

U.S. Beef Trade and Price Relationships with Japan, Canada, and Mexico

*John M. Marsh, Professor
Montana State University–Bozeman*

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About the Author

John M. Marsh is a Professor of Economics in the Department of Agricultural Economics and Economics, Montana State University–Bozeman. He has published in the areas of livestock and meat demand and supply and marketing issues. He also conducts research in livestock and meat trade issues relevant to NAFTA and GATT.

S U M M A R Y

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U.S. live cattle and beef trade has increased substantially since the mid-1980s. Total beef imports (cattle and beef, dressed weight) increased from 2.51 billion pounds in 1985 to 3.89 billion pounds in 1998. Total beef exports (cattle and beef, dressed weight) increased from 0.42 billion pounds to 2.38 billion pounds over the same period. Consequently, net imports declined by 0.58 billion pounds. On a value basis, U.S. net beef exports (value of total beef exports less the value of total beef imports) has become considerably less negative, increasing by 88 percent from 1980 to 1998.

The overall improvement in the U.S. beef trade was characterized, however, by different trade impacts with the major export customers and import suppliers. These countries are Japan, Canada, Mexico, South Korea, Australia, and New Zealand. Trade relationships and beef price effects in this article mainly address those of the first three countries.

From 1990 to 1998, U.S. net imports of live cattle and beef (carcass weight) for all countries declined from 9.2 percent to 5.2 percent of total U.S. beef supplies. Given the average market price for that period and the coefficient of price flexibility, this decline implied an increase in nominal slaughter steer price of \$4.00/cwt. However, this price effect was offset by other factors in the domestic market, such as large competitive production, increasing dressed weights, increasing wholesale-retail margins, and a decrease in consumer beef demand.

Japan constitutes about 54 percent of the export market for U.S. beef. This country has been the fastest growing export market for high-value cuts of U.S. beef; quantities exported increased by 101 percent from 1990 to 1998. Strong economic growth (until 1997), trade liberalization, and changes in dietary preferences account for most of the increase. The result of these expanding exports, as a percentage of total beef disposition, was an increase in slaughter steer price of \$1.70/cwt.

U.S. beef and live cattle trade with Mexico has improved considerably (until recent import tariffs on U.S. beef); that is, net beef exports were negative at 357 million pounds in 1990 but became positive at 200 million pounds in 1998. Declines in imported Mexican cattle and increases in U.S. beef exports account for the change. Mexico currently accounts for nearly 20 percent of U.S. beef exports. The result of erasing the trade deficit over

the 1990 to 1998 period was an increase in slaughter price of \$2.12/cwt. The U.S.-Mexican net trade position in beef and live cattle may remain volatile in the future, however.

The U.S. net beef trade position with Canada has declined considerably. Including trade in live cattle and beef, net imports from Canada increased from 2.7 percent to 5.2 percent of U.S. beef supplies from 1990 to 1998. In general, imports (cattle and beef) have significantly increased, while exports (cattle and beef) have increased little over this period. Reasons for the increased deficit include Canadian grain policies and feedlot expansion, U.S. excess capacity in meatpacking, a strong U.S. dollar and intercountry price differentials. The result was a reduction in U.S. slaughter price of \$2.55/cwt. Economists, however, consider the U.S.-Canadian beef markets to be highly integrated. Thus, reducing the trade deficit may have little impact on U.S. slaughter price.

Overall, U.S. trade in live cattle and beef has not reached the same importance as that of grain. Nevertheless, U.S. export and import quantities measured as a percentage of supplies or disposition imply that producer price effects are not zero. Domestic factors of beef dressed weights, red meat and poultry production, beef margins, feed costs, and consumer beef demand still dominate the price determination picture. The provisional tariff imposed on Canadian exports of live cattle, but recently removed by the U.S. International Trade Commission (ITC), would have slightly increased U.S. price and decreased Canadian price. But with compensating Canadian carcasses and beef entering the U.S. market, and increased slaughter costs, the gains may have been nullified.



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Introduction

The U.S. beef and live cattle trade has increased in importance, both from an import and export standpoint. In 1985, *total* U.S. beef imports (cattle plus beef imports, carcass weight) were 2.51 billion pounds and had increased to 3.89 billion pounds in 1998. Likewise, in 1985, *total* U.S. beef exports (cattle plus beef exports, carcass weight) were 0.42 billion pounds and had increased to 2.38 billion pounds in 1998. Thus net imports (total imports minus total exports) had declined by about 0.58 billion pounds (Figure 1). On a value basis, net exports (beef only) became positive in 1994, while the value of net exports (total basis) has become significantly less negative (Figures 2 and 3).¹ The decline in net total beef imports (and the decrease in negative trade value) has occurred because of rapid export growth of high-value beef products, growth in foreign incomes, and foreign (consumer) preferences for animal source proteins (Capps et al. 1994). In addition, trade agreements under the 1989 CUSTA (Canadian-U.S. Free Trade Agreement), NAFTA (1994), and GATT (1994) have facilitated increased trade by reducing tariff and nontariff barriers (Brester and Marsh 1998).

U.S. imports and exports of beef and live cattle have significantly increased since the mid-1980s.

Beef producers have mixed reactions regarding the economic consequences of increased trade. Some producers regard trade as a net benefit, whereas others consider increased beef trade more as a net cost. The view held depends, in part, upon market location and perceptions of market participants.

Figure 1. U.S. Imports and Exports of Cattle and Beef, Billion Carcass Pounds

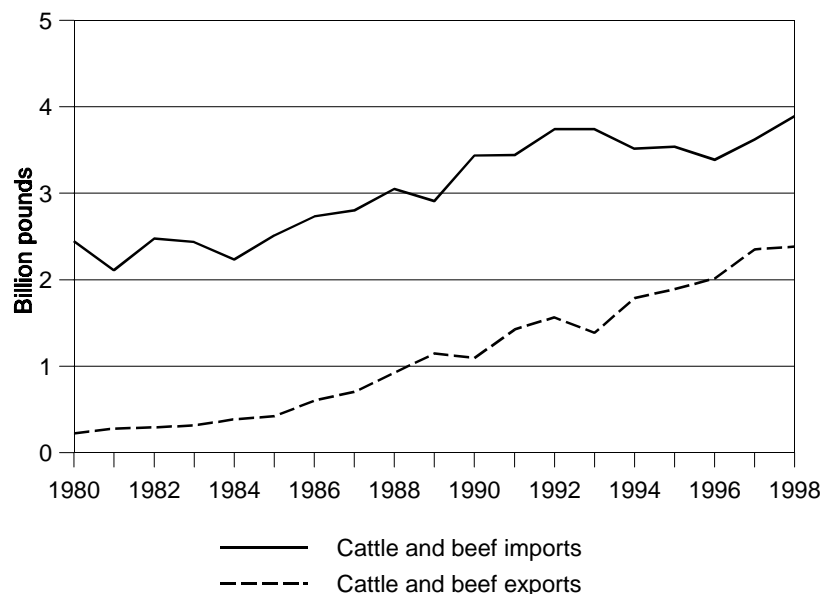
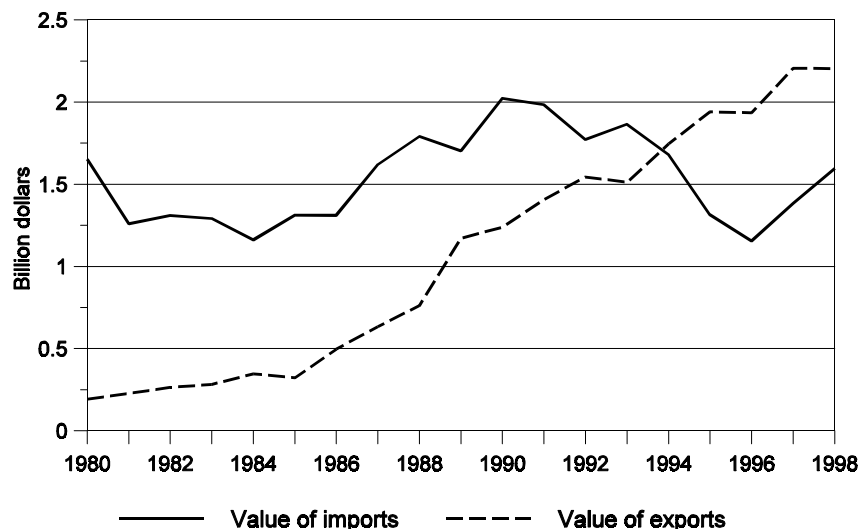


Figure 2. Value of U.S. Imports and Exports of Beef Only, Billion Dollars

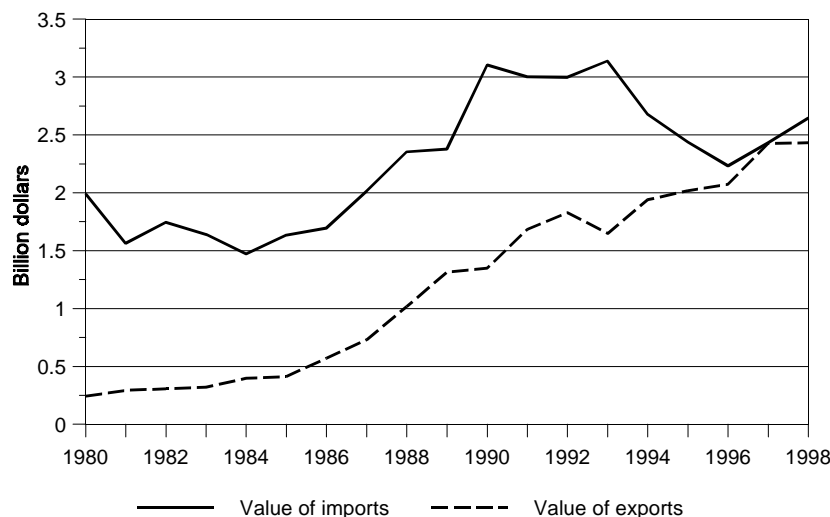


For example, the northern tier states are more preoccupied with slaughter cattle, carcass, and boxed beef imports from Canada, whereas the southern states are more concerned with feeder cattle imports from Mexico. The perceived benefit or cost may depend upon whether the market participant is a cow-calf producer, feedlot operator, packing plant manager, or consumer of the final product. For example, domestic packers have historically demanded slaughter cattle and carcasses and feedlots have demanded feeder cattle from foreign sources in order to reduce excess capacity and hence unit costs. The Canadian and Mexican cattle imports may not be considered a benefit by U.S. cow-calf producers, since they perceive the additional inventories as income reducing. The consumer, however, may benefit from the additional supplies via lower retail prices of beef. The economic status of commodity markets also influences trade perceptions; that is, low livestock prices and incomes often generate more protectionist sentiment by producers.

Although there has been an overall decline in U.S. net beef imports since the mid-1980s, trade flows with the major export customers and import suppliers have differed. The major U.S. beef trading partners are Japan, Canada, Mexico, South Korea, Australia, and New Zealand, the first four being the major export markets. (Egypt, Hong Kong, and the Russian Federation are minor export markets.) Australia, Canada, and New Zealand are the major import suppliers. The purpose of this article is to analyze, in a simplistic framework, U.S. beef trade and price effects with Japan, Mexico, and Canada; only minor comments are made on Australia and New Zealand. The price impacts are specific to the U.S. slaughter steer market, derived from econometric estimation of market price flexibilities in beef derived demand models (Marsh 1992; Wohlgenant 1989). Trade effects of live cattle and beef (carcass weight basis) are evaluated via the import-export components of U.S. total beef supplies and market disposition. The data used in the model were obtained from the USDA and the Livestock Marketing Information Center of Lakewood, Colorado.

U.S. beef and live cattle trade flows differ significantly among export customers and import suppliers.

Figure 3. Value of U.S. Imports and Exports of Cattle and Beef, Billion Dollars



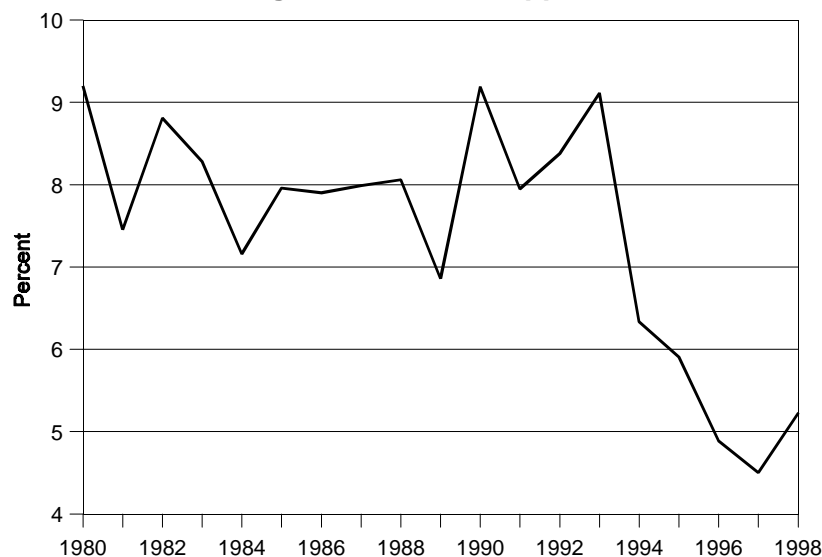
Overall Trade

Changes in U.S. net total beef imports (all countries) from 1985 to 1998 have demonstrated volatility as well as trend. *Net* imports are emphasized since the *balance* of live cattle and beef trade (carcass weight equivalent) is more relevant to trade impacts on domestic prices. Net beef imports as a percentage of total U.S. beef supplies declined from about 8.0 percent in 1985 to 5.2 percent in 1998, reached a peak of 9.2 percent in 1990 and a low of 4.5 percent in 1997 (Figure 4). Total U.S. beef supplies, carcass weight, are defined as the sum of beef production (including imported cattle slaughtered in the United States), beef imports, and beef stocks (cold storage). From a net total value standpoint, after 1994 the excess of import value over export value declined substantially due to the rapid increase in exports and the decline in imports. During the 1994–1998 period nominal and real cattle and beef prices also trended downward. Exports of U.S. beef products (excluding variety meats) consist of high-value table cuts whereas imports are lower-value products, such as manufactured and ground beef. The data indicate that the U.S. *net* export value was -\$1.75 billion in 1980 but had decreased to -\$212.0 million in 1998. The United States also exports 50–60 percent of its hide and offal by-products, particularly to the Asian Pacific Rim, Mexico, Canada, and parts of the European Union and South America. These by-products are critical to packer margins/returns since the value of boxed beef often is less than the value of the live animal. They also importantly affect slaughter price; that is, a 10 percent change in by-product value impacts price by about 2.5–3.5 percent (Marsh 1992).

To evaluate the effects of imports and exports on slaughter steer price, U.S. net total import quantities (all countries) are expressed as a percentage of total U.S. beef supplies. The price effects considered are from 1990 to 1998; the year 1990 immediately followed CUSTA and experienced the highest average slaughter price (\$78.50/cwt) and the highest net import percentage (9.2 percent). The year 1998 experienced a much lower average slaughter price (\$62.50/cwt) and lower percentage of net import share

Data indicate that U.S. net export value of live cattle and beef (combined) increased from -\$1.75 billion in 1980 to -\$212.0 million in 1998.

Figure 4. U.S. Net Imports of Beef and Live Cattle as a Percentage of U.S. Beef Supplies



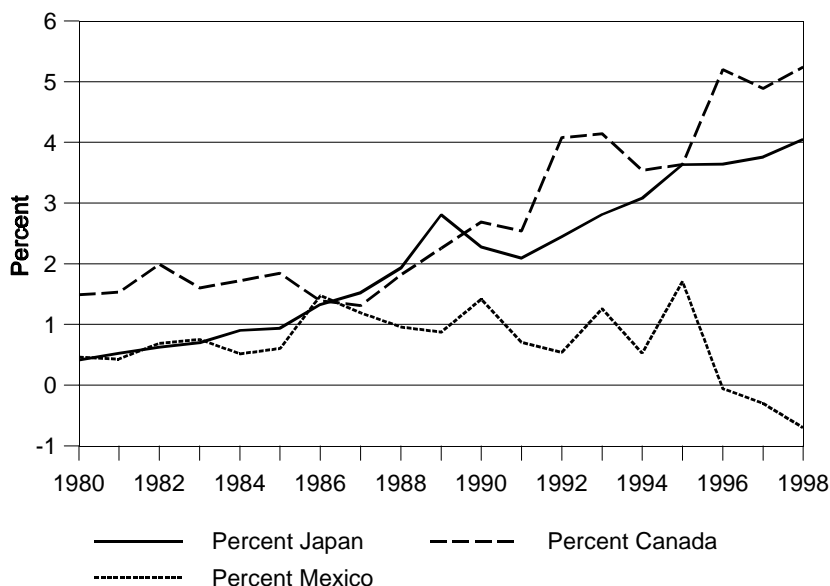
(5.2 percent). Based upon an average slaughter price of \$70.40/cwt for this period, the decrease in net imports had a positive effect on slaughter price of about \$4.00/cwt.² This assumes other market factors unchanged, many of which actually had a negative influence on the cattle market. They included increased pork and poultry production, increased dressed cattle weights, declining beef demand, the Mexican peso devaluation, and increased wholesale-to-retail beef margins.

Japan

Japan has been the fastest growing export market for U.S. beef products, with exports primarily consisting of high-value choice and prime beef cuts. From 1985 to 1998, U.S. beef exports to Japan increased 372 percent; since 1990 alone they have increased about 101 percent. In 1998, Japan's market share of U.S. beef exports was about 54 percent. Japan's strong economic growth (prior to the 1997 recession), consumer preference for high-quality beef products, and trade liberalization before and after the 1994 GATT (Uruguay Round) have accounted for much of the increase. Japan's effect on U.S. slaughter steer price is based on U.S. exports to Japan as a percentage of total U.S. beef disposition, which increased from 2.3 percent to 4.0 percent between 1990 and 1998 (Figure 5). Disposition consists of domestic disappearance, exports, and ending stocks and by definition equals total supply (USDA 1995). Other factors constant, increasing beef exports reduces quantities available for domestic consumption. The result of the 1990–1998 Japanese export growth was an increase in U.S. slaughter price of about \$1.70/cwt. In 1985, Japan's export share of total U.S. production was less than 1 percent; consequently, over the longer period of 1985–1998 the result was an increase in slaughter price of about \$3.90/cwt, based upon mean steer price (of this period) of \$68.85/cwt. The amount of time it takes for Japan to recover from its current recession will influence the export pace and price effects of beef trade in the future.

Expanding U.S. beef exports to Japan increased slaughter price by \$1.70/cwt between 1990 and 1998 and increased slaughter price by \$3.90/cwt between 1985 to 1998.

Figure 5. Net Exports to Japan, Net Imports from Canada and Mexico, Cattle and Beef Pounds as Percentages of U.S. Beef Supplies



Mexico

U.S. beef and live cattle trade with Mexico consists of U.S. exports of select and choice grade beef products and small quantities of slaughter cattle and breeding cattle. In 1998, the Mexican market constituted about 19 percent of U.S. beef exports. U.S. imports from Mexico primarily consist of stocker and feeder calves (destined for U.S. finishing) and very small quantities of lower-grade beef (ground and manufacturing). Prior to NAFTA, Mexico unilaterally reduced numerous trade restrictions; hence, only a few remained by 1994 (Williams and Garcia-Vega 1996). Until recently, the United States has primarily been a net importer of cattle and beef from Mexico (carcass weight basis). For example, in 1986 net imports were 394 million pounds. However, in 1996 the United States switched to being a net exporter of beef at 16.5 million pounds, and by 1998, net exports had reached about 200 million pounds.

Net beef imports from Mexico as a percentage of U.S. total beef supplies have trended downward since the mid-1980s, as shown in Figure 5. The reason for positive net exports (of recent) is that imports of Mexican cattle have decreased while U.S. exports of beef have increased. (As of August 1999, however, Mexico in its beef antidumping case has imposed import tariffs on U.S. beef products). For example, U.S. imports of Mexican cattle were 1.65 million head in 1995 but decreased to 720 thousand head in 1998. In 1995, U.S. beef exports to Mexico were 92.3 million pounds and by 1998 had increased to 419 million pounds. There may be enough economic uncertainty, however, that in the future the United States could alternate between the net positions. What has this meant for slaughter price? In 1990, Mexican net *imports* as a percentage of U.S. beef supplies were about 1.4 percent; by 1998 net *exports* to Mexico were about 1.0 percent, which translated into a \$2.12/cwt increase in price over this

U.S. beef and live cattle net trade with Mexico has improved, implying an increase in slaughter price of \$1.28/cwt from 1985 to 1998.

period. Over the 1985–1998 period, however, it meant only a \$1.28/cwt increase in price due to net imports dominating prior to 1995.

Canada

The U.S. beef trade with Canada consists of U.S. imports of slaughter (primarily fed) cattle and feeder cattle (in about 85–95 percent and 5–15 percent allocations, respectively) and carcasses and boxed beef. From 1990 to 1998 about one-half of U.S. boxed beef imports from Canada were table cuts with the remainder being manufactured and ground beef (Young, Barber, and Fetterly 1997). The quality of the table cuts is similar to choice and select grade beef in the United States, but the beef is sold ungraded at retail. Canadian fed cattle and carcasses imported into the United States receive primarily the USDA choice grade (Hayes, Hayenga, and Melton 1996). The United States exports small amounts of slaughter, feeder, and breeding cattle but exports substantial quantities of boxed beef, primarily select and lean grade quality. This beef is sold at Canadian retail outlets as USDA beef or ungraded beef (Hayes, Hayenga, and Melton 1996). From 1990 to 1998 about 15 percent of all U.S. beef exports were destined for Canada. For reasons of transportation cost and consumer preference, most U.S. beef imports from Canada enter the western United States whereas U.S. beef exports enter eastern Canada, the production deficit markets. The United States has always been a net importer of live cattle and beef (combined) from Canada. Similar to Mexico, most U.S.-Canadian beef trade restrictions (with the exception of sanitary codes) were removed prior to NAFTA, the primary catalyst being the 1989 CUSTA.

U.S. net trade position in live cattle and beef with Canada has declined, indicating a \$2.55/cwt reduction in slaughter price from 1990 to 1998.

The U.S. net trade position in cattle and beef with Canada, unlike with the other trading partners, has declined. For example, in 1985 net imports from Canada (cattle and beef, carcass weight) constituted 1.8 percent of U.S. beef supplies, in 1990 they were 2.7 percent, and by 1998 net imports had increased to 5.2 percent (Figure 5). Producers have raised questions concerning reasons for the net increase (basically imports have increased faster than exports). Several factors are responsible for the trade deficit: (1) removal of Canadian grain transportation subsidies under the Western Grain Transportation Act in 1995 reduced barley prices and increased expansion of Canadian feedlot capacity; (2) increases in Canadian meatpacking capacity have lagged increases in feedlot marketings, sending more fed cattle to the United States; (3) the U.S. dollar is stronger, and at times, U.S. slaughter cattle prices have exceeded Canadian slaughter cattle prices (adjusted for the exchange rate) by more than transportation costs; (4) excess capacity in U.S. beef packing plants and feedlots has increased the demand for foreign cattle and beef carcasses; (5) investigation into unfair trade practices and restrictive sanitary conditions has been ongoing; and (6) Canadian live cattle and carcasses marketed into the United States can receive the USDA choice grade.

The price effects on the U.S. slaughter cattle market from beef trade with Canada are opposite those of Japan and Mexico. In particular, the *net* import increase from 1990 to 1998 represented about a \$2.55/cwt reduction in slaughter price; from 1985 to 1998, it represented about a \$3.40/cwt reduction in price. Although these trade effects do not appear overly large on an aggregate basis, they can be significant from an individual standpoint. For example, with a \$2.55/cwt reduction in slaughter price, a

20 thousand head feedlot operating at 95 percent capacity (with an annual turnover of 2.5) would experience nearly a \$1.3 million reduction in income.

What would downsizing the 1998 beef trade deficit with Canada imply about producer price? One approach is to assume the U.S.-Canadian beef markets are not completely integrated. Thus, a reduction in the beef trade deficit with Canada would imply a positive impact on cattle price. For example, other factors unchanged, if the 1998 deficit as a percentage of U.S. beef supplies was reduced by one-half, slaughter price would increase by about \$2.32/cwt (based on 1998 average slaughter price of \$62.47/cwt). If the deficit were reduced by two-thirds, slaughter price would increase about \$3.10/cwt. On the other hand, if the beef markets are treated as nearly integrated, that is, one North American market, then reduction of the trade deficit would have minimal price effect. It would be tantamount to preventing Kansas cattle from entering Nebraska, which would not affect the aggregate U.S. slaughter price. Because most of the trade restrictions have been removed and the Canadian slaughter price closely follows the U.S. slaughter price, most economists regard the current markets as integrated. Total cattle and beef supplies in North America are more important than what moves across the border.

Under highly integrated beef markets, the U.S. beef trade deficit with Canada has a minimal impact on U.S. slaughter price.

Tariff Imposition

In the July 7, 1999 issue of the *USDA International Meat Review* (vol. 3, no. 14) the following summary was given:

On July 1, the U.S. Department of Commerce announced its preliminary determination in the anti-dumping investigation of live cattle from Canada that dumping has occurred. The Commerce Department found that between October 1, 1997 and September 30, 1998, Canadian producers had sold slaughter cattle to U.S. buyers at prices below the cost of production. As a result, this week the United States will start imposing a provisional duty averaging 4.73 percent, which will be held in a trust until the final ruling is made in September. If the final ruling finds that dumping had occurred, then the issue goes to the International Trade Commission, which decides whether U.S. producers were threatened or injured by the imports of Canadian cattle, and makes the duty final. On the other hand, if the final ruling finds that there has not been any dumping, the case will end, and the collected provisional duties held in the trust will be refunded to Canada. (p. 1)

Effects of tariff impositions in the livestock and meat industry must weigh benefits and costs.

Subsequent to this ruling, the tariff was raised to 5.57 percent. However, in November 1999, the U.S. International Trade Commission (ITC) ruled that material injury had not occurred and the provisional tariff was removed.

This provisional duty raised concerns over the economic impacts on the U.S. and Canadian markets. The intent was to improve U.S. slaughter prices via reduced imports of Canadian slaughter cattle. If one assumes no other ramifications of the tariff duty, the increased cost of Canadian

slaughter cattle would have reduced import supplies and support U.S. slaughter price. The effect would not be overly large but would depend upon U.S. import demand elasticity for Canadian cattle and actual reduction in Canadian export supply of cattle due to the tariff. However, in reality, market conditions respond. Specifically, the extra pool of Canadian cattle (from reduced exports) would be slaughtered in Canada, and part would enter the United States in the form of carcasses and boxed beef (since a tariff was not imposed on them), particularly since U.S. packers would demand carcasses to keep fabrication facilities efficiently running. Packer inability to acquire live cattle, however, would increase slaughter costs. In addition, the tariff (which can be thought of as another marketing cost increase) would lower the Canadian slaughter price, reducing the demand for U.S. feeder cattle, particularly those of Montana and Washington, which constitute the Northwest Pilot Project. Clearly we have a benefits versus costs situation that could have resulted in net costs negating the tariff intent, had the tariff continued.

Conclusions

U.S. beef producers have experienced price benefits through net beef trade when considering all countries: although positive benefits have occurred with Japan and Mexico, the United States has not experienced price gains in net trade with Canada. With respect to other countries, from 1990 to 1998, U.S. beef imports from Australia and New Zealand declined by about 14 percent, while beef exports to South Korea have increased only marginally since 1992. (Currently South Korea constitutes about 6 percent of total U.S. beef exports). Economic problems in South Korea severely reduced U.S. exports of hides in 1997 and 1998, the USDA estimating a \$2.00–\$3.00/cwt reduction in slaughter price as a result.

International trade in live cattle and beef is only one component of the market equation that influences prices received by U.S. cattlemen. Although increasing in importance, U.S. trade in live cattle and beef has not reached the price-impact proportions experienced in the grain sector. Domestic factors dominate determination of cattle prices. Critically important factors in recent years have been increasing red meat and poultry supplies (accounting for imports), decreasing real prices of feed grains, decreasing real values of by-products, increasing real wholesale-retail margins, and declining consumer beef demand.

Although beef and live cattle trade are increasing in importance, domestic factors dominate determination of U.S. cattle prices.

1. Beef imports, carcass weight, are as reported by the USDA. Live cattle imports converted to carcass weight are as follows: (1) slaughter cattle imports (primarily from Canada) are multiplied by USDA average dressed weights of steers; (2) feeder cattle imports (primarily from Mexico) are assumed to average 525 pounds and are multiplied by 0.65 (dressing percent) to yield carcass weight. These calves are fed in U.S. feedlots and therefore value is added in the United States; and (3) live cattle exports are multiplied by average dressed weight of steers. Value of exports (beef and total) is the export quantities multiplied by boxed beef cut-out value of steers. Value of imports (beef and total) take into account fed beef quantities (from Canada) and nonfed beef quantities (from Canada, Mexico, Australia, and New Zealand). The fed portion is valued using boxed beef cut-out value of steers, and the nonfed portion is valued using boxed beef cut-out value of cows.
2. Evaluation of net import/export quantities for all countries and by country on U.S. cattle prices involves (1) determining net imports/exports (live cattle and beef, where appropriate) as percentages of total U.S. beef supplies/disposition, (2) incorporating the price flexibilities of U.S. slaughter steer price with respect to beef supplies, and (3) using an appropriate mean price of slaughter steers. The price flexibility used is an average of that by Marsh (-1.52) and Wohlgenant (-1.32), which is -1.42. Thus the decrease in net imports of 4.0 percent from 1990 to 1998 yields:

$$P^* = (\%NI)(E_f)(\bar{P})$$

where P^* is the dollar per cwt change from the change resulting in net imports, $\%NI$ is the change in net imports as a percentage of total U.S. beef supplies, E_f is the coefficient of slaughter price flexibility, and \bar{P} is the average slaughter price. From 1990 to 1998, NI decreased by 4.0 percent (.04) and average slaughter steer price was \$70.40/cwt. Thus $P^* = (-.04)(-1.42)(70.40) = \$4.00/\text{cwt}$ increase.

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