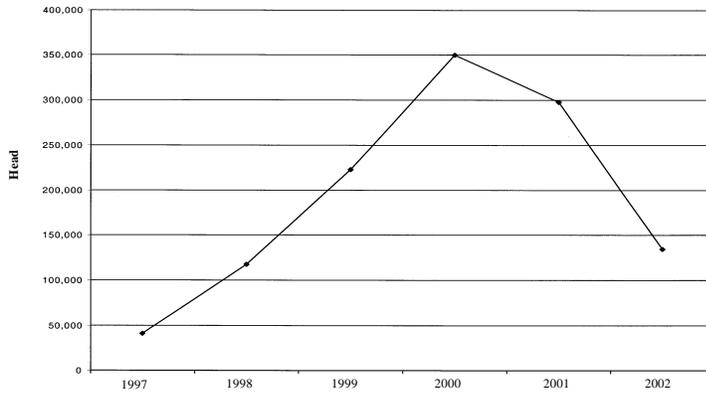
	Head	Value
Imports from Mexico	816,460	\$ 300,500,022
Imports from Canada	1,686,508	\$ 1,146,176,269
Exports to Mexico	104,573	\$ 74,829,644
Exports to Canada	134,215	\$ 49,991,680
<b>Total</b>	<b>2,741,756</b>	<b>\$ 1,571,497,615</b>



**Fig. 10. Live Cattle Imports to the United States from Mexico, 1997-2002**

**Table 10. Live Cattle Imports to the U.S. from Mexico, 1997-2002**

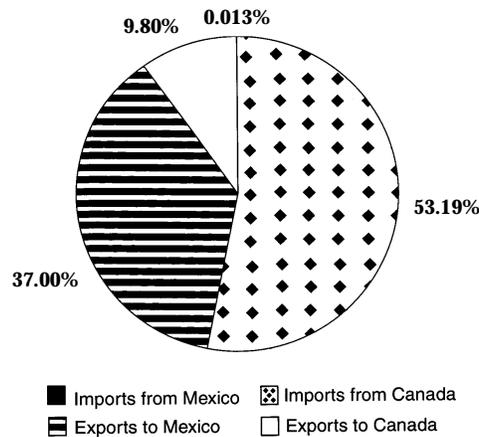
	Head	Value
1997	669,490	\$ 176,634,547
1998	720,439	\$ 206,060,053
1999	959,840	\$ 292,795,812
2000	1,222,569	\$ 405,564,098
2001	1,130,168	\$ 408,412,167
2002	816,460	\$ 300,500,022



**Fig. 11. Live Cattle Exports from the United States to Canada, 1997-2002**

**Table 11. Live Cattle Exports from the United States to Canada, 1997-2002**

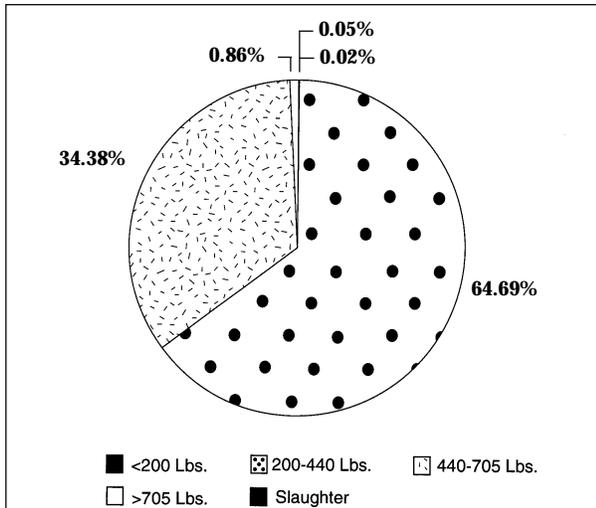
	Head	Value
1997	41,195	\$ 37,175,181
1998	117,227	\$ 63,127,327
1999	223,035	\$ 108,533,021
2000	349,732	\$ 180,369,056
2001	297,622	\$ 155,786,967
2002	134,215	\$ 49,991,680



**Fig. 12. 2002 Total Value of U.S. Breeding Cattle Trade with Mexico and Canada (Imports and Exports)**

**Table 12. 2002 Total U.S. Breeding Cattle Trade with Mexico and Canada**

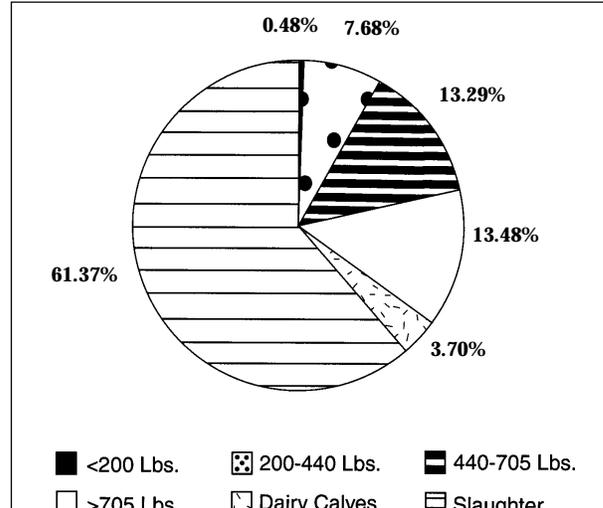
	Head	Value
Imports from Mexico	4	\$ 4,420
Imports from Canada	17,300	\$ 18,404,241
Exports to Mexico	10,888	\$ 12,802,403
Exports to Canada	1,731	\$ 3,391,037
Total	29,923	\$ 34,602,101



**Fig. 13. 2002 Total Value of Non-Breeding Cattle Imports to the United States from Mexico**

**Table 13. 2002 Total Non-Breeding Cattle Imports to the United States from Mexico**

Weight Class	Head	Value
<200 Pounds	152	\$ 29,205
200-440 Pounds	528,195	\$ 169,718,680
440-705 Pounds	280,712	\$ 126,729,359
>705 Pounds	6,990	\$ 3,776,793
Slaughter	407	\$ 241,565
<b>Total</b>	<b>816,456</b>	<b>\$ 300,495,602</b>



**Fig. 14. 2002 Total Value of Non-Breeding Cattle Imports to the United States from Canada**

**Table 14. 2002 Total Non-Breeding Cattle Imports to the United States from Canada**

Weight Class	Head	Value
<200 Pounds	7,974	\$ 2,535,367
200-440 Pounds	128,214	\$ 58,851,145
440-705 Pounds	221,782	\$ 105,565,486
>705 Pounds	225,052	\$ 142,117,724
Dairy Calves	61,808	\$ 72,773,948
Slaughter	1,024,378	\$ 745,928,358
<b>Total</b>	<b>1,669,208</b>	<b>\$1,127,772,028</b>

Imports of non-breeding live cattle are categorized by weight: less than 200 pounds, 200–440 pounds, 440–705 pounds, greater than 705 pounds, and slaughter. Imports from Mexico are mostly in the categories from 200 to 705 pounds, with almost 65% weighing 200–440 pounds. In 2002 imported cattle weighing 200–705 pounds accounted for 808,907 of the 816,456 live cattle imported into the United States from Mexico, valued at \$296.4 million (table 13).

The Mexican cattle referred to in fig. 13 are feeder cattle that are sent to backgrounding and/or feedlots in the United States and later sent to U.S. slaughter plants. The average weight of these cattle at the time they enter the United States is 450 pounds (Wallace

2003). Assuming they are slaughtered at the average live weight of slaughter steers in the U.S. (1,175 to 1,255 pounds) means that about 35% to 40% of the beef from these animals is produced in Mexico. Assuming that a dressing percentage of 54% is average from these animals (Thomas 2003), 816,049 head translates into a total of 552.2 million pounds of beef, with 198.3 million pounds produced in Mexico and 353.9 million pounds produced (or added) in the United States. Assuming the 407 cattle in the slaughter category that were imported in 2002 had a dressed weight of 823 pounds, the result would be 334,961 pounds of beef at slaughter in the United States. Overall, 198.6 million pounds of U.S. produced beef

(by weight at slaughter in the U.S., after feeding in the U.S.) can be attributed to Mexico. This is .73% of the total U.S. beef production of 27.2 billion pounds in 2002.

Fig. 14 shows that live cattle imported into the United States from Canada are primarily slaughter cattle (61.37%), or in the heavier weight categories (440 to > 705 pounds). In 2002, U.S. imports of Canadian cattle in these heavier weight categories contributed 446,834 to the total of 1,669,208 head live cattle imported into the United States from Canada, worth \$247.7 million. Canadian cattle that are imported ready for slaughter totaled 1,024,378 head in 2002 and were worth \$745.9 million (table 14).

It can be assumed that the cattle imported from Canada are grain fed and ready to slaughter, similar to cattle produced in the United States. The average dressed weight of U.S. slaughter steers in 2002 was 823 pounds (USDA/NASS 2003); so 1,024,378 head of Canadian slaughter cattle would produce 843.1 million pounds of Canadian beef (or 3.1% of the 27.2 billion pounds of U.S. beef supply in 2002). We can assume that the cattle in the heavier weight categories (440 to 705 pounds) are fed and slaughtered in the U.S. at the average live weight for slaughter steers. Assuming that the 221,782 head in the 440–705 category have an average weight of 572.5 pounds and a dressing percentage of 65.68%, then when slaughtered at the live weight of 1,253 pounds, they would produce 182.5 million pounds of beef; 83.4 million pounds is Canadian beef and 99.1 million pounds is U.S. produced. Likewise, the cattle in the 705-pound and greater category would produce 252.6 million pounds of beef when slaughtered; 142.1 million pounds are Canadian beef and 110.5 million pounds would be U.S. produced. The lighter weight categories are not considered in the amount of beef they produce because of the uncertainty of their destination in the United States. It is

possible they may be slaughtered for veal or fed and slaughtered at a later date.

In 2002, exports of live slaughter cattle to Mexico totaled 93,685 head. An additional 132,484 head were exported to Canada but these are assumed to be feeder animals that are fed in Canada and returned to the U.S. for slaughter, in order to receive USDA quality grades.

### Other Cattle Products

Trade of bovine genetic products (i.e., bovine semen and embryos) between the United States, Mexico, and Canada also occurs. The majority of this trade involves bovine semen moving between the United States and Canada. In 2002 U.S. imports of bovine semen from Canada were worth \$13.6 million while U.S. exports of bovine semen to Canada totaled \$3.8 million. Exports of U.S. bovine semen to Mexico were worth \$5.5 million in 2002. Trade in bovine embryos is relatively small, with the value of U.S. embryo exports and imports totaling \$644,884 in 2002.

### LOOKING TOWARD THE FUTURE

The U.S., Mexican, and Canadian beef and cattle industries will continue to evolve and face new challenges in the coming years. Trade in beef and cattle products among the three countries may become even more liberalized, or new trade restrictions could be implemented. Increased protectionism in the North American beef and cattle markets could result from growing concerns about the potential animal and/or human health and economic impacts of diseases such as foot and mouth, bovine spongiform encephalopathy, anthrax, tuberculosis, and brucellosis. However, despite the threat of animal diseases, a growing and increasingly affluent North American population will continue to demand high quality and greater quantities of beef products.

## Acknowledgements

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## Appendix A: Data Source for Tables and Figures

Figures 1, 2, 3, and 4–World Trade Organization, International Trade Statistics 2001. Available at: [www.wto.org/english/res\\_e/statis\\_e/its2002\\_e/its02\\_toc\\_e.htm](http://www.wto.org/english/res_e/statis_e/its2002_e/its02_toc_e.htm)

Tables 1, 2, 3, and 4–World Trade Organization, International Trade Statistics 2001. Available at: [www.wto.org/english/res\\_e/statis\\_e/its2002\\_e/its02\\_toc\\_e.htm](http://www.wto.org/english/res_e/statis_e/its2002_e/its02_toc_e.htm)

Figures 5 to 14–United States Department of Agriculture, Foreign Agricultural Service. FATUS Commodity Aggregation Reports. Available at: [www.fas.usda.gov/ustrade/](http://www.fas.usda.gov/ustrade/)

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