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The New Agricultural Trade Negotiations: Background and Issues for the U.S. Beef Sector

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Abstract

New negotiations on trade in agriculture were recently initiated by the World Trade Organization (WTO). These negotiations are focusing on extending the gains to world trade achieved in the 1994 Uruguay Round Agreement on Agriculture (URAA). Gains to world trade have occurred under the URAA as a result of limits placed on the use of tariffs and non-tariff barriers to trade, export subsidies, and the type and level of spending for domestic support programs by WTO member countries. For the beef sector, the URAA, continuing a process of increasing market access begun in the 1970s, has further increased U.S. and world beef trade. While export subsidies and non-tariff trade barriers may continue to limit the market for U.S. beef exports, additional increases in market access in these negotiations may increase U.S. beef exports. The extent will largely depend upon the degree of reductions in tariffs.

Keywords: Beef, trade, policy, WTO, market access, tariffs, tariff-rate quota, export subsidies, domestic support.

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Introduction

New multilateral agricultural trade negotiations have begun under the auspices of the World Trade Organization (WTO). Over the next few years, representatives from the 144 WTO-member countries (as of January 1, 2002) are expected to continue the process of reforming the rules of agricultural trade begun under the Uruguay Round that concluded in 1994. The Uruguay Round built on earlier bilateral and multilateral agreements in increasing access to world beef markets. Nevertheless, access to some potentially large markets is still limited in important ways. The outcome of these negotiations could affect exports of U.S. beef as well as U.S. beef imports because the United States is a major participant in both markets.

High tariffs remain the major limitation for further access to many markets, in spite of the reduction in maximum allowable (i.e., bound) tariff rates in the Uruguay Round Agreement on Agriculture (URAA). The United States will be seeking greater access for its beef exports, and other countries are expected to seek greater access to the U.S. market, which is protected from the beef exports of non-NAFTA members by tariff rate quotas (TRQs). Other important issues affecting world beef trade include export subsidies and sanitary regulations. This article discusses how additional policy liberalization might affect world and U.S. beef trade by describing how the success of policy reforms may be conditioned by the structure of world beef markets.

Overview of World Beef Markets

World beef trade has been increasing since the early 1960s (fig. 1), as income growth increased demand for meat products, including beef.¹ While declines in beef trade were associated with economic slowdowns in the mid-1960s and mid-1970s, growth in beef trade steadied at about 7.5 billion total pounds by the late 1970s. World beef trade doubled between the early 1970s and the mid-1990s, after several high-income markets were opened by a series of trade agreements: the Tokyo Round of the General Agreement on Tariffs and Trade (GATT) in 1978; bilateral agreements between Asian markets and major producers in 1984; the Beef-Citrus Agreement between the United States and Japan in 1988; the North America Free Trade Agreement (NAFTA) in 1994; and the Uruguay Round of the GATT in 1994. The rapid growth in beef trade in the years after these agreements suggests that additional access to markets could further increase trade.

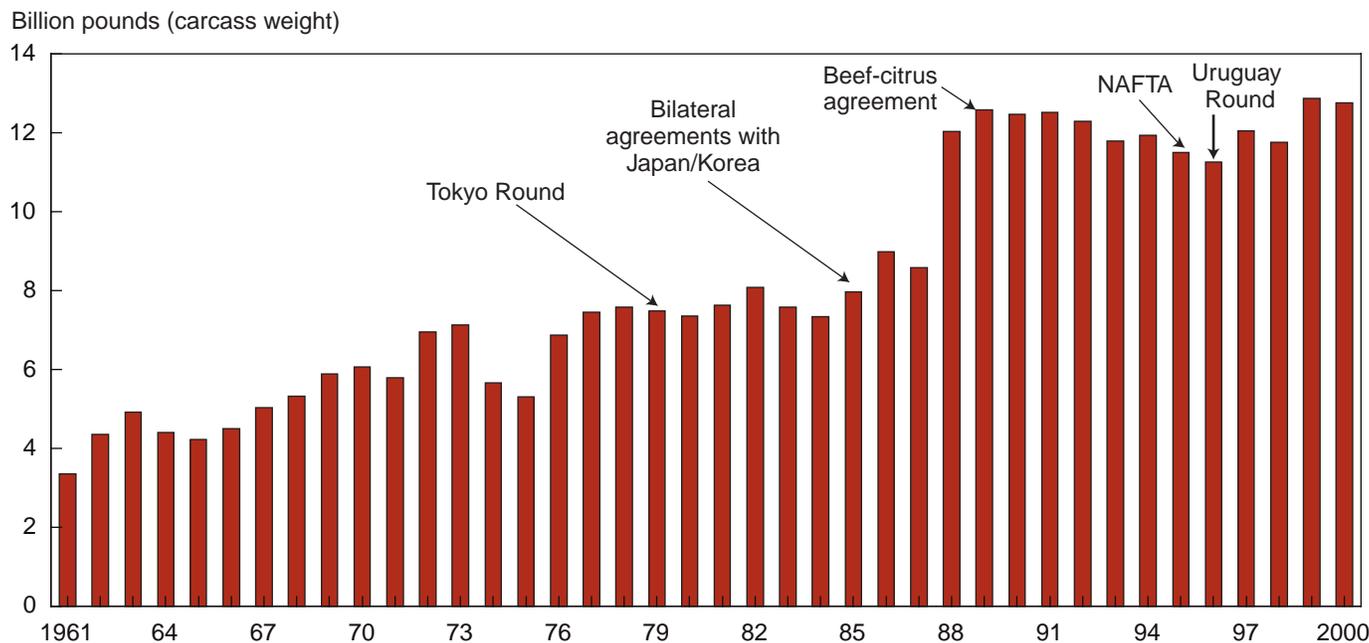
¹All data are measured on a calendar year basis and in carcass weight equivalents, unless otherwise noted. The data exclude variety meats.

World Beef Markets are Concentrated Among a Select Group of Countries

Most beef production, consumption, and trade is concentrated in a few countries (including the European Union (EU)-15 as a single country). Nearly 85 percent of consumption and 90 percent of production are located in the 13 largest beef-producing countries (fig. 2). Over 55 percent of the world's beef is produced and consumed in the United States, the EU, and Brazil. The United States accounts for about 27 percent of both world production and world consumption. Production exceeds consumption in eight of these countries, while the reverse holds in the United States, Russia, Mexico, Japan, Korea, and several other countries.

Nearly 90 percent of world beef imports are concentrated among 7 of the 13 largest beef-producing countries (fig. 3). However, two of the largest importers—Japan and Korea—are among the smallest producers of these 13 countries. The United States accounts for nearly 30 percent of world imports.

Figure 1
World beef trade expands as markets open, 1961-2000

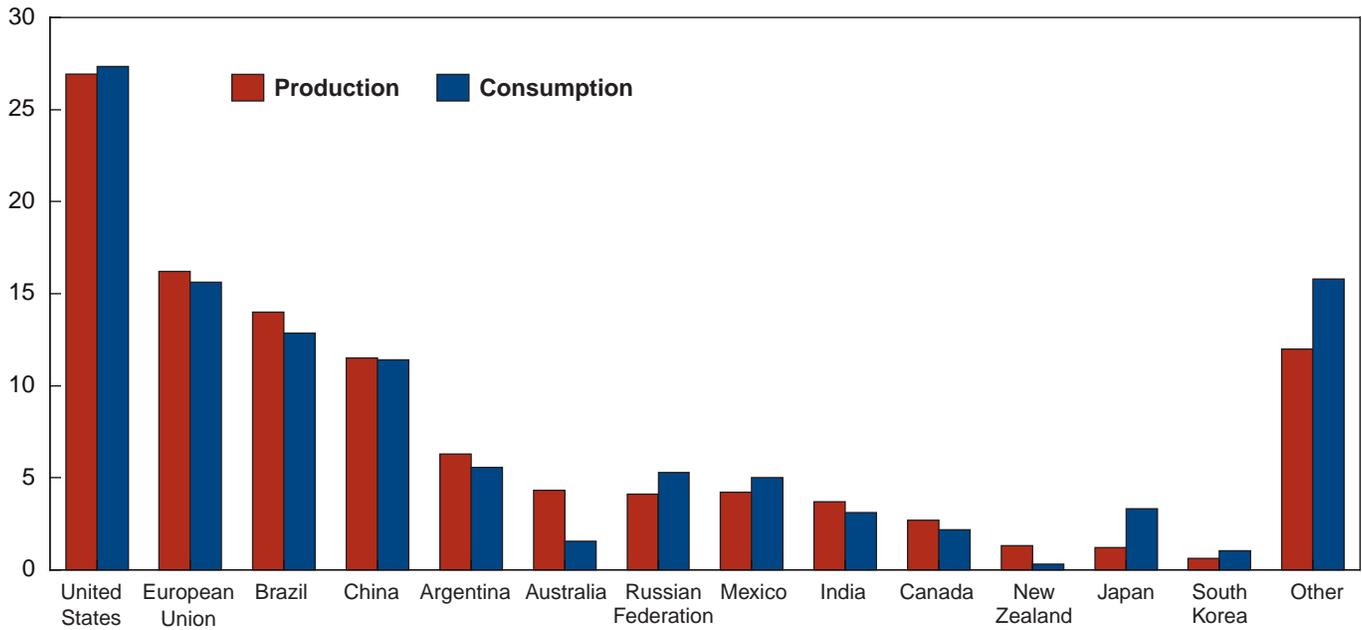


Source: USDA, Foreign Agricultural Service.

Figure 2

Thirteen countries account for 90 percent of beef production/consumption, 1999-2000

Billion pounds (carcass weight)

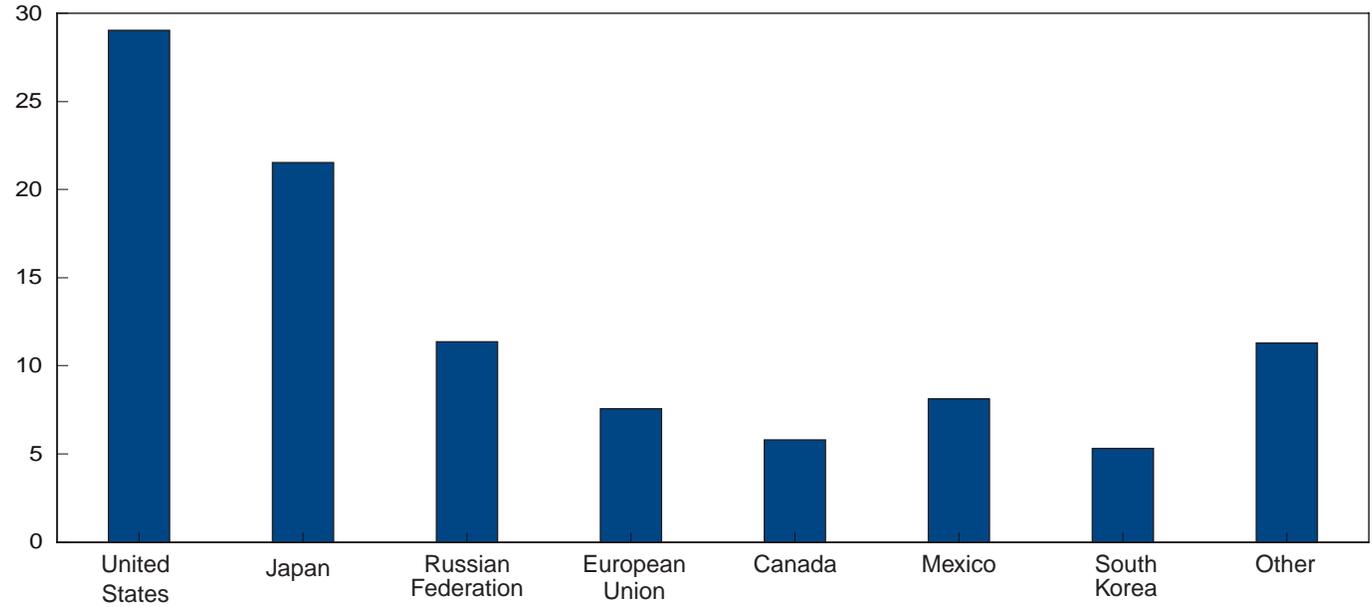


Source: USDA, Foreign Agricultural Service.

Figure 3

Seven countries account for 90 percent of beef imports among major trading countries, 1999-2000

Percentage



Source: USDA, Foreign Agricultural Service.

Beef exports are also highly concentrated, with 10 countries accounting for 95 percent (fig. 4). However, exports are not highly correlated with production because of population. Australia, with a small population, is the largest beef exporter, but is only the sixth largest producer. In contrast, the United States produces nearly six times as much beef as Australia, but is only the second largest exporter.

Factors Affecting World Beef Trade

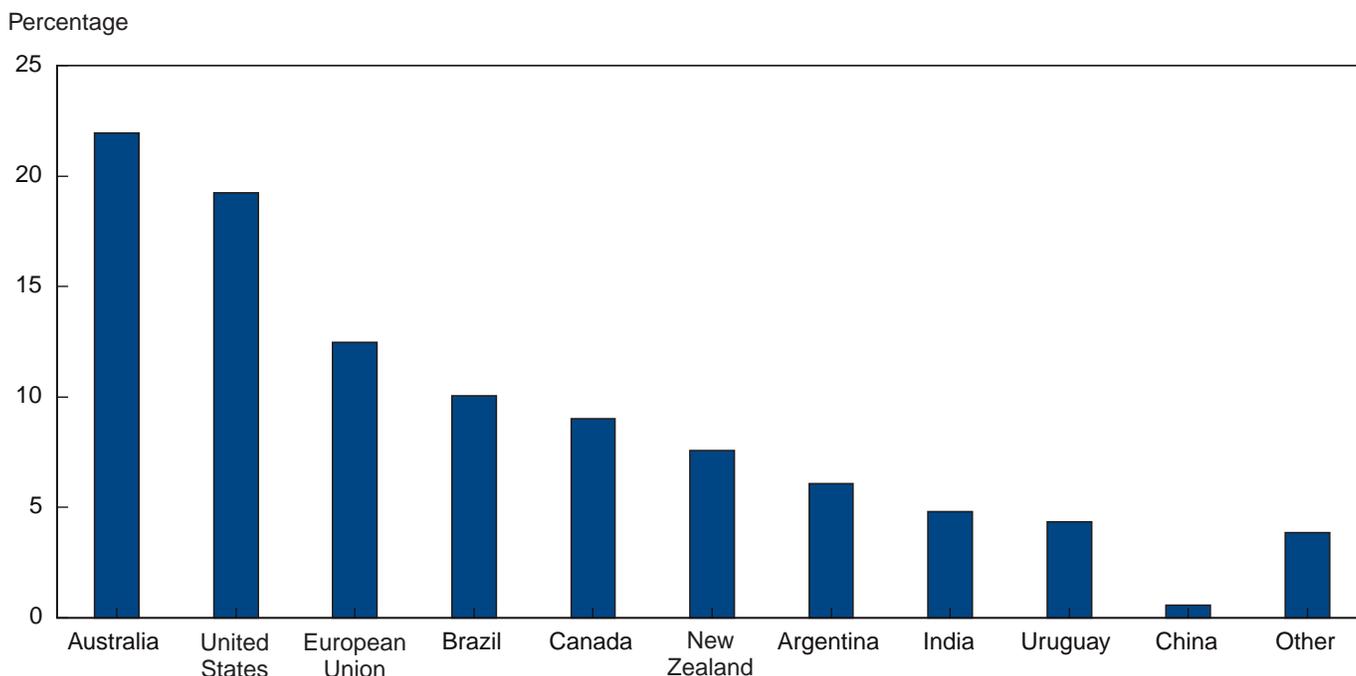
Because cattle are primarily grazing animals, countries with large areas of forage are able to accommodate large numbers of cattle. The largest number—over 300 million—is found in India (fig. 5). Brazil and China have 150 million and 125 million cattle, respectively, while the United States ranks a distant fourth, with fewer than 100 million. While India has more than three times as many cattle as the United States, India is only the ninth largest producer and exporter of beef because most cattle in India are not slaughtered for cultural reasons, or because they are used as draft animals. Similarly, China’s beef production is low relative to animal numbers because many cattle are also used as draft animals. Most of the important factors

affecting the production side of the beef sector are related to land (Hahn, et al.).

Both cattle numbers and beef supply may be limited by the availability of land or by low crop yields. Forage yields are low in Australia because of a harsh, dry climate in traditional grazing areas, and in Canada because the growing season is short. In New Zealand, forage yields are relatively high but cattle-raising is limited by rugged topography and competition from the alternatives of sheep raising and forestry. On the other hand, a few countries with relatively large amounts of forage land also have large amounts of feed grains, with which they are able to maximize the value of beef produced by quickly adding weight and a marbling of fat to cattle. Marbling imparts a taste and tenderness to beef that is desired in domestic as well as foreign markets. Only the United States, Canada, Argentina, Brazil, and the European Union produce large amounts of feed grains, however.

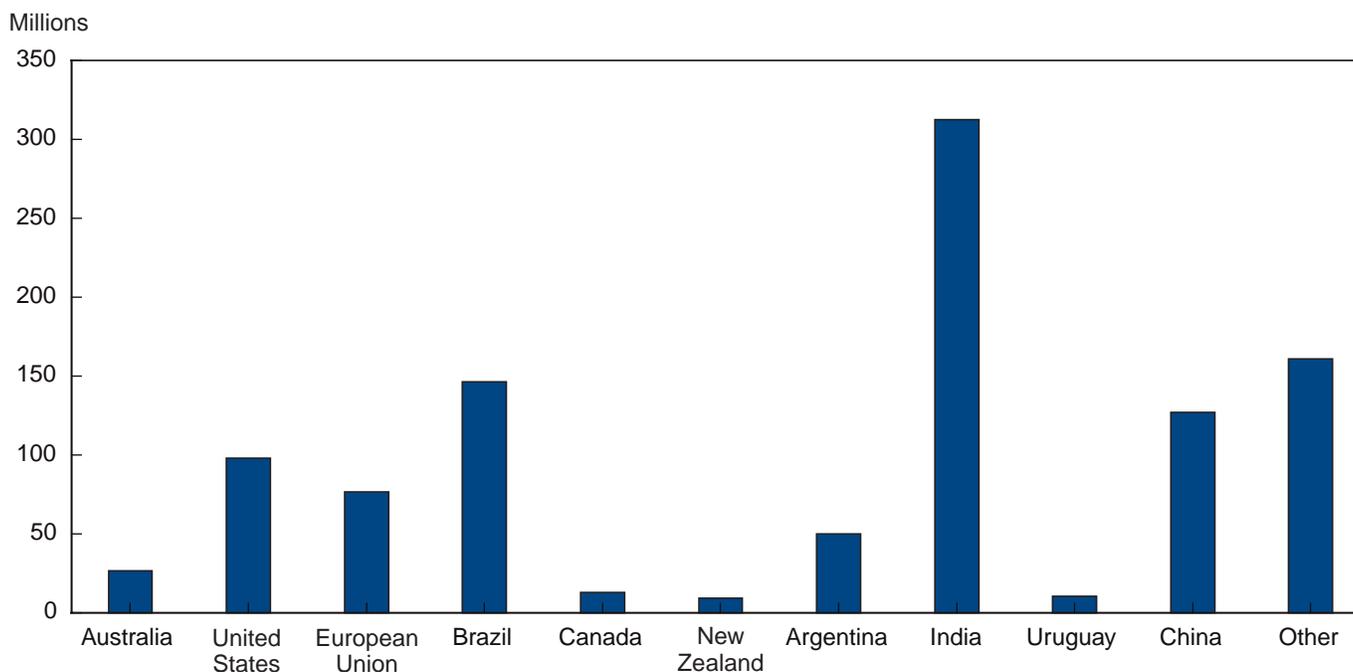
The two nonland factors that affect a country’s position in world beef trade are the genetics and the disease status of its cattle. Certain kinds of genetic stock, mainly of European heritage, allow optimum marbling to be accomplished at least cost; these lines are widely used in the United States and Canada. While these

Figure 4
Ten countries account for 95 percent of beef exports among major trading countries, 1999-2000



Source: USDA, Foreign Agricultural Service.

Figure 5
Cattle numbers in major beef producing countries, 1999-2000



Source: USDA, Foreign Agricultural Service.

beef breeds are gradually increasing in Europe, dual-purpose animals (dairy animals also used for meat), which are less efficient meat producers, still predominate there.

The most serious of the animal diseases are foot-and-mouth disease (FMD) and bovine spongiform encephalopathy (BSE). FMD- and BSE-free status allows export of fresh/chilled and frozen beef to a greater number of markets. The United States has been free of FMD since 1929 and has not had a case of BSE.

Only the United States and Canada have all of the above-mentioned advantages in beef production. While Argentina and Brazil both have large feed-grain stocks, only Argentina has begun a feeding industry. However, while Argentina was declared FMD-free by the International Office of Epizootic Diseases in 1997 and two major states in Brazil were declared free in 1999, FMD has returned to limit exports from South America for the foreseeable future.

On the consumption side of the market, income, price, and cultural influences, including a desire for quality, are important determinants of demand. Meat is consumed disproportionately by persons of high income,

and this is especially true of higher quality and higher priced grain-fed beef. However, policies that restrict market access may override other factors.

International Beef Trade Is Divided into Several Sub-markets

As a result of the above factors, international beef trade is comprised of several sub-markets. Countries that have not developed cattle feeding industries can supply only lower priced grass-fed and short-fed (grass-raised with limited feeding of grain) beef. Thus, nearly all of New Zealand's beef exports are directed to markets for grass-fed beef, including the United States and Asian markets. Australian grass-fed beef is also exported to the United States, as well as to Asian markets. There is also a small short-fed beef sector in Australia that supplies Asian markets. The EU also produces only limited amounts of fed beef, and exports grass-fed dairy beef to low-income markets in Eastern Europe, Russia, and Africa.

South American countries had long been prohibited from sending fresh/chilled and frozen beef to the high-valued Asian and North American markets because of FMD. South America's major market had historically been the EU, which allowed imports of such product

from FMD countries subject to specific standards.² Uruguay and Argentina were declared FMD-free in 1996 and 1997, respectively, and efforts were begun to serve the high-value markets, especially North America where brand recognition is the most successful. However, the reemergence of FMD in early 2001 resulted in most countries, including the EU, banning imports of fresh/chilled and frozen product from South America. South America remains the largest supplier of prepared and preserved product to North America.

²The EU standards are that fresh/chilled and frozen product have a PH no higher than 5.8, be without bone, and meet other requirements that eliminate possibility of FMD transmission.

Increased market access has allowed high-quality fed-beef from the United States to become popular in many high-income markets, although demand may be limited by remaining trade barriers and culinary traditions. However, the most significant limitation for U.S. beef may be the policies of the EU. The EU allows only a limited amount of U.S. and Canadian beef onto its highly protected market at reduced levies, and there must be certification that hormones have not been administered to cattle in the process of producing the beef. This requirement limits imports from North America, in favor of South American beef, which is produced without added hormones.

U.S. Beef Trade in the Global Market

A series of multilateral and bilateral market access agreements for agricultural products, which began in 1978 with the Tokyo Round and ended in 1995 with implementation of the URAA, has allowed international comparative advantage to influence U.S. beef trade. The United States has a comparative advantage in producing and exporting higher valued grain-fed beef, while importing lower valued grass-fed beef for grinding and as prepared and preserved products. While all of the agreements opened up growing foreign markets to the United States, the URAA and NAFTA also allowed increased access of beef to the U.S. market.

U.S. beef exports increased more than tenfold between the early 1980s and the late 1990s, while imports increased only slightly (fig. 6). Over this period, U.S. exports increased from about 2 percent to nearly 20 percent of world beef trade, and from 1 percent to nearly 10 percent of domestic production (fig. 7). While the volume of imports continues to exceed the volume of exports, the value of exports has exceeded the value of imports since 1992 (fig. 8) because exports are more highly valued.

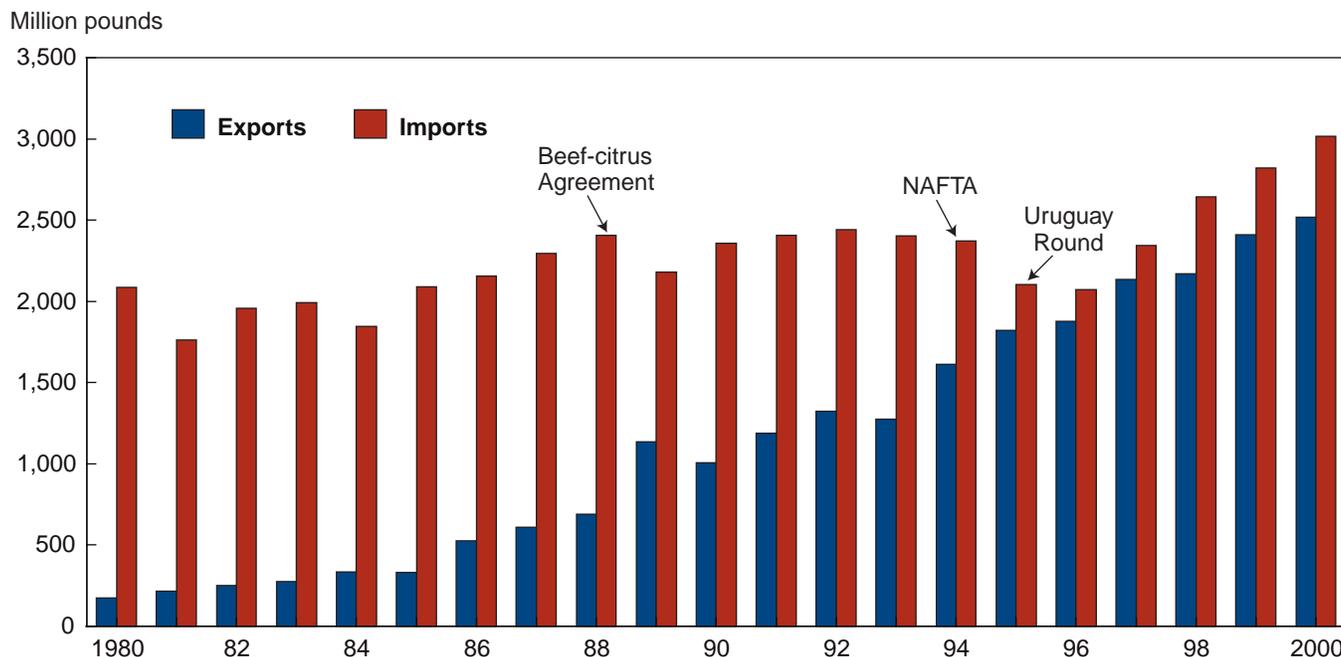
U.S. beef exports go almost entirely to higher income markets. During 1998-2000, four countries—Japan, Mexico, Canada, and South Korea—accounted for 90 percent of the value of U.S. beef exports (fig. 9). Inclusion of Russia, Hong Kong, and Taiwan add another 5 percent, and the EU accounts for 0.5 percent.

High-Valued Fresh/Chilled Beef Dominates U.S. Exports

Fresh/chilled exports have increased more rapidly than exports of frozen product (fig. 10). Fresh/chilled beef is primarily loin cuts, and the growth in such exports may be more desirable for the beef industry because they are much higher in value than other cuts. The average export unit value of fresh/chilled product to all major markets was \$1.81 per pound in 2000, compared with \$1.45 per pound for frozen product (table 1).

The more rapid expansion of fresh/chilled exports is explained partly by transformations in the packing industry, increased efficiencies in transportation, and also by the growth of high-income markets in Japan,

Figure 6
U.S. beef exports and imports: volume, 1980 to 2000

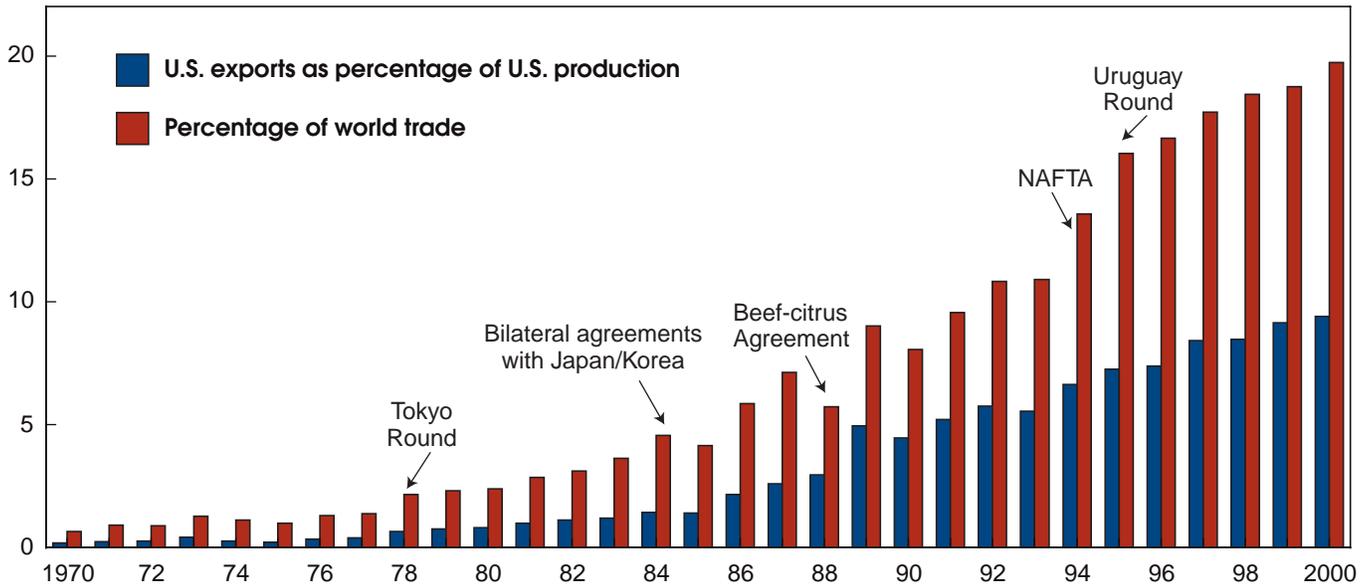


Source: U.S. Department of Commerce.

Figure 7

U.S. beef exports have increased as percentages of U.S. production and world trade

Percent

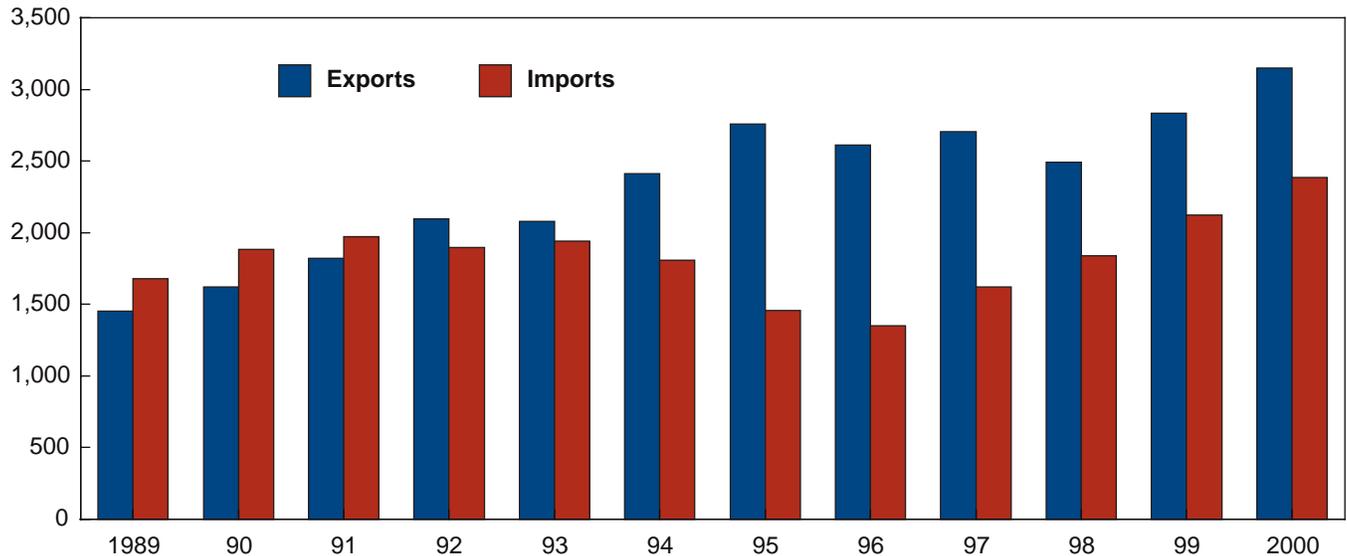


Source: USDA, Foreign Agricultural Service; USDA, National Agricultural Statistics Service.

Figure 8

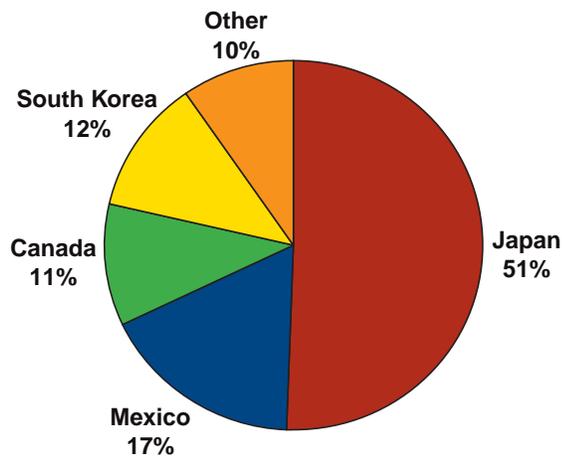
Value of U.S. beef exports grew faster than value of imports, 1989 to 2000

Million dollars



Source: U.S. Department of Commerce.

Figure 9
Export markets (value) for U.S. beef, 1998-2000



Source: U.S. Department of Commerce.

Canada, and Mexico. Over the last 20 years, the U.S. packing industry has begun marketing more near-case-ready product in both the domestic and international markets. This has encouraged a broader market by providing consumers more desirable and simple-to-prepare products.

In 2000, 42 percent, by volume, of all U.S. fresh/chilled exports went to Japan, and 18 percent went

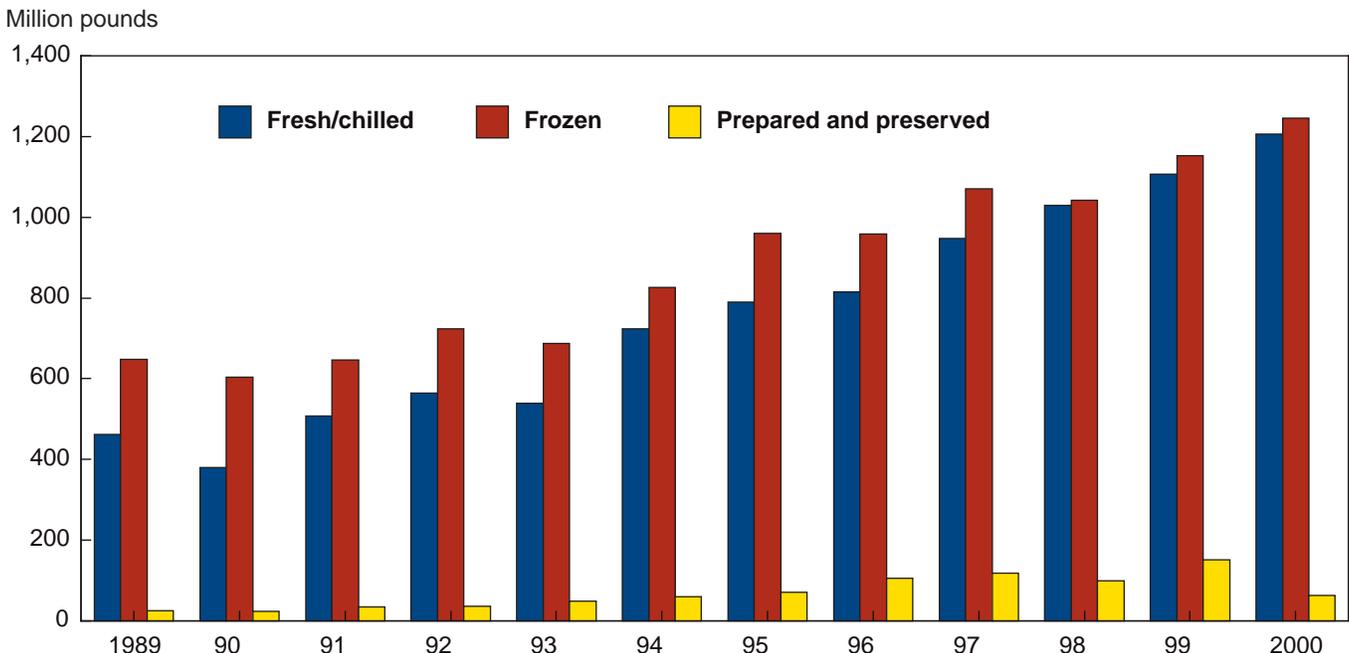
to Canada (table 1). Furthermore, fresh/chilled cuts destined for Japan were valued at \$2.34 per pound in 2000, compared with lower prices for other countries. The most rapidly growing market for fresh/chilled beef, however, has been Mexico. Mexico does not have a large feed grain base, so increased demand for fed beef has been satisfied by imports from its NAFTA partners. Mexico has tripled its imports of fresh/chilled product since the mid-1990s, to almost equal Japan as the largest importer of fresh/chilled U.S. beef in 2000. About 90 percent of exports to Mexico in 2000 were fresh/chilled product.

About 15 percent of U.S. exports to the category of “other” countries in 2000 were also fresh/chilled cuts. Countries in this group include the Caribbean islands and the EU. Exports of fresh/chilled product to these countries account for less than 3 percent of all such exports, but have a high unit value—\$2.42 per pound.

Korea Dominates the U.S. Frozen Beef Market

While exports of frozen beef have increased more slowly than exports of fresh/chilled product, nearly all of the 300-million-pound growth in exports to Korea during the last decade has been frozen product. The rapidly growing Korean market currently accounts for

Figure 10
Fresh/chilled beef is slowly increasing U.S. export share, 1989 to 2000



Source: U.S. Department of Commerce.

Table 1—U.S. beef exports: Major markets and export unit values, 2000¹

Item	Unit	Major markets	Japan	Mexico	Canada	South Korea	Other
Fresh/chilled	Percent	100.00	42.29	35.70	18.04	1.30	2.68
Frozen	Percent	100.00	53.66	5.49	1.83	25.33	13.69
Prepared/preserved	Percent	100.00	8.79	7.30	66.87	0.77	16.28
Unit value--fresh	Dollar	1.81	2.34	1.35	1.54	1.60	2.42
Unit value--frozen	Dollar	1.45	1.39	1.30	1.31	1.60	1.39
Unit value--prep/pres	Dollar	3.67	11.24	10.20	2.00	5.05	3.46

¹Product weight.

Source: U.S. Department of Commerce.

25 percent of U.S. frozen beef exports. Exports of frozen beef to the Caribbean islands, the EU, Taiwan, China, Egypt, Saudi Arabia, and other countries in the Middle East more than tripled during the 1990s, and comprised nearly 14 percent of the market for frozen product. The average unit value of frozen beef to all markets was \$1.45 per pound.

Exports of Prepared and Preserved Product Increase the Fastest

The most rapidly growing category of beef exports—prepared and preserved product—represents about 3 percent of total exports on a quantity basis and 6 percent on a value basis. These are products with a high degree of value-added, such as ready-to-eat meals, and their average export unit value is \$3.67, more than twice the value of fresh/chilled and frozen product (table 1). Over 10 percent of all beef exported to Canada is prepared and preserved product, and Canada accounts for about 67 percent of U.S. exports of this product (table 1). Japan and countries in the “other” category account for 9 percent and 16 percent, respectively, of U.S. exports of this product.

Lower Valued Grass-Fed Frozen Beef Dominates Imports

U.S. imports have grown from 2 to 3 billion pounds since 1980, but in a cyclical pattern (fig. 6). Cyclical fluctuations in imports largely represent changes in demand for lean, grass-fed beef for processing into hamburger. Processing beef substitutes for cow and bull meat, and imports increase when the slaughter of cows and bulls declines during the cattle cycle. Imported processing beef is nearly all frozen, and is mixed with domestic trimmings in order to create hamburger of consistent fat content. After peaking in 1990 and 1991, imports of frozen beef declined as cow and bull-slaughter increased, until 1996, after which it picked up as cow and bull-slaughter declined (fig. 11).

Imports of Higher Valued Fresh/Chilled Cuts Have Been Increasing

While U.S. imports of frozen beef are cyclical, imports of higher valued cuts have been increasing since 1995. Higher valued cuts tend to be fresh/chilled, and imports of fresh/chilled product have increased nearly fivefold since 1994 (fig. 11). Canada is the source for the growth in U.S. imports of fresh/chilled beef, which reflects the increased rationalization of trade among NAFTA members and the ability of Canada to have its product graded with USDA grades. Approximately 60 percent of imported beef is frozen processing beef; about one-third is fresh/chilled product; and the remainder is prepared and processed. U.S. imports of prepared and preserved product have been stable.

Suppliers of Beef to the United States Specialize

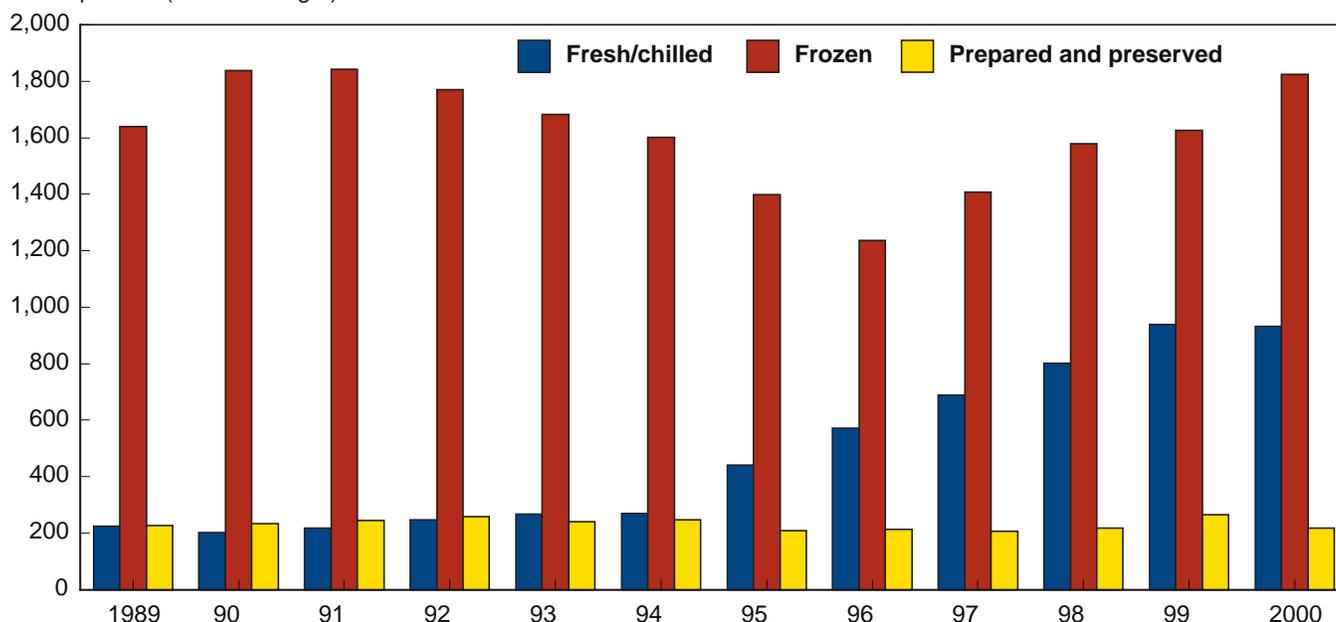
Six countries supply nearly all U.S. beef imports, but specialization is evident (table 2). Canada supplies over 93 percent of fresh/chilled beef and a small amount of frozen product; and 87 percent of frozen beef comes from Australia and New Zealand. Argentina and Brazil supply over 96 percent of prepared and preserved product, which is mostly airtight containers of low-valued cooked product for blending. Argentina and Uruguay supplied small amounts of fresh/chilled and frozen beef in 2000, while still free of FMD.

The level and composition of beef imports from South America has changed rather significantly since the granting of FMD-free status to Uruguay in 1996. FMD-free status allowed Uruguay to shift from supplying prepared and preserved product to providing increasing amounts of fresh/chilled and frozen beef. A similar process began to unfold in Argentina in 1997 when that country became FMD-free. In 2000, Uruguay supplied almost no prepared and preserved

Figure 11

U.S. imports of fresh/chilled beef grow but frozen beef imports are cyclical

Million pounds (carcass weight)



Source: U.S. Department of Commerce.

Table 2—U.S. beef imports: Major suppliers and import unit values by market, 2000¹

Item	Unit	Major suppliers	Canada	Australia	New Zealand	Uruguay	Argentina	Brazil
Fresh/chilled	Percent	97.77	93.55	0.99	0.58	1.63	1.02	NA
Frozen	Percent	96.94	3.58	52.57	34.03	2.78	3.98	NA
Prepared and preserved	Percent	99.43	0.57	0.65	0.86	1.30	21.71	74.34
Unit value--fresh	Dollar	1.39	1.35	2.69	1.84	1.21	1.56	NA
Unit value--frozen	Dollar	0.87	0.87	0.86	0.90	0.95	0.91	NA
Unit value--prepared	Dollar	0.77	0.10	2.26	1.44	0.23	0.81	0.90

¹Product weight.

NA = Not applicable

Source: U.S. Department of Commerce

product and Argentina had reduced its exports of such product to the United States by 75 percent from its 1991 record. Restricted exports from Argentina and Uruguay in 2001 because of FMD, however, could portend a shift back by those countries to supplying prepared and preserved product.

For Uruguay, and especially Argentina, the incentive to ship increased amounts of fresh/chilled product to the United States is evident in the higher unit for this product versus frozen and prepared or preserved product (table 2). However, shipments of fresh/chilled and frozen product from both Argentina and Uruguay are now restricted because of FMD. Were it not for FMD, these countries appear to have potential to provide more of these products, given recent performance.

The decline in imports of prepared and preserved product from Argentina and Uruguay since 1996 has been offset by increases from Brazil. Strong demand in the United States and the devaluation of the Brazilian currency in January 1999 helped push imports of prepared and preserved product from Brazil to new records in 2000.

Prospects for Future Beef Trade

Under current trade policies, between 2000 and 2010, USDA (2001) projects world beef trade by the 9 major importers to expand by 2.15 billion pounds, or over 20 percent. A significant part of this increase is expected to be in higher income countries where the United States is already a major supplier. Korea and Mexico will each account for 30 percent of this total trade

increase, and Japan will account for another 14 percent of total growth in beef imports. Other Asian countries, such as Taiwan, are also expected to increase imports of U.S. beef. Increased demand in China is projected to be satisfied with domestic production.

Most of the growth in beef demand by the above countries is expected to be for grain fed, and the United States is expected to supply about 25 percent of increased demand. Greater access to selected markets could substantially increase trade above this baseline, however. Australia and New Zealand will continue to dominate world beef markets by virtue of the size of their production relative to consumption. Since the (predominantly grass-fed) beef from both countries is a poor substitute for grain-fed U.S. beef, neither is likely to compete strongly in the growing fed-beef markets.

U.S. fed-beef exports are likely to face increased competition from Canada and possibly South America. Canada is expected to increase its numbers of animals and their weights, but its maximum herd size is limited to about 10 percent the size of the U.S. herd. Both Argentina and Brazil have large feed grain stocks with which to support a fed-beef sector, but capital invest-

ment to develop a feedlot sector is not likely to be forthcoming until Argentina is once again FMD-free. Furthermore, any significant shift to high-quality fed-beef production in Brazil would require a shift from the Zebu breed of cattle to European breeds that respond more desirably to feeding, and such breeds would be limited to more temperate regions.

The growth in beef imports by the United States will continue to be influenced by the cyclical need for processing beef, mainly from Australia and New Zealand. Countries capable of supplying grain-fed beef at competitive prices may be attracted to the U.S. market until they can gain entrance to the more lucrative Asian markets. The main source of growth in fresh/chilled imports will continue to be Canada, as beef and cattle trade between Canada and the United States becomes more rationalized under the NAFTA.

The prospect of increased foreign supplies, as well as increased imports from Canada and low-cost South American suppliers, underscores the importance to U.S. beef producers of further increasing market access. However, history suggests that U.S. beef exports may benefit most from increases in access to specific countries.

Pre-Uruguay Round Reductions in Trade Barriers Increased Beef Trade

The first significant multilateral trade agreement affecting beef trade occurred in 1978, as part of the Tokyo Round of international trade negotiations. Under this agreement, the United States secured a commitment that an increasing portion of the Japanese import quota would be high-quality grain-fed beef, even though these imports would compete with grain-fed Wagyu beef, which is produced in Japan. After this agreement lapsed in 1983, both the United States and Australia negotiated agreements in 1984 to raise both the total quota and the high-quality portion, which only the United States was capable of supplying.

The next few years saw growing interest by Japanese consumers for additional beef imports, as a rapidly growing Japanese economy and an appreciating currency gave them the financial ability to purchase additional amounts of higher quality beef. Between the first half of 1985 and the latter half of 1989, the Yen appreciated about 50 percent, which meant that it could buy twice as much foreign goods at a fixed dollar price, including beef. Anxious to satisfy this growing potential market, the United States, Australia, and New Zealand filed objections to the Japanese quota system with the GATT.

In 1988, the United States and Japan signed the Beef-Citrus Agreement, which further increased access to the Japanese market by phasing out Japan's import quota and the existing 25-percent tariff, and substituting them with a 70-percent tariff beginning in 1991. The new tariff was phased to 60 percent in 1992, and to 50 percent in 1993 and thereafter. In 1989, Korea also granted greater market access in a series of similar bilateral agreements with the United States,

Australia, and New Zealand. As a result of these agreements, U.S. exports to Japan in 1989 increased 40 percent, and exports to Korea increased almost fourfold, with Japan accounting for two-thirds of all U.S. beef exports that year.

Market access among North American countries was liberalized with implementation of the North American Free Trade Agreement (NAFTA) on January 1, 1994. NAFTA eliminated Mexican import tariffs on fresh/chilled and frozen beef of 20 percent and 25 percent, respectively, and provided for phasing out the tariff on beef offal over 10 years. Under the Canadian/U.S. Free Trade Agreement, signed in 1989, Canada exempted the United States from its Meat Import Law, and eliminated tariffs for both beef and cattle. Under these agreements, the United States reciprocated by eliminating tariffs on Canadian and Mexican beef cattle, including a 2.2-cent-per-kilogram tariff on non-breeding animals. This increased incentives to import feeder cattle into the United States, especially from Mexico where feed grain is limited.

NAFTA has facilitated intra-regional rationalization of the North American beef and cattle markets. Non-NAFTA countries face high tariffs for imports above maximum import levels, known as tariff rate quotas (TRQs). Since NAFTA, exports of U.S. feeder cattle to Canada and U.S. imports of feeder cattle from Mexico have increased. Beef imports from NAFTA partners have increased from 20 percent to about 30 percent of total imports, while beef exports have remained at about 30 percent of total. Exports of beef to Canada have remained stable while exports to Mexico have increased.

Liberalizing World Beef Markets in the Uruguay Round

Of eight rounds of multilateral trade negotiations, the Uruguay Round (1986-94) was the first to broadly and significantly liberalize agricultural trade-related policies. The Uruguay Round reached agreements for specified actions by the signatory parties and provided guidelines for continued reforms. Although it is difficult to distinguish the influence of the Uruguay Round from other factors affecting beef trade, the volume of world beef imports by major beef trading countries has increased 3-4 percent, in total, since 1995. This increase has occurred in spite of a period of cyclical contraction in production by the major beef-exporting countries and economic difficulties in many Asian markets. Since much of the pre-1995 expansion of trade occurred as earlier bilateral trade agreements were phased in, it seems reasonable to conclude that liberalizing influences of the Uruguay Round helped to increase beef trade.

Three major accomplishments of the Uruguay Round have had significant effects on beef trade (USDA, 1998A; Josling, 1999). The most important of these was the Uruguay Round Agreement on Agriculture (URAA) because it most directly liberalized world agricultural trade. The URAA increased market access, reduced domestic support, and subsidized export levels. A second agreement, *The Agreement on the Application of Sanitary and Phytosanitary Measures*, or SPS Agreement, provided new disciplines on the allowed use of sanitary and phytosanitary (SPS) measures to restrict trade for valid health and safety reasons. Thirdly, the Uruguay Round also provided a new process for settling trade disputes.

The URAA Increased Market Access

The URAA increased market access in three ways (WTO, 1997). WTO members were required to:

- eliminate or convert all non-tariff trade barriers to tariffs;
- reduce base period (1986-88) tariffs by a minimum of 15 percent, and an average of 36 percent and 24 percent for developed and developing countries, respectively, over 6-year and 10-year implementation periods; and
- fix, or “bind” these tariffs at the end-of-period levels.

Countries could apply these tariffs, at either the bound or lower applied levels, to imports exceeding a specified limit, known as the tariff-rate quota (TRQ), but most were required to assess imports within the TRQ at a lower tariff. The average tariff reduction on animals and animal products was 32 percent (WTO, 1995). The TRQ system assured that a certain amount of imports would benefit from low tariffs and that a maximum bound tariff could be applied on larger amounts.

TRQs for beef were not part of the URAA for Japan, Korea, and a few other countries. Japan had already converted an import quota to tariffs under the 1988 Beef-Citrus Agreement, and Korea accomplished a similar agreement before the Uruguay Round. However, under the URAA, Japan reduced beef tariffs from 50 percent to 38.5 percent for all countries. The URAA also provided for Korea to double its minimum imports of beef to 225,000 metric tons (product weight) by the year 2000. Beginning January 1, 2001, imports and distribution of beef in Korea are unrestricted, but imports continue to be subject to a 41.2-percent tariff that decreases to 40 percent in 2004.

Tariffs on Beef—The tariff structure for beef differs in two important ways from the tariff structure for grain. First, the bound tariff levels for beef (table 3) are generally much lower than the 78-percent average bound-tariff for grain (Gibson, et al.). Second, the applied tariffs for beef are much closer to the bound levels. This implies that further reductions in bound tariffs under a future WTO agreement may be more likely to result in reductions in applied tariffs, as well, which may often not be the case with field crops (Dohlman and Hoffman).

Beef TRQs—The most important countries with TRQs for beef are the NAFTA countries—the United States, Canada, Mexico—and the EU. The NAFTA countries have TRQs for imports from non-member countries, but conduct considerable unrestricted trade with each other. In 1999, for example, exports to Canada by the United States totaled nearly 65,000 tons—about 40 percent of Canada’s imports (table 4). This was mainly higher quality grain-fed product. U.S. exports to eastern Canada are expected to continue increasing as Western Canada shifts more of its production onto the

Table 3--Base, bound, and applied tariff levels on beef, selected countries¹

	Base tariff rate ²	Bound tariff rate ²	Applied tariff ²	Latest year
	Percent			
WTO member country				
European Union	20	12.8	NA	2001
	+ 2,763 to 4,740 euro/MT	+ 1,414 to 3,034 euro/MT	NA	2001
High quality beef quota	20	20	NA	2001
Processing beef quota	20	12.8	NA	2001
Boneless, frozen quota	20	12.8	NA	2001
Poland	30% + 4,74l euro/MT	19% + 3,034 euro/MT	0	1995
United States--over TRQ	31.1	26.4	26.4	2001
within TRQ	\$ 4.4/kg	\$ 4.4/kg	\$ 4.4/kg	2001
Canada--over TRQ	37.9	26.5	26.5	2001
within TRQ	\$4.41/kg	\$4.41/kg	0	2001
Mexico	50	45	20	1998
Caribbean--CARICOM ³	NA	NA	100	
Costs Rica	55	45	16	1999
Nicaragua	70	60	15	1998
Argentina	35	26.6	13-15	1998
Brazil	25	55	13	1999
Chile	35	31.5	11	2001
Uruguay	25	55	15	1998
Venezuela	50	25	20	1999
Peru	NA	NA	20	2000
Australia	0	0	0	2001
New Zealand	0	0	0	2001
Japan	50	38.5	38.5	2001
South Korea--over TRQ	44.5	40	41.8	2000
within TRQ	44.5	40	41.6	2000
Thailand	60	50	60	1995
Indonesia	70	50	20-25	1996
Malaysia	20	15	30	1997
Singapore	27	0-10	NA	NA
Philippines	60	35-40	30	1998
Pakistan	NA	100	35-70	1998
South Africa	115-400	69-160	40	1999
Egypt--fresh, chilled, boneless	5	10	NA	NA
frozen and bone-in	10	5	NA	NA
Non-WTO members				
China--bone-in ⁴	50	40	45	1999
boneless ⁴	50	32.5	45	1999
Taiwan ⁵	NA	NA	\$0.31-\$0.38 per lb.	1999
Russia	NA	NA	15	2000

¹The "base rate" is the beginning rate as of 1995. The "bound rate" is the tariff rate at the end of the implementation period, which is normally 6 years for developed countries and 10 years for developing countries.

² Most Favored Nation (MFN) tariff for most recent year available. If a range is given, it refers to the range of tariffs on the different beef categories listed on a nation's tariff schedule.

³Caribbean Community and Common Market. Rates for selected countries and commodities may be lower.

⁴Tariffs agreed to upon formally joining the WTO, which is to take effect December 11, 2001.

⁵Taiwan is expected to formally join the WTO on January 1, 2002.

NA = Not available, or not applicable.

Sources: WTO Tariff Schedule, USDA, Foreign Agricultural Service web site: <http://www.fas.usda.gov>; Agricultural Market Access Data Base (AMAD) <http://www.amad.org>.

Table 4. Beef import quotas and beef imports in metric tons, selected countries, 1999¹

Canada²	Quota allocation	
	Quota	Imports
Basic quota	76,409	NA
Supplemental quota	34,118	NA
Total quota	110,527	NA
Permits issued	NA	NA
Argentina	11,492	8,419
Uruguay	15,092	12,791
New Zealand	33,988	33,483
Australia	44,988	42,004
United States	--	64,961
Total--all countries	105,560	161,658

European Union³	Type of quota allocations	
	Quota	Imports ⁵
Basic quota	76,409	NA
High-quality (Hilton)	58,100	NA
Argentina	28,000	66,450
Australia	7,000	9,500
Uruguay	6,300	27,550
Brazil	5,000	130,150
U.S. & Canada	11,500	4,792
New Zealand	300	6,100
Any origin-frozen	53,000	NA
Any origin-no obligation	50,700	NA
Atlantic, Caribbean, and Pacific countries	52,100	38,700
East European	30,750	18,050
Other imports	NA	4,908
Total--all quotas	244,650	306,200

United States⁴	Quota allocation	
	Quota	Imports ⁵
Country		
Australia	378,214	303,796
New Zealand	213,402	187,218
Argentina	20,000	24,750
Uruguay	20,000	20,185
Japan	200	15
Other	64,805	20,864
Canada	NA	337,377
Total--all countries	696,621	894,205

¹Product weight.²USDA, Foreign Agricultural Service, Global Agriculture Information Network, Feb. 2, 2000.³USDA, Foreign Agricultural Service, Global Agriculture Information Network, June 29, 2000.⁴U.S. Department of Commerce; Harmonized Tariff Schedule of the United States, Additional Note 3.⁵Import data for the countries listed under the "high quality" quota contain data from the "any origin" quota.

NA = Specific import data were not available for these quotas.

export market. The rest of Canada's imports are mainly lower quality manufacturing-grade product from Australia, New Zealand, and South America.

Under the URAA, the United States replaced fixed quota imports under the 1979 Meat Import Law (MIL) with TRQs. These TRQs were allocated to countries on the basis of their historical levels of beef exports to the United States. In comparison, the total quota under the MIL averaged 587,193 metric tons between 1990 and 1994 (Brester and Wohlgenant), and the current TRQ totals 696,621 metric tons (table 4). The URAA, therefore, allows about 19 percent more within-quota imports into the United States than the MIL quota, and provides opportunities to import more subject to an over-quota tariff. However, imports from NAFTA partners are not counted against the U.S. TRQ. In 1999, imports under quota were about 557,000 metric tons, with imports from Canada amounting to an additional 337,000 metric tons. Total within-quota U.S. and NAFTA beef imports were about 894,000 metric tons, or more than 52 percent above the average allowed under the MIL in 1990-94.³

The EU operates the most restrictive TRQ system for imports not eligible for concessionary terms. Non-concessionary imports of cattle, calves, beef, and veal are subject to a so-called complex tariff that includes bound *ad valorem* custom duties averaging 12.8 percent and bound import tariffs ranging from 1,414 to 3,034 euros per metric ton, depending upon the cut (*CAP Monitor*).⁴ These tariffs equal \$0.59 per pound and \$1.26 per pound, at the 2000 exchange rate of 1.09 euros per U.S. dollar, and are equivalent to 46 percent and 85 percent, respectively, of the export unit value of fresh/chilled U.S. beef. The net protection on beef imports from the United States, inclusive of the *ad valorem* customs duty, would therefore range from about 59 percent to 98 percent of the U.S. price.

Most beef and cattle have entered the EU under concessionary arrangements, however, since the Common Agricultural Policy (CAP) was introduced in 1967. Nearly 245,000 metric tons of beef enters the EU under quotas with reduced duties and/or tariffs, if certified free of synthetic growth hormones. The largest—

known as the Hilton Quota—allows 58,100 metric tons of high-quality beef cuts free of tariff but assesses a 20-percent customs duty (*CAP Monitor*). The second is 53,000 metric tons of lower grade frozen beef regardless of origin, which has the 12.8-percent customs duty applied but no tariff. The third is a “no-obligation” agreement to import 50,700 metric tons of frozen beef for manufacturing subject to the customs duty and reduced tariffs. The fourth is the 52,100-metric-ton African, Caribbean, and Pacific (ACP) concession, under which customs duties are waived and tariffs reduced by 92 percent. A fifth concession covers 30,750 metric tons from East European countries, on which duties and tariffs are waived. Finally, duties and fees are reduced by 80 percent on 231,000 calves from some East European countries.

Total EU beef imports typically exceed the total quotas because of over-quota imports from South America. For example, in 1999, imports from South America were 224,150 metric tons, or 81,150 metric tons above that region's high-quality quotas and the “any origin” quotas, and represented 73 percent of EU beef imports. Total EU imports were 25 percent above the 245,000-metric-ton preferential beef quota. In contrast, neither the United States nor Canada filled their 20-percent share of high-value quotas.

Such large imports of over-quota beef draw attention to two advantages that South American beef has in the EU. The most important advantage is that Argentine beef is certified as free of administered hormones, a requirement for exporting beef to the EU. Consequently, neither Canada nor the United States come close to filling their 20-percent portion of the Hilton Quota because of the hormone-free requirement. Secondly, Argentine beef can undersell U.S. beef because the base price of grass-fed Argentine beef is much less than the price of U.S. product. This price differential is aggravated when *ad valorem* customs duties add a larger dollar markup to the already higher price of U.S. product, adding further incentives for EU consumers to make the imperfect substitution of Argentine beef.

The URAA Lowered Domestic Support Levels

The URAA required a 6-year, 20-percent reduction in the Aggregate Measurement of Support (AMS), a measure of internal producer support aggregated over all trade-distorting policies and commodities. These

³The MIL quota was varied year-to-year in order to accommodate market conditions (see Hahn, et al., p. 21), and so might have been increased had it remained in effect.

⁴Tariffs replaced variable levies on July 1, 1995, under the URAA.

trade-distorting policies are known as “amber box” policies, and may be commodity specific or not. They include government payments and market price supports that are related to the level of current production, prices, resource use, or inputs, and are also known as coupled payments. Subsidies less than 5 percent of the value of production were considered *de minimis*, and exempt from reduction. Countries could meet their AMS commitment by choosing among policies and commodities. With the exception of the intervention system in the EU, however, domestic price support policies are not widely applied to beef.

Japan, like all developed countries, committed to reducing its AMS by 20 percent, but beef accounted for only a small share of the AMS. Internal beef prices are mainly supported by an import tariff, which has been reduced under the URAA according to the 6-year transition schedule. Japan’s cattle herd continues a slow gradual decline.

Korea only notified the WTO of some *de-minimis* interest rate subsidies in the URAA, but no price-related supports. However, late in 2000, the United States successfully challenged a deficiency-type-payment system provided to Korean beef producers. In spite of its deficiency payments, Korea’s minimum imports agreed to in the URAA have pushed internal prices down and added to the liquidation pressures associated with pre-existing financial stress. The beginning cattle inventory in 2001 was down 35 percent from the level of 1998.

While the EU has reduced intervention buying of beef since the URAA, overall support has been complicated by increased use of direct payments. Most headage payments for beef are considered “blue box,” and therefore not subject to AMS reduction. Moreover, fluctuations in exchange rates and prices further cloud any assessment of recent effective support in the EU. Finally, the effect of policy changes on stocks are also difficult to gauge because the disposal of large numbers of animals as a result of BSE, FMD, and aid to

Russia. Nevertheless, EU stocks dropped to near zero in 2000, and exports remain within WTO-approved levels (table 5). However, stocks increased substantially in 2001 as a result of BSE- and FMD-related decreases in consumption.

Under Agenda 2000, intervention prices are to be reduced by 20 percent over 3 years starting July 1, 2000, and stockholders will be compensated for storage costs when market prices fall below 2,291 euros per metric ton (product weight). Additional safety net measures may be provided when steer prices drop to 1,560 euros per metric ton (liveweight), and the current special beef and suckler cow premiums are to be increased.

The URAA Reduced Export Subsidies

The URAA also required its developed-country signatories to reduce both the value and the quantity of subsidized exports by 36 percent and 21 percent, respectively, between the base (1986-90) and the end of the implementation period. The EU accounted for about half of the reduction in export subsidies for all commodities and nearly all of the reduction for beef and veal. The estimated value of EU export refunds for beef in 2000 was \$750 million and the projected expenditures in the 2001 draft budget are \$638 million (USDA, June 29, 2000, p. 21). However, continuation of low consumption because of BSE and FMD concerns could cause beef exports to reach or exceed the 821,000-ton maximum export amount agreed to in the URAA. Any subsidized EU beef exports are likely to be marketed in Russia, North Africa, and other lower income countries.

The SPS Agreement Disciplined Sanitary and Phytosanitary Measures

A second major accomplishment of the Uruguay Round was to successfully address the long-recognized inadequacy of measures aimed at disciplining technical restrictions on agricultural trade, contained in GATT Article XX and in the 1979 Agreement on

Table 5—WTO beef export subsidization commitments and use, European Union

	1995/96	1996/97	1997/98	1998/99	1999/00	2000/01
Quantity ceiling (1,000 metric tons)	1,137	1,074	1,011	948	885	822
Exports (1,000 metric tons)	1,019	1,177	947	721	880	NA
Value ceiling (Mil. EUR)	1,922	1,789	1,655	1,521	1,387	NA
Actual subsidies (Mil. EUR)	1,506	1,527	841	643	NA	NA

NA = Not available.

Source: USDA, June 29, 2000.

Technical Barriers to Trade (Roberts). These documents allowed countries to regulate trade in order to protect public health and/or the environment. However, concern about their inadequacy was heightened during the Uruguay Round because it was feared that effective discipline of traditional trade barriers under the URAA could lead countries to rely on SPS barriers to restrict trade. The ensuing SPS agreement was designed to represent an enforceable balance between allowing health and environmental protection, and prohibiting any such “disguised” restrictions on trade.

The SPS agreement reiterated the right of member countries to use trade measures to protect “human, animal or plant life, or health,” but conditioned these rights to substantive and procedural disciplines. The most important substantive provision of the agreement was to require that SPS measures be based upon scientific risk assessment, including the incorporation of international standards when possible. SPS standards are also expected to be the minimum necessary to achieve the stated goals. In cases where scientific evidence related to a perceived hazard is lacking, temporary measures are allowed until an objective risk assessment can be performed. Finally, in recognition that pests and diseases do not conform to political boundaries, the agreement provides for regional risk assessments and trade flows.

Two important procedural obligations in the agreement increased the transparency of countries’ SPS measures. First, an SPS Committee was established under the auspices of the WTO to develop policy guidelines and facilitate discussion among member countries. Second, countries were required to notify the WTO of any pending SPS measures. These procedures greatly increased the transparency of countries’ SPS measures.

Both the procedural and substantive obligations of the agreement are believed to have provided incentives for member countries to review their SPS policies, and to reach some bilateral agreements without progressing to the more formal realm of dispute settlement. For example, scientific risk assessment played a role in the United States-Canada agreement to expedite the export of feeder cattle by producers in selected States to selected feedlots in Canada. Moreover, the prospect of greater WTO discipline on dispute settlement also provided incentive for proactive negotiation.

Improved Dispute Settlement Provisions Help Resolve Complaints

The third major accomplishment of the Uruguay Round was to strengthen dispute settlement (for a summary, see Brosch, 1998). The consensus-driven pre-Uruguay Round dispute settlement process not only required that three-judge panels be chosen by the principal parties to a dispute, but allowed any of the Contracting Parties to the GATT to block the formation of such a panel.⁵ Similarly, any Contracting Party could block adoption of the final panel report. Furthermore, panels were allowed to defer on making a decision, citing “incomplete information.” The Uruguay Round shifted dispute settlement more toward adjudication by adopting the *WTO Understanding on the Rules and Procedures Governing the Settlement of Disputes*, which prohibited blocking panel formation and the issuance of reports, and specifically directed panels to settle disputes.

The prospect of WTO discipline proved real, with nine complaints advancing to the level of formal complaints during the first 3 years of the Agreement, in contrast to a lethargic pace of dispute settlement during the first 47 years of the GATT. Several of these nine complaints concerned the scientific basis for various restrictions that involved beef, among other products.

One of the nine cases involved an objection by the United States in May 1995 to the shelf-life standards for beef mandated by Korea, which advanced to the level of formal consultations. The outcome was that South Korea allowed the use dates of frozen foods and vacuum-packed meat to be set by manufacturers. This was consistent with Article 4 of the SPS Agreement, which provided for the recognition of equivalent standards if the exporter could prove that SPS measures achieved “...the importer’s appropriate level of protection.” Formal consultations were also used to resolve a 1996 complaint against Korean inspection measures at ports of entry, which imposed added costs to beef imports. And in December 2000, a panel found that Korea’s marketing system unfairly required imported beef to be sold in separate stores from domestic beef, thus excluding it from about 90 percent of stores.

⁵The beef hormone dispute was so long lasting because of such blocking (Brosch, pp. 38).

The most notable issue resolved under the Agreement was between the United States and the EU on the use of synthetic hormones in beef cattle feed. The ban by the EU on hormone-treated beef had been an issue since 1989, and became one of the disputes heard by formal panels. The EU defended the ban by arguing that international standards did not meet its public health goals and invoking the “precautionary principle” that special regulations be allowed when risks are imperfectly understood. However, the panel ruled the

ban had not been based on a risk assessment because it bore no “rational relationship” to the risks described in scientific studies of hormone-treated beef consumption. While the panel agreed that extraordinary measures could be adopted “provisionally,” under Article 5.7, they must be temporary, not permanent, as was the EU ban. The panel ruling was upheld upon appeal and the United States was allowed to retaliate by imposing compensatory duties on EU products, so long as the EU maintains the hormone ban.

Upcoming Negotiations: Continuation of Reform

The major efforts related to the beef sector in the next WTO round are expected to focus on expanding the significant but still limited achievements of the Uruguay Round. Most importantly, these would include further increases in TRQs and reductions in bound tariffs. Although Japan and Korea do not have TRQs, reductions in bound tariffs by these countries could significantly increase U.S. beef exports. It should be remembered, however, that about 25 percent of U.S. beef exports receive duty-free treatment under NAFTA. This percentage is likely to increase, since Mexico is expected to remain the fastest growing market for U.S. beef exports in the near future.

The United States will likely face pressure to increase quota levels and reduce both its within-quota and above-quota tariffs. These pressures are expected to be mainly from South American countries, especially in anticipation of eventual regional FMD-free status and increased fed-beef production.

There is a possibility that some aspects of the liberalization of Korean beef imports agreed to in the Uruguay Round, and which began on January 1, 2001, may become issues in the next round of negotiations. The measures include no quotas, direct negotiation between all buyers and sellers, and a nondiscriminatory distribution system that should allow imported beef to have free and unlimited access to all butcher shops. Such possibility of disputes arises, first, because it remains to be seen how Korea accommodates the December 2000 WTO ruling against its discriminatory separate marketing system for imported beef. Second, on November 6, 1999, the Korean Ministry of

Agriculture announced the “Measures for Stabilization of the Hanwoo Industry.” While these measures are intended to relieve some of the financial hardship that market liberalization will impose on domestic cattle producers, they also contain some provisions that could restrict free and unlimited distribution of imported beef.

The current Korean plan provides direct payments for calves when market prices fall below certain levels; support for developing alternative feedstuffs; marketing aids for the opening of specialized Hanwoo meat shops, from 602 in 1999 to 2,000 in 2004; and incentives to improve Hanwoo beef quality. An earlier version of the plan also called for country-of-origin labeling in restaurants. Any domestic policy that provides for production-related payments or discriminates against imports by origin runs a risk of becoming a trade issue.

The issue of export subsidies may not be as significant as in the past for EU beef, since the EU has reduced its internal support prices and is committed to the URAA agreement that binds both the amount spent on export subsidies, as well as the quantity exported. The United States and some other countries are, however, calling for the complete elimination of export subsidies. Moreover, the EU has increased the direct payments to its cattle producers as a means to compensate for the reduction in intervention prices. The net effect of these changes is presently unclear, especially in light of BSE- and FMD-related declines in EU beef consumption. Furthermore, while declines in the value of the euro have brought EU prices closer to world

levels, a stronger Euro and increased production induced by direct payments could make EU exports and subsidies significant issues.

Sanitary regulations will also be of continued concern. The most important SPS issues facing U.S. beef continue to be the EU's ban on imports of hormone-treated beef, and the EU's refusal to abide by the WTO ruling of 1999. This refusal is viewed by some as a serious test of the WTO dispute settlement system. In view of renewed concerns about BSE, the EU may raise alternate arguments to defend its ban in order to

minimize the effect of imports on their current oversupply situation. Continuation of the EU ban also underscores that standardization of SPS rules may need additional attention.

Other important issues for which discussions are likely to include food safety, animal health and disease, and the recognition of disease-free regions. While technical trade barriers related to these issues have been reduced since the Uruguay Round, concerns still remain that not enough has been done to reduce such trade barriers.

New Negotiations: New Issues

The primary concern of U.S. beef producers in upcoming agricultural negotiations is a further increasing of market access, particularly in higher income Asian countries where preference is high for U.S. beef. Producers also have an interest in the implications of potential entrants into the WTO.

Country Accession to the WTO—China and Taiwan are expected to formally join the WTO on December 11, 2001 and January 1, 2002, respectively. Of these, the most important for U.S. beef trade is China. China's accession to the WTO will lower its tariff from 45 percent to 12 percent for frozen beef and from 45 percent to 25 percent for fresh/chilled beef. While China is a relatively low-income country, rapid economic development is expected to expand demand for imported beef by higher income families, tourists, and business travelers. Although China's potential for beef production remains unclear, potential for imports exists. Taiwan, on the other hand, is likely to offer the larger growth market for U.S. beef exports. Increased beef consumption in Taiwan is limited, however, by cultural traditions.

Russia is also a likely member of the WTO in the future. Russia had been a small but growing market for U.S. beef before economic problems there reduced demand. Several years are likely to pass before the economic situation in Russia has turned around sufficiently to again make that country a commercial market for U.S. beef. Most recently, Russia has maintained an applied tariff of 15 percent on U.S. beef (table 3).

Other Issues—Animal welfare and trade in products of agricultural biotechnology are issues likely to be discussed in the WTO. There is increasing concern that animals raised for commercial purposes be treated as humanely as possible, both during the growing process as well as at slaughter. The EU has signaled its intention to include animal welfare as an issue in the new WTO negotiations. Trade issues related to agricultural biotechnology directly concern crop products currently, but the topic is likely to become more salient for beef producers because cattle may consume crops that have been genetically engineered. One issue that is likely to come up in the WTO that will not be important for beef is the role of State Trading Enterprises (STEs). STEs are no longer an important factor in world beef trade since South Korea allowed direct negotiations between buyers and sellers.

Two related issues that may arise in the context of food safety concern providing assurances that cattle may be tracked, from birth, through the marketing system, and labeling as to country of origin. Both Canada and the EU have tracking systems for their cattle, allowing disease problems to be detected and resolved most efficiently. Such systems are resisted by many, however, due to their cost, and countries without them may find themselves at a competitive disadvantage in trade. Both tracking requirements and country-of-origin labeling would involve additional complications for the United States because 5-6 percent of annual U.S. cattle slaughter is of Canadian or Mexican origin.

Conclusions

U.S. beef exports began to increase with trade liberalization in the early 1980s, and have continued increasing since the signing of NAFTA and the URAA in the mid-1990s. While growth in U.S. beef exports is expected to continue, additional exports could occur if further access were to be granted by countries where incomes are high and/or growing. Additional access is most important for the high-valued markets of Japan and Korea, which currently account for about 70 percent of total U.S. beef exports. Much of the rest of U.S. beef exports do not face restrictions because they are marketed under the NAFTA agreement. Nevertheless, better access to China, the EU, and fast-growing mid-

dle-income countries could also benefit U.S. beef exports as limits in traditional markets are reached.

U.S. beef imports are also expected to continue increasing, after dropping from their cyclical top, but at a much smaller rate than exports. Frozen product from Australia and New Zealand will continue to dominate the import market. However, once the FMD issue is resolved in South America, there is likely to be pressure for greater access to the U.S. Market by South American producers, as well as increased competition for the United States in export markets.

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