United States International Trade Commission

Global Beef Trade:

Effects of Animal Health, Sanitary, Food Safety, and Other Measures on U.S. Beef Exports

Investigation No. 332-488
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September 2008

U.S. International Trade Commission

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Executive Summary

The United States is the world's largest beef producer, and until BSE-related restrictions were imposed in 2003, the world's largest beef exporter. The cattle and calf industry continues to be an integral sector of the U.S. economy, accounting for more than 20 percent of the total value of U.S. agricultural production in 2006.[1] In 2007, the retail value of U.S. beef and edible offal production was $74 billion[2] while 967,000 U.S. operations were involved in cattle and calf production.[3] The industry is also a major employer; the meat packing industry alone provided 147,000 jobs in 2005.[4]

The discovery of bovine spongiform encephalopathy (BSE), in a dairy cow of Canadian origin, in the U.S. cattle herd in late 2003 led many countries to restrict imports of U.S. beef, resulting in significant losses in exports and industry revenues during 2004–07 (figure ES.1). Beginning in 2004, several countries resumed trade, confident that the regulations and oversight implemented by the United States were sufficient to ensure the health and safety of U.S. beef. Yet certain markets, most notably Japan and Korea, continued their restrictions, such that the value of U.S. beef exports to the world in 2007 was only about two-thirds the 2003 level. U.S. beef industry representatives view continued market access barriers as unjustified. Continued Korean government restrictions on U.S. beef imports have become a major impediment to consideration by the U.S. Congress of legislation to approve and implement the U.S.-Korea Free Trade Agreement.

This report responds to a request by the Senate Committee on Finance (Committee) for information and analysis on how market access barriers have affected U.S. beef producers and exporters. Specifically, the Committee requested that the report provide the following information and analysis: (1) an overview of U.S. and global beef markets; (2) information on animal health and food safety measures facing U.S. and other major beef exporters in major destination markets; (3) information on other barriers to U.S. beef exports in major destination markets; and (4) analysis of the economic effects of foreign animal health, food safety, and other measures on U.S. beef exports. The major findings and some key observations from this study are summarized below.

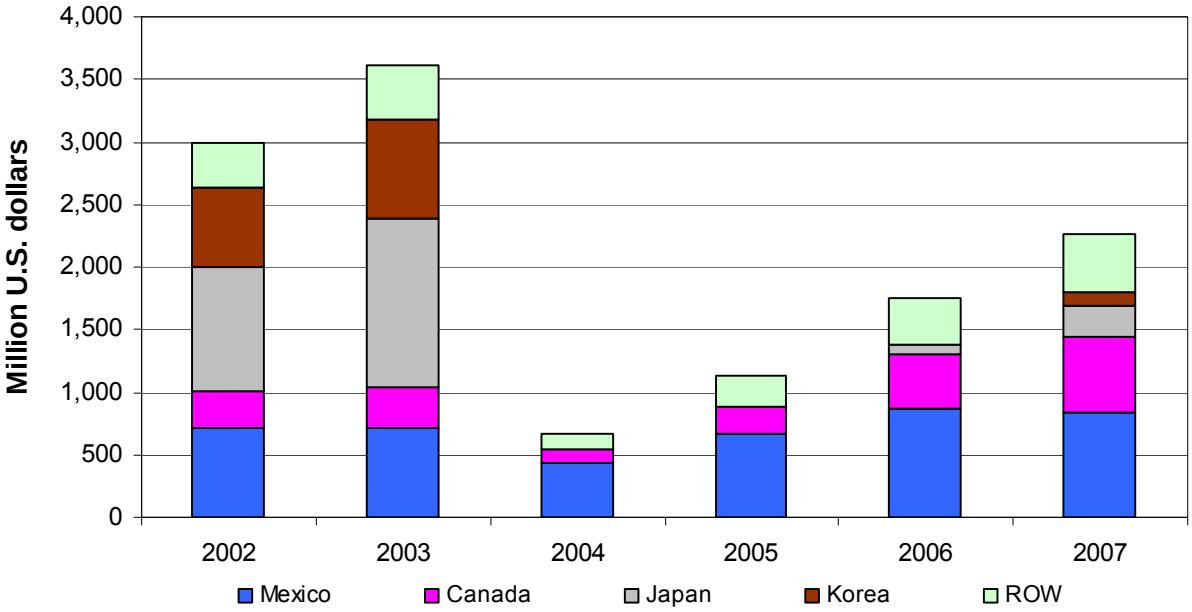
[1] USDA, ERS, "State Facts," (accessed September 2, 2008).

[2] USDA, ERS, "U.S. Beef and Cattle Industry."

[3] USDA, NASS, *Farms, Land in Farms, and Livestock Operations, 2004 Summary*, January 2005, 14; USDA, NASS, *Farms, Land in Farms, and Livestock Operations, 2007 Summary*, February 2008, 14.

[4] U.S. Department of Labor, Bureau of Labor Statistics, *Quarterly Census of Employment and Wages*, NAICS 311611. Meat packing includes both beef and pork products.

FIGURE ES.1 Beef: U.S. exports to selected countries, 2002–07



Source: GTIS, Global Trade Atlas database.

Major Findings and Observations

BSE-related restrictions on exports have resulted in substantial losses to the U.S. beef industry.

During 2004–07, BSE-related restrictions were a major barrier to U.S. beef exports; these restrictions cost the U.S. beef industry $1.5–2.7 billion in lost revenue annually. A loss in annual export sales ranging from $3.1 billion in 2004 to $2.5 billion in 2007 was offset in part by additional sales in the domestic market. Annual losses were greatest in 2004 and have since declined, as some countries have eased restrictions and U.S. exporters have developed alternative markets (albeit at lower prices).

Absent BSE-related restrictions, U.S. beef exports still face substantial impediments in the form of tariffs and tariff-rate quotas.

Even if all BSE-related restrictions were removed, U.S. beef exports would continue to face significant tariff and tariff-rate quota (TRQ) restrictions. Annual U.S. beef exports would be expected to increase by about $1.4–1.7 billion if global tariffs and TRQs on imports of U.S. beef were removed. During 2004–07, potential gains in export sales from removing tariffs and TRQs were estimated to be $6.3 billion over the four-year period, substantially less than the losses in export sales associated with BSE-related restrictions (table ES.1).

TABLE ES.1 Beef: Losses in U.S. exports resulting from BSE-related restrictions and potential gains from removal of tariffs and TRQs by markets, 2004−07 (billion dollars)

Market	BSE restrictions	Tariffs and TRQs	Total
Japan	5.7	4.1	9.8
Korea	3.7	1.3	5.1
ROW	1.5	0.9	2.4
Total	11.0	6.3	17.3

Source: Commission estimates based on a simulation framework discussed in appendix G.

Notes: Due to rounding, numbers may not add to total. ROW denotes rest of the world.

By far the greatest losses to the U.S. beef industry result from trade restrictions imposed by Japan and Korea.

Restrictions imposed by Japan and Korea on imports of U.S. beef have resulted in significant losses in export sales to the industry. During 2004–07, these two countries accounted for about 86 percent of the lost export sales caused by BSE-related restrictions and of potential export gains if tariffs and TRQs were removed.

Other measures impede U.S. beef exports in several key markets.

Although tariffs, TRQs, and sanitary and phytosanitary (SPS) regulations specific to BSE have presented the greatest obstacles, U.S. beef exports face additional restrictions in major markets (table ES.2). The EU continues to ban U.S. beef that has been treated with hormones (a ban that has been in place since 1989), whereas in other markets, restrictions include nontransparent sanitary and food safety regulations and cumbersome documentation and licensing procedures.

TABLE ES.2 Beef: Other barriers to U.S. exports by selected markets

Market	Type of barrier
Japan	Cumbersome document inspection, domestic industry support
Korea	Higher inspection rate, cumbersome document inspection, domestic industry support
EU	Hormone ban, small quota, domestic industry support
China	Nontransparent sanitary regulations, cumbersome documentation procedures
Russia	Uneven application of customs regulations and minimum import unit valuations, import licensing procedures

Source: Compiled by Commission staff.

Although the World Organization for Animal Health provides guidelines and standards regarding the safety of beef trade, it has no power to require that countries conform to its standards.

As of May 2007, the United States has been recognized by the World Organization for Animal Health (OIE) as a controlled risk country with regard to BSE. However, certain countries, including Japan and Korea, both members of the OIE, impose restrictions on U.S. beef that are more stringent than the OIE guidelines for a controlled risk country. The OIE has no power to require that countries conform to its guidelines and standards.

There is little consistency in the BSE-related restrictions imposed by major beef importing countries.

Countries apply different food safety standards for imported beef (table ES.3). Even slight differences in requirements impose significant costs on the U.S. beef industry. Such differences impair the ability of U.S. producers to sell specific products in the markets where they are most highly valued, decrease the range of products eligible for export to any particular market, and increase operating costs.

TABLE ES.3 Beef: OIE standard and BSE-related restrictions on imports from the United States in selected countries

Market	Age restrictions	Specified risk material (SRM) definition	Commodity restriction
OIE standard	None	Brains, eyes, spinal cord, skull, and vertebral column of cattle over 30 months, plus tonsils and distal ileum of all cattle	No mechanically separated meat from the skull and vertebral column of cattle over 30 months of age
Japan	20 months or younger	Head, tonsils, spinal cord and dura matter, distal ileum, vertebral column and dorsal root ganglia	No head meat, processed beef, ground beef, finely textured beef, or mechanically separated meat
Korea	Under 30 months	Brain, eyes, skull, tonsils, spinal cord, vertebral column, and distal ileum	No mechanically recovered meat or mechanically separated meat
EU	Prime and Choice beef from cattle under 30 months eligible for high-quality beef quota	Brains, eyes, spinal cord, and skull, of cattle over 12 months; vertebral column and ganglia of cattle over 30 months; tonsils and intestines of all cattle	Beef for human consumption must comply with non-horrmone treated cattle (NHTC) program, no antimicrobial treatment
China	Not applicable	U.S. beef ineligible for import	U.S. beef ineligible for import
Russia	Under 30 months	Brains, eyes, spinal cord, skull, and vertebral column of all cattle	Ground beef in bulk or patties ineligible for import
Canada	None	Same as OIE	Same as OIE
Mexico	Under 30 months	Brains, eyes, spinal cord, skull, tonsils, and small intestine	No ground meat, feet, sweetbreads, weasand meat, or head meat

Source: USDA, FSIS Index of Export Requirements for Meat and Poultry Products, (accessed August 18, 2008).

The imposition of restrictions on imported beef in response to food safety concerns can occur quickly; lifting these restrictions takes time.

Typically, governments immediately close their borders when faced with concerns over the safety of food imports. However, once a market is closed, reopening can take months or even years. The U.S. BSE incident provides an example of this imbalance between imposing and relaxing trade restrictions. Once the existence of BSE was confirmed in the United States, countries banned U.S. beef within days. More than four years after these restrictions were imposed, many of them continue, generally in a modified form, preventing less than full market access.

Country-Specific Findings

Japan

- Model simulation results indicate that losses of U.S. beef exports to Japan due to BSE measures totaled $5.7 billion during 2004–07, primarily in fresh, chilled, or frozen boneless beef and frozen beef tongue. The removal of tariffs on U.S. beef imports over the same period would have increased U.S. exports to Japan by $4.1 billion. Thus, Japan is a highly protected market based on tariffs alone, but BSE restrictions on U.S. beef exports have a trade impact roughly 40 percent greater than the existing tariff protection.

- From December 2003 until December 2005, and then from January to June 2006, the government of Japan effectively banned imports of U.S. beef. When imports of U.S. beef resumed in July 2006, they were subject to 100 percent box inspection until July 2007. Current Japanese SPS measures permit imports of beef from cattle up to 20 months of age.

- Other trade barriers to U.S. beef exports to Japan include high tariffs (38.5 percent on the majority of imports), significant government support for the domestic beef industry, and administrative restrictions, including strict documentation audits of shipper manifests.

Korea

- Model simulation results indicate that losses of U.S. beef exports to Korea due to BSE measures totaled $3.7 billion during 2004–07, primarily in fresh, chilled, or frozen boneless beef; frozen bone-in beef; and frozen edible offal (other than tongues and livers). Removal of Korean tariffs on beef imports from the United States over the same period would have increased U.S. exports to Korea by $1.3 billion. Thus, Korea is a highly protected market based on tariffs alone. BSE restrictions on U.S. beef exports, however, have an adverse trade impact nearly 200 percent greater than the existing tariff protection.

- From December 2003 until September 2006, the government of Korea effectively banned imports of U.S. beef. When Korea began importing U.S. beef again, only boneless beef cuts from cattle no more than 30 months of age were eligible for import. Restrictions on bone-in cuts eliminated a significant portion of U.S. beef trade with Korea that existed in 2003. Under an agreement between Korea and the United States, signed in April 2008, a new set of quarantine inspection procedures was put in place for imports of U.S. beef, but a transitional measure continued to prohibit beef from cattle over 30 months of age (OTM).

- Other trade barriers to U.S. beef exports to Korea include high tariffs (18–72 percent); significant government support for the domestic beef industry; administrative restrictions at customs, including unusual labeling requirements for U.S. beef and strict documentation audits of USDA health

certificates; and country-of-origin labeling requirements for consumers at all Korean restaurants.

EU

- Beef producers in the United States have largely been unable to benefit from export opportunities to the EU because of nontariff barriers to imports of U.S. beef. The EU is forecast to increase its total beef imports significantly over the next five years.

- Because the EU has expanded from 12 member countries when the hormone ban was implemented to 27 member countries in 2007, the negative effects of the hormone ban have expanded. New member states that had served as alternate export markets in 2004, when BSE-related restrictions were imposed in several countries, have reduced their imports of U.S. beef since joining the EU.

- The small volume of the current EU high-quality (Hilton) beef quota and the costs of the non-hormone treated cattle (NHTC) program have limited the ability of U.S. producers to supply the EU market.

China

- Model simulation results indicate that losses of U.S. exports to China and Hong Kong due to BSE-related measures totaled $510 million during 2004–07. Export losses were greatest for frozen boneless beef, frozen offal, and fresh and chilled boneless beef. The removal of tariffs on imports of U.S. beef over the same period would have increased U.S. exports to China by $19 million.

- The U.S. government has pressed China to follow OIE guidelines and place no limit on the slaughter age of cattle from which beef imports are produced. Hong Kong resumed beef imports (boneless beef from cattle no more than 30 months of age (UTM) from the United States in December 2005. Negotiations to expand Hong Kong's acceptance of U.S. beef, consistent with full OIE standards, continue.

- Other trade barriers to U.S. beef exports to China include moderately high tariffs (12–25 percent) and a 13 percent value added tax on imports. China maintains a number of measures that could constrain U.S. exports when the market reopens, such as restrictions on beef produced with hormones, nontransparent sanitary requirements, and cumbersome import documentation procedures. Hong Kong's tariffs on all beef and offal products are zero. Hong Kong maintains a zero tolerance for bone fragments, which has led to the delisting of many U.S. plants, and also maintains onerous certification requirements for U.S. beef processing plants.

Russia

- Model simulation results indicate that losses of U.S. beef exports to Russia due to BSE measures totaled $253 million during 2004–07, primarily in frozen liver and other edible offal. Removal of tariffs on U.S. beef over the same period would have increased U.S. exports to Russia by $54 million.

- The government of Russia banned imports of U.S. beef in December 2003. For nearly 4 years following the ban, no U.S. beef processing facilities were approved for exporting beef to Russia. Russia's animal health, sanitary, and food safety regulations are gradually and unevenly coming in line with international standards as Russia endeavors to accede to the World Trade Organization (WTO). Currently, Russia limits imports to beef products from cattle UTM, and Russian regulations define vertebral columns in cattle UTM as SRMs.

- Other trade barriers to U.S. beef exports to Russia include moderately high tariffs (typically 15 percent but not less than €0.15 per kg for beef products shipped by U.S. exporters), limited government support for the domestic beef industry, and technical barriers that cause significant disruption in Russia's beef imports. These barriers include the uneven application of Russian customs regulations in different ports of entry, the government's practice of providing customs agents with unpublished recommendations on minimum import unit valuations which artificially boost ad valorem import tariffs, and Russia's complex import licensing program, all of which add to importers' costs and can create shipping delays.

Canada

- Model simulation results indicate that losses of U.S. beef exports to Canada due to BSE measures were $346 million during 2004–05, primarily in fresh and chilled boneless beef. In 2006 and 2007, BSE-related restrictions in other export markets led to an increase in U.S. beef exports to Canada. Model simulation results indicate overall lost U.S. beef exports to Canada due to BSE-related restrictions totaled $242 million during 2004−07. The discovery of BSE in the Canadian herd and subsequent U.S. BSE-related import restrictions on Canadian cattle and beef indirectly affected Canadian demand for beef imports.

- Canada continued to permit imports of U.S. fed cattle for immediate slaughter and boneless beef from cattle UTM following the discovery of BSE in the United States. In March 2005, Canada permitted imports of feeder cattle UTM and in June 2006 permitted imports of live cattle born after 1999 and all beef and beef products.

- All cattle and beef products from the United States enter duty free under the North American Free Trade Agreement (NAFTA). There are no other major trade barriers to U.S. cattle and beef exports.

Mexico

- Model simulation results indicate that losses of U.S. beef exports to Mexico due to BSE measures were $382 million during 2004–05. Export losses were primarily in fresh and chilled boneless beef. BSE-related restrictions in other export markets led to an increase in U.S. beef exports to Mexico in 2006 and 2007. Model simulation results indicate overall losses in U.S. exports to Mexico as a result of BSE-related restrictions totaled $390 million for 2004−07.

- Mexico immediately banned imports of all U.S. cattle and beef products in December 2003. However, the market was quickly reopened to imports of boneless beef from cattle UTM in March 2004 and later to other beef products from cattle UTM. To date, Mexico continues to prohibit the import of U.S. beef cattle and beef products from cattle OTM.

- Although all cattle and beef products from the United States enter duty free under NAFTA, Mexico maintains antidumping duties on certain bone-in and boneless beef cuts. Duties range from $0.07–0.80 per kg and were first established in August 1999. There are no other major trade barriers in Mexico to U.S. cattle and beef exports.

Acronyms

AgTC	Agriculture Transportation Coalition
AI	avian influenza
ALIC	Agriculture and Livestock Industries Corporation of Japan
AMS	Agricultural Marketing Service (USDA)
APHIS	Animal, Plant, and Health Inspections Service (USDA)
AQISQ	General Administration of Quality, Inspection, and Quarantine (China MOA)
ARC	Audit, Review, and Compliance (USDA AMS)
AUV	average unit value
BSE	bovine spongiform encephalopathy
cif	cost, insurance, and freight
CWE	carcass weight equivalent
DES	synthetic diethylstilbestrol
DSB	Dispute Settlement Body of the WTO
EC	Council of the European Union
EFSA	European Food Safety Authority
ELISA	enzyme-linked immunosorbent assay
ERS	Economic Research Service (USDA)
EV	export verification
FAO	Food and Agriculture Organization of the United States
FAS	Foreign Agricultural Service (USDA)
FDA	Food and Drug Administration
FMD	foot and mouth disease
FMDP	Foreign Market Development Program
FMIA	Federal Meat Inspection Act
FSC	Food Safety Commission of Japan
FSIS	Food Safety and Inspection Service (USDA)
FTA	Free Trade Agreement
FTS	Federal Customs Service (Russia)
FVO	Food and Veterinary Office (SANCO)
GE	general equilibrium
GTAP	Global Trade Analysis Project
HHS	Department of Health and Human Services
HRI	hotel, restaurant, and institutional
HS	Harmonized Schedule
HTS	Harmonized Tariff Schedule
JECFA	Joint Export Committee on Food Additives
KORUS FTA	Korea-U.S. Free Trade Agreement
MAP	Market Access Program
MAFF	Ministry of Agriculture, Forestry, and Fisheries of Japan
MBM	meat and bone meal
MEDT	Ministry of Economic Development and Trade (Russia)
MHLW	Ministry of Health, Labor and Welfare of Japan
MIFAFF	Ministry of Food, Agriculture, Forestry, and Fisheries of Korea
MOA	Ministry of Agriculture (China)
MOH	Ministry of Health (China)
MRL	maximum residue limit
mt	metric tons
mmt	million metric tons
NAFTA	North America Free Trade Agreement

Acronyms—*Continued*

NASS	National Agricultural Statistics Service (USDA)
NHTC	non-hormone treated cattle
NPC	producer nominal protection co-efficient
NRA	National Renders Association
NTR	Normal Trade Relations
NVRQS	National Veterinary Research and Quarantine Service of Korea
OECD	Organization for Economic Cooperation and Development
OIE	World Organization for Animal Health
OTM	over thirty months of age
PE	partial equilibrium
PSE	producer support estimate
ROW	Rest of the World
SAGARPA	Mexican Ministry of Agriculture, Livestock, Rural Development, Fisheries, and Food
SANCO	Directorate General for Health and Consumer Protection (EU)
SCT	single commodity transfers
SECOFI	Mexican Ministry of Economy
SENASICA	National Service for Animal Health, Food Safety, and Agricultural and Food Quality Assurance (Mexico)
SPS	sanitary and phytosanitary
SRM	specified risk material
SSA	Mexican Ministry of Health
TBT	technical barriers to trade
TRQ	tariff rate quota
UN	United Nations
USDA	United States Department of Agriculture
USMEF	U.S. Meat Exporters Federation
USTR	U.S. Trade Representative
USLG	U.S. Livestock Genetics, Inc.
UTM	under thirty months of age
vCJD	variant Creutzfeldt Jacob Disease
VER	voluntary export restraint
VPSS	Veterinary and Phytosanitary Surveillance Service (Russia)
WHO	World Health Organization
WTO	World Trade Organization

CHAPTER 1
Introduction

Background and Purpose

The economic prosperity of the U.S. beef industry is highly dependent on access to foreign markets. In the early 2000s, close to 10 percent of U.S. beef production was exported annually, and an industry study estimated that in 2000 as much as 18 percent of the value of beef production was derived from sales to overseas markets.[1] In 2003, U.S. beef exports reached a historic high of $3.6 billion, equivalent to about 6 percent of total U.S. agricultural exports. In that year, the United States was the world's largest single-country exporter of beef, accounting for 29 percent of global exports, and was the major import supplier to two of the world's largest beef importing countries, Japan and Korea.

Access to global beef markets raises U.S. producer prices and revenues. Exporting product overseas means lower domestic supply relative to demand, which leads to higher prices in the domestic market for certain cuts.[2] Conversely, many beef products are in much greater demand and are valued much more highly overseas than in the United States. For example, beef tongue and short plate are highly valued by Japanese consumers but are little consumed in the United States; access to the Japanese market for these products would mean that U.S. exporters would earn several times the amount that they could earn domestically.

Global market access for U.S. beef changed dramatically in December 2003 when bovine spongiform encephalopathy (BSE) was discovered in a dairy cow of Canadian origin in the U.S. herd. Most trading partners responded immediately by closing their borders to U.S. beef. As a result, U.S. exports of beef and beef variety meats (edible offal) fell by about $3 billion from 2003 to 2004 (from $3.6 billion to $668 million) (figure 1.1). The resulting financial losses to the U.S. beef industry were considerable. The National Cattlemen's Beef Association estimated that during 2004–07, restrictions on U.S. beef sales to Japan and Korea alone led to revenue losses for the industry of $8 billion and $7 billion, respectively.[3] The American Meat Institute stated that foreign restrictions on U.S. beef exports resulted in a loss of 9,000 jobs in the meat packing industry from 2003 through 2005.[4]

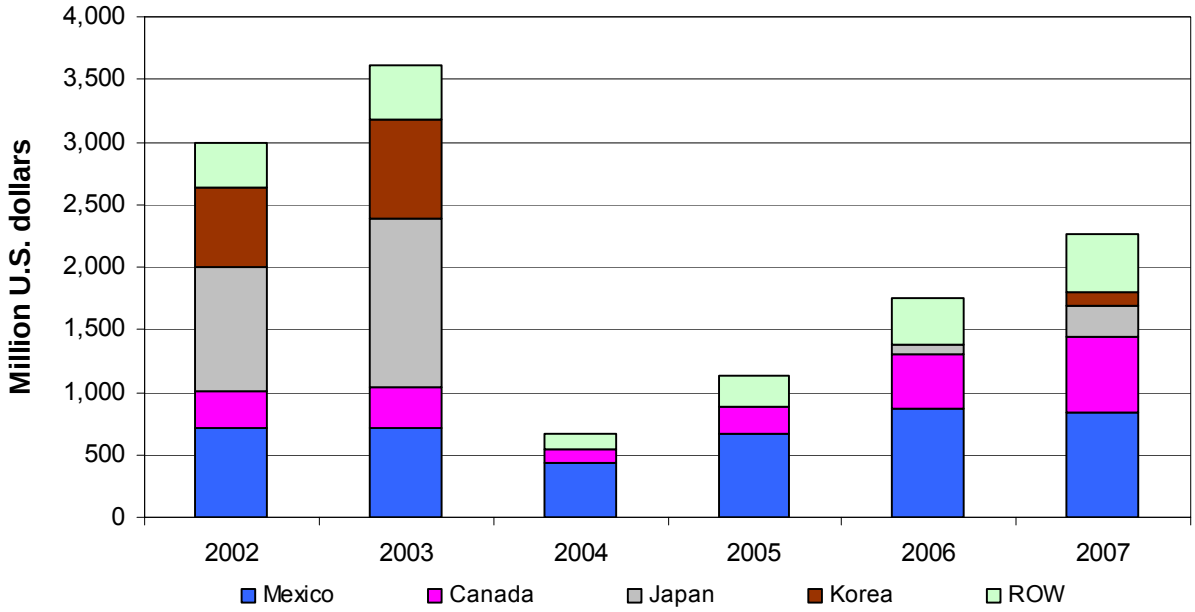
[1] USMEF, *Methodology and Results of the Value of Beef Exports Analysis*, July 2002, 10.

[2] As an example, an industry source estimated that BSE-related restrictions resulted in lower prices for beef short ribs in the U.S. market of approximately $1.25 per pound, and overall losses of $70 to $75 per head. Industry representative, email message to Commission staff, June 25, 2008.

[3] NCBA, written testimony to the Commission, November 15, 2007.

[4] AMI, written testimony to the Commission, November 15, 2007.

FIGURE 1.1 Beef: U.S. exports to selected countries, 2002–07



Source: GTIS, Global Trade Atlas database.

In response, the U.S. Department of Agriculture (USDA) and industry members took several steps to ensure the safety of U.S. beef and provide assurances to customers in domestic and foreign markets. For example, the USDA's Food Safety Inspection Service (FSIS) amended federal meat inspection requirements to designate certain materials as "specified risk materials" (SRMs), which were declared inedible and prohibited in human food. The FSIS also required that nonambulatory cattle presented for slaughter be condemned.[5] On June 1, 2004, the USDA began an enhanced surveillance program for BSE, and by July 2006, over 750,000 cattle had been tested.[6] In May 2007, the United States was designated as having a controlled risk of BSE by the World Organization for Animal Health (OIE).[7] This means that the OIE recommended that all U.S. fresh beef and beef products (except for mechanically separated meat from the skull and vertebral column of cattle over 30 months of age) be authorized for import if control procedures (including cattle inspection, a ban on certain unapproved stunning and slaughtering processes, and other types of verification) are in place.

Confident of U.S. food safety measures, many countries, including Canada and Mexico, relaxed their restrictions on imports of U.S. beef. Gradual reopening of markets, diversion to alternative markets, and sporadic relaxation of BSE-related bans in Japan and Korea all contributed to a partial recovery of U.S. exports; by

[5] 69 Fed. Reg. 1862–74 (January 12, 2004).
[6] USDA, APHIS Veterinary Services, "USDA's BSE Surveillance Efforts," July 2006.
[7] The OIE is the recognized international authority on measures dealing with animal health, including animal diseases that may be communicable from animals to humans.

2007, U.S. beef exports were approximately 60 percent of pre-BSE levels, on a value basis.

However, several key markets continued to restrict imports of U.S. beef. In 2007, as much as one-half of global beef imports was accounted for by countries that continued to maintain such restrictions. For example, Japan limits imports from the United States to beef from cattle no more than 20 months of age,[8] and Korea continues to restrict imports of U.S. beef from cattle over 30 months of age (OTM).[9] Additionally, China continues a total ban on U.S. beef that started in December 2003.

U.S. beef exporters strongly condemn the decisions by certain importing countries not to accept all types of U.S. beef, consistent with OIE guidelines.[10] They argue that measures implemented in the United States are consistent with OIE guidelines, that U.S. beef is healthy and safe, and that continued restrictions represent an unfair barrier to trade. These arguments have gained support in the U.S. Congress, where several members have worked to win access for U.S. beef in key markets. For example, since 2004, several congressional and trade delegations have traveled to Japan and Korea in an effort to persuade government officials to make policy changes with respect to imports of U.S. beef. In the case of Korea, consideration of legislation to implement the U.S.-Korea Free Trade Agreement (FTA) has been put on hold while the Korean market remains closed to U.S. beef.

Noting the importance to the U.S. beef industry of access to international markets and the effect on the industry of BSE-related restrictions, especially by Japan and Korea, the Senate Committee on Finance (Committee), on August 7, 2007, requested that the U.S. International Trade Commission (Commission) conduct an investigation and provide a report on the U.S. and world beef markets and on various measures affecting U.S. beef exports and their economic effect.[11] More specifically, the Committee asked that the Commission provide the following information and analysis in its report:

- an overview of U.S. and global beef markets, including information on production, consumption, imports, and exports;
- information on animal health, sanitary, and food safety measures facing U.S. and other major beef exporters in major destination markets;

[8] Most cattle slaughtered in the United States are between 20 and 30 months of age. This restriction affects both the supply of beef eligible to be exported to Japan and the ability to provide a steady supply throughout the year.

[9] From September 2006 to October 2007, Korean regulations allowed some imports, but prohibited imports of bone-in cuts from the United States, which prior to 2004 represented a significant portion of U.S. beef exports to Korea, and did not allow imports of U.S. beef from cattle OTM. Since June 2008, Korea has allowed imports of beef from cattle under 30 months of age (UTM). See chap. 6 of this report.

[10] AMI, USITC written testimony, November 15, 2007.

[11] The request letter is presented in app. A and the *Federal Register* notice announcing institution of this investigation is in app. B.

- information on other barriers to U.S. beef exports in major destination markets, including high tariffs, quotas, and import licensing and distribution systems; and

- a qualitative, and to the extent possible, quantitative analysis of the economic effects of foreign animal health, sanitary, food safety, and other measures on U.S. beef exports.

Country and Product Coverage

The markets covered in this investigation are Japan, Korea, the EU, China, Russia, Canada, and Mexico. These markets were selected either because they were major export markets for U.S. beef products prior to December 2003, or have the potential to be major markets absent trade restrictions.[12] China is not currently a major market for U.S. beef because of its ban on U.S. beef imports, but is included because it is a major beef producing and consuming country that is expected to increase total beef imports in the future. While U.S. beef exports to the EU are negligible, it is included because it is a major beef producing, consuming, and importing region. Moreover, the expansion of the EU since 2002 means that 12 more countries now apply EU restrictions on U.S. beef that substantially restrict export opportunities.[13] Also mentioned briefly are major countries that are competitors of the United States in global beef markets: Argentina, Australia, Brazil, New Zealand, and Uruguay. [14]

Beef is a highly heterogeneous agricultural product. Beef is traded fresh, chilled, or frozen; as carcasses and cuts; and with and without bones. Beef can be in the form of muscle cuts, edible offal (e.g., heart, liver, tongue, and brains), or fully processed (e.g., sausages). Because of differences in the market characteristics and trade restrictions among these products, it is important to disaggregate products in this sector to the fullest extent possible. Under the Harmonized System (HS), product nomenclature is consistent across all countries at the six-digit subheading level. In the HS, there are 12 major product categories that account for trade in beef at this level of disaggregation. Muscle meat cuts, either fresh/chilled or frozen carcasses, bone-in, and boneless cuts are accounted for by six 6-digit subheadings; edible offal (also referred to as variety meat) is covered by four 6-digit subheadings; and processed products by two 6-digit subheadings (table 1.1).

As requested by the Committee, most of the information presented in this report, including the economic analysis, covers the 2002–07 period. However, there have been several important developments in 2008 that warrant additional mention in this report. These include an agreement with Korea concerning imports of U.S. beef, an enhanced feed ban on certain cattle origin materials published by the U.S. Department of Health and Human Services (HHS), and changes in grain prices and exchange rates that are expected to affect beef trade.

[12] The major markets for U.S. beef are discussed in chaps. 5–11 of this report.

[13] EU restrictions predate the discovery of BSE in North America and are not BSE-related.

[14] Profiles of these major competitor countries are provided in app. C, including information on the major animal health and sanitary measures affecting beef exports of these countries.

TABLE 1.1 Beef: Product category, HS subheadings, and examples of products

Product	HS	Examples of products
Muscle cuts		
Fresh/chilled		
Carcass and half-carcass	020110	Full and half-carcasses
Bone-in	020120	Rib, chuck, loin, clod, finger meat, flat
Boneless	020130	Iron, short plate, knuckle, brisket, etc.
Frozen		
Carcass and half-carcass	020210	Full and half-carcasses
Bone-in	020220	Rib, chuck, loin, clod, finger meat, flat
Boneless	020230	Iron, short plate, knuckle, brisket, etc.
Offal (beef variety meats)		
Fresh/chilled	020610	Fresh or chilled offal
Frozen		
Tongue	020621	Tongue
Liver	020622	Liver
Other	020629	Hearts, kidneys, brains, tail, feet, tendons, cheek meat, lips
Salted, in brine, dried or smoked	021020	Meat and offal
Prepared or preserved	160250	Preparations of meat, offal, or blood, such as corned beef

Source: Compiled by Commission staff.

Pertinent information on these topics is presented in each chapter as appropriate.

Approach

The Committee asked the Commission to include information in its report covering a broad range of topics related to world beef trade, including an overview of the global and importing country markets, and information on measures related to animal health, sanitary, food safety, and other barriers to U.S. beef exports. Commission staff compiled this information from a variety of sources, focusing on primary sources whenever possible. In order to develop an overview of the U.S. and global markets for beef, staff relied on the Global Trade Atlas (GTA) trade database, complemented by other trade data sources as necessary. Relevant academic literature was also reviewed, and staff interviewed academics working on issues germane to the investigation.[15]

Commission staff interviewed officials of several U.S. trade associations, including the U.S. Meat Export Federation (USMEF), the American Meat Institute (AMI), the National Cattlemen's Beef Association (NCBA), and the Meat Importers Council of America (MICA), as well as officials of several major U.S. beef processing companies, including Cargill and Swift. Staff traveled to Colorado to visit beef production and processing facilities, and to interview officials of the USDA's Animal and Plant Health Inspection Service (APHIS). Staff also traveled to Japan and Korea to conduct interviews with local

[15] A review of the literature is provided in app. D.

government officials as well as industry representatives from competitor countries in these markets. Staff also met with beef importers, wholesalers, distributors, and retailers in Tokyo and Seoul.[16]

Additional information was obtained at a Commission hearing at which interested parties provided testimony and responded to Commissioners' questions.[17] Hearing participants included the American Meat Institute, the National Cattlemen's Beef Association, the U.S. Cattlemen's Association, the Ranchers-Cattlemen Action Legal Fund (R-CALF), the National Meat Association (NMA), the North Dakota State University Dickinson Research Extension Center, and the Canadian Cattlemen's Association (CCA).

In addition to descriptive information, the Committee requested that the Commission provide a quantitative analysis of the economic effects of foreign animal health, sanitary, food safety, and other measures on U.S. beef exports. The Commission's quantitative analysis in this report is based on a simulation framework which consists of a partial equilibrium (PE) model and a general equilibrium (GE) model. The PE model focuses on bilateral trade in beef products between the United States and other major importers and exporters. The GE model is the Global Trade Analysis Project (GTAP) model, an economy-wide model of world trade specified at an aggregate product and sector level. The GE model is linked to the PE model to incorporate in the analysis effects that lay outside the scope of the PE model. These effects range from feed prices to other input costs for producers, other product prices for consumers of beef products, and income.[18]

Data presented in this report on the cost to U.S. beef producers represent the estimated cost of lost trade arising from identified global measures affecting trade — that is, the cost to U.S. producers of trade lost following enactment of a particular measure in one destination market depends on the availability of alternative markets for the specific products, including the U.S. market. These losses will be smaller if there are alternate export markets available, or if there is strong demand for the specific product in the U.S. market. Therefore it is not appropriate to measure the losses stemming from measures imposed by any single country. Losses will be greater if alternative export markets are also closed

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[16] The request letter includes distribution systems as possible barriers to U.S. beef exports. However, no industry official interviewed identified distribution systems as significant barriers to U.S. beef exports. In early 1999, the United States filed a complaint under the WTO Dispute Settlement Understanding, alleging that Korea's regulatory scheme for beef discriminated against imported beef, including by confining sales of imported beef to specialized stores (a dual retail system). After consultations failed to resolve the dispute, the matter was referred to a panel, and in July 2000, the panel found the scheme to be in violation of Korea's obligations under various articles of GATT 1994 and the WTO Agreement on Agriculture. Korea appealed the findings, and December 200, the WTO Appellate Body affirmed the panel in part and reversed the panel in part (reversing primarily with respect to findings regarding violations of the Agreement on Agriculture). In January 2001, the WTO Dispute Settlement Body (DSB) adopted the Appellate Body and modified panel reports, and in September 2001, Korea announced that it had implemented the DSB's recommendation. See WTO Dispute Settlement: Dispute DS161, "Korea – Measures Affecting Imports of Fresh, Chilled, and Frozen Beef."

[17] A list of hearing participants and views of interest parties are provided in app. E and app. F, respectively.

[18] The modeling results are presented in chap. 12 of this report, and the economic modeling framework and assumptions in app. G.

or are nonexistent, and if there is not strong demand for the specific product in the U.S. market. Exports account for a large share of production of some cuts precisely because demand for these cuts in the U.S. market is not as strong as in international markets.

CHAPTER 2
Overview of the Global Beef Market

This chapter provides an overview of the global market for beef and offal during 2002–07. Information also is presented on global production, consumption, and trade.[1] Global beef trade flows exhibited substantial changes during 2002–07 (figure 2.1; figure 2.2).[2] In 2003, the United States was the leading global beef exporter and counted Japan and Korea as its principal markets. However, the discovery of a BSE-infected dairy cow in the U.S. cattle herd in December 2003 led to a widespread ban on U.S. beef in major foreign markets. Since then, U.S. exports have risen; by 2007, however, exports had not rebounded to the record high levels of 2003. Japan's and Korea's decreased purchases of U.S. beef accounted for the bulk of the overall decline in U.S. exports. Meanwhile, Brazilian beef exports rose dramatically during the period, mainly to the EU. Most of the Japanese and Korean market share lost by the United States was captured by Australia and New Zealand. These trade flows, and the factors affecting them, are described in greater detail in this chapter, as well as in the chapters on major global importers.

Factors Affecting Global Markets

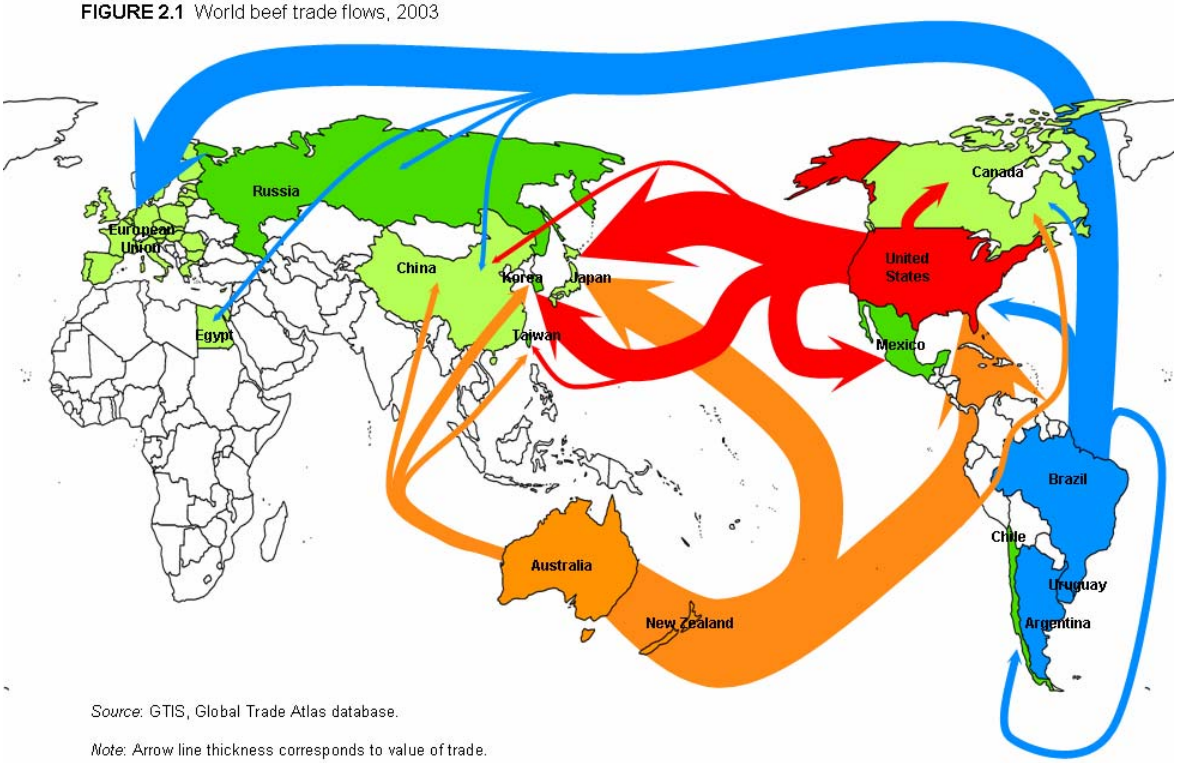
Global beef markets are affected by many factors. Sanitary issues, mainly related to animal health and safety concerns, have long been a major factor determining levels and trends in global beef trade. More recently, food safety issues affecting human health have been of increasing concern in global beef markets. Animal diseases (such as BSE, foot and mouth disease (FMD), and bluetongue), and pathogens (such as E. coli, Salmonella, and Listeria) have a major impact on market access and, thus, trade flows.[3] Other factors affecting global beef markets include: natural resources that determine live cattle and beef production, competition for resources with other agricultural products (mainly crops), exchange rates, weather conditions, transportation issues (cost, availability, and infrastructure), costs of feed and other inputs, levels and trends in consumer incomes, substitutability of other meat and food products, and consumer preferences. These factors are described in greater detail for major importing countries later in the report and for major U.S. competitors in appendix C.

[1] Production and consumption quantities are reported in carcass weight equivalent. Trade quantities are reported in product weight, unless otherwise noted. Carcass weight is not directly comparable to product weight.

[2] For the purpose of this investigation, beef and offal are defined as products classified by the Harmonized System under these subheadings: 020110, 020120, 020130, 020210, 020220, 020230, 020610, 020621, 020622, 020629, 021020, and 160250.

[3] The global market for beef experienced significant changes since 1989, when the first case of BSE was discovered in the United Kingdom. Disease concerns continue today with outbreaks of FMD in South America and BSE-related bans on beef from North America. The UN Food and Agriculture Organization (FAO) estimated that approximately one-third of global meat exports, or approximately 6 mmt annually, is affected by animal disease outbreaks. FAO, "News release," March 2, 2004.

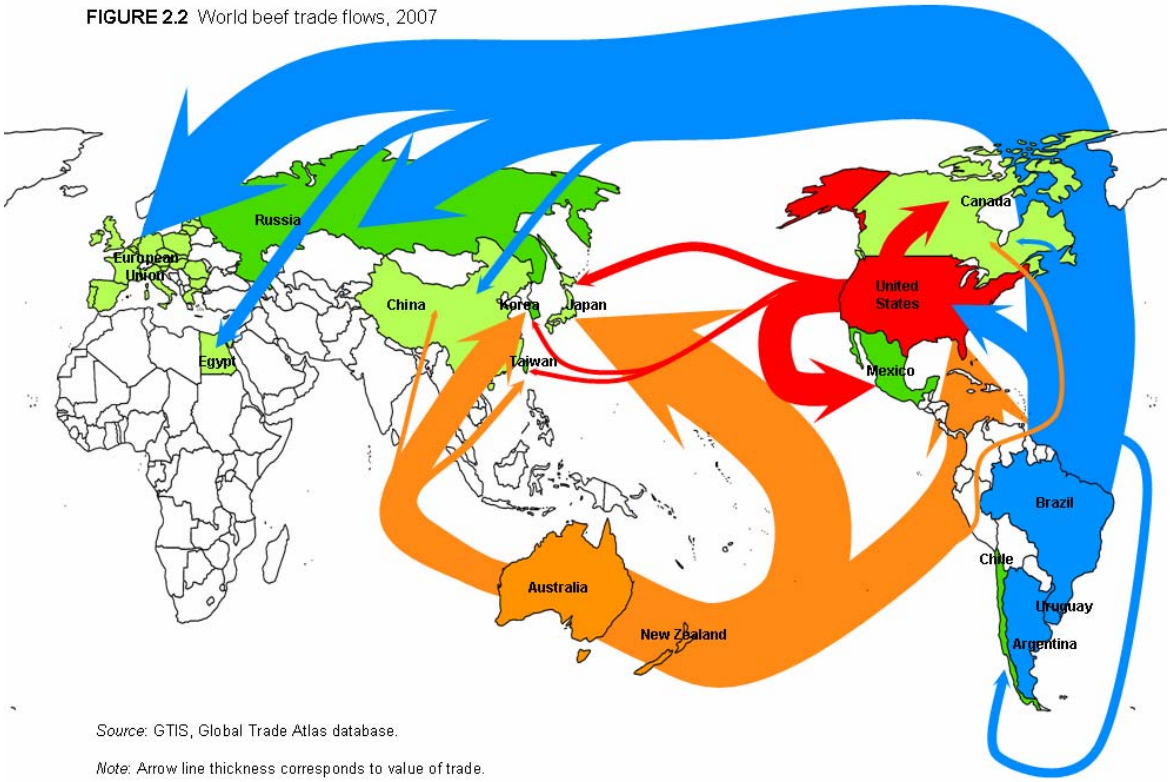
FIGURE 2.1 World beef trade flows, 2003



Source: GTIS, Global Trade Atlas database.

Note: Arrow line thickness corresponds to value of trade.

FIGURE 2.2 World beef trade flows, 2007



Source: GTIS, Global Trade Atlas database.

Note: Arrow line thickness corresponds to value of trade.

The demand for beef generally increases as income grows.[4] In recent years, most growth has occurred in developing markets. In more developed, mature markets, beef consumption tends to be more stable. In such markets, beef consumption generally tracks population levels as well as shifts to higher-quality cuts and further-processed products.[5] Beef is not a homogeneous product. Although beef initially is processed from live cattle into carcasses, global beef trade is primarily in cuts and parts.[6] There are distinct preferences for particular cuts in various markets. These preferences are described in greater detail in the individual country sections later in this report.

Global Production

Global beef production increased by about 10 percent during 2002–07, from 55.1 million metric tons (mmt) carcass weight equivalent (cwe) to 60.4 mmt cwe (table 2.1). The United States was the leading producer, accounting for 20 percent of the global quantity in 2007, followed by Brazil (16 percent), the EU (14 percent), and China (12 percent). Among major producers, production generally declined in the United States, the EU, and Russia during the period while substantially growing in Brazil, China, and India. These production trends generally reflected domestic demand patterns during the period, which are described in greater detail in the individual country sections.

TABLE 2.1 Beef: Global production, by principal markets, 2002–07 (1,000 mt)

Market	2002	2003	2004	2005	2006	2007
United States	12,427	12,039	11,261	11,318	11,981	12,096
Brazil	7,240	7,385	7,975	8,592	9,020	9,470
EU	8,397	8,304	8,245	8,090	8,150	8,175
China	5,846	6,305	6,759	7,115	7,050	7,480
Argentina	2,700	2,800	3,130	3,200	3,100	3,200
India	1,810	1,960	2,130	2,250	2,375	2,500
Mexico	1,930	1,950	2,099	2,125	2,175	2,200
Australia	2,089	2,073	2,081	2,102	2,183	2,197
Russia	1,740	1,670	1,590	1,525	1,430	1,370
Canada	1,294	1,184	1,496	1,523	1,391	1,310
ROW	9,590	9,662	10,122	10,336	10,565	10,425
Total	55,063	55,332	56,888	58,176	59,420	60,423

Source: USDA, FAS, PS&D database.

Note: ROW denotes rest of the world.

[4] USDA, ERS, *Global Food Consumption and Impacts on Trade*, 2001, 6.
[5] Ibid.
[6] USDA, ERS, *Structure of the Global Markets for Meat*, 2003, 7.

Global Consumption

Global beef consumption increased by approximately 9 percent during 2002–07, driving the trend in production (table 2.2). Major consuming markets in 2007, in absolute terms, include the United States (21 percent of the quantity of global beef consumption), the EU (15 percent), China (12 percent), and Brazil (12 percent). Consumption was flat or declined in the more affluent U.S., EU, and Japanese markets, while consumption grew substantially in the lower-income markets of China, Brazil, Argentina, India, and Pakistan.

TABLE 2.2 Beef: Global consumption, by principal markets, 2002–07 (1,000 mt)

Market	2002	2003	2004	2005	2006	2007
United States	12,737	12,340	12,667	12,664	12,834	12,830
EU	8,416	8,596	8,582	8,550	8,649	8,674
China	5,825	6,281	6,712	7,041	6,967	7,404
Brazil	6,445	6,285	6,417	6,795	6,964	7,311
Argentina	2,364	2,430	2,519	2,451	2,553	2,673
Mexico	2,423	2,319	2,376	2,428	2,519	2,568
Russia	2,441	2,369	2,300	2,492	2,361	2,392
India	1,399	1,528	1,638	1,633	1,694	1,765
Japan	1,304	1,348	1,169	1,188	1,159	1,182
Pakistan	925	949	975	1,004	1,090	1,119
ROW	10,598	10,907	11,261	11,505	11,921	12,067
Total	54,877	55,352	56,616	57,751	58,711	59,985

Source: USDA, FAS, PS&D database.

Note: ROW denotes rest of the world.

Annual per capita beef consumption is greatest in Argentina, reaching about 66 kilograms (kg) cwe in 2007 (table 2.3). Following Argentina were Uruguay (56 kg cwe), the United States (43 kg cwe), New Zealand (38 kg cwe), Brazil (37 kg cwe), and Australia (37 kg cwe). The EU consumed a relatively low amount per capita, about 18 kg cwe.

TABLE 2.3 Beef: Annual per capita consumption, by principal markets, 2002–07 (kilograms, cwe)

Market	2002	2003	2004	2005	2006	2007
Argentina	61.6	62.7	64.4	62.0	63.9	65.9
Uruguay	49.4	49.7	56.5	55.6	53.6	56.0
United States	44.3	42.5	43.2	42.8	43.1	42.6
New Zealand	31.5	39.7	34.1	33.7	38.5	38.1
Brazil	35.8	34.5	34.9	36.5	37.0	37.3
Australia	35.6	40.9	38.7	37.8	36.9	37.0
Canada	31.1	32.9	31.5	32.9	32.8	32.6
Mexico	23.3	22.2	22.4	22.7	23.3	23.3
EU	18.0	17.7	17.7	17.6	17.6	17.5
Russia	16.7	16.2	15.7	17.1	16.3	16.8

Source: USDA, FAS, *Livestock and Poultry: World Markets and Trade,* various issues.

Global Exports

Global exports of beef increased from 5.3 mmt, valued at $11.1 billion, in 2002 to 6.1 mmt, valued at $18.7 billion, in 2007 (table 2.4). The quantity increased by 16 percent, while the value increased by 68 percent, reflecting a 46 percent increase in the unit value. These changes resulted from a combination of generally rising beef prices and increased exports of higher-value beef cuts from South American exporters (Brazil, Argentina, Uruguay, and Paraguay). Brazil became the leading global exporter of beef during the period and accounted for approximately one-quarter of the total quantity and value of exports in 2007, an increase of 158 percent by quantity and 293 percent by value from 2002. Following Brazil that year were Australia (18 percent of the total quantity), the United States (11 percent), and Argentina (7 percent).

Other developing country exporters, including Argentina, Uruguay, India, and Paraguay, also substantially increased exports during the period. Substantial declines occurred in exports from most major developed country beef exporters, including the United States, Canada, and the EU. This shift from developed to developing country export sources reflected a combination of factors, including animal disease outbreaks, comparative production costs, domestic demand trends that affect production levels, weather conditions, and exchange rate movements. The principal global beef export item in 2007, and throughout the period, was frozen boneless, followed by fresh or chilled boneless (table 2.5; figure 2.3).[7] Other cuts trail these items by a substantial margin.

Global Imports

The quantity of global imports of beef increased irregularly, by 16 percent, during 2002–07, reaching 6.1 mmt in 2007 (table 2.6). However, the value of such imports increased steadily by 68 percent to $18.7 billion, reflecting a 46 percent rise in unit value during the period. The United States maintained the leading position throughout the period and accounted for 17 percent of the total quantity and 18 percent of the total value of global beef imports in 2007.

Following the United States that year were the EU (7 percent of the total quantity and 13 percent of the total value), and Japan (8 percent and 13 percent, respectively). The quantity of imports by major markets declined during the period under review except for the EU and Russia, and there was a substantial increase in the value and unit value of imports by all major markets.

[7] Beef is traded fresh, chilled, or frozen. Generally, fresh or chilled beef commands a price premium over frozen beef. Frozen beef has a shelf life up to two years versus 1–3 months for fresh or chilled beef. Transport time, price, and importing market regulations regarding shelf life are determining factors deciding whether beef is sold as fresh, chilled, or frozen.

TABLE 2.4 Beef: Global exports, by principal markets, 2002–07

Market	2002	2003	2004	2005	2006	2007
	Quantity (*mt*)					
Brazil	614,147	832,187	1,163,799	1,330,021	1,506,819	1,586,403
Australia	1,041,843	975,567	1,076,887	1,096,121	1,137,605	1,118,093
United States	1,122,841	1,154,157	255,397	385,554	543,731	648,959
Argentina	255,310	288,302	472,095	577,021	446,220	452,937
New Zealand	367,872	427,538	464,865	451,442	412,378	385,596
Canada	522,304	325,928	456,944	460,622	370,506	363,748
Uruguay	163,786	207,105	257,357	302,822	336,153	282,656
India	293,680	309,798	351,936	441,442	486,498	484,895
Paraguay	59,447	57,206	85,367	133,622	173,100	149,524
EU	432,852	331,671	290,596	210,455	192,991	139,498
ROW	416,613	509,684	482,656	463,917	472,871	500,910
Total	5,290,695	5,419,143	5,357,899	5,853,039	6,078,872	6,113,219
	Million (*U.S. dollars*)					
Brazil	1,107	1,545	2,487	3,014	3,890	4,354
Australia	2,384	2,556	3,729	4,008	4,068	4,163
United States	2,990	3,612	668	1,143	1,749	2,273
Argentina	485	620	1,061	1,403	1,356	1,490
New Zealand	833	1,019	1,403	1,464	1,295	1,287
Canada	1,419	1,041	1,493	1,540	1,187	1,162
Uruguay	275	389	638	773	991	876
India	278	282	397	562	679	815
Paraguay	73	61	160	248	424	364
EU	551	429	490	440	437	360
ROW	700	828	1,039	1,214	1,286	1,523
Total	11,094	12,383	13,566	15,809	17,362	18,667
	Unit value (*$/mt*)					
Brazil	1,802	1,857	2,137	2,266	2,582	2,744
Australia	2,288	2,620	3,463	3,657	3,576	3,723
United States	2,663	3,129	2,614	2,965	3,216	3,506
Argentina	1,898	2,151	2,248	2,431	3,039	3,290
New Zealand	2,266	2,383	3,018	3,242	3,141	3,338
Canada	2,717	3,193	3,269	3,344	3,205	3,195
Uruguay	1,680	1,880	2,479	2,552	2,947	3,099
India	946	909	1,129	1,274	1,395	1,682
Paraguay	1,223	1,067	1,875	1,853	2,450	2,434
EU	1,272	1,294	1,687	2,091	2,266	2,579
ROW	1,680	1,625	2,153	2,617	2,719	3,040
Average	2,097	2,285	2,532	2,701	2,856	3,053

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total. ROW denotes rest of the world.

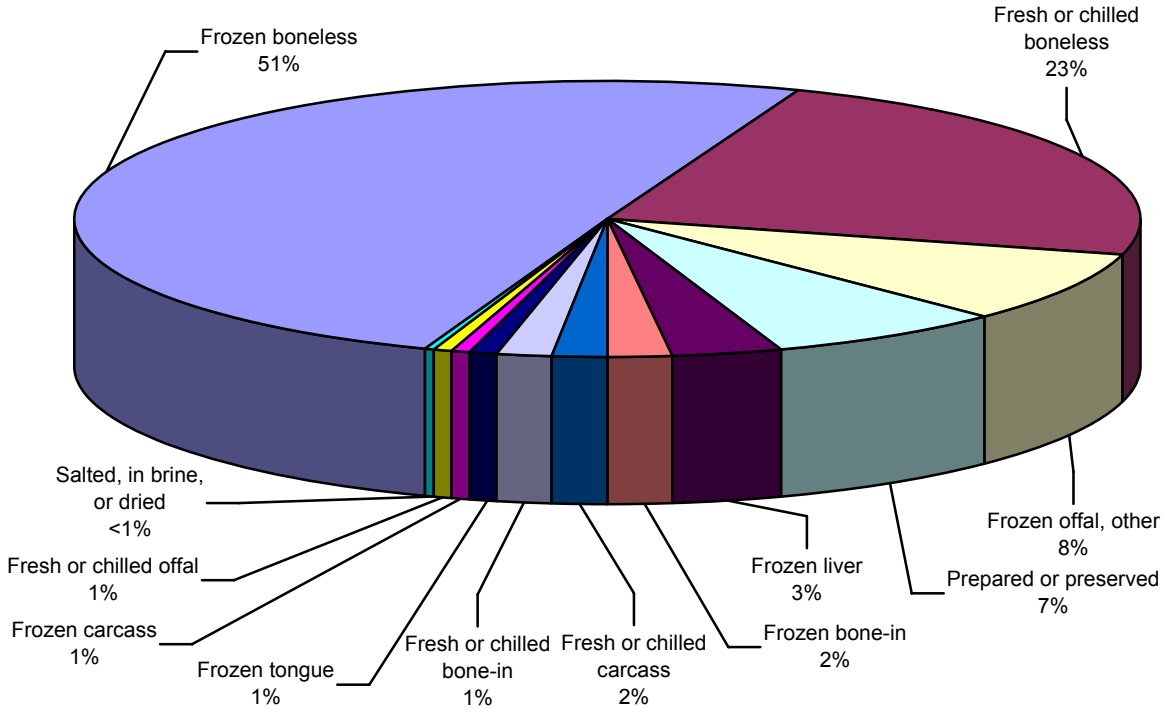
TABLE 2.5 Beef: Global exports, by HS subheading, 2002–07

HS subheading		2002	2003	2004	2005	2006	2007
		Quantity *(mt)*					
020110	Fresh/chilled carcass	13,736	15,035	33,418	33,691	50,062	99,156
020120	Fresh/chilled bone-in	161,350	93,757	53,933	60,211	84,410	82,176
020130	Fresh/chilled boneless	1,321,780	1,266,192	1,210,434	1,353,240	1,294,791	1,318,144
020210	Frozen carcass	139,025	139,486	124,703	100,910	77,876	44,914
020220	Frozen bone-in	200,974	199,472	99,025	126,971	129,678	113,005
020230	Frozen boneless	2,484,878	2,648,550	2,922,585	3,173,772	3,356,614	3,308,112
020610	Fresh/chilled edible offal	26,562	29,630	21,484	24,447	26,097	28,920
020621	Frozen edible offal, tongue	44,485	47,726	26,755	40,493	41,363	47,074
020622	Frozen edible offal, liver	143,210	143,809	134,679	163,523	184,665	189,799
020629	Frozen edible offal, other	401,747	446,736	331,013	345,855	405,756	456,180
021020	Salted, in brine, or dried	8,980	11,201	12,364	9,665	9,923	13,311
160250	Prepared or preserved beef	343,967	377,548	387,506	420,261	417,637	412,429
	Total	5,290,694	5,419,142	5,357,899	5,853,039	6,078,872	6,113,220
		Million *(U.S. dollars)*					
020110	Fresh/chilled carcass	37	43	92	106	152	377
020120	Fresh/chilled bone-in	396	257	151	211	323	400
020130	Fresh/chilled boneless	4,015	4,555	4,837	5,578	5,886	6,419
020210	Frozen carcass	197	193	226	232	203	123
020220	Frozen bone-in	408	537	217	332	321	321
020230	Frozen boneless	4,532	5,008	6,194	7,049	8,043	8,313
020610	Fresh/chilled edible offal	74	81	95	146	134	153
020621	Frozen edible offal, tongue	122	154	139	242	167	197
020622	Frozen edible offal, liver	92	107	106	161	195	182
020629	Frozen edible offal, other	466	582	450	512	598	746
021020	Salted, in brine, or dried	43	60	63	52	68	109
160250	Prepared or preserved beef	711	807	996	1,189	1,274	1,327
	Total	11,094	12,383	13,566	15,809	17,362	18,667
		Unit value *($/mt)*					
020110	Fresh/chilled carcass	2,722	2,888	2,751	3,158	3,045	3,800
020120	Fresh/chilled bone-in	2,453	2,736	2,803	3,497	3,821	4,869
020130	Fresh/chilled boneless	3,038	3,598	3,996	4,122	4,546	4,870
020210	Frozen carcass	1,418	1,382	1,808	2,299	2,605	2,734
020220	Frozen bone-in	2,031	2,694	2,193	2,612	2,472	2,840
020230	Frozen boneless	1,824	1,891	2,119	2,221	2,396	2,513
020610	Fresh/chilled edible offal	2,794	2,718	4,420	5,951	5,128	5,300
020621	Frozen edible offal, tongue	2,748	3,224	5,175	5,984	4,028	4,185
020622	Frozen edible offal, liver	645	742	790	987	1,056	960
020629	Frozen edible offal, other	1,159	1,302	1,359	1,481	1,474	1,636
021020	Salted, in brine, or dried	4,733	5,373	5,087	5,416	6,827	8,173
160250	Prepared or preserved beef	2,067	2,137	2,571	2,828	3,050	3,217
	Average	2,097	2,285	2,532	2,701	2,856	3,054

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total. Data are not available for all years for all countries.

FIGURE 2.3 Global beef exports, by type, 2007



Source: GTIS, Global Trade Atlas database.

TABLE 2.6 Beef: Global imports, by principal markets, 2002–07

Market	2002	2003	2004	2005	2006	2007
	Quantity (*mt*)					
United States	1,094,822	1,018,740	1,208,358	1,232,675	1,033,694	1,012,359
EU	410,945	418,013	555,024	571,854	552,303	441,321
Japan	606,370	696,598	499,693	541,995	534,928	532,661
Russia	646,682	623,416	621,902	809,323	909,958	791,612
Mexico	351,646	305,519	242,183	279,828	316,188	301,539
Korea	368,253	353,789	188,627	229,374	260,636	270,956
Canada	227,997	208,372	93,629	107,175	144,079	198,078
ROW	1,584,393	1,795,207	1,949,326	2,080,904	2,327,090	2,561,693
Total	5,290,695	5,419,143	5,357,899	5,853,039	6,078,872	6,113,219
	Million *(U.S. dollars)*					
United States	2,751	2,708	3,622	3,743	3,244	3,292
EU	1,052	1,236	1,785	1,968	2,305	2,456
Japan	1,827	2,471	2,137	2,510	2,282	2,361
Russia	760	771	1,026	1,547	2,122	1,700
Mexico	871	823	722	892	1,036	1,025
Korea	925	1,086	577	724	889	1,047
Canada	578	568	290	372	576	803
ROW	2,332	2,723	3,414	4,061	4,908	5,983
Total	11,094	12,383	13,566	15,809	17,362	18,667
	Unit value (*$/mt*)					
United States	2,513	2,658	2,997	3,036	3,138	3,252
EU	2,558	2,954	3,209	3,430	4,173	5,528
Japan	3,013	3,547	4,277	4,631	4,266	4,432
Korea	1,176	1,236	1,650	1,911	2,332	2,148
Mexico	2,476	2,695	2,980	3,187	3,277	3,401
Russia	2,512	3,069	3,059	3,156	3,410	3,864
Canada	2,535	2,725	3,093	3,471	3,999	4,053
ROW	1,472	1,517	1,751	1,951	2,109	2,336
Average	2,097	2,285	2,532	2,701	2,856	3,053

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total. ROW denotes rest of the world.

CHAPTER 3
Overview of the U.S. Beef Market

During 2002–07, the United States led the world in beef production, consumption, and imports, accounting for 20 percent, 21 percent, and 18 percent, respectively, of the world totals (table 2.1; table 2.2; table 2.6).[1] Until 2003, the United States also was the leading global beef exporter, with 21 percent of the world market (table 2.4). The United States is highly competitive in global beef markets, especially in the production and export of high-quality, grain-fed beef. This competitiveness is based on several factors: availability of low-cost inputs, especially rangeland and grain-based feed; widespread use of advanced animal husbandry methods and genetics; economies of scale both at the farm and processing levels; highly efficient transportation infrastructure; well developed marketing and pricing systems; a large and affluent domestic market; supportive government programs; and a well-established regulatory framework for animal health and food safety.[2]

The U.S. beef market is highly complex, consisting of raising and feeding cattle for slaughter, beef processing and packing, and domestic consumption through retail outlets and the hotel, restaurant, and institution (HRI) sector. International trade both in live animals and meat plays an important role in this system. The major components of the system and their linkages are listed in figure 3.1[3] and are described in the remainder of this chapter.

Production System

The beef production system in the United States consists of three major components: cow-calf operations, backgrounding operations, and cattle feedlot operations (figure 3.1). In addition, imports of live cattle from Canada and Mexico enter at certain stages in the system. In 2007, although there were about 758,000 beef cow operations[4] located throughout the United States, such operations are concentrated in the Corn Belt[5] and Southwest.[6] The sector is characterized by a high degree of concentration, with a small number of operations accounting for a disproportionately large share of inventory. For example, in 2007, operations having 100 or more head of cattle constituted 10 percent of the total number of beef cow operations, yet accounted for 54 percent of inventory.[7]

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[1] GTIS, Global Trade Atlas database, trade data reported in product weight. USDA, FAS, PS&D database, production and consumption data reported in carcass weight equivalent.

[2] USDA, FAS, *Livestock and Poultry: World Markets and Trade*, various reports.

[3] USDA, ERS, *Market Integration of the North American Animal Products Complex*, 2005, 4.

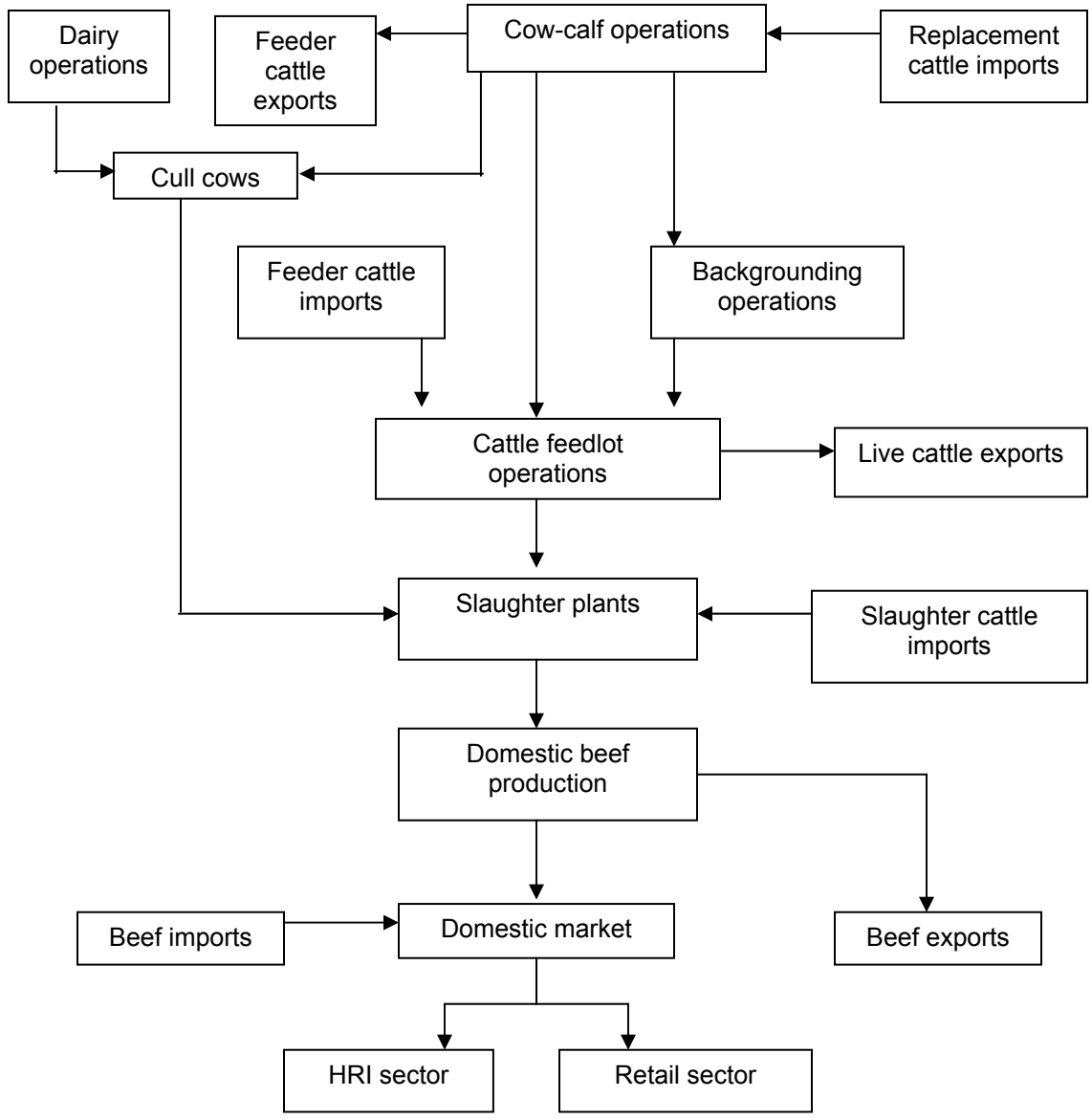
[4] Beef cow operations include cow-calf, backgrounding, and feedlot operations. Data do not exist on the numbers of operations by operation type.

[5] The Corn Belt states are Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, Ohio, and Wisconsin.

[6] The Southwest states are Texas, New Mexico, Arizona, and California.

[7] USDA, NASS, *Farms, Land in Farms, and Livestock Operations: 2007 Summary*, February 2008, 14.

FIGURE 3.1 Overview of the U.S. cattle and beef industry



Source: Compiled by Commission staff.

In cow-calf operations, cattle are born and raised to a weaning age of about 9 months of age.[8] In addition to their mothers' milk, calves feed on forage, such as grass and hay, and some supplements. Once the calves have reached a weight of 400–650 pounds, they are moved either to backgrounding operations or directly to cattle feedlot operations. Backgrounding operations provide an intermediate step between cow-calf operations and feedlots. The objective of backgrounding feeding calves is weight gain and the development of muscle and frame with minimal fat gain.[9] Calves are backgrounded on enriched pasture and other forage, such as hay and silage, with very little grain supplements. Typically, calves enter the backgrounding operations at 400–650 pounds and are grown to weights of 650–850 pounds before being sold to feedlot operations.

Cattle feedlot operators purchase calves both from cow-calf operations and backgrounding operations and feed them to weights of 1,100–1,350 pounds, at which point they are considered "finished" and ready for slaughter.[10] Cattle typically spend four to six months in a feedlot and reach slaughter weight at 18–22 months of age. Cattle in feedlots are fed a ration consisting of 70–90 percent grain, primarily corn. The use of corn increases the "marbling"[11] of the meat, which makes it relatively tender compared to beef from grass-fed cattle. Cattle feedlots are a significant user of corn, accounting for about 25 percent of U.S. corn production in 2007.[12] In 2007, there were approximately 87,000 feedlots operating in the United States with a total average annual capacity of over 27 million head.[13] The cattle feeding sector is highly concentrated. For example, in 2007, the 2,160 feedlots that were considered "commercial" (i.e., feedlots with a capacity of 1,000 or more head of cattle) accounted for less than 3 percent of all feedlot operations, yet accounted for about 85 percent of all fed cattle. Commercial feedlots in the United States are concentrated in large corn-producing states. Nebraska, Iowa, and Kansas accounted for over 60 percent of total U.S. commercial feedlot operations in 2007.

The United States imports live cattle from Canada (including cattle for immediate slaughter, feeding and finishing, and herd replacement) and Mexico (feeder cattle only) (figure 3.1).[14] In 2007, the United States imported 1.6 million head of feeder cattle, with about two-thirds from Mexico and one-third from

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[8] The cattle used for beef production in the United States historically originated from Europe (Angus, Hereford) and tropical countries, such as India (Brahman). European breeds are well suited for temperate climates, while breeds from India are suited for warmer climates. EPA, *Background of Beef Production in U.S.*

[9] Saskatchewan Agriculture, Food and Rural Revitalization, *Backgrounding Beef Cattle*, 2000, 1.

[10] U.S. industry representatives, interviews by Commission staff, August 2007. Feeder cattle denote cattle destined for or in a feedlot. After feeder cattle are finished and ready for slaughter they are known as fed cattle.

[11] Marbling in beef denotes the presence of veins of fat dispersed throughout the muscle cut.

[12] The recent increase in corn prices has significantly increased the costs of finishing cattle. For example, between July 2007 and May 2008, the price of corn increased from about $3.00 per bushel to $5.60 per bushel. Commission staff estimate that this price increase alone raised the cost to feedlot operators of finishing one head of cattle from about $125 to $314.

[13] U.S. industry official, telephone interview by Commission staff, April 10, 2008.

[14] Although live cattle can be transported over long distances (e.g., Australia has been successful transporting live cattle on specially designed ocean vessels primarily to Indonesia and the Middle East), the stress and fatigue of travel, coupled with limited access to feed and water, can result in weight reduction, which further decreases profitability. USDA, ERS, *Briefing Room: Cattle Trade*, January 23, 2007.

Canada, equivalent to about 6 percent of cattle entering U.S. feedlots. In addition to feeder cattle, the United States imported 816,000 head of cattle for immediate slaughter from Canada in 2007, accounting for about 2 percent of total slaughter that year. The United States predominantly exports live cattle to Canada and Mexico, accounting for over 93 percent of total nondairy cattle exports in 2007.[15]

The U.S. beef production system is cyclical, such that production and prices often rise and fall fairly regularly over a period of several years. This cycle, known as the cattle cycle, is the expansion and contraction of cattle inventory in response to changes in price. Historically, the beef cattle cycle has been a period of 8–12 years that consists of an expansion phase, a consolidation phase, and a liquidation phase.[16] The combination of high prices and tight beef supplies usually marks the beginning of expansion. In response to high prices, cow-calf producers retain heifers to rebuild the herd, and culling rates decline.[17] Eventually, beef prices reflect reduced beef production, marking the consolidation phase. Liquidation begins when the increased supply of cattle reaches slaughter age. The increased cattle slaughter results in an increased supply of beef, which depresses prices. Liquidation continues until supplies are reduced and prices begin to rise. Due to the length of the biological maturation rate, each phase takes several years to influence beef production and creates a lag between price peaks and inventory peaks.

Recently, even with high cattle prices, beef cow numbers have declined in 11 of the last 13 years. Typically, high cattle prices fuel expansion; however, current high prices are perceived to be short lived, especially given record corn prices.[18] Producers, faced with either keeping heifers to rebuild the herd or taking advantage of current high cattle prices, are choosing to slaughter. Cattle numbers also are influenced by weather, government regulations, energy and transportation costs, and changes in consumer preferences.

Cattle Slaughter and Beef Production

After reaching slaughter weight, live cattle and calves are transported to slaughter, or meatpacking, plants. There they are inspected, stunned, bled, eviscerated, scalded, and skinned. The animal's carcass is then generally split along the spinal column and chilled. The carcass may be partially or fully

[15] A more detailed discussion of the trade in cattle between NAFTA countries is provided in chaps. 10 and 11 of this report.

[16] USDA, ERS, *Livestock, Dairy, and Poultry Outlook*, February 15, 2008, 3.

[17] The cycle results from the inability of cow-calf operators to react quickly to changes in economic conditions. For example, if the price of cattle were to increase and enhance profit margins in the feedlot sector, this would be reflected in an increased demand for feeder calves and higher feeder calf prices for cow-calf operators. This would prompt cow-calf operators to retain inventories by reducing culling rates and holding back heifers from the market. The decline in feeder supply intensifies the upward pressure on steer and feeder prices. Within two to three years, the hold-back of heifers is reflected in increased supplies and downward pressure on steer prices. This, in turn, reduces the demand and prices of feeder calves, and the cycle begins a downward trend.

[18] U.S. industry representative, email message to Commission staff, June 23, 2008.

processed at the meatpacking plant (e.g., processed into primal cuts and smaller subprimal cuts)[19] or shipped to retail outlets for further processing.

There are over 600 federally inspected slaughter (or packing) plants in the United States, with a total estimated annual slaughter capacity of 30–35 million head.[20] The packing industry is heavily concentrated. For example, in 2007, 14 plants, each slaughtering over 1 million head annually, accounted for over 50 percent of all cattle slaughtered in the United States, while smaller plants, those slaughtering fewer than 1,000 head, accounted for less than 1 percent of cattle slaughtered but 73 percent of the total number of plants.[21] The meatpacking industry is concentrated in Kansas, Nebraska, and Texas; and in 2007, these three states accounted for nearly 21 million head, or 62 percent of all cattle slaughtered in the United States.

Annual beef production in the United States is equal to the number of cattle slaughtered (including heifers and steers from cattle feedlot operations and cull cows[22] and bulls from cow-calf and dairy operations) multiplied by the average carcass weight for each animal type. About 84 percent of U.S. beef production is from heifers and steers and consists mostly of high-quality, grain-fed beef.[23] Cull cows and bulls are generally used in the production of manufacturing (ground) beef and currently account for the remaining 16 percent of production.[24]

U.S. beef production fell from 2002 through 2004 before rebounding from 2005 through 2007, and several factors accounted for this trend, but the discovery of BSE in the United States in December 2003 does not appear to have directly affected production (table 3.1). The decline in U.S. production was primarily because of lower slaughter rates in 2004 compared with 2002, and partially due to the ban on all Canadian cattle and beef in response to the discovery of BSE in Canada in May 2003.[25] High cattle prices in the second half of 2003 induced producers to sell cattle for slaughter early.[26] Subsequent lower prices in 2004 led to reduced slaughter rates.[27] The decrease in slaughter coupled with the loss of live cattle imports from Canada (accounting for approximately 3 percent of U.S. slaughter in 2003) resulted in a 7 percent decrease of beef production. While imports of beef from Canadian animals under 30 months (UTM) resumed in August 2003, some of the trade in Canadian cattle did not resume until July 2005.[28] The gradual resumption of live cattle imports from Canada and increased U.S. slaughter resulted in increased production in 2005–07.

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[19] Most packers process primal cuts into smaller subprimal cuts that are then sold to the foodservice industry and retailers. Subprimal cuts are also known as retail or market-ready cuts. Some examples are tenderloin, filet mignon, rump roast, and porterhouse steaks.

[20] U.S. industry representative, phone interview with Commission staff, June 25, 2008.

[21] USDA, NASS, *Livestock Slaughter 2007 Summary*, March 2008, 57.

[22] Cull cows are primarily older cows that have outlived their usefulness, such as dairy and breeding cows.

[23] In the United States, corn is the primary grain used to feed cattle.

[24] U.S. industry representative, email message to Commission staff, June 18, 2008.

[25] Ibid., June 5, 2008.

[26] For example, the price for fed cattle on July 18, 2003 was $73 per hundred weight increasing to $104 per hundred weight by November 7, 2003.

[27] U.S. industry representative, email message to Commission staff, June 25, 2008.

[28] A further description of U.S.-Canadian beef trade is in chap. 10.

TABLE 3.1 Beef: U.S. production, consumption, trade, and key factors affecting demand, 2002–07

Market data	2002	2003	2004	2005	2006	2007
Beginning stocks (1,000 mt cwe)	278	317	237	291	261	288
Production (1,000 mt cwe)	12,427	12,039	11,261	11,318	11,981	12,096
Imports (1,000 mt cwe)	1,459	1,363	1,669	1,632	1,399	1,471
Total supply (1,000 mt cwe)	14,164	13,719	13,167	13,241	13,641	13,728
Exports (1,000 mt cwe)	1,110	1,142	209	317	519	650
Domestic consumption (1,000 mt cwe)	12,737	12,340	12,667	12,663	12,834	12,815
Ending stocks (1,000 mt cwe)	317	237	291	261	288	263
Exports as a share of production	9	9	2	3	4	5
Imports as a share of consumption	12	11	13	13	11	11
GDP/capita ($U.S./person)	36,311	37,641	39,751	41,886	44,024	45,594
Population (millions)	288.3	291.2	294	296.9	299.7	302.5
Wholesale beef price index	100	124	121	126	127	128
Annual beef per capita consumption (kg)	44.3	42.5	43.2	42.8	43.1	42.6

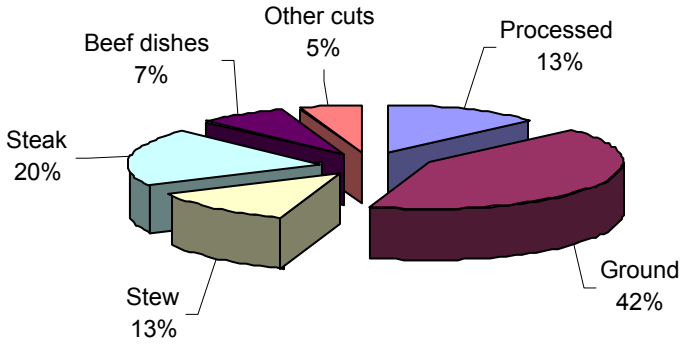
Sources: Production, consumption, and trade data taken from USDA, FAS, PS&D database unless otherwise noted. Exchange rate, GDP per capita, and population from IMF. Wholesale beef price index estimated by Commission staff from USDA, ERS data.

Note: Production, supply, and consumption data are in carcass weight equivalent. These data are not directly comparable to data in product weight.

Domestic Market

Beef that is ready for cooking and consumed without further processing is referred to as table beef, and accounts for about two-thirds of most beef carcasses. The other one-third is processed into such products as sausages and corned beef. The table beef consumed in the United States is primarily sourced from domestically raised cattle. Imported beef is typically mixed with fat and trimmings derived from domestic cattle and used in prepared hamburgers, frozen dinners, stews, and soups. There is no system to track beef consumption by cuts. However, estimates of consumption by type of beef indicate that ground beef accounted for 42 percent[29] of all beef consumed in the United States during 2002–07 (figure 3.2).[30]

FIGURE 3.2 Beef: U.S. consumption share (quantity basis), by type, 2002–07



Source: USDA, ERS, *Factors Affecting U.S. Beef Consumption,* October 2005.

[29] It is estimated that 50 percent of all beef sold in the United States is ground beef. Industry representative, email message to Commission staff, June 18, 2008.

[30] CattleFax Web site. http://cattle-fax.com.

Steaks, stew beef, and processed beef account for the next largest shares of U.S. beef consumption during this period. While beef generally is consumed at home (65 percent),[31] most ground beef is consumed away from home. This is due to the popularity of hamburgers and other food items requiring ground beef that are sold into the HRI sector.[32]

During 2002–07, annual fluctuations in U.S. beef consumption were small, both overall and on a per capita basis. For example, overall beef consumption ranged between 12.3 mmt and 12.8 mmt, a difference of less than 4 percent (table 3.1). During this period, consumption patterns were driven mostly by changes in production and export levels, rather than by changes in beef prices, per capita income, or population.[33] For example, the decline in consumption between 2002 and 2003 resulted from lower domestic production and higher domestic prices that year, and the increase in consumption between 2003 and 2004 occurred because of sharply lower exports, leading to increased domestic supplies and lower prices in 2004. The effect of BSE did not significantly impact U.S. consumption of beef. In fact, according to one study, the U.S. BSE incident resulted in only a two-week decline in consumption before consumers returned to previous purchasing behavior.[34]

Exports

Export markets are important to the U.S. beef industry, not only because they provide an additional outlet for production, but also because certain beef products receive price premiums when sold abroad compared to the domestic market.[35] For example, exports of rounds, chucks, and offal to Mexico; livers, hearts, and kidneys to Russia; short ribs, chuck roll, and intestines to South Korea; and tongue to Japan all receive prices higher than if sold domestically.[36] In the U.S. market, such products are primarily used in the production of ground beef or rendered into pet food.[37]

The United States was the world's largest exporter of beef and offal in 2002 and 2003, exporting 9–10 percent of domestic production (table 3.1). The December 2003 discovery in the United States of a BSE-infected cow, imported from Canada, led many countries to limit or ban imports of U.S. beef and offal. From 2003 to 2004, U.S. beef exports decreased by approximately 80 percent, or by $2.9 billion (table 3.2; figure 1.1). Most important was the loss of the Japanese and Korean markets that represented nearly 60 percent, by value, of total U.S. beef exports in 2003. In addition to Japan and Korea, the major beef importing markets that restrict imports of U.S. beef are Russia, China, and the EU. In 2007,

[31] USDA, ERS, *Factors Affecting U.S. Beef Consumption*, October 2005, 12.

[32] Approximately 50 percent of beef in the United States is sold into the HRI sector. U.S. industry representative, email message to Commission staff, June 18, 2008.

[33] In the United States, increases in per capita income are likely to be reflected in increased purchases of high-quality beef, rather than increases in the absolute quantity.

[34] USDA, *ERS, Did BSE Announcements Reduce Beef Purchases?* December 2006.

[35] A 2002 study calculated that export markets created an added value to U.S. producers of $1.2 billion in 2000. USMEF, *Methodology and Results of the Value of Beef Exports Analysis*, July 2002.

[36] Reddington, "Opening Markets for U.S. Meat," February 22, 2008.

[37] USMEF, *Methodology and Results of the Value of Beef Exports Analysis*, July 2002.

TABLE 3.2 Beef: U.S. exports, by principal markets, 2002–07

Market	2002	2003	2004	2005	2006	2007
			Quantity (*mt*)			
Mexico	281,814	260,795	143,838	203,035	260,217	240,524
Canada	98,041	92,595	23,711	49,481	97,732	133,692
Japan	307,892	350,911	540	2,357	13,754	46,774
Korea	231,610	237,102	240	1,987	233	24,874
Taiwan	18,344	18,864	141	7,432	21,405	22,578
Egypt	27,192	30,842	29	28,745	79,011	86,195
EU	10,562	11,561	44,249	33,884	12,534	13,026
Hong Kong	24,807	23,051	227	75	3,316	9,604
China	10,523	11,651	195	66	133	198
Russia	68,624	62,464	1,003	3,250	265	176
ROW	43,433	54,319	41,225	55,242	55,131	71,353
Total	1,122,841	1,154,157	255,397	385,554	543,731	648,959
			Million *(U.S. dollars)*			
Mexico	708.0	708.1	435.6	665.4	868.5	833.4
Canada	299.0	332.8	99.9	210.7	438.0	609.1
Japan	988.0	1,343.6	3.0	8.1	66.5	244.3
Korea	638.5	797.1	0.2	1.1	0.6	117.7
Taiwan	55.6	75.8	0.2	41.4	101.3	107.2
Egypt	26.0	39.8	0.1	45.3	84.6	76.5
EU	14.7	16.2	33.5	35.0	25.4	52.1
Hong Kong	67.8	81.8	0.4	0.1	14.9	35.4
China	22.8	27.4	0.2	0.1	0.2	0.7
Russia	57.1	52.2	0.7	1.9	0.2	0.1
ROW	112.4	146.3	93.3	134.0	147.7	196.2
Total	2,990.2	3,611.9	667.6	1,143.1	1,748.5	2,272.7
			Unit value (*$/mt*)			
Mexico	2,512	2,715	3,028	3,277	3,338	3,465
Canada	3,050	3,605	4,213	4,258	4,482	4,556
Japan	3,209	3,829	5,641	3,443	4,838	5,227
Korea	2,757	3,362	1,004	554	2,627	4,732
Taiwan	3,031	4,018	1,113	5,571	4,733	4,748
Egypt	956	966	3,310	1,576	1,071	888
EU	1,397	1,406	758	1,034	2,029	4,000
Hong Kong	2,733	3,549	1,564	920	4,493	3,686
China	2,165	2,352	913	1,500	1,504	3,355
Russia	832	900	698	585	755	568
ROW	2,588	2,693	2,263	2,427	2,679	2,750
Average	2,663	3,129	2,614	2,965	3,216	3,502

Source: GTIS, Global Trade Atlas database.

Note: Due to rounding, numbers may not add to total. ROW denotes rest of the world.

these markets accounted for approximately 41 percent, by value, of global beef imports.[38]

Gradual reopening of markets, trade diversion to alternative markets, and sporadic relaxation of BSE-related bans in Japan and Korea all contributed to a partial recovery of U.S. exports; by 2007, U.S. beef exports recovered to approximately 60 percent of pre-BSE levels, on a value basis. However, global beef trade flows in 2004 were significantly different from 2003 (figure 3.3; figure 3.4). The decline of U.S. exports to key markets created opportunities for other major beef exporting countries to increase their shares. Although Australia and New Zealand have increased their exports to Japan and Korea, they have been unable to fully compensate for the absence of U.S. beef exports.[39] Brazil and Argentina are currently the predominant suppliers of beef and offal to Russia. Some of the market loss experienced by U.S. exports, particularly those to Russia and Asian markets, has been mitigated by increased exports to Mexico and Canada, albeit at lower premiums.

During 2002–07, nearly 74 percent of U.S. beef exports were boneless cuts of beef, either fresh/chilled (HS 020130) or frozen (HS 020230). Most of these exports are grain-finished, high-quality choice cuts, primarily destined for the HRI sectors of overseas markets.[40] Generally, fresh or chilled beef is a higher-quality product, while frozen beef is more likely to be used for lower- value products, such as manufacturing beef. The quality differences between chilled and frozen beef are indicated by average unit values (AUVs) throughout the period, with AUVs of chilled boneless beef substantially higher than frozen boneless beef (table 3.3).

Sanitary restrictions are not the only market access constraints facing U.S. beef exports. For example, U.S. beef faces high tariff barriers in Japan and Korea, limited TRQ volumes in the EU, tariffs and technical barriers in China and Russia, and antidumping duties in Mexico.[41] In addition, concerns about limited transportation infrastructure (refrigerated shipping containers) have been raised as a potential constraint on U.S. beef exports to certain markets (box 3.1).[42]

[38] GTIS, Global Trade Atlas database.

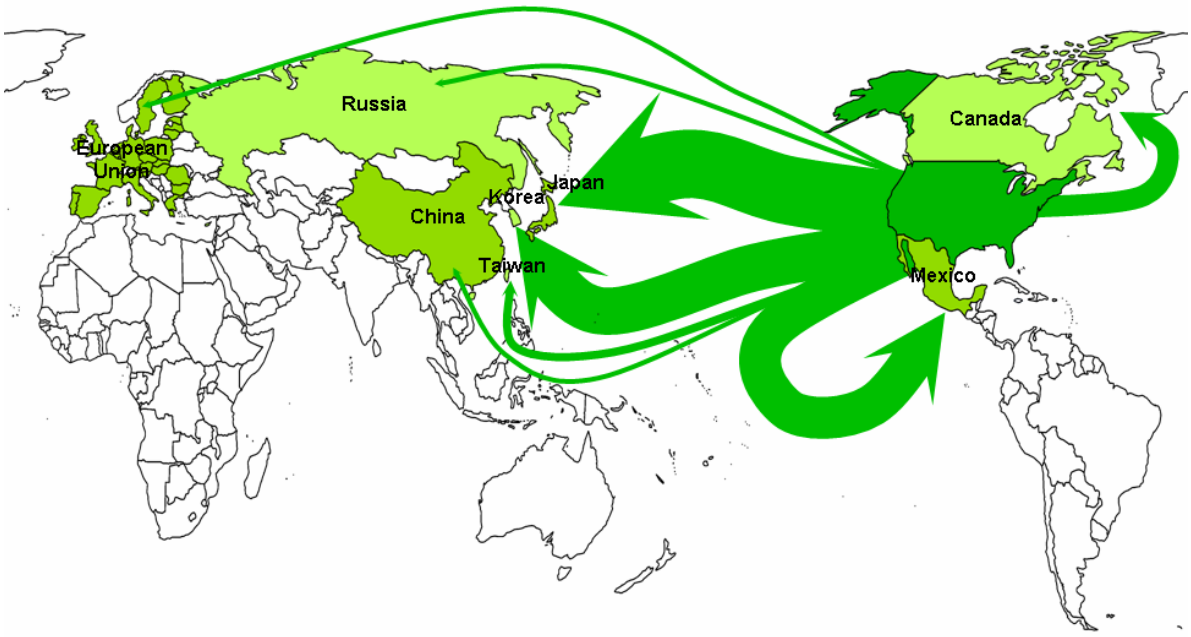
[39] Japanese industry representative, interview by Commission staff, Tokyo, Japan, April 15, 2008.

[40] USMEF official, email message to Commission staff, November 26, 2007.

[41] Details of country-specific barriers are described in chaps. 5–11.

[42] Agricultural Transportation Coalition official, interview by Commission staff, April 30, 2008.

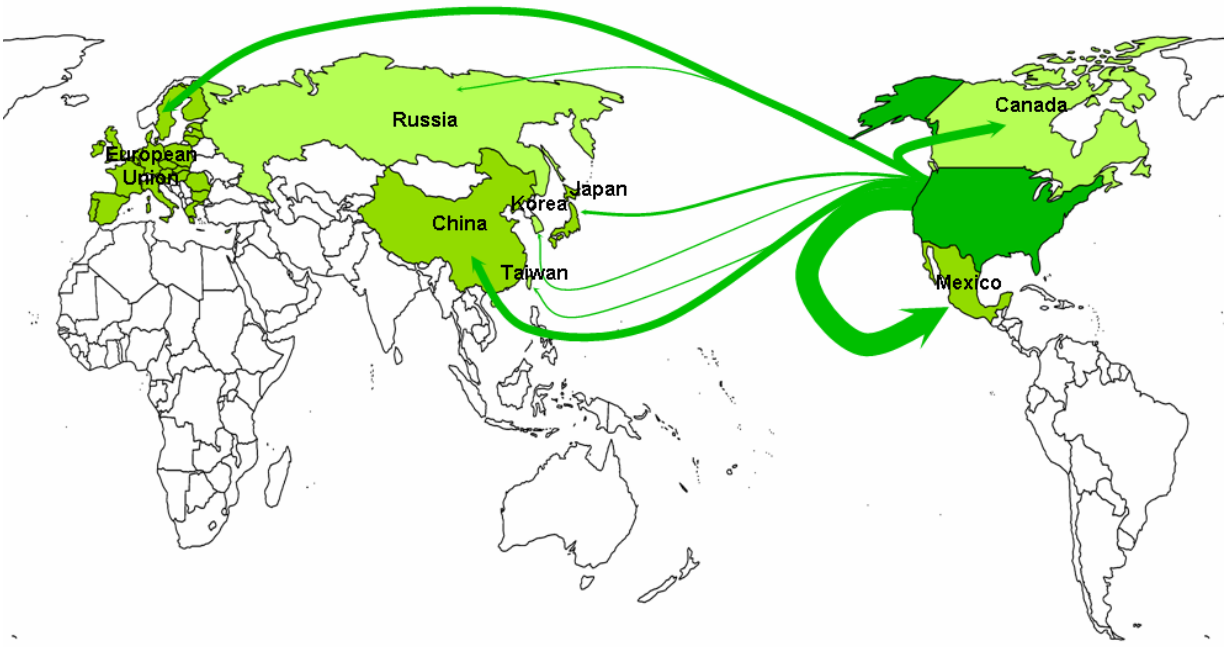
FIGURE 3.3 U.S. beef exports, 2003



Source: GTIS, Global Trade Atlas database.

Note: Arrow line thickness corresponds to value of trade.

FIGURE 3.4 U.S. beef exports, 2004



Source: GTIS, Global Trade Atlas database.

Note: Arrow line thickness corresponds to value of trade.

TABLE 3.3 Beef: U.S. exports, by HS subheading, 2002–07

HS subheading		2002	2003	2004	2005	2006	2007
		Quantity (*mt*)					
020110	Fresh/chilled carcass	4,866	2,528	630	983	971	1,829
020120	Fresh/chilled bone-in	26,963	23,595	1,409	3,639	10,346	17,177
020130	Fresh/chilled boneless	386,205	408,731	116,663	169,882	282,478	315,554
020210	Frozen carcass	2,112	1,625	509	430	618	609
020220	Frozen bone-in	95,504	108,776	2,295	2,528	6,164	9,501
020230	Frozen boneless	307,296	287,580	21,875	31,568	49,566	95,754
020610	Fresh/chilled edible offal	8,091	7,564	1,312	2,584	2,598	2,638
020621	Frozen edible offal, tongue	25,742	27,389	3,731	11,594	8,949	12,487
020622	Frozen edible offal, liver	91,763	90,607	55,573	82,141	101,222	103,793
020629	Frozen edible offal, other	146,028	157,515	42,227	60,753	54,387	61,143
021020	Salted, in brine, or dried	1,346	1,256	120	683	911	177
160250	Prepared or preserved beef	26,926	36,991	9,055	18,769	25,521	28,297
	Total	1,122,841	1,154,157	255,397	385,554	543,731	648,959
		Million *(U.S. dollars)*					
020110	Fresh/chilled carcass	14	10	1	3	3	5
020120	Fresh/chilled bone-in	96	86	7	27	76	124
020130	Fresh/chilled boneless	1,316	1,621	435	699	1,128	1,341
020210	Frozen carcass	8	7	2	2	3	4
020220	Frozen bone-in	251	371	11	12	23	38
020230	Frozen boneless	850	968	70	117	186	391
020610	Fresh/chilled edible offal	17	16	3	9	8	14
020621	Frozen edible offal, tongue	86	106	7	25	25	44
020622	Frozen edible offal, liver	64	72	38	80	102	88
020629	Frozen edible offal, other	190	238	48	89	85	99
021020	Salted, in brine, or dried	9	11	1	4	6	1
160250	Prepared or preserved beef	90	105	44	78	104	123
	Total	2,990	3,612	668	1,143	1,748	2,273
		Unit value *($/mt)*					
020110	Fresh/chilled carcass	2,935	4,145	2,199	3,255	2,972	2,943
020120	Fresh/chilled bone-in	3,550	3,635	5,227	7,296	7,379	7,234
020130	Fresh/chilled boneless	3,407	3,966	3,731	4,112	3,992	4,249
020210	Frozen carcass	3,864	4,518	2,990	4,844	4,294	5,883
020220	Frozen bone-in	2,631	3,411	4,862	4,593	3,775	3,947
020230	Frozen boneless	2,765	3,365	3,188	3,699	3,749	4,085
020610	Fresh/chilled edible offal	2,111	2,174	2,233	3,297	3,142	5,320
020621	Frozen edible offal, tongue	3,325	3,862	1,821	2,165	2,798	3,551
020622	Frozen edible offal, liver	700	796	688	976	1,004	852
020629	Frozen edible offal, other	1,298	1,513	1,147	1,466	1,566	1,619
021020	Salted, in brine, or dried	7,014	8,472	5,461	5,627	6,867	5,348
160250	Prepared or preserved beef	3,325	2,844	4,878	4,135	4,060	4,350
	Average	2,663	3,129	2,614	2,965	3,216	3,502

Source: GTIS, Global Trade Atlas database.

Note: Due to rounding, numbers may not add to total.

BOX 3.1 Transportation trouble

The rising costs of transportation, primarily because of rising fuel costs, are well publicized. However, there is another potential transportation problem facing U.S. beef exports: refrigerated shipping containers (reefers). Exports of beef typically are loaded into 20- or 24-foot containers.[1] According to the Agricultural Transportation Coalition, there is currently a shortage of reefers serving the U.S. market.[2] After the BSE-related import restrictions implemented by a number of trading partners in December 2003, the reefer market in the United States shrank 60–70 percent. This excess supply of reefer containers grew until ocean carriers developed alternative markets. The result was fewer reefers[3] servicing the United States and, ultimately, fewer vessels scheduled for the U.S. market.

With recent relaxations of bans on U.S. beef the current available supply of reefers has been unable to match export demand in the first quarter of 2008. This has created competition between U.S. meat shipments and other agricultural products requiring temperature-controlled containers. The anticipated increase in demand for U.S. beef from Korea, lower value of the dollar, growing demand from emerging markets for products requiring refrigerated containers, diminished U.S. imports of products requiring refrigerated containers (thus fewer containers entering the United States), and the increased profitability of other markets for shipping companies could result in beef exports becoming stranded at U.S. ports.

[1] Weight restrictions imposed by shipping vessels and destination markets usually limit beef to be loaded into 20- and 24-foot containers. While beef could be loaded into 40-foot containers, the weight restrictions would translate into the container only being partially loaded, but the exporter would be responsible for the full price.

[2] Agricultural Transportation Coalition official, interview with Commission staff, April 30, 2008.

[3] Refrigerated containers are owned by the shipping companies and are leased/rented to companies.

Imports

During 2002–07, 11–13 percent of annual beef consumption in the United States was imported (table 3.1). Most beef imported by the United States is grass-fed lean beef, destined for processing, primarily as ground beef.[43] Major suppliers of this type of beef are Australia, New Zealand, and Uruguay.[44] Canada, because of its geographic proximity and the similarity of its industry, is an important supplier both of grain- and grass-fed beef to the United States. Because of outbreaks of FMD in Argentina and Brazil, beef exports from those countries must be thermally treated before shipment to the United States.[45] Exports from these countries may enter as, for example, pre-cooked beef or corned beef. The United States imports very little offal.

U.S. imports of beef declined by 8 percent in quantity during 2002–07 (table 3.4), a trend that appears to be continuing in 2008.[46] Imports from Canada, Australia, New Zealand, and Argentina declined during the period. This decline

[43] U.S. imports of lean trim may enhance the value of the U.S. beef market and overall cattle prices. U.S. beef is highly marbled (i.e., the meat contains veins of fat tissue) and is more tender and juicier than grass-fed beef. While marbling is desirable in high-value cuts, it is not suited for producing ground beef. U.S. imports of lean trim are mixed with domestic trim, which contains a higher fat content, to produce ground beef that is preferred by the domestic market. Imports of lean trim allow U.S. producers to concentrate on producing high-value cuts and still fulfill domestic demand for ground beef. Elam, "The U.S. Ground Beef Market: Why Imports Help," August 27, 2003.

[44] In 2007, the largest suppliers of beef to the United States were Australia (30 percent), Canada (27 percent), New Zealand (16 percent), Brazil (10 percent), and Uruguay (9 percent) accounting for over 90 percent of total U.S. beef imports. Mexico was the next largest supplier (3 percent).

[45] 9 CFR 94.4 (2008) (APHIS regulation). Beef from regions with FMD must be cooked with the specifications contained under this section. The cooking time and temperature ensure that the pathogens are destroyed.

[46] GTIS, Global Trade Atlas database.

TABLE 3.4 Beef: U.S. imports, by leading supplier, 2002–07

Market	2002	2003	2004	2005	2006	2007
	Quantity (*mt*)					
Australia	393,386	382,164	360,016	327,662	306,113	302,605
Canada	409,910	267,899	362,494	382,007	303,429	288,923
New Zealand	205,992	225,623	213,989	204,629	188,638	170,477
Brazil	46,528	49,868	55,630	51,830	63,488	66,036
Uruguay	3,311	54,067	154,553	202,361	111,517	121,132
Mexico	6,615	8,896	9,491	11,651	16,641	16,818
Argentina	20,825	20,782	27,848	25,155	19,873	16,370
ROW	8,255	9,441	24,337	27,380	23,995	29,998
Total	1,094,822	1,018,740	1,208,358	1,232,675	1,033,694	1,012,359
	Value (*U.S. dollars*)					
Australia	884	916	1,036	933	923	974
Canada	1,171	890	1,222	1,310	976	913
New Zealand	472	523	619	602	544	510
Brazil	119	149	198	206	275	327
Uruguay	8	117	355	476	287	315
Mexico	28	44	51	67	96	101
Argentina	55	55	84	87	81	65
ROW	14	16	58	62	63	87
Total	2,751	2,708	3,622	3,743	3,244	3,292
	Unit value (*$/mt*)					
Australia	2,246	2,396	2,878	2,848	3,014	3,217
Canada	2,856	3,324	3,371	3,430	3,216	3,159
New Zealand	2,289	2,320	2,894	2,940	2,883	2,991
Brazil	2,567	2,992	3,551	3,976	4,328	4,958
Uruguay	2,556	2,106	2,294	2,354	2,573	2,603
Mexico	4,208	4,905	5,335	5,729	5,758	5,984
Argentina	2,644	2,669	3,006	3,463	4,090	3,997
ROW	1,709	1,724	2,397	2,263	2,620	2,894
Average	2,513	2,658	2,997	3,036	3,138	3,252

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total. ROW denotes rest of the world.

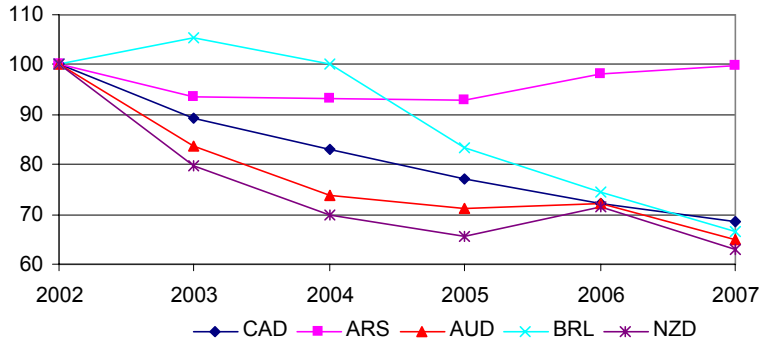
was the result of five principal factors. First, following the May 2003 discovery of BSE in Canada, the United States imposed a ban on Canadian beef that resulted in diminished trade in 2003. Second, inflationary pressure on domestic food prices in Argentina, especially on beef, led the Argentine government to impose several measures restricting the amount and type of beef available for export, beginning in 2005. A third factor is trade diversion. The increase in Australian and New Zealand exports to Japan and Korea, and Argentina's expansion into Russia, corresponded with a decline of their exports to the United States. A fourth factor concerns unfavorable weather conditions. Australia and, to a lesser extent, New Zealand have experienced sustained periods of drought that have affected beef supplies as they rebuild the herd. These factors are also limiting the availability of beef to the global market.[47] In terms of quantity, U.S.

[47] Meyer and Steiner, *Daily Livestock Report*, March 10, 2008.

beef imports have declined while the AUVs have increased. To an extent, this is because of a fifth factor affecting both the U.S. and global market: the recent depreciation of the U.S. dollar (box 3.2).

BOX 3.2 Depreciation of the U.S. dollar: A double-edged sword for the United States

U.S. dollar exchange rate index, selected countries, 2002–07



Source: Pacific Exchange Rate Service.

Since 2002, the U.S. dollar depreciated against many currencies of major beef exporting countries, with the exception of the Argentine peso. In the global beef market, a weak dollar is a double-edged sword. A weaker dollar makes U.S. exports more price competitive in the global market, even vis-à-vis lower cost producers like Brazil and Argentina. In traditional U.S. export markets, like Korea and Japan, a weak dollar means that U.S. beef is "cheaper," in that one yen or won will now purchase more U.S. beef than before.

At the same time, a weaker dollar makes U.S. imports of beef more expensive. With lower returns in the U.S. market, traditional suppliers may choose to explore other markets in search of higher returns.[1] This diversion could require the U.S. market to pay increased prices, find alternative suppliers, or produce a lower-value, leaner beef product domestically.

[1] Steiner Consulting Group, "U.S. Imported Beef Market Weekly Report," April 23, 2008.

The rapid growth of U.S. beef imports from Uruguay began in June 2003.[48] This growth corresponded with the designation by the OIE recognizing Uruguay as "FMD-free with vaccination." During 2003–07, the United States has been the largest destination for Uruguayan beef exports, with Uruguay consistently filling and exceeding its quota allotment. However, in 2008, Uruguayan beef exports to the United States were volatile. Limited Argentine exports,[49] disruptions of Brazilian exports, and a weak U.S. dollar have contributed to a diversion of exports from Uruguay to the EU and Russia.

U.S. beef imports are subject to TRQs as shown in the tabulation below. In-quota tariffs range from 4–10 percent, while over-quota rates are 26.4 percent ad valorem equivalent (AVE). U.S. offal imports are not subject to a TRQ. Tariff rates for offal range from free to 4.5 percent. Beef imports from Canada and Mexico receive preferential treatment under NAFTA (enacted in 1994) and are

[48] USDA, FAS, *Uruguay: Livestock and Products Annual, 2003*, September 30, 2003, 3.
[49] Factors affecting Argentine and Brazilian exports are described in app. C.

not subject to TRQs. Australia also receives preferential treatment under the U.S.–Australia FTA (enacted in 2005) but exports are still subject to a TRQ, with an in-quota rate of free and an over-quota rate of 26.4 percent.[50]

U.S. beef TRQ volumes, 2008 (mt)

Country	2008 Quota
Canada	No limit
Mexico	No limit
Australia	378,214
New Zealand	213,402
Japan	200
Argentina	20,000
Uruguay	20,000
Other countries or areas	64,805

Source: Harmonized Tariff Schedule of the United States (2008)(Rev.2)

Note: The quota amount refers to the aggregate quantity of beef entered under subheadings: 0201.10.10, 0201.20.10, 0201.20.30, 0201.20.50, 0201.30.10, 0201.30.30, 0201.30.50, 0202.10.10, 0202.20.10, 0202.20.30, 0202.20.50, 0202.30.10, 0202.30.30, and 0202.30.50.

Animal Health and Food Safety Regulatory Framework

Responsibility for U.S. animal health and food safety regulations falls principally on USDA and HHS. Two agencies within USDA oversee animal health and food safety regulations: FSIS and APHIS. The Food and Drug Administration (FDA) is the agency responsible for beef-related food issues under HHS.

FSIS is the primary agency responsible for regulating the safety and labeling of most domestic meat under the Federal Meat Inspection Act (FMIA).[51] FSIS inspects cattle slaughter plants and meat products to ensure food safety. Any meat processing plant in the United States that transports meat over state lines or for export must comply with FSIS requirements. In addition to overseeing U.S. commercial meat production, FSIS audits and certifies that foreign plants are eligible to export to the United States. FSIS also inspects both domestic and imported food products for veterinary drug residues. The U.S. office of the Codex Alimentarius Commission[52] is located within FSIS.

APHIS is responsible for the health and welfare of U.S. cattle. If an animal disease, such as BSE or FMD, is detected, APHIS implements emergency protocols to quickly manage or eradicate the outbreak. APHIS has conducted BSE surveillance since 1990. Following the discovery of a BSE-infected cow in December 2003, APHIS developed and administered an enhanced surveillance program that began in June 2004 to test for and determine the incidence of BSE

[50] USITC, "U.S.-Australia Free Trade Agreement: Potential Economywide and Selected Sectoral Effects," Pub. 3697, May 2004, 43-46.

[51] Federal Meat Inspection Act, 21 U.S.C. 601 et seq.

[52] The Codex Alimentarius Commission is further described in chap. 4.

in the U.S. cattle herd. With regard to international trade, APHIS develops and advances science-based standards with trading partners and works with international organizations, such as the OIE and Food and Agricultural Organization of the United Nations (FAO).[53]

The FDA is responsible for the evaluation of drugs used in livestock for their safety to the environment and to the consumers who eat the animal products. The FDA is responsible for ensuring that any substances or drug residues that remain in food are not harmful to consumers. Tolerances for veterinary drug residues are established by the FDA.[54] The FDA enacted the current regulation banning the use of most animal proteins in ruminant feed in response to BSE concerns in 1997. This regulation was amended in April 2008 to restrict other cattle by-products in all animal feed. Under the FMIA, the FDA has the authority to detain meat outside of a USDA inspected plant if the products are believed to be adulterated or mislabeled.[55]

Support for Domestic Production

The United States provides limited direct support to domestic beef production. The OECD estimates that the average price paid for beef by consumers (Consumer NPC) in the United States was equivalent to the border price during 2002–06 (table 3.5). During 2002–04, the value of gross transfers (percent PSE) to beef and veal producers was 4 percent of farm gate receipts. In 2006, the value of commodity-specific support (percent SCT) to beef and veal producers was zero percent of farm gate receipts.

TABLE 3.5 Beef: OECD estimates of U.S. support for production, 2002–06

Measure	2002	2003	2004	2005	2006
Producer support estimate (PSE)[a]	4	4	[b]4	([c])	([c])
Single commodity transfers (SCT)[d]	([c])	([c])	0	0	0
Consumer NPC[e]	1	1	1	1	1

Source: OECD, *Agricultural Policies in OECD Countries*, 2005 and 2007.

[a]Percent PSE is equal to total transfers to producers as a percentage of receipts.
[b]Preliminary estimate.
[c]Not available. In 2004–05, the OECD switched from reporting percentage PSE to percent SCT.
[d]Percent SCT is equal to commodity-specific transfers as a percentage of receipts.
[e]Consumer NPC is the ratio of the price for beef and veal paid by consumers to the border price.

Government support for the U.S. beef industry focuses on market access, research and development, and recovery assistance following natural disasters. Some examples are the Market Access Program (MAP) and the Foreign Market Development program (FMDP) operated by the USDA's Foreign Agricultural Service (FAS). MAP forms partnerships between nonprofit U.S. agricultural trade associations, U.S. agricultural cooperatives, and the USDA to share the costs of overseas marketing and promotional programs.[56] The U.S. Meat Export

[53] For further information see USDA, APHIS, Web site. http://www.aphis.usda.gov.
[54] Published in Title 21 of the Code of Federal Regulations (21 CFR 556).
[55] Federal Meat Inspection Act, 21 U.S.C. 601 et seq.
[56] USDA, FAS, *Fact Sheet: Market Access Program*, November 2007.

Federation (USMEF), National Renderers Association (NRA), and U.S. Livestock Genetics, Inc. (USLG) are examples of current MAP participants, with a total fiscal year 2007 allocation of $7 million. Similar to MAP, the FMDP assists U.S. producers and exporters to develop new foreign markets and expand access in existing markets by promoting U.S. agricultural products.[57] USMEF, NRA, and USLG are also participants in the FMDP, with a total allocation for 2007 of $950,000.

There is no permanent program for natural disaster assistance, although cattle producers have received *ad hoc* disaster assistance in response to severe weather. For example, livestock losses caused by the severe blizzards in 2006 in the Rocky Mountains were compensated under such federal disaster assistance. In 2006, South Dakota, Montana, New Mexico, Wyoming, and Colorado accounted for 57 percent of total livestock disaster payments.[58] During 2002–06, total disbursements for livestock disaster assistance were $359 million.[59]

[57] USDA, FAS, *Fact Sheet: Foreign Market Development Program*, November 2007.

[58] Livestock disaster payments do not distinguish between different species of livestock nor between types of natural disasters.

[59] EWG, Farm Subsidies database.

CHAPTER 4
International Animal Health, Sanitary, and Food Safety Standards

The WTO agreements, including GATT 1994, recognize the right of WTO member countries to maintain animal health and food safety measures to protect their animal and human populations. The WTO Agreement on the Application of Sanitary and Phytosanitary Measures (SPS agreement) establishes a framework to ensure that these measures are not used as a means to protect a domestic industry from import competition.[1] Paragraph 3 of that agreement allows a member to set standards other than the international standards, guidelines, or recommendations only when there is scientific justification for doing so, or if scientific evaluation of the international standards, guidelines, or recommendations reveals that they do not afford the level of safety the member determines to be appropriate.[2]

The SPS agreement explicitly recognizes three relevant international organizations that develop and review accepted standards, guidelines, and recommendations.[3] These are the OIE,[4] the Codex Alimentarius (Codex) Commission, and the International Plant Protection Commission. The first two are important to beef trade.

The OIE is the recognized international authority for measures dealing with animal health, including animal diseases that may be communicable from animals to humans. A brief description of the OIE is presented in box 4.1. The Codex Commission is the recognized international authority for measures dealing with food safety standards and codes of practice.[5] The Codex Commission deals both with hygiene (i.e., microbiological criteria and their controls) and residue limits for materials such as metals, pesticides, veterinary compounds, food additives, and preservatives. It publishes international standards for certain food products and guidelines for maximum residue limits.[6] Guidelines for residues of veterinary drugs are established by the Codex Committee on Residues of Veterinary Drugs in Foods, largely based on expert advice from the FAO/WHO Joint Expert Committee on Food Additives (JECFA).[7]

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[1] The SPS agreement states that: "To harmonize sanitary and phytosanitary measures on as wide a basis as possible, Members shall base their sanitary or phytosanitary measures on international standards, guidelines or recommendations, where they exist, except as otherwise provided for in this Agreement, and in particular in paragraph 3."

[2] Agreement on the Application of Sanitary and Phytosanitary Measures, art. 3, para. 3.

[3] Ibid., 3, para. 4.

[4] The organization changed its name to the World Organization for Animal Health in 2003, but is still widely known by its former French acronym, OIE.

[5] Codex web site, (accessed May 28, 2008).

[6] Ibid.

[7] JECFA web site, (accessed May 28, 2008).

BOX 4.1 Description of the OIE

The OIE is headquartered in Paris and was formed in 1924 by international treaty.

As of January 2008, there were 172 member countries and territories. Each member is represented by a delegate that in most cases is the chief veterinary officer of that country.[1] The OIE's mission is to prevent the spread of animal diseases through three primary functions: (1) gathering and providing information on the distribution and occurrence of animal diseases; (2) coordinating research on contagious animal diseases; and (3) developing international standards for the movement of animals and animal products in international trade.[2] The OIE publishes its recommendations on minimizing the risks of animal-borne diseases to the animal and human populations in the Terrestrial Animal Health Code. This code serves as a guide for member countries' import regulations.[3]

Member countries include Argentina, Australia, Brazil, Canada, China, Japan, Korea, Mexico, New Zealand, Russia, Uruguay, the United Kingdom, and the United States. The EU itself is not a member of the OIE, but every member of the EU is a member of the OIE.[4]

[1] OIE Web site. http://www.oie.int/eng/OIE/en_about.htm?e1d (accessed May 28, 2008).
[2] USDA, APHIS, "Supporting International Trade Factsheet," May 2004, 1.
[3] OIE Web site. http://www.oie.int/eng/OIE/en_about.htm?e1d (accessed May 28, 2008.)
[4] OIE Web site. http://www.oie.int/eng/OIE/PM/en_PM.htm?e1d1 (accessed July 16, 2008).

When beef is exported from the United States, it is subject to the food safety standards imposed by the importing country. Importing countries routinely test samples from U.S. beef shipments for pathogens and for a variety of maximum residue limits (MRLs). U.S. beef also meets international guidelines for the incidence of animal diseases, such as bovine tuberculosis.

Two animal health and food safety issues that have had significant effects on U.S. beef exports during 2002–07 are those related to concerns over BSE and the EU ban on growth promotants (the hormone ban). The OIE provides guidelines for dealing with animal diseases, including BSE, but the BSE guidelines in many destination markets are more stringent than those provided by the OIE. The SPS agreement requires that more stringent standards be supported by scientific research. The EU hormone ban is more stringent than the MRLs established by the Codex Commission and has been found by the WTO to be inconsistent with the SPS agreement.[8]

BSE

BSE is a fatal neurological disease afflicting adult cattle that was first recognized in the United Kingdom in 1986 (box 4.2). Researchers believe that BSE is caused by a prion, a protein that is not destroyed by cooking or other commonly used measures to control pathogens such as bacteria. BSE is likely spread by consumption of meat and bone meal (MBM) containing the infective agent that is incorporated into cattle feed.[9] The infective agent can infect humans and has been associated with variant Creutzfeldt Jacob Disease (vCJD), a fatal neurological disease in humans (box 4.3).[10]

[8] WTO Summary, Dispute DS26, European Communities, (accessed August 4, 2008).
[9] OIE, "Bovine Spongiform Encephalopathy," 2006 (accessed May 28, 2008).
[10] University of Edinburgh, UK Creutzfeldt-Jakob Disease Surveillance Unit, (accessed September 2, 2008).

BOX 4.2 History of BSE in North America

Through 2007, there have been a total of 184,551 cases of BSE reported in the United Kingdom; 1,614 reported in Ireland; 984 reported in France; over 100 each in Germany, Portugal, Spain, and Switzerland; and 34 cases reported in Japan. There have been two cases of BSE in indigenous cattle in the United States, in addition to the one dairy cow imported from Canada.[1]

Worldwide, the number of reported BSE cases has been declining. The number of reported cases in the United Kingdom, where BSE was first recognized, peaked at 37,280 cases in 1992. In 2007, 67 cases of BSE were reported in the United Kingdom.

The first case of BSE in North America was discovered in Canada in May 2003 and resulted in widespread loss of export markets for Canadian cattle and beef, as many countries, including the United States, immediately closed their borders to imports of beef and cattle from Canada.

In August 2003, the United States lifted its restrictions on boneless cuts of beef from Canadian cattle less than 30 months of age. The United States lifted its restriction on imports of live cattle less than 30 months of age in July 2005, but maintained a ban on imports of live cattle over 30 months of age and beef from such cattle until November 19, 2007. Since that time, the United States has allowed imports of live cattle, and beef from cattle born after March 1, 1999.[2]

In December 2003, the first case of BSE was discovered in the U.S. cattle herd, in a dairy cow imported from Canada. Many destination markets immediately suspended imports of U.S. beef. Two more cases of BSE were later detected in the United States. In November 2004, an initial screening test for BSE on a nonambulatory animal was inconclusive. A confirmatory immunohistochemical test was also inconclusive. A second confirmatory Western blot test was positive for BSE, and the case was reported as BSE in June 2005.[3] A second nonambulatory animal was tested for BSE in February 2006. Initial screening tests were again inconclusive, but confirmatory tests were positive for BSE, and this second case was confirmed as BSE in March 2006.[3]

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[1] OIE "World Animal Health Situation: Bovine Spongiform Encephalopathy," January 9, 2007.
[2] See chap. 10 for a more complete description of the impact of BSE on trade with Canada.
[3] USDA, APHIS, "Texas BSE Investigation: Final Epidemiology Report," August 2005.
[4] USDA, APHIS, "Alabama BSE Investigation: Final Epidemiology Report," May 2, 2006.

BOX 4.3 Human health risk

BSE has been associated with variant Creutzfeldt-Jakob Disease (vCJD), a fatal neurological disease in humans. To date (June 2008), there have been 208 reported cases of vCJD worldwide. The vast majority of the cases (167) have been among residents of the United Kingdom.[1] There have been three cases reported in the United States; two of the patients were born in the United Kingdom and lived there as children, and the other was born in Saudi Arabia and lived there as a child. It is believed that all three of these patients were infected as children.[2] One case has been reported in Japan, in September 2004.[3] The patient spent 24 days in the United Kingdom in 1988. It is considered probable that the patient was infected while in the United Kingdom.[4]

Tissues in which the BSE infective agent has been found in cattle are designated as specified risk materials (SRMs). The infective agent has been found in the brain, spinal cord, dorsal root ganglia, trigeminal ganglia, distal ileum, and tonsils of infected cattle. The infectivity observed in tonsils was near the limit of detection by current testing methods.[5] However, the infective agent has not been found in milk, blood, or muscle tissues.[6] U.S. regulations require that SRMs be removed and not enter the human food chain, nor be used in ruminant feed. Meat from "downer" cattle, animals unable to walk at the time of inspection, is also banned from entering the human food chain, as these animals are at higher risk of infection.

The removal of SRMs is designed to control the risk of the infective agent being ingested by humans, and thus the risk of vCJD. Humans could theoretically be at risk of infection by consuming the infected tissues, by consuming emboli of brain tissues dislodged by stunning, or by cross contamination when removing the SRMs. Current USDA regulations and OIE guidelines prohibit the use of stunning devices that inject compressed gas or air into the cranial cavity and pithing processes, in order to avoid creating emboli of brain tissues. Production processes and inspections at meat packing plants are designed to minimize the possibility of cross contamination.

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[1] The National Creutzfeldt-Jakob Disease Surveillance Unit Web site, (accessed July 17, 2008).
[2] CDC, "Confirmed Cases of Variant Creutzfeldt Jakob Disease," November 29, 2006.
[3] Eurosurveillance editorial team, "First case of vCJD reported in Japanese patient," 2005, 10 (2), citing a February 4, 2005, translation of a memo from the Japanese Ministry of Health, Labor, and Welfare.
[4] The National Creutzfeldt-Jakob Disease Surveillance Unit Web site, (accessed July 17, 2008).
[5] Comer and Huntly, "Exposure of the Human Population to BSE Infectivity," 2003, 5.
[6] EC, "Update of the Opinion on TSE Infectivity Distribution in Ruminant Tissues," 8–9.

BSE Risk Status

The OIE determines the risk status of each member country with regard to BSE and has established guidelines for products that should be authorized for import based on the BSE risk status of the exporting country. Countries are placed in one of three categories—negligible risk, controlled risk, or undetermined risk—based on an assessment of the risk to animal and human health in the importing country. The risk status is based on four criteria spelled out in Article 2.3.13.2 of the Terrestrial Animal Health Code: (1) an assessment of the incidence of BSE in the member country (through a surveillance program); (2) an established program for the detection of possible BSE cases; (3) the compulsory notification and testing of possible BSE cases; and (4) the existence of approved laboratory and testing procedures for tissues collected in the surveillance program. The OIE categories for classification of BSE risk were changed in 2005. Information on OIE risk categories for 2004–07 and the OIE guidelines for imports of beef from the United States are summarized in box 4.4.

BOX 4.4 OIE risk status of the United States and guidelines for imports of beef, 2004–07

In the 2004 Terrestrial Animal Health Code, 12th edition, countries are classified by the OIE as BSE free, provisionally free, minimal risk, moderate risk, or high risk.[1] Classifications are based on the outcome of a risk assessment; surveillance; identification of affected cattle, their progeny, and other animals raised with them; and the incidence of BSE. The OIE does not assess the risk status of a member country that has not requested classification of risk. The United States did not request classification of BSE risk under the 12th edition of the Terrestrial Animal Health Code.

In the 2005 and subsequent editions of the Terrestrial Animal Health Code, the risk categories were changed to negligible risk, controlled risk, and undetermined risk. The USDA requested an OIE risk classification for BSE under the 2006 Terrestrial Animal Health Code in October 2006. The OIE Scientific Commission recommended that the United States be recognized as a controlled risk country, and the controlled risk status of the United States was confirmed at the 75th Annual General Session of the OIE in May 2007.

Guidelines for controlled risk countries permit imports of fresh meat and meat products from cattle of any age, except for mechanically separated meat from the skull and vertebral column of cattle OTM. The vertebral column from cattle OTM is an SRM.

[1] All editions of the Terrestrial Animal Health Code are from the OIE web site, (accessed July 17, 2008).

On May 22, 2007, the OIE published a list of member countries categorized by BSE risk. Argentina, Australia, New Zealand, Singapore, and Uruguay were recognized as negligible risk countries.[11] OIE guidelines recommend that all beef from negligible risk countries be authorized for import, provided that it can be demonstrated that the cattle have not been exposed to BSE and were born after the date of an effective feed ban to control the spread of the infective agent.

Brazil, Canada, Chile, Switzerland, Taiwan, and the United States were recognized as controlled risk countries. For such countries, OIE guidelines recommend that all fresh meat and meat products, except for mechanically separated meat from the skull and vertebral column of over 30 month (OTM)

[11] Iceland and Paraguay were recognized in 2004 as "provisionally free" of BSE, and until May 2008 were recognized by the OIE as provisionally free. They are now recognized as "negligible risk" countries.

cattle, be authorized for import if control procedures are in place. Recommended control procedures include antemortem and postmortem inspections of all cattle for human consumption, a ban on certain unapproved stunning or slaughtering processes, and verification that the meat or meat products have been produced and handled in a manner such that they have not been contaminated with SRMs or mechanically separated meat from the skull and vertebral column from OTM cattle.[12]

The OIE guidelines recommend that "deboned skeletal muscle meat (excluding mechanically separated meat) from cattle 30 months of age or less" be authorized for import from all countries, without regard to BSE risk, provided SRMs are removed and cattle were not subjected to a stunning process with a device injecting compressed air or gas into the cranial cavity or to a pithing process.[13]

U.S. Measures to Control the Risk of BSE

Beef producers and regulatory agencies in the United States have undertaken a series of steps to gain OIE recognition as a controlled risk country. These steps include (1) the establishment of an effective feed ban to control the spread of the infective agent in the U.S. cattle population; (2) a surveillance program to determine the incidence of BSE in the United States and maintain the ability to detect possible future BSE cases; and (3) the establishment of a system to monitor and report possible cases of BSE, with compulsory notification of positive results by a system of approved laboratories, antemortem and postmortem inspections of all cattle for human consumption, and removal of SRMs from beef for human consumption.

Feed Ban

Because scientists believe that the primary route of transmission of BSE is believed to be through the ingesting of feed that has been contaminated with a sufficient amount of meat and bone meal from an infected animal, U.S. regulatory action relating to the transmission of BSE has focused on the content of animal feed.[14] U.S. Food and Drug Administration (FDA) regulations in effect since 1997 ban most animal proteins from being incorporated into ruminant feed unless the manufacturing process is such that the infective BSE agent is inactivated. There are exceptions for blood products, gelatin, plate waste, milk products, and for animal protein from porcine or equine sources.[15]

In April 2008, after a multi-year review process, the FDA published a notice of final rule-making announcing that it would amend its 1997 rules to further strengthen existing safeguards against BSE. The amended rule is scheduled to take effect on April 27, 2009. The new rule will expand the restriction to prohibit the following cattle-derived risk materials in the food or feed of all animals: the

[12] The SRMs listed by the OIE for cattle originating in a controlled risk country are the tonsils and distal ileum of cattle of any age, plus the brains, eyes, spinal chord, skull, and vertebral column from cattle OTM. OIE Terrestrial Animal Health Code – 2007, art. 2.3.13.14.

[13] OIE "Bovine Spongiform Encephalopathy," June 5, 2008, (accessed June 29, 2008).

[14] 73 Fed. Reg. 22720 (April 25, 2008)

[15] See 21 CFR, part 589.2000, 2007. Ruminants include animals such as cattle, buffalo, sheep, and goats.

entire carcass of BSE-positive cattle; the brains and spinal cords from cattle 30 months or age and older; the entire carcass of cattle not inspected and passed for human consumption that are 30 months of age or older from which brain and spinal cords were not removed; tallow that is derived from BSE-positive cattle; tallow that is derived from other materials prohibited by this rule that contain more than 0.15 percent insoluble impurities; and mechanically separated beef that is derived from the materials prohibited by this rule.[16] While this is a narrower range of materials than in the current rule, as indicated above, the new rule expands the ban from use in ruminant feed to use in all animal feed.

BSE Surveillance

The purpose of the BSE surveillance program in the United States is twofold: (1) to determine the incidence of BSE in the U.S. cattle herd and (2) to maintain the ability to detect the presence of BSE in the U.S. cattle herd if it were to occur at a rate of one in one million animals.[17] Based on data gathered by the USDA surveillance program, the OIE reports that the incidence of BSE in the United States is 0.024 cases per one million in cattle aged over 24 months.[18]

The United States began a surveillance program for BSE in 1990. The number of cattle tested annually increased to approximately 20,000 annually in 2002 and 2003. Following the discovery of the first case of BSE in the United States in December 2003, an enhanced surveillance program began in June 2004. From June 2004 to March 2006, the enhanced surveillance program tested over 600,000 cattle, predominantly from high-risk cattle populations, in order to determine the incidence of BSE in the United States. Two cases were identified by this targeted surveillance effort.[19] Both of the identified animals were born before the enactment of the U.S. feed ban in 1997.[20]

The USDA has now transitioned to an ongoing surveillance plan designed to maintain the ability to detect the presence of one case per million animals in the adult cattle population of the United States with at least 95 percent confidence. The United States has approximately 42 million adult cattle. The ongoing surveillance plan tests approximately 40,000 animals per year, predominantly from high-risk groups. These groups include cattle that display symptoms of a central nervous system disorder and cattle at least 30 months of age that are condemned during antemortem inspection or excluded from slaughter because of poor health status. From October 2006 through September 2007, 44,881 samples were tested. There were no confirmed cases of BSE.

The United States does not have a regulation requiring that all cattle, or all cattle above a certain age, be tested for BSE at slaughter (as does Japan, see chapter 5). As noted, APHIS has determined that this level of testing is not necessary to satisfy the requirements of determining the incidence of BSE in the U.S. cattle herd and maintaining the ability to detect the presence of BSE if it were to recur.

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[16] 73 Fed. Reg. 22720 (April 25, 2008).

[17] USDA, APHIS, "USDA's BSE Surveillance Efforts," July 2006.

[18] OIE, "Annual Incidence Rate," June 10, 2008.

[19] USDA, CEAH, "Summary of Enhanced BSE Surveillance in the United States," Table 1, April 27, 2006, 4.

[20] USDA, APHIS, "USDA's BSE Surveillance Efforts," July 2006, 1.

The majority of cattle in the United States are slaughtered before the age at which BSE can be detected in the brain of the animal.[21] One U.S. beef producer has offered to test all its cattle destined for the Japanese beef market, but has so far not been allowed to do so.[22]

BSE Monitoring and Notification

Until the onset of clinical symptoms, BSE is undetectable without postmortem examination of the brain. In the United States, tests for BSE are carried out at designated state and university diagnostic laboratories that are audited and approved by USDA's National Veterinary Services Laboratory. Samples of the obex (part of the brain stem) are excised by an FSIS veterinarian. Samples are tested on a daily basis using an enzyme-linked immunosorbent assay (ELISA) screening test. If a sample tests positive, a second test is performed in order to rule out possible cross-contamination. If both screening tests are positive, the remaining sample is sent to the National Veterinary Services Laboratory, where further tests (an immunohistochemical test and a Western blot test) are performed in order to confirm the presence of BSE.[23]

Industry Costs of U.S. Measures Related to BSE

Compliance with measures in destination markets that exceed, or are incompatible with, international standards to control the risk of BSE results in additional costs to U.S. beef producers. The cost of compliance with international standards is approximated by the costs of compliance with U.S. federal regulations. The impact of measures that are more stringent than, or are incompatible with, international standards can be estimated by subtracting the costs of compliance with international standards from overall costs incurred by U.S. beef producers.

In 1997, the FDA estimated compliance costs of the current feed ban at $44.3 million and revenue losses to ruminant (mostly beef) processors because of lower MBM prices at $171 million annually. These costs were partly offset by gains to producers of non-ruminants from lower feed costs. Separately, researchers at Kansas State University estimated the cost to the U.S. beef packing sector from BSE-related regulations at $200 million in 2004.[24] Total compliance costs of the final rule, which is to take effect in April 2009, are estimated to be $64.0–80.5 million annually (annualized cost).[25] Most of the cost is attributed to increased costs to operators of renderer facilities and feed mills (dedicated equipment, including dedicated transportation equipment, and higher transportation costs) and disposal of cattle over 30 months of age that are not inspected and passed for human consumption.[26]

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[21] In an experimental study, infectivity was first detected in the central nervous system of infected cattle 32 months after inoculation. Wells, et al. "Preliminary Observations," 1998, 103.

[22] See the views of Creekstone Farms, presented in app. F.

[23] American Association of Veterinary Laboratory Diagnosticians Representative, interview by Commission staff, September 17, 2007.

[24] 62 Fed. Reg. 30969 (June 5, 1997) Table 1.

[25] 73 Fed. Reg. 22720, 22737 (April 25, 2008).

[26] Ibid.

Regulations Facing U.S. Beef Exports in Destination Markets

Despite the fact that the OIE classifies the United States as a controlled risk country for BSE, many importing countries apply BSE-related measures to imports of beef from the United States that are similar to the guidelines that the OIE has determined are appropriate for an exporting country with an undetermined risk of BSE. Further, regulations in many destination markets are largely not harmonized with international standards, or with regulations in other markets. Table 4.1 presents information on import restrictions on U.S. beef in selected destination markets.

Varying SPS and animal health regulations across destination markets impose additional costs on U.S. producers. Typically, a packing plant groups carcasses that meet the same specifications for processing. Switching to another group of carcasses with different characteristics necessitates costly downtime between production runs. When destination markets apply different sanitary standards (e.g., standards regarding SRM removal), a meat processor must either use the most stringent set of measures or stop and restart the production process to produce for different markets. Differences in other regulations, such as the age or sourcing of cattle, narrow the range of beef that can be exported to a given market.

These differing requirements also reduce the competitiveness of U.S. beef producers. One of the strengths of the U.S. beef industry is the ability to supply large volumes of the cuts and quality grades demanded by its customers. However, this advantage is undermined by the differing BSE-related measures in different markets. Dividing production at a given packing plant into more production runs limits the volume of every quality grade available for sale to a particular destination market and may effectively eliminate production of some quality grades for specific destination markets. In some cases, a producer may choose to not serve a particular destination market at all, if the market is small and requirements are different than those in other destination markets.[27]

Foot and Mouth Disease (FMD)

The United States is recognized by the OIE as free of FMD, which is one of the most contagious animal diseases, with the potential for severe economic loss.[28] FMD is a highly contagious viral disease affecting cloven foot animals, including cattle, swine, sheep, goats, and other cloven hoof ruminants.[29] FMD is characterized by fever and blister-like sores on the tongue and lips in the mouth, on the teats, and between the hooves.[30] Although rarely fatal in adult animals,[31] FMD causes significant production losses in the affected animals because ruptured sores can result in extreme lameness and a reluctance to eat. Even after

[27] Industry representative interview by Commission staff, September 16, 2007.
[28] OIE Web site, "Foot and Mouth Disease," June 15, 2008.
[29] In a susceptible population, the proportion of animals that will be infected by FMD approaches 100 percent. OIE Web site, "Foot and Mouth Disease," June 15, 2008.
[30] OIE Web site, "Foot and Mouth Disease," June 15, 2008.
[31] OIE, *Disease Card,* 2007, 1.

TABLE 4.1 Restrictions on U.S. beef exports to selected countries

Market	Share of U.S. exports		Age restrictions	Specified Risk Material (SRM) definition	Commodity restrictions
	2003	2007			
Japan	37.2%	10.7%	20 months or younger	Head (excluding tongue and cheek meat), palatine and lingual tonsils, spinal cord and dura matter, distal ileum, vertebral column, and dorsal root ganglia	No head meat, processed beef, ground beef, finely textured beef, or mechanically separated meat
Korea	22.1%	5.2%	Under 30 months	Skull, brain, eyes, distal ileum, tonsils, spinal cord, vertebral column	No mechanically recovered meat or mechanically separated meat. Cattle must be born and raised in the United States, or imported from a country deemed eligible by the Korean government to export beef or beef products to Korea, or raised in the United States for at least 100 days. Trace-back records must be maintained for at least 2 years
Canada	9.2%	26.8%	None	Skull, brain, trigeminal ganglia, eyes, spinal cord, dorsal root ganglia, and vertebral column from cattle aged 30 months and older; tonsils and distal ileum from cattle of all ages	No mechanically separated meat from the skull and vertebral column from cattle aged 30 months or older
Mexico	19.6%	36.7%	Under 30 months	Skull, brain, eyes, tonsils, spinal cord, and small intestine	No ground meat, feet, sweetbreads, weasand meat, or head meat
Hong Kong	2.3%	1.6%	Under 30 months	Skull (including brain, eyes and trigeminal ganglia), tonsils, spinal cord, dorsal root ganglia (with the vertebral column) and intestine	No bone-in beef, ground beef, edible offal, or beef derived from advanced meat recovery systems

Source: USDA, FSIS, Index of Export Requirements for Meat and Poultry Products, undated, (accessed May 8, 2008).

the animals recover from the disease, FMD often still leaves them weakened, with their productivity impaired.[32]

FMD is not easily transmitted to humans, and there are only a few documented cases of human infections that have occurred from direct contact with infected animals.[33] The U.S. cattle industry estimates that introduction of FMD into the United States would result in economic losses in the tens of billions of dollars.[34] FMD is endemic in parts of Asia, Africa, the Middle East, and South America and occurs sporadically in some usually FMD-free areas. The last reported FMD case in the United States occurred in 1929.[35]

International Safeguards Against FMD

FMD is the first animal disease for which the OIE established an official list of FMD-free countries and zones, beginning in 1996.[36] There are two categories within the FMD-free classification: (1) FMD free without using vaccination (country or zone) and (2) FMD free with the use of vaccination (country or zone). There are currently 64 countries that are recognized as FMD-free by the OIE without vaccination. These include Australia, Canada, Japan, Mexico, and the United States.

U.S. Safeguards Against FMD

The United States does not vaccinate against FMD; since the United States has been free of the disease since 1929, it is not possible to predict prior to an outbreak which FMD vaccine should be used for protection, and an FMD vaccination program would change the FMD status of the United States in world markets. Countries that vaccinate for FMD cannot claim to be FMD-free and face trade restrictions.[37] The primary U.S. safeguard against FMD is the use of strict import prohibitions administered by APHIS on live ruminants and swine and their products from FMD-affected regions.[38] U.S. meat imports from FMD-endemic regions are restricted to cooked products.[39]

EU Beef Hormone Ban

There are several veterinary drugs commonly used by beef producers in the United States and other countries. Hormones are used to promote weight gain in

[32] The virus that causes FMD is an aphthovirus of the family Picoronavidae with a large number of strains, each requiring a specific vaccine strain to provide immunity in the vaccinated animal. There are seven types and more than 60 subtypes of the FMD virus, and vaccines for FMD must be matched to the type and subtype existing in the affected area. USDA, APHIS, "Foot-and-Mouth Disease Vaccine Factsheet," March 2007, 1.

[33] OIE, "Foot & Mouth Disease: Questions and Answers," (accessed June 4, 2008), 4.

[34] USCA, USITC written testimony, May 5, 2008, 5.

[35] USDA, APHIS, "Status of Reportable Diseases in the United States", May 1, 2008.

[36] OIE Web site, "Foot and Mouth Disease," June 15, 2008.

[37] USDA, APHIS, "Foot-and-Mouth Disease Vaccine Factsheet," March 2007, 2.

[38] Additionally, U.S. Customs and Border Protection inspects agricultural products carried by travelers into the United States.

[39] Shagham, "World Beef & Cattle Trade: Evolving & Expanding," December 1997, 8.

beef cattle and allow a higher feed conversion ratio along with a higher ratio of muscle mass to fat. Standards for MRLs have been established for these growth hormones by regulatory agencies in producing countries. For many but not all of these hormones, MRLs have also been established by the Codex Committee on Residues of Veterinary Drugs in Foods. Rather than establishing tolerance limits on maximum residue levels for these products in beef, EU regulations require that beef sold in the EU be from cattle that have never been treated with growth hormones.

International and U.S. Standards

The safety of the growth-promoting hormones used in the production of beef cattle is supported by the findings of the FAO/WHO JECFA and the MRLs that have been established and published by the Codex Commission.[40] The original U.S.-EU hormone dispute involved six hormones that are generally administered through implants in cattle.[41] Three are naturally occurring hormones that the JECFA has determined "are unlikely to pose a hazard to human health" when used in accordance with good animal husbandry practices. Two are veterinary drugs for which the Codex Commission has established maximum levels.[42] One hormone, melegestrol acetate (MGA), is used by cattle producers in the United States, Canada, Japan, and Taiwan. MGA MRLs have been established by agencies in these countries, but an MRL has not yet been established by the Codex Commission. The consideration of an MRL for MGA is currently at step seven of the Codex eight-step approval process, with the understanding that the EU will provide new data for the evaluation of the safety of MGA by the JECFA at its next session.[43]

The six hormones involved in the EU hormone ban have been evaluated by the FDA. MRLs have been established for four of these substances in beef in beef tissue. For the remaining two hormones (trenbolone and zereanol), the FDA has established an acceptable daily intake, but found that a tolerance for residues in beef tissue was not necessary.[44]

EU Regulations

The European Parliament adopted a directive, effective January 1989, restricting the use of natural hormones to therapeutic purposes, banning the use of all synthetic hormones, and prohibiting imports of animals and meat from animals to which hormones had been administered.[45] Since 1997, the EU also has banned

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[40] Codex Alimentarius, Veterinary Drug Residues in Food, Maximum Residue Limits database, (accessed May 20, 2008).

[41] The six hormones are estradiol, progesterone, testosterone, melegestrol acetate, trenbolone acetate, and zeranol.

[42] Codex Alimentarius, Veterinary Drug Residues in Food, Maximum Residue Limits database, (accessed May 20, 2008).

[43] Report of the 17th Session of the Codex Committee on Residues of Veterinary Drugs in Foods, September 2007, V.

[44] 21 CFR 556.739 and 21 CFR 556.760.

[45] Taylor, Walsh, and Lee, "The U.S./EU Beef Controversy and a proposed Framework for Resolving Standards Disputes in International Trade," *Journal of Consumer Affairs*, Summer 2003, 112.

sales of poultry and meat that have undergone antimicrobial treatment and restricted the use of certain veterinary antibiotics and drug residues found in meat. Since 1989, the EU has lengthened the list of proscribed growth promotants. The current list of unauthorized substances may be found in Annex I of the FSIS Program for Certifying Nonhormone Treated Beef to the European Union.[46]

U.S. Reaction to the Hormone Ban

Litigation at the WTO

The EU hormone ban has served to restrict imports of U.S. beef and increase per-unit production costs for U.S. beef producers that export to the EU. Prior to the ban in 1989, U.S. beef exports to the EU had been approximately $100 million per year. In 1996, the United States filed a complaint under the WTO Dispute Settlement Understanding, alleging that the EU directive prohibiting the use of hormones violated the GATT and the WTO SPS agreement. In 1998, the WTO Dispute Settlement Body (DSB) adopted an appellate body report finding that the EU directive was inconsistent with the EU's WTO obligations, as the ban was not supported by an adequate risk assessment illustrating the health risks of hormone-treated beef. When the EU failed to comply with the recommendations and rulings of the DSB, the United States sought authorization to suspend offsetting concessions and in 1999 was authorized to suspend concessions in the amount of $116.8 million. In 2003, the EU modified its directive, but the United States claimed that it did not implement the recommendations and rulings of the DSB.[47] Recently, a WTO Dispute Settlement Panel found that the EU had still not supplied scientific justification for the amended ban.[48]

Non-hormone Treated Cattle

Administered by FSIS, the Non-hormone Treated Cattle (NHTC) program began in 1989 to facilitate trade in beef from cattle raised in the United States without growth-promoting hormones. Participating farms and feedlots agree to use no growth-promoting hormones and to provide appropriate documentation for traceability and identification of all animals in the program. Facilities are subject to inspection, and tissue samples are sent to accredited independent laboratories for analysis to detect any restricted compounds.[49] Slaughter facilities and cold storage facilities also must be approved to produce beef for the NHTC program. As of January 2008, there were 11 entities approved to provide cattle to the NHTC program (some are cattle management groups that may have more than one ranch, farm, or feedlot) and six facilities approved to slaughter NHTC for export to the EU. In 2002, the value of U.S. beef exports to the EU was

[46] USDA, FSIS, "Food Safety and Inspection Service's Program for Certifying Non-hormone Treated Beef to the European Union," June 12, 2007.

[47] WTO, "European Communities: Measures Concerning Meat & Meat Products," May 30, 2008.

[48] United States – Continued Suspension of Obligations in the EC – Hormones Dispute, March 31, 2008.

[49] USDA, FSIS, "Food Safety and Inspection Service's Program for Certifying Non-hormone Treated Beef to the European Union," June 12, 2007.

$14.7 million. As the EU has shifted to become a net importer of beef, U.S. exports of beef to the EU have increased in value, to $25.4 million in 2006 and $52.1 million in 2007.[50]

[50] See chap. 7 of this report.

CHAPTER 5
Japan

In 2003, Japan was the largest export market for U.S. beef, with exports valued at $1.3 billion and accounting for 37 percent of total U.S. beef exports. Also in 2003, the United States was Japan's largest import supplier, with a market share of 54 percent of total Japanese beef imports (box 5.1). However, the discovery of a case of BSE in the U.S. cattle herd in December 2003 led to the immediate closing of the Japanese border to U.S. beef, resulting in negligible U.S. exports in both 2004 and 2005. Total Japanese beef imports, in quantity terms, fell in 2004, but unit values increased, as other suppliers, particularly Australia and New Zealand, filled the gap left by the United States. In 2005, total imports remained below 2003 levels on a volume basis, but were slightly higher on a value basis.

BOX 5.1 Summary of Japan's BSE-related events and restrictions on imports of U.S. beef

August 2001	First case of BSE in the Japanese cattle herd.
September 2001	Announcement of first case of BSE in Japan.
December 2003	Following discovery of BSE in a cow in the United States, Japan closes its market to U.S. beef.
December 2005	Imports of U.S. beef resume, limited to beef from cattle no more than 20 months of age.
January 2006	Vertebral column discovered in shipment of U.S. beef; imports halted.
July 2006	Imports of U.S. beef resume with 100 percent box inspection.
March 2007	OIE declares that the United States is a "controlled risk" with respect to BSE.
June 2007	Requirement for 100 percent box inspection lifted.

Source: USDA, FAS, GAIN Reports, various dates.

In July 2006, U.S. beef exports to Japan resumed after lengthy bilateral negotiations and problems with certain shipments.[1] Despite the revocation of the ban, Japanese concerns over BSE remain, and the inspection process and age restrictions on beef cattle continue to limit U.S. exports. For example, U.S. exports of $244 million in 2007 were less than one-fifth the value of such exports in 2003. Compared to the 2003 level, the estimated U.S. beef export loss during 2004–07 was over 1.3 mmt, valued at over $5 billion.[2]

U.S. exporters have found alternative domestic and foreign markets for product previously destined for the Japanese market, but for many beef cuts, Japan is the preferred market, and sales to alternative markets are significantly less profitable. In 2000, the five top U.S. beef cuts exported to Japan were short plate, short rib, intestine, tongue, and skirt. According to information from USMEF, the next-best alternative domestic use for short plate, short rib, and skirt is use in trim (used to make processed products such as hamburger). Most beef tongue would be sold for use in pet food if not exported, and most tripe would be sent for rendering if not exported.[3]

[1] USDA, "Statement by Agriculture Secretary Mike Johanns," July 27, 2006.

[2] Commission staff calculation based on data from Global Trade Atlas database, comparing annual data to that for 2003.

[3] USMEF, *Methodology and Results of the Value of Beef Exports Analysis*, July 2002, 13 and 16.

Model simulation results indicate that losses of U.S. exports to Japan due to BSE-related restrictions totaled $5.7 billion for 2004–07. Export losses were greatest for fresh or chilled boneless beef, frozen boneless beef, and frozen beef tongue. Model results indicate that the effect of the removal of tariffs on beef imports from the United States during the same period would have increased U.S. exports to Japan by $4.1 billion. Even though Japan has high tariffs on beef imports, the effect of sanitary restrictions on U.S. beef exports was substantially greater than the tariff protection.

Japan Market Characteristics and Trends

Beef Consumption Trends

Beef is a relatively minor source of protein for Japanese consumers, after seafood, pork, and poultry. Traditionally, seafood is the predominant source of protein in the Japanese diet, with seafood consumption exceeding beef, pork, and poultry consumption combined.[4] In 2007, annual per capita consumption of beef was approximately 10 kg, compared with 43 kg in the United States.[5] Changes in consumption have been driven both by relative prices and food safety issues. Seafood consumption has declined moderately since 2002. Annual per capita beef consumption declined in 2002 following the discovery of BSE in the Japanese cattle herd in 2001, recovered slightly in 2003, and has since declined. Consumption of alternative meat products has increased, as beef has become more expensive compared to alternative protein sources (table 5.1).

TABLE 5.1 Beef: Japans production, consumption, trade, and key factors affecting demand, 2002–07

Market data	2002	2003	2004	2005	2006	2007
Beginning stocks (1,000 mt cwe)	199	129	110	89	87	103
Production (1,000 mt cwe)	537	466	514	500	497	504
Imports (1,000 mt cwe)	697	833	634	686	678	686
Total supply (1,000 mt cwe)	1,433	1,458	1,258	1,275	1,262	1,293
Exports (1,000 mt cwe)	0	0	0	0	0	0
Domestic consumption (1,000 mt cwe)	1,304	1,348	1,169	1,188	1,159	1,182
Ending stocks	129	110	89	87	103	111
Exchange rate (KR won/U.S.$)	125.399	115.93	108.19	110.22	116.3	117.75
GDP/capita (U.S.$/person)	30,809	33,180	36,076	35,672	34,181	34,023
Population (millions)	127.4	127.6	127.7	127.8	127.7	127.7
Wholesale beef price index	100.0	130.4	164.9	172.0	179.4	198.5
Annual beef per capita consumption (kg)	10.2	10.6	9.2	9.3	9.1	9.5

Source: Production, consumption, and trade data from USDA, FAS, unless otherwise noted. Exchange rate, GDP per capita, and population data from IMF. Wholesale beef price index calculated from FAPRI database.

Note: Production, supply, and consumption data are in carcass weight equivalent. These data are not directly comparable to product weight data.

[4] In 2006, the total volume of fishery products for consumption as food was 7.8 mmt, compared to 1.2 mmt for beef and veal, 2.5 mmt for pork, and 1.9 mmt for broiler meat. USDA, FAS, *Japan: Fishery Products Annual, 2007*, 14; and USDA, FAS, PS&D database.

[5] USDA, FAS, *Livestock and Poultry: World Markets and Trade*, November 2007.

Overall Japanese beef consumption declined moderately during 2002–07 from 1.3 mmt to 1.2 mmt on a cwe basis. Because changes in stock levels and exports are negligible, changes in beef available for consumption is due to changes in domestic production or imports. Domestic production remained stable at about 500,000 mt during the period. The largest year-on-year change in beef consumption occurred from 2003 to 2004 when consumption dropped 179,000 mt cwe (13 percent) as imports fell following the ban on beef from the United States. Japanese beef consumption is forecast to increase only slightly (1 percent) in 2008, given the current restraints on beef imports from the United States.[6] Not evident from the annual consumption data is the fact that Japanese beef consumption is highly seasonal. Consumption peaks in the December holiday season when cuts of beef may be given as gifts, and the incidence of parties and restaurant dining increases, leading to increased consumption in the retail and foodservice sectors.

Sources of Supply

The Japanese beef market can be broadly segmented into four major product types—domestic Wagyu beef, domestic "dairy beef" (Holstein steers and crosses between Wagyu and Holstein cattle), imported grain-fed beef, and imported grass-fed beef. Each type has specific characteristics in terms of production methods, sales outlets, and use in Japanese cuisine.[7] Shares in total consumption are difficult to determine because of data limitations (e.g., grain- and grass-fed beef are not distinguished in the tariff schedule). However, Japanese domestic production accounts for approximately 40 percent of consumption annually, on a quantity basis, and imports account for the remaining 60 percent.[8] Of domestic production, dairy beef accounts for about 60 percent, and Wagyu beef 40 percent.[9]

Wagyu cattle are native to Japan and are prized for their extensively marbled meat. Wagyu beef is the premium product in the retail and foodservice segments. It is used in traditional cooking methods that require thinly sliced, well-marbled beef, such as *shabu-shabu* and *sukiyaki*. Wagyu beef is considered to be the highest quality and commands higher prices than other domestically produced and imported beef.[10] Because of its special characteristics and uses in Japanese cuisine, other types of beef (including types exported by the United States) are not seen as a substitute for domestic Wagyu beef.[11]

Dairy beef is sold in the retail and foodservice segments.[12] Dairy cows and breeding stock are slaughtered when no longer suitable for other production.

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[6] USDA, FAS, *Japan: Livestock and Products Annual, 2007*, October 15, 2007.

[7] Mutondo and Henneberry, "Competitiveness of U.S. Meats in Japan and South Korea," July 29–August 1, 2007, 11 and 16.

[8] According to an industry representative, the low level of self-sufficiency in food products is a contributing factor in Japanese consumers' attitudes and regulatory agencies' requirement of strict compliance with food safety and sanitary regulations concerning imported food.

[9] Estimate based on annual slaughter numbers. It does not account for differences is slaughter weights between Wagyu and dairy beef cattle. Source: ALIC, "Monthly Statistics," May 2008.

[10] For the most recent fiscal year (April 2007–March 2008), the average price of a Wagyu steer carcass in Tokyo ranged from ¥1,493 per kg for A-2 grade to ¥2,457 per kg for A-5 grade ($5.75 to $9.46 per pound at the 2007 average exchange rate of 117.75 yen per dollar).

[11] Peterson and Chen, "The Impact of BSE on Japanese Retail Meat Demand," 2005, 322.

[12] Ibid., 2005, 314–15.

Domestic dairy beef is generally perceived by consumers to be of higher quality than imported beef and generally commands a higher price than imports.[13] However, the beef quality, uses, and sales outlets of dairy beef are similar to those of imported grain-fed beef, and they are therefore considered closely substitutable. Dairy beef is the domestic product with which U.S. beef exports are most competitive. Imported grain-fed beef is a substitute for Japanese domestic beef from dairy cattle in dishes requiring whole muscle cuts.[14]

Imports of grain-fed beef were largely from the United States prior to 2004. Imported grain-fed beef is predominately consumed away from home in the foodservice sector.[15] Grain-fed beef imports largely consist of well-marbled cuts, such as chuck roll and short ribs. A popular dish that generally utilizes imported grain-fed beef is *gyudon*, or beef bowl, in which broiled beef is served over rice. Imported grain-fed beef is also commonly used in dishes such as Korean-style barbeque (*yakiniku*), *sukiyaki*, and *shabu-shabu*. All of these use thin slices of well-marbled beef. Prior to the ban on U.S. imports, *gyudon* and *yakiniku* restaurants utilized mostly U.S. beef.[16] When U.S. beef became unavailable because of Japan's beef import restrictions, and with supplies of grain-fed beef from other sources limited, some restaurants started emphasizing more dishes featuring pork or seafood, and others went out of business.[17]

Imported grass-fed beef is less well marbled and is less suitable for dishes that call for thinly sliced beef that is cooked very rapidly. Supplied mainly by Australia and New Zealand, most grass-fed beef is used for processed products, such as hamburger.[18]

Factors Affecting Beef Demand

Between 2001 and 2007, health and food safety concerns related to BSE significantly affected Japanese beef consumption. BSE was discovered in the Japanese domestic herd in 2001 and then in its largest import source, the United States, in December 2003 (box 5.1). Several incidents combined to magnify the concerns of Japanese consumers regarding BSE and contributed to a mistrust of domestic regulatory institutions. The first animal in Japan found to have BSE was tested in August 2001, but the results were not made public until the next month. Japanese authorities initially reported that the animal had been incinerated, but later revealed that the carcass had been used to produce meat and bone meal.[19] By the time the findings were announced, meat and bone meal from this animal had been distributed and had to be recalled. There was also a case of

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[13] Holstein steers averaged ¥ 746 per kg for B-2 grade and ¥ 857 per kg for B-3 grade over the most recent fiscal year ($2.82 to $3.30 per pound at the 2007 average exchange rate of 117.75 yen per dollar).

[14] USDA, FAS, *Japan: Livestock and Products Annual, 2001*, August 1, 2001, 3; and industry representative, interview by Commission staff, April 15, 2008.

[15] According to an industry representative, 60 percent of U.S. beef muscle cut exports to Japan and 80 to 90 percent of tongue exports are to restaurants and food service. Industry representative, interview by Commission staff, April 5, 2008.

[16] USDA, FAS, *Japan: Livestock and Products Annual, 2007*, October 15, 2007, 5.

[17] Industry representatives, interviews by Commission staff, October 31, 2007, and April 16, 2008. An association of yakiniku restaurants had 22,000 members in 2002 and 18,000 in 2007.

[18] Peterson and Chen, "The Impact of BSE on Japanese Retail Meat Demand," 2005, 314–15.

[19] USDA, FAS, *Japan: Livestock and Products, BSE Confirmed in Japan*, September 27, 2001, 3.

false labeling of beef at about the same time, further eroding Japanese consumers' confidence in the safety of the domestic meat supply.[20] As a result, consumption of domestic and imported beef each declined. Household consumption of beef fell by 50 percent during October–November 2001, compared to the previous year.[21]

Problems with conformance to the export verification (EV) program for U.S. beef exports to Japan also may have eroded Japanese consumer confidence in U.S. beef. Shortly after limited imports of U.S. beef were resumed in December 2005, a vertebral column, which is not allowed under the EV program, was discovered in a shipment of veal in January 2006.[22]

Opposition political parties within Japan have issued statements critical of U.S. food safety and agreements reached concerning imports of U.S. beef. This criticism also may have slowed the acceptance of U.S. beef in the Japanese market.[23] A consumer survey of Japanese conducted in February 2007 found that a majority of respondents rated food products imported from North America as "inexpensive" but "have problems regarding safety," while the image of food products from Oceania (including Australia and New Zealand) was "inexpensive" and "safe."[24] Additionally, Japanese consumers perceive a greater risk from BSE than U.S. consumers. In a recent survey on beef food safety risks, 53 percent of Japanese respondents rated the risk from BSE as "very high" or "high," compared to 10 percent of Canadian respondents and 12.1 percent of those in the United States.[25]

Following the 2001 discovery of BSE in the Japanese cattle herd, Japan implemented a mandatory BSE testing program for all slaughtered cattle, which was modified in August 2005, to require that only cattle over 20 months of age be tested for BSE.[26] One reason for this requirement was to allay the fears of Japanese consumers.[27] There is evidence that the actions taken by the government of Japan helped rebuild consumer confidence in beef faster than it would have otherwise.[28] By December 2002, Japanese household beef consumption recovered to levels observed prior to the discovery of BSE.

Japanese beef demand also reflects Japanese consumers sensitivity to beef prices in certain segments of the market.[29] Anecdotal information indicates that there is significant demand for U.S. beef.[30] Japanese retailers, including four of the five

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[20] Ozawa, "Bovine Spongiform Encephalopathy in Japan and options for control," 2007, 21.

[21] USDA, FAS, *Japan: Livestock and Products Semiannual, 2002*, March 1, 2002, 2–3.

[22] USDA, FAS, *Japan: Livestock and Products Semiannual, 2006*, February 28, 2006, 3.

[23] CIDRAP News, "Japan to End BSE-based Ban," June 21, 2006, 2; New Zealand Farmers Weekly, "Japanese PM Cops U.S. Beef Trade Flak," 1–2; and industry representatives, interviews by Commission staff, April 15–16, 2008.

[24] Agriculture, Forestry, and Fisheries Finance Corporation, "Consumer Safety on Domestic and Imported Food Products," February 2007.

[25] Schroeder, et al., "The Role of Consumer Risk Perceptions and Attitudes in Cross Cultural Beef Consumption Changes," Table 2.

[26] Ozawa, "Bovine Spongiform Encephalopathy in Japan and Options for Control." 2007, 26.

[27] Ozawa, "BSE Risks in Asia and its Status in Japan," undated, remarks quoted by USMEF, Korea, (accessed October 1, 2007).

[28] Peterson and Chen, "The Impact of BSE on Japanese Retail Meat Demand", 2005, 320–21.

[29] USDA, FAS, *Japan: Livestock and Products Annual, 2007*, October 15, 2007, 5.

[30] Clemens, "After the Ban," April 2007, 2; and industry representatives, interviews by Commission staff, April 15–16, 2008.

largest retailers, have begun to carry U.S. beef.[31] Declines in Japanese beef consumption since 2003 may be largely the result of increasing prices resulting from the restriction in supply. Between FY 2002 and FY 2007, average import prices for beef increased by 20.2–42.8 percent, depending on the cut. [32] Exchange rate effects are discussed below.

Import Market Characteristics and Trends

Imports by Major Supplier

In 2002 and 2003, 94 percent of Japanese imports of beef were supplied by the United States (54 percent) and Australia (40 percent) (table 5.2). But following the discovery of BSE in the United States, Japanese imports of U.S. beef all but disappeared, with imports from the United States plummeting from $1.3 billion in 2003 to just $3 million in 2004. In response, the Japanese increasingly sourced their imports from Australia such that in 2004 about two-thirds of the gap left by the United States was made up by increased imports from Australia. Imports from New Zealand also rose, increasing by about $114 million from 2003 to 2004, while imports from China nearly doubled. As a result of the shift to alternative sources of supply, the overall value of Japanese beef imports fell only moderately, from $2.5 billion to $2.1 billion, or by 13 percent.

Japan's beef imports from the United States have slowly increased since 2004, especially since July 2006 when certain restrictions on imports from the United States were loosened. However, Australia continues to be the predominant import source, accounting for about three-quarters of all Japanese beef imports in 2007. Although the United States overtook New Zealand as the second leading supplier in 2007, garnering a market share of about 10 percent, imports of U.S. beef in 2007 remained less than one-fifth their 2003 value (table 5.2). In 2003, U.S. beef exports to Japan accounted for 37 percent of all U.S. beef exports on a value basis. In 2007, U.S. beef exports to Japan accounted for 7 percent of all U.S. beef exports.

In addition to the lifting of certain restrictions on U.S. beef, Japanese imports of U.S. beef may have been affected by exchange rate changes. During 2002–07, the U.S. dollar depreciated approximately 7 percent relative to the Japanese yen, in nominal terms.[33] This depreciation made U.S. beef relatively less expensive during the period. Furthermore, the Australian dollar and the New Zealand dollar have both appreciated by over 40 percent relative to the Japanese yen during the period, making beef from these import sources relatively more expensive.

Australia is the most significant competitor to the United States in the Japanese imported beef market.[34] A traditional advantage of U.S. beef exporters is their ability to supply full shipments of the specific cuts favored in the Japanese market. A large share of Australian beef exports to Japan are on a full set basis,

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[31] USDA, FAS, *Japan: Livestock and Products Annual, 2007*, October 15, 2007, 5; and USMEF official, interview by Commission staff, April 16, 2008.

[32] ALIC, "Monthly Statistics," May 2008, 8, Table 3b.

[33] IMF, International Financial Statistics, November 2007.

[34] USDA, FAS, *Japan: Livestock and Products, The Japanese Beef Market*, October 11, 2005, 2.

TABLE 5.2 Beef: Japan's imports, by leading suppliers, 2002–07 (million U.S. dollars)

Market	2002	2003	2004	2005	2006	2007
Australia	715.2	988.4	1,858.9	2,091.3	1,898.7	1,794.2
United States	988.0	1,343.6	3.0	8.1	66.5	244.3
New Zealand	48.7	74.7	189.1	243.7	190.6	176.8
Mexico	0.7	0.5	12.3	43.5	35.8	49.0
China	15.9	24.2	47.3	71.5	45.9	39.5
Canada	51.7	32.7	0.0	0.1	17.0	25.6
Chile	0.2	0.8	9.5	25.8	10.7	11.5
Brazil	1.6	1.8	7.5	13.4	7.4	6.5
Argentina	0.3	0.3	2.5	3.0	2.3	3.3
Costa Rica	0.4	0.1	0.9	3.0	1.5	3.0
Nicaragua	0.0	0.0	2.3	2.5	1.6	2.2
Panama	0.2	0.2	0.4	1.6	1.6	2.0
ROW	4.1	3.3	3.5	2.7	2.6	2.6
Total	1,827.0	2,470.6	2,137.4	2,510.2	2,282.1	2,360.5

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total. ROW denotes rest of the world.

meaning that buyers are required to purchase all the cuts from a carcass. This results in a surplus of cuts, such as round, that are less desirable in the Japanese market, and reduces the substitutability of Australian beef compared to U.S. beef. Australia's ability to supply the Japanese market is also constrained by its production capacity, particularly of its feeding operations.

Imports by Products

World

During 2002–07, about 84 percent of Japanese beef imports were boneless cuts of beef, either chilled (HS 020130) or frozen (HS 020230). Chilled beef is more likely to be high-quality product for retail sale, and frozen beef is more likely to be for the foodservice segment or for processing. The quality differences are apparent from the AUV of chilled and frozen beef throughout the period, with chilled boneless beef having a substantially higher AUV than frozen boneless beef (table 5.3).

The specific cuts of meat imported under HS 020130 and HS 020230 are not discernible from the trade statistics. However, data from the Agriculture & Livestock Industries Corporation of Japan (ALIC) indicate that the share of frozen boneless beef imports accounted for by ribs has declined during the period, while imports of "other" cuts have increased (table 5.4).[35] Offal [36] is the second-largest Japanese beef import category after boneless. Imports of edible offal accounted for $268 million in 2007, or about 11 percent of all Japanese beef imports on a value basis.

[35] ALIC, Monthly Statistics, May 2008, Table 3a.
[36] Imports under HS 020610, 020621, 020622, and 020629.

TABLE 5.3 Beef: Japan's imports from the world, by HS subheading, 2002–07

HS subheading		2002	2003	2004	2005	2006	2007
		Quantity *(mt)*					
020110	Fresh/chilled carcass	548	651	55	29	498	1,335
020120	Fresh/chilled bone-in	6,624	5,756	899	745	354	543
020130	Fresh/chilled boneless	269,397	301,919	219,790	238,809	233,800	225,663
020210	Frozen carcass	374	463	559	458	498	797
020220	Frozen bone-in	11,504	16,884	3,876	3,231	1,945	3,552
020230	Frozen boneless	223,591	276,554	219,028	234,176	236,379	251,422
020610	Fresh/chilled edible offal	4,484	6,934	5,645	6,187	6,496	6,326
020621	Frozen edible offal, tongue	26,453	26,185	9,142	9,324	9,445	9,882
020622	Frozen edible offal, liver	2,159	3,949	1,526	1,204	1,411	1,842
020629	Frozen edible offal, other	42,615	37,607	13,183	15,313	16,275	16,925
021020	Salted, in brine, or dried	907	694	249	188	169	74
160250	Prepared or preserved beef	17,713	19,001	25,741	32,331	27,657	16,301
	Total	606,370	696,598	499,693	541,995	534,928	532,661
		Million *(U.S. dollars)*					
020110	Fresh/chilled carcass	3.2	4.4	0.1	0.2	1.7	4.1
020120	Fresh/chilled bone-in	29.7	15.2	3.7	3.0	2.1	3.9
020130	Fresh/chilled boneless	1,030.8	1,371.0	1,155.6	1,303.4	1,255.8	1,267.0
020210	Frozen carcass	2.0	2.2	1.2	1.6	1.7	2.6
020220	Frozen bone-in	20.5	36.6	9.3	13.2	5.1	13.6
020230	Frozen boneless	494.9	715.3	626.4	684.7	657.3	725.5
020610	Fresh/chilled edible offal	18.6	34.0	48.3	84.9	68.8	69.4
020621	Frozen edible offal, tongue	94.9	115.9	110.7	183.4	94.3	106.7
020622	Frozen edible offal, liver	2.5	4.7	2.7	3.2	3.2	3.5
020629	Frozen edible offal, other	79.1	99.2	69.1	93.1	79.8	88.4
021020	Salted, in brine, or dried	9.2	10.3	4.3	2.3	2.6	1.7
160250	Prepared or preserved beef	41.6	61.9	106.0	137.4	109.7	74.0
	Total	1,827.0	2,470.6	2,137.4	2,510.2	2,282.1	2,360.5
		Unit value *($/mt)*					
020110	Fresh/chilled carcass	5,896	6,725	2,656	5,663	3,504	3,091
020120	Fresh/chilled bone-in	4,489	2,635	4,131	3,978	5,984	7,156
020130	Fresh/chilled boneless	3,826	4,541	5,258	5,458	5,371	5,615
020210	Frozen carcass	5,258	4,842	2,119	3,446	3,494	3,262
020220	Frozen bone-in	1,782	2,169	2,397	4,097	2,597	3,829
020230	Frozen boneless	2,213	2,586	2,860	2,924	2,781	2,886
020610	Fresh/chilled edible offal	4,154	4,900	8,558	13,720	10,598	10,977
020621	Frozen edible offal, tongue	3,587	4,424	12,107	19,665	9,987	10,800
020622	Frozen edible offal, liver	1,176	1,193	1,764	2,668	2,246	1,900
020629	Frozen edible offal, other	1,855	2,637	5,240	6,077	4,906	5,224
021020	Salted, in brine, or dried	10,127	14,787	17,354	12,115	15,175	22,945
160250	Prepared or preserved beef	2,351	3,255	4,118	4,249	3,966	4,542
	Average	3,013	3,547	4,277	4,631	4,266	4,432

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total. ROW denotes rest of the world.

TABLE 5.4 Frozen boneless beef: Japan's imports from the world, by cut, FY 2002–07 (mt)

Product	FY 2002	FY 2003	FY 2004	FY 2005	FY 2006	FY 2007
Loins	10,831	10,779	10,150	10,267	11,791	8,830
Chuck, clod, round	29,221	46,827	39,120	36,780	33,010	29,375
Ribs	155,039	122,429	45,140	53,944	63,936	67,864
Other	81,094	91,724	133,059	128,162	133,840	122,066

Source: ALIC Monthly Statistics, May 2008, Table 3a.

United States

Like Japan's overall beef imports, imports from the United States are predominantly chilled and frozen boneless beef (HS 020310 and 020230). In 2003, these products accounted for 82 percent of the value of all Japanese imports of U.S. beef (table 5.5), while offal accounted for about 13 percent. As Japanese imports of U.S. beef returned following the 2004 ban, boneless beef and offal continued to account for most of the trade. A comparison of AUVs for imports from the world and United States shows values for U.S. products that are consistently higher for the vast majority of products. For frozen beef in particular, the AUV for U.S. product was about 21 percent higher in 2003 and 44 percent higher in 2007 than the global average AUV. This difference reflects the premiums Japanese consumers are willing to pay for high quality U.S. grain-fed beef.

Even though U.S. exporters were able to find alternative markets for the 350,000 mt of beef they stopped shipping to Japan in 2004, certain products, such as offal, received significant premiums in Japan because of strong consumer demand. Therefore, the loss of the Japanese market significantly curtailed U.S. exporters' overall profitability. An example of the financial loss related to U.S. exports of beef tongue is described in box 5.2.

Animal Health, Sanitary, and Food Safety Regulations in Japan

Regulatory Framework

Responsibility for animal health and food safety regulations in Japan fall principally to two ministries, the Ministry of Agriculture, Forestry, and Fisheries of Japan (MAFF) and the Department of Food Safety within the Ministry of Health, Labor, and Welfare (MHLW). MAFF is primarily responsible for animal health issues. The MHLW covers the impacts of food safety on human health. In addition, the Food Safety Commission (FSC) was established in 2003 to evaluate food safety risks, monitor the effectiveness of control measures, and provide information on food safety. The principal food safety regulations in Japan that impact U.S. beef imports are those related to concerns with BSE.

TABLE 5.5 Beef: Japan's imports from the United States, by HS subheading, 2002–07

HS subheading		2002	2003	2004	2005	2006	2007
		Quantity *(mt)*					
020110	Fresh/chilled carcass	426	488	0	13	414	1,161
020120	Fresh/chilled bone-in	6,154	5,264	1	2	0	62
020130	Fresh/chilled boneless	117,243	146,178	53	602	9,039	26,729
020210	Frozen carcass	282	271	0	0	14	0
020220	Frozen bone-in	8,990	13,884	0	0	2	1,033
020230	Frozen boneless	116,822	129,933	0	85	2,794	15,736
020610	Fresh/chilled edible offal	1,421	2,063	0	7	27	620
020621	Frozen edible offal, tongue	19,376	17,255	26	0	47	606
020622	Frozen edible offal, liver	1,820	3,762	0	22	0	271
020629	Frozen edible offal, other	33,074	29,584	461	1,625	1,416	526
021020	Salted, in brine, or dried	754	529	0	0	0	0
160250	Prepared or preserved beef	1,530	1,700	0	0	0	0
	Total	307,892	350,911	540	2,357	13,754	46,744
		Million *(U.S. dollars)*					
020110	Fresh/chilled carcass	2.9	4.0	0.0	0.1	1.3	3.1
020120	Fresh/chilled bone-in	27.9	13.1	([a])	([a])	0.0	0.4
020130	Fresh/chilled boneless	491.6	698.3	0.3	4.6	51.7	154.8
020210	Frozen carcass	1.8	2.1	0.0	([a])	([a])	0.0
020220	Frozen bone-in	16.1	31.2	0.0	0.0	([a])	5.9
020230	Frozen boneless	292.4	405.4	0.0	0.5	11.1	65.6
020610	Fresh/chilled edible offal	5.3	9.3	0.0	0.1	0.1	7.9
020621	Frozen edible offal, tongue	76.4	83.6	0.1	0.0	0.1	5.3
020622	Frozen edible offal, liver	1.8	4.4	0.0	0.1	0.0	0.3
020629	Frozen edible offal, other	60.4	78.7	2.7	2.7	2.1	0.9
021020	Salted, in brine, or dried	6.9	7.4	0.0	0.0	0.0	0.0
160250	Prepared or preserved beef	4.7	6.2	0.0	0.0	0.0	0.0
	Total	988.0	1,343.6	3.0	8.1	66.5	244.3
		Unit value *($/mt)*					
020110	Fresh/chilled carcass	6,799	8,275	([b])	6,462	3,242	2,697
020120	Fresh/chilled bone-in	4,526	2,491	5,938	11,884	([b])	6,083
020130	Fresh/chilled boneless	4,193	4,777	5,590	7,633	5,725	5,791
020210	Frozen carcass	6,277	7,743	([b])	([b])	2,543	([b])
020220	Frozen bone-in	1,789	2,246	([b])	([b])	3,217	5,754
020230	Frozen boneless	2,503	3,120	([b])	5,511	3,963	4,167
020610	Fresh/chilled edible offal	3,739	4,500	([b])	9,991	3,617	12,771
020621	Frozen edible offal, tongue	3,941	4,843	2,183	([b])	3,029	8,801
020622	Frozen edible offal, liver	1,005	1,164	([b])	6,084	([b])	1,147
020629	Frozen edible offal, other	1,825	2,660	5,828	1,681	1,484	1,633
021020	Salted, in brine, or dried	9,117	13,940	([b])	([b])	([b])	([b])
160250	Prepared or preserved beef	3,044	3,641	([b])	([b])	([b])	([b])
	Average	3,209	3,829	5,641	3,443	4,838	5,226

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total.

[a]Less than $50,000.
[b]Not applicable.

BOX 5.2 Financial losses in U.S. exports of beef tongue to Japan

Frozen beef tongue (HS subheading 020621) accounted for a significant share of U.S. beef exports to Japan prior to 2004. In 2002, frozen tongue accounted for 7.7 percent of U.S. beef exports to Japan on a value basis and 6.3 percent on a quantity basis. In 2007, exports of frozen tongue accounted for 2.1 percent of U.S. beef exports to Japan on a value basis, and 1.3 percent on a quantity basis. In Japan, beef tongue is commonly used in Korean-style *yakiniku* dishes.[1]

The Japanese market for beef tongue is particularly significant in terms of the share of U.S. production. In 2002, U.S. slaughter of cattle and calves was 37.0 million head. At 1.5 kg of tongue per animal, total U.S. production of beef tongue in 2002 was approximately 55,500 mt. Exports to Japan were 19,376 mt, or 34.9 percent of total U.S. production. In 2006, U.S. slaughter of cattle and calves was 34.6 million, and exports of frozen beef tongues to Japan of 47 mt accounted for much less than 1 percent of total U.S. production of approximately 51,900 mt of beef tongue. In 2007, U.S. exports of beef tongue to Japan increased to 606 mt, approximately 1.1 percent of total U.S. production of 52,800 mt of tongue from 35.2 million cattle and calves slaughtered that year.[2]

U.S. exports of frozen beef tongue illustrate the costs associated with the loss of an export market. In 2003, Japan was the largest export market for frozen beef tongue from the United States. U.S. exports to Japan were 19,376 mt, with a unit value of $4.84 per kg. In 2007, Mexico was the largest export market for U.S. frozen beef tongue, with exports of 11,065 mt valued at $3.32 per kg. U.S. beef producers have lost both export volume and unit value during 2004–2007.

Japanese consumers have not been able to replace U.S. imports of tongue with similar product from another import source, despite the unit values of $8.80 per kg on U.S. exports of frozen beef tongue to Japan in 2007. Together with the fact that U.S. producers have not been able to export nearly the same volume of tongue under the current Japanese EV program, this lack of replacement is an indication of the restrictions and costs of compliance with the Japanese EV program.

[1] Industry representative, interview by Commission staff, April 15, 2008.
[2] USDA, NASS, *Livestock Slaughter: 2002 Summary*, March 2003; and USDA, NASS, *Livestock Slaughter: 2006 Summary,* March 2007.

In regard to BSE, MAFF is responsible for implementing Japan's 2002 BSE law.[37] Key components of this law are a feed ban, a BSE field surveillance program, and the establishment of a traceability system. The feed ban mandates that feed containing meat or bone meal derived from cattle cannot be fed to cattle. Under the BSE field surveillance program, MAFF tests cattle deemed at greatest risk of BSE. Through September 2006, the program had tested approximately 300,000 animals and detected 11 positive cases.[38]

Traceability is a key component of Japan's strategy to combat BSE and has expanded in scope since the original system was enacted in 2002. In 2003, the Law for Special Measures Concerning the Management and Relay of Information for Individual Identification of Cattle (the beef traceability law) was enacted, requiring that all domestically produced beef be traceable from the farm to final purchase by the consumer. The initial phase was implemented in December 2003 and required that cattle be traceable from farm to slaughterhouse. The second phase was implemented on December 1, 2004, and extended traceability to the restaurant or point of retail sale. A 10-digit number that is attached to all retail packages of meat identifies each animal at birth.[39] According to an industry source in Japan, even though most consumers do not often use the system to trace

[37] MAFF initially responded to the first confirmed case of BSE in Japan in September 2001 by establishing a BSE screening program in October of that year, and a program to buy back and incinerate an estimated 12,600 mt of domestic beef in Japan that was produced before the screening program was implemented. The Law on Special Measures Against Bovine Spongiform Encephalopathy (Law No. 70) came into force on June 14, 2002.
[38] USDA, FAS, *Bovine Spongiform Encephalopathy in Japan*, 2007, 23.
[39] USDA, FAS, *Japan: Livestock and Products, Japan Mandates Traceability for Beef*, July 1, 2003; *Japan: Livestock and Products, Update; Japan's Beef Traceability Law*, December 29, 2004.

the origin of beef purchased at retail, the fact that it is traceable is important in ensuring Japanese consumers as to the safety of domestic beef.[40]

The MHLW has jurisdiction over food safety regulation, including BSE as it relates to the risk to human health. The MHLW mandated that all cattle slaughtered in Japan be tested for BSE, although in August 2005, regulations were changed to require that only cattle over 20 months of age be tested for BSE at slaughter.[41] However, in practice, all cattle slaughtered in Japan continue to be tested for BSE, regardless of age. According to industry officials, testing is reportedly regarded as a marketing advantage.[42] Through December 2006, over 6.3 million cattle had been tested, and 31 tested positive for BSE (including those tested by MAFF as part of the BSE field surveillance program).[43]

Measures Affecting Imports from the United States

Japanese regulations differ in certain respects from OIE guidelines. For example, Japanese regulations do not allow imports of processed, ground, finely textured, or mechanically separated beef from cattle of any age. More importantly with regard to the United States, beef imported from the United States can only be from cattle no more than 20 months of age, and the entire vertebral column is regarded as SRM and removed.

The requirement that U.S. beef be from cattle of 20 months or younger is a major impediment to imports from the United States entering the Japanese market. Only a small percentage of U.S. fed cattle that are ready for slaughter meet this age requirement. The availability of such young cattle also varies throughout the year. Most calves are born in early spring, and cattle are typically raised for 12–20 months before being sent to a feedlot for 3–5 months. Thus, beef from cattle that are born in March would reach typical slaughter weight starting in June of the following year and would be eligible for sale to Japan under current regulations only through November.[44] The majority of cattle do not reach slaughter weight until more than 20 months of age. The ideal slaughter age, for U.S. grain-fed cattle is 24–30 months of age.[45]

The shortage of cattle 20 months or younger is compounded by the fact that sufficient documentation of chronological age is only available for a small share of fed cattle in the United States. In an attempt to address this problem, the USDA conducted a maturity study to determine the relationship between maturity characteristics utilized in USDA carcass evaluation and chronological age of cattle. The study identified a maturity score (A^{40}) at which all cattle examined were 20 months or younger. A maturity score of A^{40} or below is sufficient to verify that cattle are 20 months or younger, and beef from such cattle is eligible for inclusion in the EV program for Japan. However, most cattle in the USDA study that were actually 20 months of age had a higher maturity

[40] Industry representative, interview by Commission staff, April 15, 2008.
[41] Ozawa, "Bovine Spongiform Encephalopathy in Japan and Options for Control," 2007, 26.
[42] Industry representatives, interviews by Commission staff, April 15 and 16, 2008.
[43] Ozawa, "Bovine Spongiform Encephalopathy in Japan and Options for Control," 2007, 22. Three additional cases were reported in 2007, bringing the total number of BSE cases in Japan since 2001 to 34.
[44] Industry official, interview by Commission staff, August 20, 2007.
[45] USITC hearing transcript, November 15, 2007, Rosemary Mucklow, National Meat Association, 107.

score, and would not be eligible for inclusion in the EV program for Japan without documentation of age.[46] The inability to verify the age of all cattle that are 20 months or younger further restricts the quantity of U.S. beef eligible for export to Japan.

Other Barriers to Imports from the United States

Tariff Treatment

Beef imports into Japan face significant tariff barriers. The NTR rate on fresh/chilled or frozen beef muscle cuts is 38.5 percent. Rates on edible offal generally range from 12.8 percent to 21.3 percent (table 5.6). U.S. exporters, as well as most U.S. competitors in the market, including Australia and New Zealand, face the same tariff rates. In addition to the NTR tariff, imports of chilled and frozen beef are subject to safeguard provisions such that a tariff of 50 percent is applied if cumulative quarterly imports of fresh/chilled or frozen products in the current fiscal year (April 1 to March 31) exceed 117 percent of comparable imports in the previous year.

TABLE 5.6 Beef: Japan's NTR duty rates, 2008

HS subheading		NTR rate
020110[a]	Fresh/chilled carcass	38.5%
020120[a]	Fresh/chilled bone-in	38.5%
020130[a]	Fresh/chilled boneless	38.5%
020210[a]	Frozen carcass	38.5%
020220[a]	Frozen bone-in	38.5%
020230[a]	Frozen boneless	38.5%
020610	Fresh/chilled edible offal	12.8–21.3%
020621	Frozen edible offal, tongue	12.8%
020622	Frozen edible offal, liver	12.8%
020629	Frozen edible offal, other	12.8–21.3%
021020	Salted, in brine, or dried	161¥/kg ($0.62/lb.)
16025010	Prepared or preserved beef	21.3–38.3%

Source: APEC tariff database, http://www.apectariff.org (accessed June 16, 2008).

[a]Japan's bound tariff rates for beef meat (HS headings 0201 and 0202) are 50 percent, but the temporary rate of 38.5 percent has been levied on imports throughout 2002–07, except for August 1, 2003–March 31, 2004 when a safeguard tariff rate of 50 percent was levied on imports of chilled beef.

Because of the low level of imports since 2003, Japan's Tariff and Foreign Exchange Council recommended that the safeguard trigger point be maintained at 117 percent of the average level of imports in FY 2002–03.[47] This recommendation has been maintained for FY 2008 and is the third year in a row that this special safeguard measure has been implemented.

[46] USDA, "Final Report to the Government of Japan," January 19, 2005.

[47] USDA, FAS, *Japan: Livestock and Products, Beef Safeguard Calculation Announced*, December 28, 2007, 2.

Technical Barriers

In July 2006, Japan began a "voluntary" 100 percent inspection program for U.S. beef. Under this program, every individual box of U.S. beef was subject to inspection. This program was costly and time consuming, and served to further restrict imports. In mid-June 2007, Japan ended this 100 percent inspection requirement.[48]

Currently, other than for measures related to BSE, imports of beef from the United States are subject to the same level of monitoring tests as shipments from any other source. However, because of Japanese concerns about BSE, a sample of boxes from every shipment of beef from the United States is checked for conformance with the Japanese EV program. In addition, the product descriptions are checked against a list of product descriptions for each shipper. Discrepancies are considered to be potential compliance violations of the EV program, and if a discrepancy is discovered, all shipments from a U.S. shipper can be held until the discrepancy is resolved.[49]

Support for Domestic Production

Japanese beef producers benefit from significant government protection and support. In addition to the border protection measures discussed above, the ALIC purchases and resells imported beef in order to stabilize wholesale prices, provides deficiency payments whenever the price of beef calves falls below the minimum basis price, and supports programs to promote production, environmental, and food safety measures that benefit domestic livestock producers and rural communities.[50] In addition, the Feed Price Stabilization Scheme, partly funded by a check-off program and administered by MAFF, stabilizes the price of feed to livestock producers.[51]

The OECD provides a measure of the degree to which Japanese beef producers are protected by these and other interventions.[52] From 2002 to 2006, the average price paid for beef by consumers in Japan was about 39 percent higher than the border price (both measured at the farm gate) (table 5.7). The support provided to beef producers declined during the period, but was equivalent to an estimated 28 percent of gross farm receipts for beef in 2006 (percent SCT).

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[48] USDA. FAS. *Japan: Livestock and Products Annual, 2007*, October 15, 2007, 5.

[49] U.S. Embassy staff and industry representatives, interviews by Commission staff, Tokyo, Japan, April 14–16, 2008.

[50] ALIC Web site. http://alic.lin.go.jp/english/about/livestock.html (accessed May 12, 2008).

[51] MAFF officials, interviews by Commission staff, Tokyo, Japan, April 17, 2008.

[52] OECD, Agricultural Policies in OECD Countries, 2007, 264; and OECD, Agricultural Policies in OECD Countries 2005, 274.

TABLE 5.7 Beef: OECD estimates of Japan's support for production, 2002–06

Measure	2002	2003	2004	2005	2006
Producer support estimate (PSE)[a]	32	33	([b])	([b])	([b])
Single commodity transfers (SCT)[c]	([b])	([b])	31	28	28
Consumer NPC[d]	1.39	1.39	1.39	1.39	1.39

Source: OECD, *Agricultural Policies in OECD Countries*, 2005 and 2007.

[a]Percent PSE is equal to total transfers to producers as a percentage of receipts.
[b]Not available.
[c]Percent SCT is equal to commodity-specific transfers as a percentage of receipts.
[d]Consumer NPC is the ratio of the price for beef and veal paid by consumers to the border price.

CHAPTER 6
Korea

In 2003, Korea was the second-largest export market for U.S. beef after Japan (table 2.3). At the time, the United States was the largest supplier of imported beef to Korea, and more than three-quarters of U.S. exports, by value, were frozen boneless and bone-in cuts. Immediately after the discovery of BSE in a cow in the United States in December 2003, Korean officials instituted a ban on nearly all imports of U.S. beef (box 6.1). After lengthy bilateral negotiations that concluded in January 2006, Korea partially lifted the ban in September 2006, but only U.S. boneless beef from cattle under 30 months of age (UTM) was permitted entry. In October 2007, when a vertebral column (considered to be an SRM by Korea) was found in a U.S. beef shipment, Korea suspended quarantine inspections on all U.S. beef, effectively banning imports once again.

BOX 6.1 Summary of Korea's BSE-related events and restrictions on imports of U.S. beef

December 2003	Following discovery of BSE in a U.S. cow, Korea closes market to U.S. beef.
January 2006	Protocol established for certain beef imports from the United States; permitted imports of boneless meat from cattle under 30 months of age.
September 2006	Korea's market opened for U.S. beef under the new protocol.
November–December 2006	Bone fragments found in three shipments of U.S. beef.
March 2007	Korea instituted less stringent inspection procedures; allowed for partial rejection of a shipment when bone chips are found.
May–Sept. 2007	Bones found in several U.S. beef shipments; U.S. plants involved are suspended from shipping to Korea.
June 2007	The United States requests a revision to the current protocol based on its OIE classification as a controlled risk country for BSE.
October 2007	An SRM (part of a vertebral column) found in a U.S. shipment. A quarantine inspection suspension stopped all imports from the United States.
April 2008	Bilateral protocol signed between the United States and Korea. Korea to allow all beef imports from the United States, except for SRMs.
April–June 2008	Opposition parties, trade unionists, students, and other groups in Korea protest the April 2008 beef protocol.
June 26, 2008	Korea officially releases the text of the new protocol. Inspections of imports of U.S. beef resume.

Source: USDA, FAS, GAIN reports, various dates.

Bilateral negotiations in April 2008 between Korea and the United States ended with an agreement (known as the "beef protocol") in which Korea would allow imports of all U.S. beef products from cattle of any age, except for SRMs that pose the greatest risk of transmission to humans of the human variant of BSE.[1] The Korean government postponed its release of the beef protocol in the federal gazette, originally scheduled for June 3, 2008, until June 26, 2008.[2] However, once the protocol was officially released, inspections of imports of U.S. beef resumed the same day.[3]

[1] *Chosun Ilbo*, "New Import Conditions for U.S. Beef to Be Proclaimed," May 26, 2008.
[2] *JoongAng Daily*, "The Government Appears to Blink on U.S. Beef," June 3, 2008.
[3] USDA, FAS official, email message to Commission staff, July 11, 2008.

The resumption of beef imports from the United States remains very unpopular in Korea, in large part because voters believe they were not properly consulted by their government before the protocol was signed.[4] Specifically, Korean consumers are particularly concerned about the agreement's proposal that Korea accept U.S. beef OTM.[5] Recent street protests in Seoul and strong language by Korean opposition parties against any loosening of U.S. beef restrictions highlight the political sensitivity that U.S. beef faces in the Korean market.[6]

Discussions in June 2008 between high-ranking U.S. and Korean officials centered on reassuring Korean consumers that U.S. beef is safe without renegotiating the Korea-U.S. FTA (KORUS FTA).[7] However, the beef protocol contained several late-minute addendums that clarified that the United States government will remove all SRMs and the Korean government has the right to take "necessary measures" to protect the health and safety of the Korean people if SRMs are discovered in U.S. beef shipments. In addition, under a "transitional private sector initiative" by U.S. beef exporters, only beef and beef products produced by establishments verified by USDA under a Less than 30 Month Age-Verification Quality System Assessment Program will be permitted to enter Korea until Korean consumer confidence in U.S. beef recovers.[8] Now that beef inspections have resumed, U.S. beef sales in Korea are expected to be about $50 million per month through the end of 2008.[9]

The continued exclusion of many U.S. beef products from the Korean market means that products for which Korea is a preferred market are sold into far less profitable markets. According to USMEF, although the United States supplied 40 percent of the Korean market for short ribs in 2000, current exports are zero.[10] The opening of the Korean market to U.S. short ribs was expected to increase U.S. prices for this product by up to $2 per pound. Absent exports to Korea, the best use for short ribs in the United States is making trim, a lower-value product. The premium in Korea, compared to the next-best market, was estimated to be $0.25 per pound for shank/humorus bones and $0.65–0.70 per pound for femur bones in 2003. For boneless beef cuts, the premium was $0.50–0.80 per pound in 2007.[11]

Model simulation results indicate that losses in U.S. beef exports to Korea due to BSE measures totaled $3.7 billion during 2004–07. Export losses were primarily in fresh, chilled, or frozen boneless beef; frozen bone-in beef; and frozen edible offal (other than tongues and livers). Model results indicate that the effect of the removal of Korean tariffs on U.S. beef imports over the same period (of 18–72 percent) would have increased U.S. exports to Korea by $1.3 billion.

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[4] Australian industry representative, interview by Commission staff, Seoul, Korea, June 2, 2008; and U.S. embassy staff, interview by Commission staff, Seoul, Korea, June 2, 2008.

[5] According to Koreans knowledgeable about consumer sentiments regarding U.S. beef, Koreans would likely accept U.S. beef under any protocol that is also approved by either Japan or Taiwan. Korean industry representative, interview by Commission staff, Seoul, Korea, June 3, 2008.

[6] *Yonhap News Agency*, "Government to Consult Farmers," May 27, 2008; and Harden, "In S. Korea, Regrets and Assurances on U.S. Beef," May 23, 2008.

[7] *JoongAng Daily*, "Seoul Slaps Limits on U.S. Beef, Delays Import Start," June 4, 2008; and *CNN.com*, "Thousands Protest in Seoul against U.S. Beef," June 10, 2008.

[8] MIFAFF, "Import Health Requirements for U.S. Beef and Beef Products," June 26, 2008.

[9] USDA, FAS official, email message to Commission staff, July 11, 2008.

[10] USMEF, *Methodology and Results of the Value of Beef Exports Analysis*, July 2002, 20.

[11] USMEF official, email message to Commission staff, June 11, 2008.

Thus, Korea is a market highly protected with tariffs alone. But BSE restrictions on U.S. beef exports create an adverse trade impact nearly 200 percent greater than the existing tariff protection.

Korean Market Characteristics and Trends

Beef Consumption Trends

Beef is a relatively minor source of protein for Korean consumers, behind seafood, pork, and chicken. Korea is one of the world's leading consumers of seafood, and total consumption of fisheries products significantly exceeds the consumption of beef, pork, and poultry combined. Per capita annual consumption of fisheries products was 54.2 kg in 2006 (the latest data for fisheries available), and pork and broiler meat were 28.7 kg and 12.9 kg, respectively. Annual per capita beef consumption in 2006 was 10.2 kg.[12]

From 2003 through 2007, per capita consumption of beef declined by 18 percent. Nearly all of the decline came in 2004, immediately after Korea's ban on imports of U.S. beef took effect (table 6.1).[13] Changes in consumption patterns were driven by an inability of other major beef exporting countries such as Australia and New Zealand to fully replace for U.S. beef shipments in 2004. Korean beef herds are unable to expand to meet demand because they face a higher cost structure than competitor countries, including limited agricultural land and the need to import nearly all feed grain inputs.[14] Domestic production increased

TABLE 6.1 Beef: Korea's production, consumption, trade, and key factors affecting demand, 2002–07

Market data	2002	2003	2004	2005	2006	2007
Beginning stocks (1,000 mt cwe)	25	40	61	1	3	5
Production (1,000 mt cwe)	192	182	186	195	200	205
Imports (1,000 mt cwe)	442	457	224	250	298	315
Total supply (1,000 mt cwe)	659	679	471	446	501	525
Exports (1,000 mt cwe)	0	0	0	0	0	0
Domestic consumption (1,000 mt cwe)	619	618	470	443	496	515
Ending stocks	40	61	1	3	5	10
Exchange rate (KR won/U.S.$)	1,251.10	1,191.60	1,145.30	1,024.10	954.8	929.3
GDP/capita (U.S.$/person)	11,504	12,711	14,181	16,444	18,392	19,624
Population (millions)	47.6	47.9	48	48.1	48.3	48.4
Wholesale beef price index	100	99	92	115	115	122
Annual beef per capita consumption (kg)	13.0	12.8	9.7	9.1	10.2	10.5

Source: Production, consumption, and trade data from USDA, FAS, unless otherwise noted. Exchange rate, GDP per capita, and population data from IMF. Wholesale beef price index calculated from FAPRI database.

Note: Production, supply, and consumption data are in carcass weight equivalent. These data are not directly comparable to product weight data.

[12] U.S. industry representative, Korean market briefing for Commission staff, Seoul, Korea, June 4, 2008; USDA, FAS, *Livestock and Poultry: World Markets and Trade*, November 2007; USDA, FAS, *Republic of Korea: Fishery Products Annual, 2007*, November 9, 2007, 16; and USDA, FAS, *Republic of Korea: Poultry and Products Annual, 2007*, October 2, 2007, 10.

[13] USDA, FAS, *Republic of Korea: Poultry and Products Annual, 2007*, October 2, 2007, 10.

[14] Korean industry representative, interview by Commission staff, Seoul, Korea, June 3, 2008.

slightly during 2002–07, rising from 192,000 mt to 205,000 mt. Korean per capita beef consumption did not increase until 2006 and 2007, when beef imports from the United States resumed.[15]

Not evident in annual data is the seasonality of Korean beef consumption. Consumption rises in August because Korea's national day of thanksgiving is in September, and rises again just before the Lunar New Year. In addition, between August and the Lunar New Year, Koreans eat more beef offal in soups and stews as the weather turns cold.[16] After the Lunar New Year (late January or February), beef consumption declines and more pork is consumed.[17]

Sources of Supply

Domestic Production

Korea's beef market can be broadly segmented into four major product types—domestic beef (broadly known as Hanwoo), domestic Holstein steers and spent Holstein cows (dairy beef), imported grain-fed beef, and imported grass-fed beef. Precise data on the segment shares for total consumption are unavailable because grain- and grass-fed beef are not distinguished in the tariff schedule, and Korean cattle numbers are reported in head, not slaughter weight. However, Commission staff estimates that roughly 30 percent of total Korean beef consumption is Hanwoo beef, and 10 percent is from Holsteins; imported grass-fed beef accounts for 37 percent, and imported grain-fed beef accounts for the remaining 23 percent.[18]

Each of the four types of beef has specific characteristics in terms of production methods, channels of distribution, and uses in Korean cuisine.[19] Hanwoo cattle are a Korean domestic draft breed originally used in rice farming.[20] They are prized for the marbling of the meat, which is largely due to the grain and other concentrates that they are fed. Hanwoo beef is a premium product in Korean retail outlets and restaurants, and consumers pay a substantially higher price per pound.[21] Although other types of beef, whether from domestic or imported sources, are not considered to be substitutes for Hanwoo beef,[22] DNA tests have

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[15] Data for 2007 are preliminary. USDA, FAS, *Republic of Korea: Poultry and Products Annual, 2007*, October 2, 2007, 10.

[16] Voss, "Korea: Offal," July 2005, 2.

[17] Korean industry representative, interview by Commission staff, Seoul, Korea, June 2, 2008.

[18] Ministry of Food, Agriculture, Forestry, and Fisheries (MIFAFF) data from January–April 2008 indicate that nearly three-quarters of the Korean cattle slaughtered over that period were Hanwoo, and the remainder were Holsteins. Domestic production accounted for about 40 percent of the beef consumed in 2007 (table 6.1). All Korean imports of New Zealand beef are grass-fed, and about 72 percent of imports from Australia were grass-fed beef in 2007 (the remainder, grain-fed). Nearly all other Korean beef imports are from grain-fed cattle, including those from the United States and Mexico. Australian industry representatives, interview by Commission staff, Seoul, Korea, June 2, 2008; New Zealand industry representative, interview by Commission staff, Seoul, Korea, June 5, 2008.

[19] Mutondo and Henneberry, "Competitiveness of U.S. Meats in Japan and South Korea," July 29–August 1, 2007, 11 and 16.

[20] USDA, ERS, *South Korea: Beef Briefing Room*, undated (accessed June 12, 2008).

[21] Mutondo and Henneberry, "Competitiveness of U.S. Meats in Japan and South Korea," July 29–August 1, 2007, 19; and USDA, FAS official, email message to Commission staff, June 16, 2008.

[22] U.S. industry representative, Korean market briefing for Commission staff, Seoul, Korea, June 4, 2008.

shown that beef from imported sources and Holstein cattle produced domestically are often substituted for Hanwoo beef in restaurants.[23]

Imports

Prior to 2004, imports of grain-fed beef were largely from the United States. Australia is the other major supplier of imported grain-fed beef, but less than 10 percent of Australian beef exports to Korea were from grain-fed cattle when the U.S. beef ban took effect.[24] Grain-fed beef imports largely consist of well-marbled cuts such as chuck roll and short ribs. Chuck roll is used in *bulgogi*, a Korean barbeque dish using marinated beef strips.[25] Imported grain-fed short ribs are commonly used in Korean-style barbeque, called *galbi*.

Many Korean restaurants are family operations and have limited menus, focusing on just a few dishes and specializing in one type of meat, such as beef or pork. When imports of U.S. beef largely ended in December 2003, and with supplies of grain-fed beef from Australia limited, some restaurants served more dishes featuring pork, and others simply went out of business.[26]

Imported grass-fed beef is leaner meat and therefore less suitable for traditional Korean dishes that call for thinly sliced marbled beef. Supplied mainly by Australia and New Zealand, grass-fed beef is considered by Korean consumers to be of lower quality than imported grain-fed beef.[27] It is primarily used for processed products (such as hamburger) in the HRI market.[28] Research indicates that in Korea, grass-fed beef is a complement to grain-fed beef, not a substitute.[29]

Factors Affecting Beef Demand

The main factor affecting Korea's beef demand is consumer concern over health and food safety following the discovery of BSE. Several incidents, particularly in 2007 and 2008, magnified the concerns of Korean consumers about BSE. Currently, Korean consumers consider the risk of BSE in U.S. beef to be very high. In a May 13, 2008, survey on U.S. beef food safety risks, 78 percent of Korean respondents said that "U.S. beef is not safe."[30] Korean public perception has been influenced by (1) the discovery of a vertebral column (considered to be an SRM by Korea) in a U.S. beef shipment in October 2007, (2) uncertainty about the Korean government's commitment to food safety, and (3) a beef protocol that allows beef imports from the United States from cattle 30 months of age or older.[31] Scientific studies documenting the low risks of contracting the

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[23] USDA, FAS, *Republic of Korea: Livestock and Products Annual, 2005*, September 6, 2005, 7.

[24] Australian industry representative, interview by Commission staff, Seoul, Korea, June 2, 2008.

[25] U.S. industry representative, interview by Commission staff, Seoul, Korea, June 4, 2008.

[26] U.S. embassy staff, interview by Commission staff, Seoul, Korea, June 5, 2008.

[27] Mutondo and Henneberry, "Competitiveness of U.S. Meats in Japan and South Korea," July 29–August 1, 2007, 25.

[28] New Zealand industry representative, interview by Commission staff, Seoul, Korea, June 5, 2008.

[29] Mutondo and Henneberry, "Competitiveness of U.S. Meats in Japan and South Korea," July 29–August 1, 2007, 20.

[30] U.S. industry representative, Korean market briefing for Commission staff, Seoul, Korea, June 4, 2008.

[31] Ibid.; and U.S. embassy staff, interview by Commission staff, Seoul, Korea, June 2, 2008.

human variant of BSE from U.S. beef have not assuaged consumer fears, nor have assurances from the U.S. and Korean governments that U.S. beef is safe to eat.

Domestic producers of Holstein cattle and importers of non-U.S. beef also report that their beef sales have been negatively affected by recent events. In particular, Korea's Holstein farmers state that significant numbers of consumers believe that all Holsteins are infected with BSE because media reports of BSE typically show Holstein rather than Hanwoo cattle.[32]

Import Market Characteristics and Trends

Imports by Major Supplier

During 2002 and 2003, the United States supplied about 70 percent of Korea's imports of beef, by value. Australia was second with 20 percent (table 6.2). Following the discovery of BSE in the United States, imports of beef from the United States virtually ceased, declining from $797 million in 2003 to only $241,000 in 2004. Initially, Korean consumers were unable to find substitute suppliers of grain-fed beef. As a result, overall Korean beef imports fell from $1.1 billion in 2003 to $577 million in 2004, or by 47 percent.

Over the longer term, as it became clear that U.S. grain-fed beef would not reenter the Korean market quickly or in sufficient volumes, importers increasingly sourced grain-fed beef from other suppliers, notably Australia and Mexico, and grass-fed beef from New Zealand. The Australian industry saw an opportunity to meet the Korean demand for grain-fed beef and expanded the number of feedlot operations.[33] But Australian exporters were only able to supply 41,000 mt more beef to Korea in 2004 (valued at $200 million) than in 2003. The transition from traditional Australian grass-fed operations to the production of more grain-fed beef was aided by Japanese investments in feedlots. However, these investments produced beef largely for the Japanese market. By 2007, efforts to expand feedlot operations and overall grain-fed beef production allowed Australia to supply nearly 93 percent of the import value that the United States had supplied in 2003 but far lower volumes.[34]

New Zealand has doubled its beef shipments to Korea since 2003, shipping $155 million in 2007. But New Zealand beef producers only export grass-fed beef. They largely serve two channels, the HRI segment (producing ground beef) and retail outlets catering to consumers seeking leaner beef.[35] Some of the demand for beef has been supplied by increases in Korean domestic herds; from December 2005 to March 2008, the number of Korean Hanwoo and Holstein dairy cattle increased from 1.6 million head to 2.2 million head.[36]

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[32] Korean industry representative, interview by Commission staff, Seoul, Korea, June 3, 2008.

[33] Australia industry representative, interview by Commission staff, Seoul, Korea, June 2, 2008.

[34] USDA, FAS, *Japan: Livestock and Products, The Japanese Beef Market*, October 11, 2005, 3.

[35] New Zealand industry representative, interview by Commission staff, Seoul, Korea, June 5, 2008.

[36] U.S. industry representative, Korean market briefing for Commission staff, Seoul, Korea, June 4, 2008.

TABLE 6.2 Beef: Korea's imports, by leading suppliers, 2002–07 (million U.S. dollars)

Market	2002	2003	2004	2005	2006	2007
Australia	207.4	194.3	396.3	510.8	685.2	737.5
New Zealand	44.2	72.7	158.8	165.1	161.8	155.3
United States	638.5	797.1	0.2	1.1	0.6	117.7
Mexico	0.0	([a])	3.7	12.8	19.0	18.8
China	2.7	2.5	5.4	19.1	20.8	15.8
ROW	32.3	19.1	12.4	15.0	1.3	2.0
Total	925.1	1,085.7	577.0	723.8	888.7	1,047.0

Source: GTIS, Global Trade Atlas database.

Notes: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total. ROW denotes the rest of the world.

[a]Less than 50,000.

Nearly five years after the initial U.S. beef ban in December 2003, alternative sources of supply have not been able to match the large production volumes supplied by U.S. packers. In January 2006, Korea and the United States agreed on an import protocol that limited imports from the United States to deboned skeletal muscle meat (boneless cuts), and by September 2006, the ban was officially lifted.[37] But three U.S. shipments to Korea in November and December 2006 were found to contain bone fragments and were rejected. Korea eventually published less onerous inspection procedures on March 8, 2007, and beef imports from the United States resumed. Between March and October 2007, U.S. boneless beef sold well with Korean consumers. But bones and bone chips continued to be found in U.S. beef containers, leading to additional rejected shipments and increasingly negative media coverage.[38] Korea suspended quarantine inspections for all U.S. beef on October 5, 2007, after finding what was considered to be an SRM in a U.S. beef shipment. After extensive bilateral negotiations, the U.S. and Korean governments agreed to a new beef inspection protocol, and inspections of U.S. beef resumed on June 26, 2008.[39] Initial reports indicate that the newly inspected U.S. beef is being sold primarily through small butcher shops and a few small restaurants in Korea. Big discount stores are reluctant to sell U.S. beef until they know more about Korean consumer sentiment.[40]

U.S. beef suppliers face considerable challenges as they reenter the Korean market. The most significant will be to counteract an increasingly negative consumer perception of U.S. beef. Consumer perception of the safety of U.S. beef declined during 2008 as trade negotiations continued and press reports proliferated. Another challenge is to regain market share from the competitive Australian industry. Australian beef is increasingly being distributed to retail outlets, and the number of Australian retail brands is rising.[41] A mitigating factor,

[37] *Tradingmarkets.com,* "Chronology of Major Events in S. Korea-U.S. Beef Talks," undated (accessed May 30, 2008).

[38] USDA, FAS, *Republic of Korea: Livestock and Products Semiannual, 2008,* February 29, 2008, 10–11.

[39] USDA, FAS official, email message to Commission staff, July 11, 2008.

[40] Ibid.

[41] Australian industry representative, interview by Commission staff, Seoul, Korea, June 2, 2008.

and one that may provide a distinct advantage for the U.S. industry, is that U.S. beef exporters are able to supply large shipments of specific cuts favored in the Korean market without forcing purchasers to buy full sets.[42] A large share of Australian beef exports to Korea are on a full set basis,[43] which results in surpluses of cuts that are less desirable in the Korean market.[44] These cuts are difficult for importers to sell profitably. Australia's ability to compete in the Korean market is also constrained by its slaughter capacity.[45]

If the U.S. industry can overcome negative Korean consumer perceptions about BSE risks associated with U.S. beef, imports of U.S. beef are likely to be positively impacted by current exchange rates. In nominal terms, the U.S. dollar depreciated approximately 26 percent against the Korean won between 2002 and 2007, making U.S. beef relatively less expensive compared with domestic beef.[46] By contrast, the Australian dollar and the New Zealand dollar have appreciated 15 percent and 18 percent, respectively, against the Korean won during the period. The currency appreciation has made beef from these import sources more expensive in the Korean market, relative to both U.S. and domestic beef.

Imports by Products

World

During 2002–07, Korea's beef imports were largely of three types: boneless cuts, both fresh/chilled (HS 020130) and frozen (HS 020230); frozen bone-in cuts (HS 020220); and frozen edible offal, except tongues and livers (HS 020629). Over the six-year period, boneless cuts accounted for 65 percent of total imports by value, frozen bone-in beef accounted for 23 percent, and frozen edible offal accounted for 7 percent (table 6.3). Most fresh/chilled beef is sold at retail, while frozen beef often ends up in HRI channels of distribution.

The specific cuts of beef imported by Korea are not immediately evident from the trade statistics. Data from the Korean Meat Trade Association show that the two single-largest cuts of imported beef in 2003 were bone-in short ribs (about 160,000 mt) and chuck roll (about 60,000 mt).[47] By 2007, total Korean imports of these cuts had declined significantly because they traditionally had been imported from the United States and were no longer available from other suppliers (table 6.4). Australia and New Zealand increased beef shipments to Korea to replace U.S. beef volumes, but total Korean imports in 2004 were only one-half of 2003 levels, making Korea one of the highest-priced markets for beef in the

[42] There is no standard definition of a "full set" in Korea, which can contain as few as 7 and as many as 24 separate cuts. Korean industry representative, interview by Commission staff, Seoul, Korea, June 5, 2008.

[43] Australian industry representative, interview by Commission staff, Seoul, Korea, June 2, 2008.

[44] Korean industry representative, interview by Commission staff, Seoul, Korea, June 5, 2008.

[45] Australian industry representative, interview by Commission staff, Seoul, Korea, June 2, 2008.

[46] IMF, International Financial Statistics, November 2007.

[47] U.S. industry representative, Korean market briefing for Commission staff, Seoul, Korea, June 4, 2008. Data from Korean Meat Trade Association.

TABLE 6.3 Beef: Korea's imports from the world, by HS subheading, 2002–07

HS subheading		2002	2003	2004	2005	2006	2007
		Quantity *(mt)*					
020110	Fresh/chilled carcass	342	246	70	39	5	1
020120	Fresh/chilled bone-in	5,937	3,255	3,079	2,883	4,110	4,367
020130	Fresh/chilled boneless	27,463	38,739	14,807	17,659	25,546	34,390
020210	Frozen carcass	1,320	1,300	476	1,202	965	400
020220	Frozen bone-in	107,201	110,093	34,174	63,655	55,520	47,588
020230	Frozen boneless	184,423	154,264	112,404	105,050	130,270	145,017
020610	Fresh/chilled edible offal	1,380	535	318	399	585	851
020621	Frozen edible offal, tongue	1,125	2,552	478	462	233	230
020622	Frozen edible offal, liver	931	1,044	1,593	3,931	521	621
020629	Frozen edible offal, other	33,166	32,214	16,077	20,292	26,983	24,234
021020	Salted, in brine, or dried	9	7	7	31	26	48
160250	Prepared or preserved beef	4,957	9,541	5,146	13,773	15,872	13,210
	Total	368,253	353,789	188,627	229,374	260,636	270,956
		Million (*U.S. dollars*)					
020110	Fresh/chilled carcass	1.1	1.2	0.3	0.2	([a])	([a])
020120	Fresh/chilled bone-in	13.2	13.1	11.9	21.3	31.7	27.8
020130	Fresh/chilled boneless	92.0	162.1	81.4	106.7	155.4	223.6
020210	Frozen carcass	1.7	2.0	0.8	2.7	3.4	1.8
020220	Frozen bone-in	253.5	352.1	87.3	190.0	162.3	158.6
020230	Frozen boneless	496.5	468.6	337.0	318.3	435.2	529.9
020610	Fresh/chilled edible offal	2.6	1.0	1.3	2.0	4.2	4.8
020621	Frozen edible offal, tongue	2.6	8.3	0.6	0.8	0.7	0.6
020622	Frozen edible offal, liver	0.7	1.0	1.5	3.2	0.6	0.5
020629	Frozen edible offal, other	55.0	63.3	47.1	56.9	70.8	76.5
021020	Salted, in brine, or dried	0.0	0.0	0.1	0.2	0.6	1.0
160250	Prepared or preserved beef	6.1	12.9	7.6	21.6	23.8	21.8
	Total	925.1	1,085.7	577.0	723.8	888.7	1,047.0
		Unit value *($/mt)*					
020110	Fresh/chilled carcass	3,228	5,001	4,243	5,326	7,258	5,558
020120	Fresh/chilled bone-in	2,220	4,032	3,861	7,387	7,716	6,373
020130	Fresh/chilled boneless	3,351	4,184	5,497	6,041	6,082	6,503
020210	Frozen carcass	1,296	1,504	1,601	2,242	3,508	4,411
020220	Frozen bone-in	2,365	3,198	2,554	2,985	2,924	3,334
020230	Frozen boneless	2,692	3,038	2,998	3,030	3,341	3,654
020610	Fresh/chilled edible offal	1,850	1,946	4,073	5,097	7,110	5,635
020621	Frozen edible offal, tongue	2,269	3,263	1,188	1,775	2,874	2,686
020622	Frozen edible offal, liver	787	945	970	804	1,168	860
020629	Frozen edible offal, other	1,658	1,965	2,932	2,805	2,625	3,157
021020	Salted, in brine, or dried	3,325	5,358	15,265	5,190	22,050	21,355
160250	Prepared or preserved beef	1,239	1,347	1,486	1,566	1,500	1,647
	Average	2,512	3,069	3,059	3,156	3,410	3,864

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total.

[a]Less than $50,000.

world.[48] Australia exports short ribs and chuck roll, but not in sufficient grain-fed quantities to meet all of Korea's import demand.[49]

United States

Beef imports from the United States closely tracked total Korean imports in 2003 before the U.S. beef ban. In 2003, U.S. beef exports to Korea were over 237,000 mt, valued at $797 million. Primary cuts from the United States included fresh/chilled and frozen boneless beef, frozen bone-in cuts, and frozen edible offal (except tongues and livers). In 2002 and 2003, these products cumulatively accounted for more than 96 percent of Korean imports of U.S. beef, by value (table 6.4). After the suspension, imports from the United States declined to nearly zero. The minimal volumes of U.S. beef entering Korea from 2004 through 2006 were either frozen edible offal or cuts that passed quarantine inspection before the beef ban.[50] Korean imports of U.S. beef resumed on a larger scale following the partial lifting of the ban in September 2006, but U.S. bone-in cuts were still not permitted entry. Compared with 2003 levels, the value of U.S. beef exports to Korea lost due to BSE restrictions during 2004–07 could be as high as $3 billion. Although the United States found alternative markets for this beef, Korea is a preferred market for certain cuts, particularly short ribs and many offal products.

A comparison of unit values between imports from the world and the United States in 2003 and 2004 shows that for the highest-volume products (frozen boneless and bone-in cuts), unit values for U.S. products were typically higher than the average for all Korean imports. The unit value of frozen bone-in beef from the United States was about 8 percent higher than the Korean import average in 2004. The AUV of U.S. frozen boneless beef was nearly 17 percent higher than the Korean import average that year. A notable exception in 2003 and 2004 was frozen edible offal (except tongues and livers), but this category has many products, and differences in product mix may account for the lower U.S. unit values. The small volume of Korean imports of U.S. beef during 2004–06 makes comparisons between unit values unreliable. In 2006 and 2007, when quarantine inspections resumed for boneless beef, nearly 85 percent of beef imports from the United States were frozen products.

Differences in unit values during periods in which U.S. beef entered Korea in large volumes reflect the premiums Korean consumers were willing to pay for high-quality, U.S. grain-fed beef. But consumer sentiments about U.S. beef may be changing. Recent Korean protests over U.S. beef shipments, discussed previously in the chapter, call into question the willingness of consumers to pay such premiums, at least in the short term.

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[48] U.S. industry representative, Korean market briefing for Commission staff, Seoul, Korea, June 4, 2008; and Kang, "S. Korea Blocks U.S. Beef After Banned Parts Found," August 2, 2007.

[49] Australian industry representative, interview by Commission staff, Seoul, Korea, June 2, 2008.

[50] U.S. industry representative, Korean market briefing for Commission staff, Seoul, Korea, June 4, 2008.

TABLE 6.4 Beef: Korea's imports from the United States, by HS subheading, 2002–07

HS subheading		2002	2003	2004	2005	2006	2007
		Quantity *(mt)*					
020110	Fresh/chilled carcass	105	177	0	0	0	0
020120	Fresh/chilled bone-in	897	1,270	0	0	0	0
020130	Fresh/chilled boneless	16,232	29,126	0	0	44	2,808
020210	Frozen carcass	100	156	0	0	0	0
020220	Frozen bone-in	75,429	82,025	0	0	0	0
020230	Frozen boneless	118,472	93,776	34	0	32	21,531
020610	Fresh/chilled edible offal	1,218	438	0	88	0	0
020621	Frozen edible offal, tongue	664	2,436	0	0	0	0
020622	Frozen edible offal, liver	667	743	24	1,746	87	513
020629	Frozen edible offal, other	16,253	20,354	182	153	70	22
021020	Salted, in brine, or dried	9	4	0	0	0	0
160250	Prepared or preserved beef	1,563	6,598	0	0	0	0
	Total	231,610	237,103	240	1,987	233	24,874
		Million *(U.S. dollars)*					
020110	Fresh/chilled carcass	0.5	1.0	0.0	0.0	0.0	0.0
020120	Fresh/chilled bone-in	2.9	6.3	0.0	0.0	0.0	0.0
020130	Fresh/chilled boneless	53.2	116.0	0.0	0.0	0.3	17.5
020210	Frozen carcass	0.2	0.4	0.0	0.0	0.0	0.0
020220	Frozen bone-in	197.9	283.9	0.0	0.0	0.0	0.0
020230	Frozen Boneless	353.0	333.0	([a])	0.0	0.2	99.8
020610	Fresh/chilled edible offal	2.2	0.7	0.0	0.1	0.0	0.0
020621	Frozen edible offal, tongue	1.6	8.1	0.0	0.0	0.0	0.0
020622	Frozen edible offal, liver	0.5	0.8	([a])	0.8	0.1	0.4
020629	Frozen edible offal, other	24.4	38.1	0.2	0.2	0.1	([a])
021020	Salted, in brine, or dried	([a])	([a])	0.0	0.0	0.0	0.0
160250	Prepared or preserved beef	2.1	8.7	0.0	0.0	0.0	0.0
	Total	638.5	797.1	0.2	1.1	0.6	117.7
		Unit value *($/mt)*					
020110	Fresh/chilled carcass	4,566	5,511	([b])	([b])	([b])	([b])
020120	Fresh/chilled bone-in	3,265	4,975	([b])	([b])	([b])	([b])
020130	Fresh/chilled boneless	3,276	3,983	([b])	([b])	6,556	6,247
020210	Frozen carcass	2,083	2,771	([b])	([b])	([b])	([b])
020220	Frozen bone-in	2,624	3,461	([b])	([b])	([b])	([b])
020230	Frozen boneless	2,980	3,551	1,103	([b])	4,991	4,634
020610	Fresh/chilled edible offal	1,796	1,671	([b])	766	([b])	([b])
020621	Frozen edible offal, tongue	2,370	3,337	([b])	([b])	([b])	([b])
020622	Frozen edible offal, liver	816	1,063	688	468	889	700
020629	Frozen edible offal, other	1,499	1,873	1,025	1,353	1,243	957
021020	Salted, in brine, or dried	2,087	2,398	([b])	([b])	([b])	([b])
160250	Prepared or preserved beef	1,364	1,321	([b])	([b])	([b])	([b])
	Average	2,757	3,362	1,002	549	2,628	4,732

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total.

[a]Less than $50,000.
[b]Not applicable.

The loss of the Korean market in 2004 meant that U.S. exporters had to find alternative markets for about 237,000 mt of beef, valued at $800 million. Certain products, particularly edible offal (called "variety meats" in Korea), receive significant premiums in Korea because of strong consumer demand for traditional Korean dishes using these cuts. Although secondary markets were found for this beef, prices were lower, either because demand for those cuts were not as high, or because the closed Korean market caused a supply glut in secondary markets.[51]

Animal Health, Sanitary, and Food Safety Regulations in Korea

Regulatory Framework

In Korea, the administration of food safety regulations is generally under the jurisdiction of the Ministry of Health and Welfare, although the Ministry of Food, Agriculture, Forestry, and Fisheries (MIFAFF) is responsible for the safety of meat and poultry products.[52] Under MIFAFF, the Livestock Bureau enacts and revises the Meat and Poultry Products Processing Act and the Livestock Sanitation Act; the National Veterinary Research and Quarantine Service (NVRQS) implements these acts. Various departments under the NVQRS undertake surveillance of illegal and adulterated livestock products, supervise imported livestock products, and approve and monitor veterinary drugs and quarantine against animal diseases. They provide on-site inspections of slaughterhouses and processing plants, as well as the analysis of products and the approval of laboratories. The principal food safety regulations in Korea that impact U.S. beef imports are those related to concerns with BSE.

Most Hanwoo beef is traceable from the farm through retail sale; all beef produced in Korea (Hanwoo and Holstein) will reportedly be included in a national traceability system by June 2009.[53] In many retail outlets, Korean consumers can enter the bar code of a beef package into a computer and look up information about where and when the cattle were raised, slaughtered, and processed.

In late May 2008, the NVRQS significantly increased the number of inspections on domestic cattle at local slaughterhouses, to coincide with the lifting of the ban on U.S. beef.[54] The Korean government intends to test enough high-risk cattle to apply for a safety assessment from the OIE. Because Korea has not submitted the materials needed for a BSE risk assessment, the domestic industry is categorized by the OIE as having an "undetermined risk."[55] This risk category severely

[51] For example, Korea is the preferred market for U.S. beef intestines. When that market was unavailable, U.S. intestines were largely shipped to Mexico or sold in the United States to serve Korean and Mexican immigrant markets. But the large volume of intestines sent to these markets significantly lowered the price for suppliers. Korean beef industry representative, interview by Commission staff, Seoul, Korea, June 5, 2008.

[52] Government of the Republic of Korea, "Food Control and Food Safety System in Korea," October 12–14, 2004, 1.

[53] USDA, FAS official, email message to Commission staff, June 17, 2008.

[54] Cho, "Korea to Tighten Inspection on Homegrown Beef," May 28, 2008.

[55] Korean government official, interview by Commission staff, Seoul, Korea, June 5, 2008.

hampers any attempt by Korean beef exporters to sell Hanwoo beef in other countries, and is in contrast to the United States, which earned a "controlled risk" status from the OIE in May 2007.

The new safety inspection process is also designed to thwart criticism of Korea's relatively lax inspection process for domestic cattle. Although Korea has no reported cases of BSE, critics note that BSE may have gone undetected for years because so few domestic cattle are tested[56] and even fewer cattle are tested in high-risk categories.[57]

Measures Affecting Imports from the United States

During March-October 2007, when Korea partially lifted the ban on U.S. beef, restrictions related to concerns over BSE severely limited beef imports from the United States. Officials from the OIE reported that Korean quarantine standards for beef imports from the United States are more stringent than the international standards set by their organization.[58] The Korean government responded by expressing concern to the OIE that the United States did not meet the requirements to be classified as a controlled risk country. However, OIE's panel of experts found that Korea's claims were not factually supported.[59] For beef imports from countries other than the United States, Korean regulations do not differ substantially from OIE guidelines.

When the government of Korea lifted the beef ban in place since December 2003, and began importing significant volumes of U.S. beef during the second half of 2007, import regulations required that only U.S. boneless beef cuts from cattle no more than 30 months of age could enter the country. The age requirement did not pose a significant barrier to trade because the typical slaughter age for grain-fed cattle raised in the United States is 24–30 months of age.[60] But restrictions on bone-in cuts eliminated a significant portion of U.S. beef exports to Korea that existed in 2003. Such restrictions did not comply with OIE standards for countries certified to have a controlled risk for BSE.

Under the April 2008 beef protocol, published June 26, 2008, a new set of quarantine inspection procedures were put in place by MIFAFF for imports of U.S. beef. The protocol brings Korea's beef quarantine inspection procedures broadly in line with OIE standards. Some of the key elements and procedures are as follows:

- The restrictions on U.S. bone-in cuts and all beef from cattle slaughtered at 30 months of age or older are removed.[61]

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[56] Cho, "Korea to Tighten Inspection on Homegrown Beef," May 28, 2008.
[57] Korean industry representative, interview by Commission staff, Seoul, Korea, June 5, 2008.
[58] *Yonhap News Agency*, "S. Korea-U.S. beef deal includes strict quarantine rules: OIE," May 18, 2008.
[59] Ibid.
[60] USITC hearing transcript, November 15, 2007, 107.
[61] Under the protocol, Korea agreed to open its market to U.S. beef from cattle 30 months and under (stage one), and open its market to U.S. beef from cattle OTM upon U.S. publication of the enhanced feed ban rule (stage two). The enhanced feed ban rule was published April 25, 2008. USTR, "Import Health Requirements for U.S. Beef and Beef Products," undated.

- The government of Korea prohibits SRMs using the U.S. definition of SRMs. Under this definition, there are two SRMs for cattle under 30 months and seven for cattle OTM.[62]

- Inspections (including thermometer tests), epidemiological inspections (including documentation checks), organoleptical inspections (sensory inspections), and laboratory inspections will be conducted by the government of Korea.

- During the first 180 days of the new protocol, the ratio of inspection will be 3 percent, rather than 1 percent for other countries. After that time, the NVRQS will review the results and decide whether to lengthen the period of increased inspection.

- All variety meats, such as tongues and intestines, will be subject to thawing and tissue inspection to ensure they are not SRMs. Every box of t-bone and porterhouse steaks will be inspected to see if the age is noted on the box.

- When an SRM is found for which the age of the cattle at slaughter cannot be identified, the lot will be rejected.

- Regarding the inspection of documents, administrative errors will be corrected and then accepted, but for product inspections, the entire container will be rejected if the seal number does not match the certificate.

- U.S. beef from new plants will be subject to laboratory inspection by the government of Korea. If SRMs exceeding permissible limits are found, the subject lot will be rejected and the plant will be subjected to five consecutive enhanced lab inspections. Under enhanced lab inspections, the inspection level will increase sampling from that plant from 3 percent to 10 percent.

Other Barriers to Imports from the United States

Tariff Treatment

Korea's beef imports face significant tariff barriers (table 6.5). The NTR rate on fresh/chilled boneless and bone-in beef (HS 0201) and frozen boneless and bone-in beef (HS 0202) is currently 40 percent ad valorem. The tariff on edible offal (including tongues, livers, and oxtails) is 18 percent; salted, in brine or dried beef is 27 percent, and prepared or preserved beef is 72 percent.[63]

[62] The beef protocol resolved a long-standing dispute regarding the definition of SRMs. The Korean government agreed to use the U.S. definition, which matches the OIE standard. For the full definition, see chap. 4, as well as 69 Fed. Reg. 1862 (January 12, 2004).

[63] USDA, FAS, *Republic of Korea: Livestock and Products Annual, 2006*, September 22, 2006, 14.

TABLE 6.5 Beef: Korea's NTR duty rates, 2008

HS subheading		NTR rate (%)
020110	Fresh/chilled carcass	40
020120	Fresh/chilled bone-in	40
020130	Fresh/chilled boneless	40
020210	Frozen carcass	40
020220	Frozen bone-in	40
020230	Frozen boneless	40
020610	Fresh/chilled edible offal	18
020621	Frozen edible offal, tongue	18
020622	Frozen edible offal, liver	18
020629	Frozen edible offal, other	18
021020	Salted, in brine, or dried	27
160250	Prepared or preserved beef	72

Source: Korea Customs and Trade Institute.

If ratified by both countries, the recently negotiated KORUS FTA will provide significant cost savings to U.S. beef exporters shipping to Korea. Tariffs under the pending FTA would be completely eliminated over 15 years. Korean beef imports from the United States would also be subject to safeguard measures, thus simplifying export procedures and eliminating the need for import licenses.[64] The initial safeguard would begin at 270,000 mt, approximately the volume of Korean imports of U.S. beef in 2003, increasing by 2 percent annually until it is eliminated in year 16 of the agreement.

Technical Barriers

Country-of-Origin Labeling for Consumers

Korea's National Assembly passed a revision to the Law on Quality Management of Agricultural Products in May 2008, to expand country-of-origin labeling rules for beef sold by restaurants and other eating establishments, with the rules going into effect in June 2008.[65] The old rules required only restaurants with floor space of 300 square meters or more to notify consumers of the country of origin of the beef they serve. MIFAFF announced on May 28, 2008, that under the new requirements, all eateries, fast-food chains, and catering firms, regardless of size, must specify the country of origin for each cut of beef they are using. In the case of domestic beef, the establishment must indicate whether the beef is from Hanwoo cattle, regular meat cattle, or from dairy cows.[66]

Labeling of Imported Beef

Korean import regulations for beef require that all packages of beef, even those within sealed boxes, be marked with proper country-of-origin labeling. This applies to all beef exporting countries. In many other export markets, labeling can be placed on exterior boxes but is not required on packages within the sealed containers. Korea's original policy rejected beef shipments from the United

[64] USITC, *U.S.-Korea Free Trade Agreement*, September 2007, 3–37.

[65] *Yonhap News Agency*, "S. Korea to Expand Country-of-origin Labeling for Beef in June," May 28, 2008.

[66] Ibid.

States in which the acronym "USDA" and the agency's seal were printed on the interior packages, but "U.S. Department of Agriculture" was not spelled out. Negotiations between U.S. and Korean officials resolved the matter, and "USDA" now meets the regulatory standard.[67]

Barriers to Entry Due to USDA Health Certificate Documentation

Prior to the complete suspension quarantine inspections for U.S. beef in October 2007, USDA often documented U.S. beef shipments that were held up at Korean ports because of typographical and other documentation errors on USDA health certificates. In many cases, USDA officials at the U.S. embassy were able to intervene and make clarifications, thus allowing the beef shipments to clear Korea's customs.[68]

Support for Domestic Production

Korean beef producers benefit from significant government support. In addition to the border protection described above, MIFAFF provides support to beef producers through several programs that either mitigate risk to farmers or lower production costs. These programs (and the estimated funds provided in 2008) include modernization of livestock and poultry farms ($135.4 million), modernization of calf auction markets through low interest loans ($2.1 million), money for purchasing 110 trucks for moving livestock from farms to slaughterhouses ($6.8 million), and payments to farmers when there are disease outbreaks and animals are disposed of in an infected area ($135.5 million).[69] Low-interest loans totaling about $1.6 billion (given at a 1 percent annual rate) are also being provided to farmers under a one-year program to cut the cost of purchasing cattle feed.[70] Repayments from farmers will be made in equal installments over two years.[71]

MIFAFF has announced future programs to support cattle farmers. The agency will provide payments over the next 10 years totaling 30 percent of the cost to modernize animal pen facilities, and has also pledged funding to improve or restructure small-scale slaughterhouses.[72] A national traceability program, currently in pilot format, will be fully operational by June 2009. After that time, only Korean cattle electronically registered with ear tags will be eligible for slaughter.[73]

A measure of the degree to which Korean beef producers are supported by government programs is provided by the OECD.[74] OECD data estimate that between 2002 and 2006, the average price paid for beef by consumers in Korea

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[67] Australian industry representative, interview by Commission staff, Seoul, Korea, June 2, 2008.

[68] USDA, FAS, unpublished report, "A Results Report from AN Overseas," various dates.

[69] USDA, FAS, *Republic of Korea: Livestock and Products Semiannual, 2008*, February 29, 2008, 17–18.

[70] Korean cattle feed industry representative, interview by Commission staff, Seoul, Korea, June 3, 2008.

[71] USDA, FAS official, email message to Commission staff, June 17, 2008.

[72] Ibid.

[73] Ibid.

[74] OECD, *Agricultural Policies in OECD Countries, 2005*, 276; and OECD, *Agricultural Policies in OECD Countries, 2007*, 266.

was 114 percent to 254 percent higher than the border price (both measured at the farm gate) (table 6.6). Domestic support provided to beef producers has generally declined over the period, but the value of total support was an estimated 67 percent of farm receipts for beef in 2006 (percent SCT).

TABLE 6.6 Beef: OECD estimates of Korea's support for production, 2002–06

Measure	2002	2003	2004	2005	2006
Producer support estimate (PSE)[a]	73	61	([b])	([b])	([b])
Single commodity transfers (SCT)[c]	([b])	([b])	53.2	63.8	66.6
Consumer NPC[d]	3.54	2.42	2.14	2.76	2.99

Source: OECD, *Agricultural Policies in OECD Countries*, 2005 and 2007.

[a]Percent PSE is equal to total transfers to producers as a percentage of receipts.
[b]Not available.
[c]Percent SCT is equal to commodity-specific transfers as a percentage of receipts.
[d]Consumer NPC is the ratio of the price for beef and veal paid by consumers to the border price.

CHAPTER 7
European Union

In 2007, the EU was the world's second-largest consumer, third-largest producer, and second-largest importer of beef and veal products.[1] That year, it consumed more beef than any market except the United States. Until 2003, the EU was a net exporter of beef, but since then exports have declined while imports have risen; by 2007, the EU was a significant net importer of beef.[2] The European Commission forecasts EU beef and veal imports to increase over the next five years to approximately 730,000 mt per year by 2012.[3] One industry source forecasts EU beef and veal exports to increase at a faster rate.[4] Beef producers in the United States have largely been unable to benefit from export opportunities to the EU because of nontariff barriers to imports of U.S. beef.

In 1989, the EU-12 banned the use of growth promotants in its production of beef and in its beef imports ("the hormone ban") (box 7.1). The United States challenged the EU ban under the WTO dispute settlement procedures and in 1998, the Dispute Settlement Body (DSB) adopted findings of the WTO Appellate Body and a dispute settlement panel that the EU ban was inconsistent with EU obligations under the WTO Agreement on Sanitary and Phytosanitary Measures (SPS agreement). In 1999, the DSB authorized the United States to suspend concessions in the amount of $116.8 million annually to offset losses resulting from the ban. The effect of the ban on U.S. beef exports has grown as the EU expanded. The number of European countries covered by the hormone ban has more than doubled, as the EU has grown in size from 12 members in 1989 to 27 members in 2007. As new member states have acceded to the EU, producers in the United States have lost potentially lucrative export markets.

The EU does not ban imports of U.S. beef through regulations related to BSE; therefore, when other markets were closed or restricted because of BSE-related concerns, the EU became a relatively more attractive alternate market to qualifying U.S. product. Although U.S. beef exports to the EU increased in 2004 and 2005, almost all of this increase was because of increased exports to the new member countries that joined the EU in 2004, and U.S. beef exports to these new member countries has since declined.[5]

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[1] USDA, FAS, *Livestock and Poultry: World Markets and Trade*, November 2007, 8–11; and USDA, FAS, *Livestock and Poultry: World Markets and Trade*, October 2006, 19.

[2] USDA, FAS, *Netherlands: Livestock and Products, The Benelux Beef Market 2007,* March 26, 2007, 2; and USDA, FAS, *Livestock and Poultry: World Markets and Trade*, November 2007, 8–11.

[3] USDA, FAS, *Netherlands: Livestock and Products, The Benelux Beef Market 2007,* March 26, 2007, 2.

[4] USMEF reports in its Europe Market Overview, that in October 2006, the European Commission forecast the net deficit in 2012 at 750,000 mt, but that current forecasts are for a higher deficit of up to 1.3 mmt.

[5] Model simulation results for the effects of BSE-related measures are not presented for the EU because the effects cannot be distinguished from the effects of the EU expansion in 2004 and 2007. (See chap. 12).

BOX 7.1 History of the hormone ban

Since 1985, the EU has issued a series of directives that either ban or severely restrict imports (and domestic production) of hormone-treated beef. The ban on hormone-treated beef grew out of wide spread consumer scares over growth promotants in beef. In 1980, synthetic diethylstilbestrol (DES) used to treat cattle was found to be causing health problems in children fed baby food containing veal. In 1981, Directive 81/602/EEC prohibited the use of hormones for growth promotion, but this was later amended to ban only DES, leaving other hormones subject to national regulations.[1] The European Parliament adopted a directive effective January 1989 restricting the use of natural hormones to therapeutic purposes, banned the use of all synthetic hormones, and prohibited imports of animal and meat from animals to which hormones had been administered.[2] Currently, growth promoting substances in imported beef are banned under Directive 96/22/EC, as amended by Directive 2003/74/EC.[3] Since 1997, the EU has banned sales of poultry and meat that have undergone anti microbial treatment.[4]

The majority of beef cattle in North America are produced with the aid of growth hormones that promote lean weight gain. Growth hormones are not generally used by producers in South America, Australia, and New Zealand. In 1996, the United States challenged the EC ban on six hormones under the WTO dispute settlement procedures, alleging that the ban was inconsistent with the EC's obligations under the WTO Agreement on the Application of Sanitary and Phytosanitary Measures (SPS Agreement).[5] At the request of the United States, a WTO dispute settlement panel was established, and in 1997, the panel found that the EU ban was inconsistent with the SPS Agreement and not based on science, a risk assessment, or relevant international standards. The panel's findings were subsequently affirmed by the WTO Appellate Body, and the Appellate Body report and the modified panel findings were adopted by the WTO Dispute Settlement Body (DSB) in February 1998.[6] The EU subsequently offered compensation in view of the likelihood it would be unable to comply with the DSB's rulings and recommendations, and in July 1999 the DSB authorized the United States to suspend concessions on goods from the EU in the amount of $116.8 million, an amount earlier determined by arbitrators as being equivalent to the level of nullification suffered by the United States.[7] Based on that authorization, the United States imposed additional duties of 100 percent ad valorem on a list of EC products with an annual trade value of $116.8 million. Those duties were still in effect at the time this report was prepared. Canada filed a similar complaint with the WTO, also in 1996, concerning the EU's hormone ban, and obtained similar panel and Appellate Body rulings in its favor; Canada was authorized to suspend concessions on goods from the EU, in the amount of Canadian $11.3 million.[8]

In November 2003, following entry into force of a new EU directive (2003/74/EC) that the EC claims implements the recommendations and rulings of the DSB, the EU advised the DSB that there was no legal basis for the continued application of retaliatory measures by the United States.[9] When the United States declined to lift its retaliatory measures in response to the new directive, the EU sought consultations and subsequently sought establishment of a panel. A panel was established in February 2005. The panel issued its report in March 2008, finding generally in favor of the United States.[10] The EC appealed the findings, and the panel report was under review by the Appellate Body as of September 2008.[11]

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[1] Krissoff, "The European Ban on Livestock Hormones," July-September 1989.
[2] Taylor, Walsh, and Lee, "The U.S./EU Beef Controversy", Summer 2003, 112.
[3] Europa Web site, http://ec.europa.eufood/food/chemicalsafety/contaminants/homones/index_en.htm, (accessed June 13, 2008).
[4] Council Directive 71/118/EC as amended by Directive 97/79/EC.
[5] The six hormones are estradiol, progesterone, testosterone, melegestrol acetate, trenbolone acetate, and zeranol.
[6] WTO Summary, Dispute DS26, European Communities.
[7] Ibid.
[8] WTO Summary, Dispute DS48, European Communities.
[9] WTO Summary, Dispute DS26, European Communities.
[10] USTR press release, March 31, 2008, "Panel Finds EU Ban on Hormones Remains WTO-Inconsistent." See also WTO Summary, Dispute DS320, United States.
[11] For a summary of the U.S. position in the appeal, see the U.S. oral statement of July 28, 2008, before the Appellate Body in United States – Continued Suspension of Obligations in the EC – Hormones Dispute.

EU Market Characteristics and Trends

Beef Consumption Trends

Per capita beef consumption in the EU has been nearly constant during 2003–07, declining by 1.1 percent between 2003 and 2007, as the population of the EU increased by 2 percent and overall beef consumption increased by less than

TABLE 7.1 Beef: EU's production, consumption, trade, and key factors affecting demand, 2002-07

Market data	2002	2003	2004	2005	2006	2007
Beginning stocks (1,000 mt cwe)	309	242	61	2	0	0
Production (1,000 mt cwe)	8,397	8,304	8,245	8,090	8,050	8,175
Imports (1,000 mt cwe)	532	549	641	711	717	725
Total supply (1,000 mt cwe)	9,238	9,095	8,947	8,803	8,667	8,813
Exports (1,000 mt cwe)	580	438	363	253	218	139
Domestic consumption (1,000 mt cwe)	8,416	8,596	8,582	8,550	8,649	8,674
Ending Stocks (1,000 mt cwe)	242	61	2	0	0	0
Exchange rate (€/U.S.$)	1.06	0.89	0.81	0.80	0.80	0.73
GDP/capita (U.S.$/person)	19,347	23,363	26,869	27,925	29,591	34,021
Population (millions)	483.9	487	488.3	490.2	491.9	493.4
Wholesale beef price index	100	101	98	107	117	115
Annual beef per capita consumption (kg)	[a]18.0	17.7	17.7	17.6	17.6	17.5

Sources: Production, consumption, and trade data from USDA, FAS, PS&D unless otherwise noted. Exchange rate, GDP per capita, and population data from Economist Intelligence Unit. Per capita consumption data from USDA, FAS, *Livestock and Poultry: World Markets and Trade*, November 2007. Wholesale beef price index calculated from FAPRI farm-level prices.

Note: Production, supply and consumption data are in carcass weight equivalent. These data are not directly comparable to data in product weight.

[a]2002 per capita consumption is for the EU-25, as EU-27 per capita consumption was not available from this source. All other data in all periods are for the EU-27.

1 percent (table 7.1). During this period, beef consumption accounted for about 23 percent of total meat consumption. The EU's per capita beef consumption of about 18 kg lags far behind Argentina (66 kg), the United States (43 kg), Uruguay (56 kg), Brazil (38 kg), and Australia (37 kg).[6]

Apart from the small increase between 2002 and 2003, overall beef consumption in the EU was almost unchanged during 2002–07, as a decline in production and exports was offset by increased imports. From 2005 to 2006, there was a slight increase in consumption coinciding with an avian influenza outbreak, as some consumers shifted away from poultry consumption to veal. EU per capita consumption of poultry meat recovered in 2007 to nearly the 2005 level.[7] Beef and pork prices both irregularly increased through 2006. In 2007, pork prices declined relative to beef and poultry prices, and per capita consumption of pork increased while per capita consumption of beef declined.[8]

Consumer Preferences in Beef Consumption

The EU market is very large and diverse, and many types of beef and beef products are consumed. Marketing outlets for high-quality beef in the EU include high-end restaurants, supermarkets, butcher shops, and delicatessen stores.[9] Most EU consumers prefer leaner grass-fed beef to well-marbled grain-fed beef,

[6] USDA, FAS, *Livestock and Poultry: World Markets and Trade*, November 2007, 8–11.
[7] USDA, FAS, *EU-27: Livestock and Products Annual, 2007*, July 20, 2007, 6.
[8] EU per capita consumption of poultry meat fell from a record 16.6 kilograms in 2005 to 15.8 kilograms in 2006, and then rose to 16.2 kilograms in 2007. USDA, FAS, *Livestock and Poultry: World Markets and Trade*, November 2007, 22.
[9] USDA, FAS, *Netherlands: Livestock and Products, The BeneluxBeef Market 2007,* March 26, 2007, 2.

particularly for retail purchases in supermarkets.[10] Grain-fed beef imported from the United States and Australia is sold mainly in the hotel and restaurant segment.[11] EU consumers are of mixed viewpoints with respect to concerns over consuming beef produced with and without growth hormones, or beef produced with and without the use of genetically modified feed grain.[12]

Beef prices within the EU generally rose over the period. Although varying between member states, overall EU prices for a half-carcass increased on average by 10 percent from July 2003 to July 2007.[13] In comparison with Irish grass-fed beef, prices for high-quality U.S. beef were approximately twice as high, while prices on imports from Argentina and Brazil were just over half to two-thirds the price for comparable cuts from Irish beef in 2005.[14]

Sources of Supply

Domestic Production

In 2002, the EU was virtually self-sufficient in beef production. Beef production, as a share of consumption was 99.8 percent in terms of volume. Over the next six years, beef production declined more rapidly than consumption, so that by 2007, production accounted for 94 percent of consumption (table 7.1).

During 2002–07, EU beef production fell by 4.7 percent, from 8.4 mmt to 8.0 mmt. The drop in beef production resulted from the decline in the available supply of cattle, with the cattle herd, including dairy and beef cattle, declining by 5 percent from 93 million head (beginning stocks) in 2002 to 88 million head in 2007. The decline in the number of cattle mainly reflected a drop in the size of the dairy herd, which fell by 2.3 million head from 2002 through 2007.[15] This was because fewer cows were needed to fill the domestic milk production quotas as milk yields per cow improved throughout the period.[16] Beef production in the EU depends much more on the supply of dairy cattle than does beef production in the United States. In the United States, dairy cows comprise less than 10 percent of cattle numbers, while in the EU, more than 25 percent of cattle are dairy cows. Declining support for beef production under the Common Agricultural Program (CAP) likely also contributed to the decline in beef production. The EU cattle herd is expected to decline further in the near term. The annual EU calf crop during 2003–07 fell by 8 percent to 30 million head in 2007.[17] Higher EU feed prices have reduced profitability for beef cattle production, despite higher beef prices.

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[10] USDA, FAS, *EU-25: Livestock and Products, US Beef Faces Strong Competition,* September 8, 2005, 4.

[11] Ibid.

[12] Tonsor, et al., "European Preferences for Beef Steak Attributes," 2006, 379.

[13] EC, Agriculture and Rural Development, Market Prices "Carcasses" database (accessed March 21, 2008). Data prior to 2003 were not available from this source.

[14] USDA, FAS, *EU-25: Livestock and Products, US Beef Faces Strong Competition in the European Market,* September 8, 2005, 3–4.

[15] USDA, FAS, PS&D database (accessed March 21, 2008).

[16] USDA, FAS, *EU-27: Livestock and Products Annual, 2007,* July 20, 2007, 4. Given the current high prices for beef and milk, and restrictions on beef imports from Brazil, the contraction in the EU cattle herd is expected to slow, with increased cattle production in the new member states. USDA, FAS, *EU-27: Livestock and Products Semiannual, 2008,* February 29, 2008.

[17] USDA, FAS, *Livestock and Poultry: World Markets and Trade*, November 2007, 8.

Within the EU, cattle production is regionally concentrated in France, Germany, the United Kingdom, Italy, and the Benelux countries (Belgium, the Netherlands, and Luxembourg). Combined, these countries accounted for 59 percent of the EU cattle calf crop production in 2007.[18] Despite the elimination of the UK ban on the slaughter of OTM cattle in 2006 and the subsequent increase in OTM cattle slaughter in that year,[19] the total supply and slaughter of cattle in the EU declined in every year of the 2002–07 period.

During 2002–07, EU exports of beef declined sharply—by 70 percent—to 175,000 mt cwe (table 7.1); the EU was the fifth-largest world beef exporter in 2003, and fell to ninth place in 2007.[20] Changes in the EU CAP in 2000 reduced internal beef production and export subsidies, thereby reducing EU exports. Higher domestic prices also reduced incentives for EU beef exports. Increasing costs of dairy-based feed are expected to further reduce veal production.[21]

Imports

Since 2002, the EU has become a significant net importer of beef.[22] The EU is the fourth-largest beef importer in the world; imports supplied about 8 percent of its domestic consumption in 2007. This ratio, however, is significantly lower than import penetration ratios of Japan (58 percent), Russia (43 percent), and Mexico (16 percent). EU imports rose by 36 percent during the period, to 725,000 mt in 2007.[23] As noted, the European Commission has forecasted that EU beef and veal imports will increase over the next five years.[24]

In early 2008, the EU withdrew the certification for all beef producers in Brazil due to traceability and FMD status concerns, effectively banning imports of Brazilian beef.[25] In February, the EU Food and Veterinary Office (FVO) certified 106 Brazilian cattle farms as eligible to produce beef for export to the EU. This is a small share of the approximately 10,000 cattle producers in Brazil that were eligible in 2007, and unless more farms are certified, this will limit EU imports from Brazil.[26]

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[18] USDA, FAS, *EU-27: Livestock and Products Annual, 2007,* July 20, 2007, 6.

[19] Ibid., 4–5.

[20] USDA, FAS, *Livestock and Poultry: World Markets and Trade*, November 2007, 9.

[21] USDA, FAS, *EU-27: Livestock and Products Annual, 2007,* July 20, 2007, 8.

[22] USDA, FAS, *Netherlands: Livestock and Products*, *The Benelux Beef Market,* March 26, 2007, 2; and USDA, FAS, *Livestock and Poultry: World Markets and Trade*, November 2007, 8–11.

[23] USDA, FAS, *Livestock and Poultry: World Markets and Trade*, November 2007, 8.

[24] USDA, FAS, *Netherlands: Livestock and Products, The Benelux Beef Market,* March 26, 2007, 2.

[25] USDA, FAS, *EU-27: Livestock and Products, EU Suspends Brazil Beef Imports*, 2008, February 9, 2008, 2.

[26] LMC, *LMC Bulletin*, February 29, 2008.

Import Market Characteristics and Trends

Imports by Major Supplier

About 88 percent of EU beef imports by value came from the three leading South American exporters: Brazil, Argentina, and Uruguay supplied 55, 25, and 8 percent of EU imports, respectively, during 2002–07 (table 7.2). These countries produce primarily grass-fed beef. The United Kingdom, the Netherlands, Italy, Germany, and Spain are the leading EU importers. The Argentine peso and the Uruguay peso depreciated relative to the euro between 2002 and 2007, by 32 percent and 38 percent, respectively, and the dollar depreciated relative to the euro by about 31 percent in nominal terms.[27] In contrast, the currency of Brazil, the largest supplier of beef to the EU, appreciated approximately 3 percent relative to the euro over the same period. This means that beef imports from Argentina, Uruguay, and the United States became about 31 percent less expensive over the period, compared to EU domestic beef. Brazil ranked as the largest supplier of beef to the EU during 2002–07. Brazil's share of the EU beef market rose from 46.8 percent of imports in 2002 to 51.6 percent in 2007.

TABLE 7.2 Beef: EU's imports from leading suppliers, 2002–07 (million U.S. dollars)

Market	2002	2003	2004	2005	2006	2007
Brazil	492.9	637.6	992.0	1,137.4	1,387.3	1,329.9
Argentina	297.3	332.7	461.1	497.3	501.9	624.8
Uruguay	97.9	79.5	105.1	135.9	197.5	224.0
Botswana	61.9	63.4	42.3	45.6	42.9	64.6
Australia	34.0	34.9	48.8	44.9	61.8	56.2
United States	14.7	16.2	33.5	35.0	25.4	52.1
ROW	53.6	71.5	101.8	71.7	87.9	104.4
Total	1,052.3	1,235.9	1,784.7	1,967.8	2,304.7	2,456.0

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total. ROW denotes rest of the world.

Imports by Products

World

About 93 percent of the volume of global beef exports to the EU during 2002–07 consisted of three products: frozen, boneless beef (40 percent); fresh or chilled boneless beef (30 percent); and preserved beef (23 percent) (table 7.3). The United Kingdom and the Benelux countries imported mainly fresh beef, while Italy and Spain imported mainly frozen beef.[28] The United Kingdom also imported large quantities of edible offal, most destined for pet food.[29]

[27] IMF, "International Financial Statistics," March, 2008.

[28] USDA, FAS, *EU-25: Livestock and Products, U.S. Beef Faces Strong Competition*, September 8, 2005, 3.

[29] USDA, FAS, *Netherlands: Livestock and Products*, *The Benelux Beef Market,* March 26, 2007, 4.

TABLE 7.3 Beef: EU imports from the world, by HS subheading, 2002–07

HS subheading		2002	2003	2004	2005	2006	2007
		Quantity *(mt)*					
020110	Fresh/chilled carcass	20	485	207	90	118	97
020120	Fresh/chilled bone-in	432	684	1,783	614	957	1,505
020130	Fresh/chilled boneless	121,164	123,040	150,650	170,043	158,941	164,124
020210	Frozen carcass	137	105	2,732	437	595	378
020220	Frozen bone-in	1,028	2,991	2,738	1,538	944	1,352
020230	Frozen boneless	165,601	164,376	217,929	244,458	262,473	140,215
020610	Fresh/chilled edible offal	68	124	202	312	442	469
020621	Frozen edible offal, tongue	1,011	1,744	3,064	3,180	2,011	859
020622	Frozen edible offal, liver	4,047	3,521	38,800	29,950	7,927	4,108
020629	Frozen edible offal, other	10,075	14,070	12,946	4,925	3,711	3,816
021020	Salted, in brine, or dried	1,034	1,162	1,348	1,461	1,466	1,494
160250	Prepared or preserved beef	106,328	105,711	122,624	115,845	112,718	125,903
	Total	410,945	418,013	555,024	572,853	552,303	444,321
		Million *(U.S. dollars)*					
020110	Fresh/chilled carcass	0.1	1.5	0.7	0.4	0.3	0.4
020120	Fresh/chilled bone-in	2.1	3.9	9.4	4.0	6.6	10.3
020130	Fresh/chilled boneless	483.3	624.6	838.5	977.6	1,177.8	1,424.5
020210	Frozen carcass	0.3	0.3	3.0	1.0	1.8	1.3
020220	Frozen bone-in	3.3	6.0	5.4	4.4	3.9	7.5
020230	Frozen boneless	340.6	373.4	585.5	618.3	742.4	595.3
020610	Fresh/chilled edible offal	0.1	0.3	0.7	0.6	0.6	0.6
020621	Frozen edible offal, tongue	1.2	1.9	5.6	6.8	5.1	2.4
020622	Frozen edible offal, liver	2.2	1.8	20.3	18.7	6.7	3.9
020629	Frozen edible offal, other	7.6	9.4	14.1	7.3	5.7	8.1
021020	Salted, in brine, or dried	12.9	15.7	22.0	21.7	24.8	25.9
106025	Prepared or preserved beef	198.6	197.0	279.6	307.1	329.0	375.7
	Total	1,052.3	1,235.9	1,784.7	1,967.8	2,304.7	2,456.0
		Unit value *($/mt)*					
020110	Fresh/chilled carcass	4,419	3,161	3,435	4,058	2,743	4,232
020120	Fresh/chilled bone-in	4,746	5,724	5,271	6,471	6,901	6,904
020130	Fresh/chilled boneless	3,989	5,077	5,566	5,749	7,410	8,680
020210	Frozen carcass	2,250	2,980	1,082	2,314	2,961	3,517
020220	Frozen bone-in	3,195	1,999	1,987	2,882	4,111	5,560
020230	Frozen boneless	2,057	2,272	2,687	2,529	2,828	4,246
020610	Fresh/chilled edible offal	1,967	2,223	3,626	2,011	1,384	1,198
020621	Frozen edible offal, tongue	1,173	1,109	1,821	2,141	2,528	2,806
020622	Frozen edible offal, liver	554	501	524	625	850	937
020629	Frozen edible offal, other	753	670	1,090	1,482	1,536	2,115
021020	Salted, in brine, or dried	12,445	13,541	16,310	14,823	16,948	17,312
160250	Prepared or preserved beef	1,868	1,864	2,280	2,651	2,919	2,984
	Average	2,561	2,957	3,216	3,435	4,173	5,528

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total.

United States

U.S. beef exports to the EU increased from 10,562 mt, valued at $14.7 million in 2002, to 12,534 mt, valued at $25.4 million in 2006 (table 7.4). Throughout 2002–06, offal (mostly liver) accounted for the majority of U.S. beef exports to the EU on a product weight basis. From 2006 to 2007, the quantity of imports from the United States increased only slightly, but the value of those imports increased by 86 percent to $47.3 million. The increase in value was driven by a shift from edible offal to more fresh boneless beef. U.S. beef exports of variety meat (edible offal) to the EU in 2006 accounted for 70 percent of total beef exports on a product weight basis, and 33 percent by value. In 2007, exports of edible offal accounted for 35 percent of total beef exports on a quantity basis, and 9 percent by value (table 7.4). All beef and beef products for human consumption, including edible offal, must comply with the EU ban on growth hormones, described below. Products for use in pet food are not required to comply with the hormone ban.

Prior to 2004, Russia had been the largest export market for U.S. beef liver. In 2004, the 10 new EU member states, plus the two countries that joined in 2007, were the largest export market for U.S. liver when combined. In June 2004, the EU enacted additional denaturing labeling and certification requirements for edible offal for use in pet food, and harmonized these requirements across the EU in order to distinguish such material from edible offal for human consumption.[30] In 2005, U.S. exports of beef liver to the new EU member states declined by over 20 percent from the high of 2004, and have continued to decline. In 2007, U.S. beef liver exports to this region were only 12.3 percent of the 2004 volume.[31]
U.S. hormone-free Prime- and Choice-grade grain-fed beef sold within the EU is closely competitive with Australian grain-fed beef and, to a lesser degree, grass-fed Irish beef. U.S. edible offal is largely sold as a generic commodity, for use in pet food. U.S. beef livers are competitive with Brazilian and Argentine products, even though these exporters reportedly often undersell U.S. beef products in the EU.[32]

U.S. hormone-free Prime and Choice beef from animals no more than 30 months of age is eligible for export under the high-quality (Hilton) beef quota.[33] U.S. beef imported under this quota is composed primarily of prime cuts sold to high-end restaurants and by direct mail order in the United Kingdom and the Benelux countries.[34] U.S. Prime beef has garnered a reputation for quality in some high-end restaurants. Similarly, high-end supermarkets seeking to expand their product offerings present an opportunity for U.S. beef exports.

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[30] Material must be marked with liquefied charcoal or activated carbon on each side of the frozen block to indicate it is not for human consumption.

[31] GTIS, Global Trade Atlas database.

[32] USDA, FAS, *EU-25: Livestock and Products, U.S. Beef Faces Strong Competition*, September 8, 2005, 4.

[33] Kamenski, USMEF, "U.S. beef opportunities expanding in Europe, " September-October 2007, 2.

[34] USDA, FAS, *EU-25: Livestock and Products, U.S. Beef Faces Strong Competition,* September 8, 2005, 4.

TABLE 7.4 Beef: EU's imports from the United States, by HS subheading, 2002–07

HS subheading		2002	2003	2004	2005	2006	2007
		Quantity *(mt)*					
020110	Fresh/chilled carcass	4	11	9	29	9	0
020120	Fresh/chilled bone-in	77	214	12	91	238	309
020130	Fresh/chilled boneless	908	613	890	690	1,235	4,198
020210	Frozen carcass	87	29	110	137	239	216
020220	Frozen bone-in	308	205	195	147	232	878
020230	Frozen boneless	507	649	1,149	2,471	1,424	2,528
020610	Fresh/chilled edible offal	38	26	0	60	24	0
020621	Frozen edible offal, tongue	1	24	0	446	409	9
020622	Frozen edible offal, liver	3,138	2,240	35,724	28,331	7,224	3,800
020629	Frozen edible offal, other	5,293	7,447	5,957	1,017	1,133	538
021020	Salted, in brine, or dried	5	11	0	95	7	2
160250	Prepared or preserved beef	194	93	204	370	361	548
	Total	10,562	11,561	44,249	33,884	12,534	13,026
		Million *(U.S. dollars)*					
020110	Fresh/chilled carcass	([a])	0.1	([a])	0.3	([a])	0.0
020120	Fresh/chilled bone-in	0.5	1.5	0.5	0.7	1.7	2.3
020130	Fresh/chilled boneless	5.2	4.4	5.1	5.2	6.6	22.6
020210	Frozen carcass	0.3	0.2	0.3	0.7	1.1	1.0
020220	Frozen bone-in	1.2	1.7	1.2	1.1	1.1	4.5
020230	Frozen boneless	2.7	3.5	3.6	4.7	4.3	10.2
020610	Fresh/chilled edible offal	0.1	0.1	0.0	0.1	0.0	0.0
020621	Frozen edible offal, tongue	([a])	([a])	0.0	0.7	1.0	([a])
020622	Frozen edible offal, liver	1.7	1.0	18.5	18.0	6.3	3.5
020629	Frozen edible offal, other	2.5	3.0	3.1	1.0	1.1	0.5
021020	Salted, in brine, or dried	([a])	0.1	0.0	0.6	0.1	([a])
106025	Prepared or preserved beef	0.5	0.7	1.2	1.9	2.1	2.7
	Total	14.7	16.2	33.5	35.0	25.4	47.3
		Unit value *($/mt)*					
020110	Fresh/chilled carcass	6,313	4,654	3,867	10,054	4,914	([b])
020120	Fresh/chilled bone-in	6,931	7,146	39,155	7,816	7,075	7,315
020130	Fresh/chilled boneless	5,744	7,195	5,708	7,490	5,337	5,372
020210	Frozen carcass	2,904	6,576	3,094	4,746	4,495	4,631
020220	Frozen bone-in	3,962	8,251	6,337	7,738	4,826	5,466
020230	Frozen boneless	5,327	5,392	3,091	1,912	3,005	5,814
020610	Fresh/chilled edible offal	1,342	3,607	([b])	1,786	609	([b])
020621	Frozen edible offal, tongue	10,917	585	([b])	1,636	2,524	2,778
020622	Frozen edible offal, liver	544	446	519	634	866	926
020629	Frozen edible offal, other	469	404	513	1,014	993	885
021020	Salted, in brine, or dried	3,053	7,910	([b])	6,250	19,145	23,770
160250	Prepared or preserved beef	2,751	7,286	6,029	5,239	5,752	4,927
	Average	1,396	1,406	758	1,034	2,029	4,000

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total.

[a]Not applicable.
[b]Less than $50,000.

Shortages of U.S. cattle certified to produce beef for export to the EU under the NHTC program (described below) and the small number of approved slaughter plants have meant that U.S. exporters often offer full sets of beef rather than offering the specific cuts most desired by consumers. This practice, along with an inability to offer a steady supply of beef, again because of the small size of the program, has limited the competitiveness of U.S. beef exports in the EU.[35]

Animal Health, Sanitary, and Food Safety Measures in the EU

Regulatory Framework

The EU, through the European Parliament (EP) and the Council of the European Union (the Council), has established a series of laws, directives, and regulations designed to protect animal and human health. National governments enact and enforce legislation to implement the directives of the EP and the Council. The Directorate General for Health and Consumer Protection (SANCO) oversees the enforcement of EU directives at the national level and ensures that laws are kept up to date.[36] Within SANCO, the FVO conducts inspections to ensure enforcement of regulations. There are three independent regulatory agencies with which SANCO closely cooperates: the Community Plant Variety Office, the European Center for Disease Control, and the European Food Safety Authority (EFSA).

Regulation (EC) 178/2002 established EFSA and provides the basis for regulation of "food law" within the EU. The regulation provides a common basis for trade between the member states and for external trade. Imported food and feed is required to comply with the relevant safety regulations or conditions, or to provide at least an equivalent level of safety. Member states are required to establish procedures to enforce, monitor, and verify the relevant requirements of food law, including the communication of food safety and risk to the public. EFSA provides scientific opinions on food safety that serve as the scientific basis for EU regulation. Nine scientific panels within EFSA perform risk assessments within specialized fields, and five of these panels potentially impact U.S. beef exports to the EU.[37]

The food law contains provisions dealing with all stages of food (as well as feed for food animals) production, processing, and distribution, including hazards from biological, chemical, and physical agents. It addresses risk analysis (where

[35] USDA, FAS, *Netherlands: Livestock and Products*, *The Benelux Beef Market,* March 26, 2007, 8 and 10.

[36] Directorate General for Health and Consumer Protection Web site, http://ec.europa.eu/dgs/health_consumer/index_en.htm. (accessed June 13, 2008).

[37] The five panels are: Food Additives, Flavorings, Processing Aids and Materials in Contact with Food (AFC), Animal Health and Welfare (AHAW), Biological Hazards (BIOHAZ), Contaminants in the Food Chain (CONTAM), and Additives and Products or Substances used in Animal Feed (FEEDAP). As of July 10, AFC has been replaced by the panel on Food Additives And Nutrient Sources Added To Food (ANS) and the panel on Food Contact Materials, Enzymes, Flavourings And Processing Aids (CEF).

appropriate), risk management, and the precautionary principle.[38] In order to facilitate the recall of food products in case a food safety problem arises, the regulation requires the establishment of a traceability system that can identify, at a minimum, the business entity from which an ingredient has been supplied. It also establishes that food business operators have the primary legal responsibility for ensuring the safety of food products.

Measures Affecting Imports from the United States

Description of Current Measures

The primary sanitary measures in the EU affecting imports of U.S. beef are the EU ban on hormone-treated beef, the EU ban on antimicrobial treatment of beef, and EU veterinary drug residue limits.[39] EU measures that affect beef from other countries, such as those related to FMD and to blue tongue disease, are not considered here because they do not affect U.S. exports. EU restrictions relating to BSE generally are not considered by U.S. industry to be a significant trade barrier to U.S. beef. The EU list of SRMs required to be removed is very similar to the OIE guidelines for a controlled risk country (see chapter 4). The EU TRQ (summarized below) covering high-quality beef from the United States effectively limits U.S. beef imports for human consumption to beef from cattle under 30 months of age, for which the BSE-related restrictions are less onerous.

The EU requires that a U.S. company exporting meat products to the EU be listed as an eligible export establishment after being inspected by the FVO.[40] All U.S. beef exports to the EU that are destined for human consumption must be from cattle that meet the requirements of the NHTC program administered by the FSIS. All farms, ranches, and feedlots participating in the NHTC program are audited and approved by the Audit, Review, and Compliance (ARC) branch of the USDA Agricultural Marketing Service. Each animal must be individually identified to ensure traceability. Slaughter, processing, and cold-storage facilities must be approved by the FSIS. Tissue samples from non–hormone treated cattle are tested by an independent laboratory for substances that the EU has determined to be growth promotants. The NHTC program itself is audited every two years by the FVO.[41]

Until recently, each individual operation was inspected by personnel from the ARC. Beginning in spring 2006, ARC began auditing and approving the NHTC programs of cattle management groups that may encompass multiple individual operations. It is anticipated that this change will result in lower compliance costs for U.S. cattle producers. As of March 20, 2008, there were six individual farms, ranches, or feedlots and five cattle management companies approved to supply cattle used to produce beef for export to the EU.[42] In addition, six

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[38] The precautionary principle establishes that where the possibility of a harmful effect exists, but where scientific uncertainty regarding the risk persists, provisional risk management strategies may be adopted that ensure the high level of health protection chosen by the European Community. Regulation (EC) 178/2002, art. 7.

[39] See box 7.1 for additional information on the history of the EU hormone ban.

[40] USDA, FAS, *EU-25: Food and Agricultural Import Regulations and Standards – Update, Approved Lists of Animal Product Establishments 2005*, February 1, 2005, 2.

[41] USDA, ARC official, interviewed by Commission staff, October 30, 2007.

[42] Ibid. Approved list can be found at: USDA, AMS, Web site, (accessed March 26, 2008).

slaughterhouses in the United States are approved by the EU to export beef to the EU.

Other Barriers to Beef Imports from the United States

Tariff and Tariff-Rate Quota Treatment

Even without the hormone ban, most types of beef products imported into the EU from the United States would potentially face very high tariffs. EU beef imports are subject to TRQs, although preferential access is provided for certain developing countries.[43] During 2003–07 43 percent of the volume of beef imports entered the EU under quota (mostly at the in-quota rate of 20 percent), and the remaining 57 percent was fully dutiable (table 7.5).

TABLE 7.5 Beef: EU's quotas and import volume, 2003–07 (1,000 mt)

Item	Quota amount	Period				
		2003	2004	2005	2006	2007
Within quota: (20% rate)						
Fresh						
Hilton high-end:						
U.S./Canada	12	1	1	1	1	1
Argentina	28	28	28	28	28	28
Brazil	5	5	5	5	5	5
All others	38	14	14	15	16	18
Subtotal	83	48	48	49	50	52
Baby beef (veal)	22	1	1	1	2	4
Frozen						
ACP	52	0	18	18	10	10
Other	104	110	103	103	103	103
Total quota	239	158	169	170	163	165
Outside quota: (full duty)						
Fresh	([a])	75	100	120	110	120
Frozen	([a])	5	5	5	5	5
Processed	([a])	101	114	110	105	105
Total outside quota		180	220	230	215	225
Grand total, all imports		342	392	406	385	400

Note: Totals may vary because of rounding. ACP denotes eligible beneficiary developing countries in Africa, the Caribbean, and the Pacific Islands.

Under the Hilton quota, the United States and Canada share a quota of 11,500 mt per year.[44] U.S. Prime and Choice beef from hormone-free cattle less than 30 months of age, or that otherwise meets the definition of "high quality," is eligible for import under the high-quality beef quota (Hilton quota).[45] Import licenses for U.S. beef are issued on a monthly basis, with any unfilled quantity rolling over to

[43] The EU provides preferential access for eligible beneficiary developing countries in Africa, the Caribbean, and the Pacific Islands, referred to as the ACP countries.

[44] USDA, FAS, *Netherlands: Livestock and Products*, *The Benelux Beef Market,* March 26, 2007, 3–4; and USDA, FAS, *EU-25: Livestock and Products, U.S. Beef Faces Strong Competition,* September 8, 2005, 2.

[45] Kamenski, USMEF, "U.S. Beef Opportunities Expanding in Europe," September-October 2007, 2.

the following month.[46] In addition, the EU maintains quotas for beef that do not meet the requirements for "high quality beef." The quota of 53,000 mt of frozen cuts is filled almost entirely by Brazil, and the quotas for 50,700 mt of beef for processing are also largely filled by Brazil.[47]

In 2007, applied over-quota tariff rates on most U.S. beef muscle cuts were well over 50 percent AVE. Over-quota rates consist of an ad valorem rate of 12.8 percent plus a specific duty of € 1.414–3.034 per kg.[48] For example, the average over-quota duty on U.S. fresh chilled boneless beef (HS 020130) would have been 12.8 percent ad valorem plus € 3.034 per kg ($1.885/lb.), for a total of about 90 percent AVE.[49] The EU maintains lower duties on preserved beef products (such as corned beef in airtight containers classified under HS 16025031). The EU duty on U.S. cooked preserved beef in 2007 was 16.6 percent. Most beef variety meats (edible offal) enter free of duty. Throughout 2002–06, frozen beef liver accounted for the greatest share of U.S. beef exports to the EU by quantity. U.S. beef liver entered the EU free of duty under HS 020622. In addition to access within the quota, the EU maintains some preferential tariff rates. In 2007, the preferential duty rate for baby beef (veal) from former Yugoslavia countries was 20 percent of the applied WTO rate; and the rate for ACP countries was 8 percent of the applied duty rate for WTO members.

The U.S. high-quality beef quota (Hilton quota) has never been filled since it was established. The United States and Canada share a quota of 11,500 mt, with an in-quota tariff of 20 percent AVE. In 2004–05, only about 9 percent of this quota was filled.[50] For 2007, the fill rate increased to approximately 26 percent.[51] The quotas assigned to other beef exporters, such as Argentina, Australia, Brazil, New Zealand, and Uruguay, are nearly always filled and also face a 20 percent in-quota tariff.

One of the reasons the U.S. quota has been underfilled is the small volume of the quota relative to the costs of operating the NHTC program. However, increasing demand in the EU, coupled with changes in the NHTC program aimed at lowering the costs of certifying a producer of NHTC beef, have provided increased opportunities for U.S. beef in the EU market.[52]

Technical Barriers

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[46] USDA, FAS, U.S. Mission to the European Union, "High Quality Beef Quota," undated (accessed June 18, 2008).

[47] USDA, FAS, *EU-25: Livestock and Products, U.S. Beef Faces Strong Competition*, September 8, 2005, 2.

[48] USDA, FAS, *Netherlands: Livestock and Products, Opportunities on the EU Meat Market,* December 18, 2007, 2.

[49] EC, Taric Database. The duty conversion uses the U.S. 2007 export unit value to the EU of $5.37/kg, and a foreign exchange rate of 0.73 € per U.S. dollar. The continuing appreciation of the euro relative to the U.S. dollar means that the effective over-quota rate has increased.

[50] USDA, FAS, *EU-25: Livestock and Products, U.S. Beef Faces Strong Competition*, September 8, 2005, 2.

[51] Official with U.S. Mission to the EU, email message to Commission staff, March 25, 2008.

[52] USDA, FAS, *EU-27: Livestock and Products, Redefinition of U.S. Quality Beef*, March 15, 2007, 2; and Kamenski, USMEF, "US. Beef Opportunities Expanding in Europe," September-October, 2007.

Other measures that have been identified as restricting U.S. exports to the EU include the lack of a single customs administration and animal by-products legislation. Rather than a single customs administration, each member state enforces rules on classification, value, and customs procedures separately. Regulations on importation of animal by-products enacted in 2004 affect an estimated $100 million of U.S. exports of products that are not for human consumption, such as pet food and other animal protein product. The extent of the impact of these measures on U.S. beef exports is unknown.[53]

Support for Domestic Production

EU beef producers benefit from significant government support. In addition to the border protection and sanitary restrictions described above, EU beef production receives direct support from the CAP. A measure of the degree to which EU beef producers are supported by government programs is provided by the OECD.[54] OECD data estimate that between 2002 and 2006, the average price paid for beef by consumers in the EU was 79–157 percent higher than the border price (both measured at the farm gate) (table 7.6). Domestic support provided to beef producers has generally declined over the period, but the value of commodity-specific support was an estimated 48.8 percent of farm receipts for beef in 2006 (percent SCT).

TABLE 7.6 Beef: OECD estimates of the EU's support for production, 2002–06

Measure	2002	2003	2004	2005	2006
Producer support estimate (PSE)[a]	74	76	([b])	([b])	([b])
Single commodity transfers (SCT)[c]	([b])	([b])	66.7	57.7	48.8
Consumer NPC[d]	2.56	2.57	2.14	2.01	1.79

Source: OECD, *Agricultural Policies in OECD Countries*, 2005 and 2007.

[a]Percent PSE is equal to total transfers to producers as a percentage of receipts.
[b]Not available.
[c]Percent SCT is equal to commodity-specific transfers as a percentage of receipts.
[d]Consumer NPC is the ratio of the price for beef and veal paid by consumers to the border price.

[53] USTR, *2008 National Trade Estimate Report on Foreign Trade Barriers*, March 28, 2008, 194, 208–9.

[54] OECD, *Agricultural Policies in OECD Countries*, *2005*, 276; and OECD, *Agricultural Policies in OECD Countries, 2007*, 266.

CHAPTER 8
China

China represents one of the largest potential growth markets for U.S. beef.[1] China is a leading consumer and producer of beef, ranking as the world's third-largest consumer (after the United States and the EU), and the fourth-largest producer in 2007 (table 2.1; table 2.2).[2] With its 1.3 billion consumers, rising income levels, and rapid urbanization, growth in China's per capita beef consumption outpaced all major beef-consuming countries during the last decade. Although domestic production currently accounts for over 99 percent of domestic consumption, most of China's beef output is of low quality. Imported beef is widely expected to increase to meet accelerating demand, particularly for the rapidly expanding urban restaurant and supermarket sectors.

China officially banned U.S. beef and offal after the discovery of a single case of BSE in the U.S. cattle herd in December 2003. To date, four years of bilateral negotiations have not resulted in the lifting of the ban (box 8.1). Prior to the BSE-related ban, the United States was China's leading foreign beef supplier by value (excluding transshipments through Hong Kong), and China was the tenth-largest U.S. beef export market in 2003. China also represented a complementary market to the U.S. domestic market, in which certain beef cuts that are underutilized in the United States, such as offal, were marketed in China as premium products.[3] During 2004–07, China's ban on U.S. beef is estimated to have been worth $110 million in lost exports based on 2003 export sales.[4]

BOX 8.1 Summary of China's BSE-related events and restrictions on imports of U.S. beef

December 2003	Following the discovery of BSE in the U.S. cattle herd, China bans U.S. beef and offal.
June 2006	China offers to accept U.S. boneless beef from cattle under 31 months, but excludes most offal. The United States rejects the offer because it is not based on OIE trade guidelines for "undetermined risk" classification.
May 2007	OIE classifies the United States as a "controlled risk country" for BSE.
May 2007	China becomes a full member of the OIE.
August 2007	China offers to accept U.S. boneless beef, bone-in beef, and most offals from cattle under 31months, but excludes certain high-value offal. The United States rejects China's offer and insists that China follow OIE guidelines to open its market to all U.S. beef and offal, regardless of age, as long as SRMs are removed.

Source: USDA, FAS, GAIN reports, various dates.

[1] Hong Kong's trade and import policies also will be examined in this chapter because of its role as a major trade gateway to China.

[2] USDA, FAS, *Livestock and Poultry: World Markets and Trade*, November 2007.

[3] Certain U.S. cuts exported to China as high-value premium products are of very low value in the U.S. market. For example, in the United States beef offal is utilized in pet food, while it is a high-value delicacy in China. Short plate and chuck roll primarily destined for the manufacturing sector in the U.S. market are high-value premium cuts in China. Lonergran, "Beef Mission 2001," May 2002, 1.

[4] Commission staff estimate based on Global Trade Atlas data.

Moreover, given the absence of official U.S. beef exports during the five-year period in which China's beef consumption grew substantially, the cost to the U.S. beef industry likely is higher.[5]

Model simulation results indicate that losses in U.S. exports to China and Hong Kong due to sanitary measures totaled $510 million during 2004–07. Export losses were greatest for frozen boneless beef, frozen offal, and fresh and chilled boneless beef. Model results indicate that the effect of the removal of China's tariffs on U.S. beef imports over the same period would have increased U.S. exports by $19 million.[6]

China Market Characteristics and Trends

Beef Consumption Trends

Beef represents 12 percent of China's meat protein consumption, and beef consumption is growing at a faster rate than that of pork (71 percent of meat protein consumption) or poultry (17 percent).[7] Chinese consumers are increasingly shifting to beef from pork owing to shortages and high prices for pork and poultry due to concerns related to avian influenza. Traditionally, beef was viewed as a special occasion food[8] and not an important meat ingredient in traditional Chinese home-cooked meals. However, beef preparation methods are evolving from mainly stewing and other wet cooking to methods more suited to beef, such as grilling and roasting.[9] Moreover, the rising incomes of the rapidly expanding urban population are leading the shift to beef consumption, which is regarded as a healthier meat than pork.[10]

China's total consumption of beef amounted to 7.8 mmt cwe in 2007, having expanded by 33 percent since 2002 (table 8.1). Per capita beef consumption was 5.9 kg in 2007, a relatively small amount compared to the United States (42.6 kg) and other major beef-consuming countries. However, China's per capita consumption has risen by 31 percent since 2002, the fastest rate of growth among major beef-consuming countries.[11] China's strong economy and income growth during the period, expansion of the foodservice sector (including hotels and restaurants), and the development of the retail sector (especially supermarkets) are important factors contributing to rising beef consumption.[12]

[5] Since the ban, U.S. beef has continued to enter China through informal (grey market) channels.

[6] Hong Kong maintains zero duties on beef and offal products.

[7] USMEF, *Greater China Beef*, October 2007, 1.

[8] Kansas/Asia Community Connection, "Eating Beef in China: Consumer Preferences," undated (accessed January 24, 2008).

[9] USMEF, *Greater China Beef*, October 2007, 1.

[10] Kansas/Asia Community Connection, "Eating Beef in China: Consumer Preferences," undated (accessed January 24, 2008).

[11] USDA, FAS, *Livestock and Poultry: World Markets and Trade*, November 2007.

[12] USMEF, *Greater China Beef*, October 2007, 1.

TABLE 8.1 Beef: China's production, consumption, trade, and key factors affecting demand, 2002–07

Market data	2002	2003	2004	2005	2006	2007
Production (1,000 mt cwe)	5,846	6,305	6,759	7,115	7,492	7,850
Imports (1,000 mt cwe)	16	12	5	2	2	5
Total supply (1,000 mt cwe)	5,862	6,317	6,764	7,117	7,494	7,855
Exports (1,000 mt cwe)	37	36	52	76	85	99
Domestic consumption (1,000 mt cwe)	5,825	6,281	6,712	7,041	7,409	7,756
Exchange rate (RMB/U.S.$)	8.277	8.277	8.2768	8.1943	7.9734	7.6075
GDP/capita (U.S.$/person)	1,132	1,270	1,486	1,716	2,013	2,460
Population (millions)	1,284.3	1,292.3	1,299.9	1,307.6	1,314.1	1,320.7
Wholesale beef price index	([a])	100	103	109	115	134
Annual beef per capita consumption (kg)	4.5	4.9	5.2	5.4	5.6	5.9

Sources: Production, consumption, and trade data taken from USDA, FAS, PS&D database unless otherwise noted. Exchange rate, GDP per capita, and population from IMF. Wholesale beef price index estimated by Commission staff.

Note: Production, supply, and consumption data in carcass weight equivalent. These data are not directly comparable to product weight data.

[a]Not available.

Sources of Supply

China's beef market is almost entirely supplied by domestic production. The beef market is broadly segmented into two main categories based on quality. These are the mass-market segment, which is characterized by low-quality, undifferentiated beef products (90 percent of consumption) and the premium market segment (10 percent of consumption), which can be further divided into high- and mid-value market segments.

China's mass market for beef is characterized by consumers with little understanding of different cuts of beef or quality characteristics, such as marbling, according to U.S. industry sources.[13] Mass-market beef is largely produced from grass-fed, draft-quality indigenous "yellow cattle" breeds and cull dairy cows. Most mass-market cattle are supplied by small-scale family farmers who sell one or two cattle to local slaughter facilities.[14] Mass-market beef is generally sold soon after slaughter in wet markets with little or no packaging.[15] The sanitary conditions relating to the slaughter, processing, and distribution of mass market beef reportedly are poor.[16]

The high-value segment of the premium market represents a very small share of consumption. This market segment is characterized by highly differentiated marbled muscle cuts of beef, produced from specialized breeds of high-quality, grain-fed cattle. High-value beef is primarily served at high-end hotels,

[13] Kansas/Asia Community Connection, "Eating Beef in China: Consumer Preferences," undated (accessed January 24, 2008).

[14] These farmers derive most of their income from crops and other activities. Kansas/Asia Community Connection, "Beef production in China: Beef Breeds," undated (accessed January 24, 2008).

[15] Wet markets are traditional markets where food is sold, and in which animal products are mostly sold fresh. Kansas/Asia Community Connection, "Beef production in China: Marketing and Distribution," undated (accessed January 24, 2008).

[16] The risk of food contamination is somewhat mitigated because most of this beef is consumed soon after slaughter. Brown and Waldron, IFPRI, *Case Study: Beef Industry China,* September 2003, 1.

restaurants, and in the growing tourist sector. Although China has a small premium beef-producing industry, a substantial portion of China's high-quality beef consumption is supplied by imports.[17] Prior to the ban on U.S. beef, the United States was the leading import supplier in this segment; which is now largely supplied by Australia.[18]

The mid-value segment of the premium beef market is China's fastest-growing beef market.[19] Principally supplied by domestic production, this beef is often produced by specialized farms and feedlots from dedicated beef cattle breeds.[20] Mid-value beef is more differentiated than mass-market product and supplies China's rapidly expanding urban consumers, who are willing to pay higher prices for differentiated cuts of beef that undergo more rigorous health and safety inspections.[21]

Imported beef is expected to gain greater market share in China's premium beef market. Expansion of China's quality beef production is reportedly constrained by a lack of breeding animals, underdeveloped knowledge of and technology in animal husbandry, and limited available land.[22] Moreover, producing quality beef cattle is costly in China because of the relatively high cost of land that can be dedicated to cattle raising and the high and increasing cost of feed grains.[23]

Factors Affecting Beef Demand

Five principal factors are driving China's increased demand for beef: rising incomes, increasing urbanization, high relative prices for pork, shifting consumer preferences to greater food variety, and the perception among consumers that beef is healthier than pork.[24] China's strong income growth and rapid urbanization have been the leading factors driving increased consumption of beef. Since 2002, China's per capita income has increased by 117 percent, allowing consumers to spend more on relatively higher-priced beef. Income growth, particularly among urban consumers, also has led to changes in traditional consumption patterns, as many more consumers are dining out and purchasing ready-to-eat beef products from supermarkets.[25] From 1999 through 2005, sales of fast food in China (including many beef dishes) more than doubled, and sales at Western-style supermarkets increased by 600 percent to $91 billion.[26] Beef is also perceived as a superior source of protein as compared with pork, contributing to strengthened beef demand, particularly as pork prices

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[17] USDA, FAS, *China: Livestock and Products Semiannual, 2008*, March 1, 2008, 6.

[18] Including beef from Wagyu breeds shipped through Hong Kong. USMEF, *Greater China Beef*; and USDA, FAS, *China Livestock and Products Annual Report 2007*, September 25, 2007, 5.

[19] Brown and Waldron, *Case Study: Beef Industry China,* September 2003, 1.

[20] About 5 percent of China's cattle herd is composed of specialized cattle breeds produced through artificial insemination. Kansas/Asia Community Connection, "Beef Production in China: Beef Breeds," undated (accessed January 24, 2008).

[21] Brown and Waldron, *Case Study: Beef Industry China,* September 2003.

[22] Agriculture and Agri-Food Canada, Agri-Food Trade Service, "The Meat Products Market in China," April 2006.

[23] U.S. beef industry official, email message to Commission staff, May 29, 2008.

[24] Kansas/Asia Community Connection, "Eating Beef in China: Consumer Preferences," undated (accessed January 24, 2008).

[25] USDA, FAS, *China: Livestock and Products Semiannual, 2008,* March 1, 2008, 6.

[26] Frazão, Meade, and Regmi, "Converging Patterns in Global Food Consumption," February 2008.

increased rapidly in recent years.[27] Moreover, rising incomes have led consumers to demand a greater variety of foods, such as beef, which had not been a staple of the Chinese diet.

Import Market Characteristics and Trends

Imports by Major Supplier

Imports account for a very small share of China's beef market. In 2007, China's imports were $41 million, representing less than 1 percent of the total beef market (table 8.2). However, because of the scarcity of domestically produced, high-quality beef, imports account for a substantial share of the country's high-end, grain-fed beef market.[28] Excluding Hong Kong export data, which are believed to be over-reported for 2002–04,[29] China's total imports declined slightly during 2002–07. Given the upsurge in demand during the period, the relatively static level of official imports is primarily because of the absence of U.S. exports.[30] However, strong demand for quality beef in the HRI sector and continued rapid growth in the mid-value portion of the market, combined with shortages of domestic production, is expected to result in an upsurge in beef imports in 2008.[31]

The United States was China's leading beef supplier prior to the BSE-related ban. U.S. exports amounted to $27 million in 2003, accounting for 52 percent of the value and 37 percent by quantity of China's import market.[32] Since the ban, Australia has become China's leading foreign supplier. In 2007, Australia's exports were $18 million, accounting for roughly one-half of the import market. New Zealand (which recently completed a FTA with China) and Uruguay were the other major beneficiaries of the ban on U.S. beef, with exports from Uruguay rising significantly since 2003.

Brazil and other South American beef exporters are expected to become important suppliers as China's beef demand accelerates, particularly in the mid-value market segment. In November 2007, China reached an agreement with Brazil to allow imports of boneless beef from four Brazilian states.[33] As China

[27] Beef is the most expensive meat product in China. The average wholesale price for beef was $2.37/kg in 2007; however the price differential with pork,($2.20/kg in 2007) has declined. Prices for all protein meat increased from 2002 through 2007, led by pork because of shortages caused by Porcine Reproductive and Respiratory Syndrome or blue ear disease.

[28] USDA, FAS, *China: Livestock and Products Semiannual, 2008*, March 1, 2008, 6.

[29] Official data for Hong Kong beef and offal exports to China for 2002–04 are inconsistent (greatly overvalued) with value and quantity data provided by USDA-FAS in its GAIN reports, and China's import statistics are not believed to be accurate. Because these data are overvalued, the totals for 2002–04 in tables 8.2 and 8.3 are overvalued.

[30] Unofficial grey market imports are believed to have increased during 2002–07.

[31] China's beef imports are forecast to increase four-fold by quantity in 2008. USDA, FAS, *China: Livestock and Products Semiannual, 2008*, March 1, 2008, 1.

[32] Excluding transshipments through Hong Kong.

[33] USDA, FAS, *China: Livestock and Products Semiannual*, *2008*, March 1, 2008, 6. China suspended imports from Brazil in October 2005 owing to FMD concerns. USDA, FAS, *China: Livestock and Products Annua*, *2007*, September 25, 2007, 6.

TABLE 8.2 Beef: China's imports, by leading suppliers, 2002–07 (million U.S. dollars)

Market	2002	2003	2004	2005	2006	2007
Australia	10.2	15.6	20.4	15.5	13.8	18.2
Hong Kong	[a] 104.3	[a] 128.1	[a] 52.6	7.5	8.2	10.4
Uruguay	0.3	0.0	0.7	2.2	1.3	4.5
New Zealand	3.0	5.0	4.0	2.1	4.9	3.9
India	0.6	1.0	1.0	2.7	6.4	1.7
Brazil	0.8	2.1	1.4	2.4	0.7	0.7
United States	22.8	27.4	0.2	0.1	0.2	0.7
EU	0.3	0.3	0.9	1.1	0.1	0.4
Russia	0.0	0.0	0.0	0.0	0.0	0.1
Canada	2.6	1.0	0.2	2.5	0.7	0.1
Mexico	0.0	0.0	0.0	0.0	0.0	0.1
ROW	1.0	0.8	1.4	1.9	1.2	0.2
Total	145.9	181.3	82.8	38.0	37.5	41.0

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total. ROW denotes rest of the world.

[a]Official data for Hong Kong beef and offal exports to China are believed to be over-reported during 2002–04. The data are inconsistent with China's import data and data provided by USDA, FAS in its Gain Reports.

is a very price-sensitive beef market,[34] demand for relatively low-cost Brazilian beef (one-half the price of U.S. beef) is expected to increase substantially.[35]

Hong Kong serves as a major gateway for imports into China. In 2007, Hong Kong imported $415 million of beef products, including beef offal ($119 million), frozen bone-in beef ($193 million), and fresh/chilled boneless beef ($43 million). Hong Kong's imports from the United States were $35 million in 2007, and included frozen boneless beef ($25 million) and fresh boneless beef ($9 million).[36]

Unofficial (grey market) imports into China are reportedly a significant source of foreign beef supply. As much as one-third of China's beef imports enter through grey market channels, including Hong Kong and certain other neighboring countries.[37] Currently, U.S. exports of beef to China are officially banned; however, because of the shortage of quality beef, U.S. frozen beef and offal is reportedly entering China,[38] even though the Chinese government has tightened its inspection regime.[39]

[34] *Ashburton Guardian*, "New China Deal Not Universally Popular," April 11, 2008.
[35] USDA, FAS, *China: Livestock and Products Semiannual, 2008*, March 1, 2008, 6.
[36] GTIS, Global Trade Atlas database.
[37] Hong Kong accounts for most of China's grey market imports. Vietnam is reportedly less desirable for grey market beef shipments because of a lack of cold and chilled storage infrastructure. USDA, FAS, *Trade Policy Monitoring: Demystifying the Grey Market for Meat Products, 2008*, April 3, 2008, 2.
[38] Industry representative, telephone interview with Commission staff, May 20, 2007. USDA-FAS estimates that shipments of U.S. beef through indirect channels may be equal to amounts shipped through official channels in 2003 before the BSE-related ban. USDA, FAS, *China: Livestock and Products Semiannual, 2007*, March 1, 2007, 6.
[39] USDA, FAS, *Trade Policy Monitoring: Demystifying the Grey Market for Meat Products*, *2008*, April 3, 2008, 2.

Imports by Products

World

China's beef imports are concentrated in two product areas, offal (excluding liver) and boneless beef, which accounted for 81 percent by value of total beef imports in 2007. Boneless beef was China's leading beef import in 2007 (table 8.3). Imports included frozen boneless beef ($14 million) and fresh and chilled boneless beef ($6 million), which were mainly Asian-style cuts from the rib and chuck that are served in such dishes as hotpots,[40] stir fry, and Korean-style barbeque, a popular restaurant dish.[41] Beef offal, including tripe (omasum or third stomach), was the other leading beef product import by value, at $13 million in 2007. Beef offal is widely used in Chinese cuisine and often prepared in traditional hotpot cooking; omasum is in high demand because it can be substituted for pork offal. Bovine tongues are also popular in Chinese cuisine and often used for cold dishes.[42]

United States

Prior to China's BSE-related ban, the United States was the main supplier to China's emerging premium beef market and an important supplier to the foodservice and high-end retail sectors. According to U.S. industry sources, U.S. beef was highly regarded in China's market for superior and consistent quality.[43] In 2003, U.S. exports were concentrated in two main product areas, frozen offal ($16.6 million) and frozen boneless beef ($7.5 million) (table 8.4). U.S. offal is regarded as high quality because it is harvested from relatively younger cattle compared to domestic offal and that from other countries exporting beef to China.[44] Prior to the ban, the primary cuts of frozen boneless beef supplied by the United States were short plate and chuck roll, which are typically sliced thin and used in hotpot dishes.[45] Both cuts were marketed as high-quality beef cuts in China, in contrast to the U.S. market, where they are of much lower value.[46]

According to U.S. beef industry sources, U.S. grain-fed beef has competitive advantages in quality and product diversity over the grass-fed beef currently supplied by Australia, Brazil, and New Zealand.[47] For example, the utilization of more diverse cooking methods in China, such as grilling, pan-frying, and roasting, is particularly suited to U.S. grain-fed marbled beef.[48] Moreover, a large

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[40] Hotpots are pots of boiling broth in which diners dip thin slices of beef and vegetables for rapid cooking.

[41] USDA, FAS, *China: Livestock and Products Semiannual, 2008*, March 1, 2008; and USMEF, Greater China Beef, October 2007.

[42] USDA, FAS, *China: Livestock and Products Annual, 2007*, September 25, 2007, 5.

[43] U.S. beef industry representative, telephone interview by Commission staff, May 14, 2008.

[44] U.S. beef industry representative, email message to Commission staff, May 29, 2008.

[45] Lonergran, "Beef Mission 2001," May 2002, 1.

[46] An important priority for the U.S. industry will be recapturing lost market segments resulting from the ban. According to an analysis by the USMEF, U.S. short plate accounted for 34 percent (4,938 mt) of the Chinese market, short rib for 30 percent (4,314 mt), and tripe for 15 percent (2,169 mt) in 2000. In the U.S. market, these products would be processed into low-value trim; whereas in China's market, these are higher-value, differentiated products. USMEF, *Methodology and Results of the Value of Beef Export Analysis*, July 2002.

[47] USMEF, *Greater China Beef,* October 2007.

[48] Ibid.

TABLE 8.3 Beef: China's imports from the world, by HS subheading, 2002–07

HS subheading		2002	2003	2004	2005	2006	2007
		Quantity (*mt*)					
020110	Fresh/chilled carcass	0	0	71	325	23	3
020120	Fresh/chilled bone-in	191	28	27	23	43	36
020130	Fresh/chilled boneless	3,135	529	1,036	647	400	388
020210	Frozen carcass	74	45	0	18	1	10
020220	Frozen bone-in	876	1,030	182	110	176	299
020230	Frozen boneless	16,168	14,589	6,680	4,846	5,877	7,431
020610	Fresh/chilled edible offal	2,251	1,394	507	533	55	59
020621	Frozen edible offal, tongue	338	758	134	1,065	96	353
020622	Frozen edible offal, liver	16	20	239	24	0	0
020629	Frozen edible offal, other	85,998	104,804	50,284	15,766	10,975	8,800
021020	Salted, in brine, or dried	78	74	176	325	276	256
160250	Prepared or preserved beef	2,468	2,479	1,669	212	54	422
	Total	111,593	125,750	61,005	23,894	17,976	18,057
		Million *(U.S. dollars)*					
020110	Fresh/chilled carcass	0.0	0.0	0.1	0.4	0.1	0.1
020120	Fresh/chilled bone-in	0.2	0.2	0.2	0.2	0.4	0.4
020130	Fresh/chilled boneless	8.1	2.4	4.8	4.2	5.2	5.7
020210	Frozen carcass	0.1	([a])	0.0	([a])	0.1	0.1
020220	Frozen bone-in	2.2	3.3	0.2	0.3	0.4	0.7
020230	Frozen boneless	28.5	31.9	12.3	9.2	10.2	14.4
020610	Fresh/chilled edible offal	1.0	0.6	0.5	0.5	0.1	0.1
020621	Frozen edible offal, tongue	0.4	1.5	0.2	1.6	0.2	0.6
020622	Frozen edible offal, liver	([a])	([a])	0.2	([a])	0.0	0.0
020629	Frozen edible offal, other	103.2	138.1	61.9	20.9	16.7	13.3
021020	Salted, in brine, or dried	0.1	0.2	0.2	0.3	4.1	3.2
160250	Prepared or preserved beef	2.0	3.2	2.2	0.3	0.1	2.4
	Total	145.9	181.3	82.8	38.0	37.5	41.0
		Unit value *($/mt)*					
020110	Fresh/chilled carcass	([b])	([b])	857	1,254	4,287	20,929
020120	Fresh/chilled bone-in	1,286	6,205	8,089	9,703	8,536	10,664
020130	Fresh/chilled boneless	2,589	4,458	4,606	6,500	12,930	14,612
020210	Frozen carcass	1,231	1,016	([b])	931	81,698	14,380
020220	Frozen bone-in	2,549	3,211	1,354	3,084	2,174	2,237
020230	Frozen boneless	1,763	2,183	1,835	1,900	1,733	1,964
020610	Fresh/chilled edible offal	431	429	1,031	858	2,493	1,761
020621	Frozen edible offal, tongue	1,173	1,983	1,415	1,547	1,719	1,671
020622	Frozen edible offal, liver	773	1,327	800	700	([b])	([b])
020629	Frozen edible offal, other	1,200	1,318	1,232	1,325	1,521	1,516
021020	Salted, in brine, or dried	1,788	2,358	1,104	1,021	14,781	12,553
160250	Prepared or preserved beef	792	1,271	1,338	1,366	2,216	5,744
	Average	1,307	1,442	1,358	1,591	2,085	2,299

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total.

[a]Less than $50,000.
[b]Not applicable.

TABLE 8.4 Beef: China's imports from the United States, by HS subheading, 2002–07

HS subheading		2002	2003	2004	2005	2006	2007
		Quantity *(mt)*					
020110	Fresh/chilled carcass	0	0	0	0	0	2
020120	Fresh/chilled bone-in	4	0	0	0	13	0
020130	Fresh/chilled boneless	2,623	107	0	47	0	25
020210	Frozen carcass	53	45	0	0	0	1
020220	Frozen bone-in	176	277	23	0	0	0
020230	Frozen boneless	3,024	2,507	0	1	26	162
020610	Fresh/chilled edible offal	0	49	49	0	29	0
020621	Frozen edible offal, tongue	294	675	0	0	0	0
020622	Frozen edible offal, liver	0	0	0	0	0	0
020629	Frozen edible offal, other	4,309	7,833	121	0	57	0
021020	Salted, in brine, or dried	0	0	0	0	0	0
160250	Prepared or preserved beef	39	157	2	17	9	9
	Total	10,523	11,651	195	66	133	198
		Million *(U.S. dollars)*					
020110	Fresh/chilled carcass	0.0	0.0	0.0	0.0	0.0	([a])
020120	Fresh/chilled bone-in	([a])	([a])	0.0	0.0	([a])	0.0
020130	Fresh/chilled boneless	6.8	0.5	0.0	0.1	([a])	0.1
020210	Frozen carcass	0.1	([a])	0.0	0.0	0.0	([a])
020220	Frozen bone-in	0.5	0.9	([a])	0.0	0.0	0.0
020230	Frozen boneless	7.0	7.5	0.0	([a])	0.1	0.5
020610	Fresh/chilled edible offal	0.0	([a])	([a])	0.0	0.1	0.0
020621	Frozen edible offal, tongue	0.3	1.4	0.0	0.0	0.0	0.0
020622	Frozen edible offal, liver	0.0	0.0	0.0	0.0	0.0	0.0
020629	Frozen edible offal, other	8.0	16.6	0.1	0.0	([a])	0.0
021020	Salted, in brine, or dried	0.0	0.0	0.0	0.0	0.0	0.0
160250	Prepared or preserved beef	0.1	0.5	([a])	([a])	([a])	([a])
	Total	22.8	27.4	0.2	0.1	0.2	0.7
		Unit value *($/mt)*					
020110	Fresh/chilled carcass	([b])	([b])	([b])	([b])	([b])	21,776
020120	Fresh/chilled bone-in	2,962	([b])	([b])	([b])	2,908	([b])
020130	Fresh/chilled boneless	2,610	4,362	([b])	1,704	([b])	3,459
020210	Frozen carcass	1,378	1,016	([b])	([b])	([b])	21,526
020220	Frozen bone-in	2,684	3,226	1,231	([b])	([b])	([b])
020230	Frozen boneless	2,300	2,972	([b])	2,856	1,952	2,951
020610	Fresh/chilled edible offal	([b])	449	898	([b])	3,340	([b])
020621	Frozen edible offal, tongue	1,009	2,047	([b])	([b])	([b])	([b])
020622	Frozen edible offal, liver	([b])	([b])	([b])	([b])	([b])	([b])
020629	Frozen edible offal, other	1,865	2,119	818	([b])	632	([b])
021020	Salted, in brine, or dried	([b])	([b])	([b])	([b])	([b])	([b])
160250	Prepared or preserved beef	2,468	3,437	3,142	933	2,865	3,796
	Average	2,165	2,352	911	1,497	1,859	3,353

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total.

[a]Less than 50,000.
[b]Not applicable.

segment of projected future growth in beef consumption in China is expected to come from more affluent urban consumers who have a greater awareness and concern for product quality and food safety. Consequently, U.S. beef reportedly has a competitive advantage in China's market based on quality attributes such as USDA grading and certification and the quality of corn-fed beef over that produced with other feed grains, or grass-fed beef.[49] Moreover, the 8 percent appreciation of the Chinese yuan relative to the U.S. dollar during 2003–07, as well as the depreciation of the U.S. dollar relative to the currencies of major beef competitors Australia (42 percent), Brazil (38 percent), and New Zealand (45 percent), will make U.S. beef more price competitive than it was prior to the ban.[50]

Animal Health, Sanitary, and Food Safety Regulations in China

Regulatory Framework

Oversight of China's animal health, sanitary, and food safety regulations is directed by 10 government agencies that often have overlapping responsibilities.[51] The principal Chinese government agencies responsible for oversight of the beef sector are the Ministry of Health (MOH), the Ministry of Agriculture (MOA), and the General Administration of Quality Supervision, Inspection and Quarantine (AQSIQ). Each agency is generally responsible for different stages of the supply chain.[52] The MOA is responsible for oversight of animal health, including setting production standards, epidemic prevention and control, inspection of slaughtering operations, and drafting laws and rules for imports and exports. The MOH is responsible for regulating and inspecting the safety of beef in retail markets.[53] The AQSIQ is the regulatory agency responsible for setting standards of quality, inspection, and health that apply to domestic and traded goods. It is also the government agency responsible for SPS and technical barriers to trade (TBT) negotiations at the WTO, and is the primary agency responsible for establishing a trade protocol with the United States to resume beef trade.[54]

China's food safety oversight procedures have been under intense scrutiny because of recent revelations of tainted food exports. A major problem with China's animal health, sanitary, and food safety oversight regime is the difficulty in monitoring the widespread, small-scale, often "backyard" producers,[55] slaughterhouses, and wet markets that characterize China's mass market for beef. The challenges are compounded by decentralized oversight enforcement, which is often the responsibility of local and/or provincial authorities that have limited

[49] Industry official, email message to Commission staff, May 20, 2008.
[50] Exchange rates are in nominal terms. IMF, *International Financial Statistics*, February 2008.
[51] Wei, "Safe Food For All," March 15, 2007; and Thompson, "China's Poisonous Exports," June 14, 2007.
[52] Gong, et al., "Beef Supply Chain Management," July 8–9, 2007.
[53] Ibid.
[54] AQSIQ Web site, http://english.aqsiq.gov.cn (accessed May 12, 2008). China's MOA and MOH are also key agencies conducting negotiations on the resumption of U.S. beef trade.
[55] U.S. House of Representatives, "Food from China," October 4, 2007, 3.

resources to monitor the beef sector.[56] China's premium beef-producing industry generally is subject to greater regulatory scrutiny.[57]

In response to these food and animal health safety challenges, China's latest 11-year plan for agriculture and food (announced in 2007) includes proposals to strengthen sanitary regulations. Those that specifically apply to beef include setting up a national system for food recall; strengthening regulation of production, processing, and transportation; cracking down on unregulated slaughtering; setting up a system of improved oversight of small-scale producers and processors; and creating training programs, workshops, and food safety demonstrations for small-scale enterprises.[58]

Measures Affecting Imports from the United States

China banned the importation of U.S. beef in December 2003 following the discovery of a single case of BSE in the U.S. cattle herd. In June 2006, following several years of bilateral technical negotiations between the USDA and the AQSIQ, China's offer to accept U.S. boneless beef from cattle under 31 months of age was rejected by the United States because the offer did not correspond with OIE guidelines.[59] Following the OIE decision in May 2007 that classified the United States as a controlled risk country for BSE, China expanded its offer to accept a wider variety of U.S. beef, including boneless and bone-in beef and many beef variety meats from cattle less than 31 months of age, but excluded certain high-value offal (including omasum). The United States rejected the offer and is pressing China to follow OIE trade guidelines[60] that place no age limit on cattle as long as SRMs are removed.[61] According to the U.S. beef industry, China is currently refusing to discuss moving toward full OIE standards.[62]

Hong Kong resumed beef imports (boneless beef from cattle under 31 months) from the United States in December 2005. Negotiations to expand Hong Kong's acceptance of U.S. beef consistent with full OIE standards (i.e., accepting all U.S. beef regardless of age) continue.

Other Barriers to Imports from the United States

China's distribution system for fresh and frozen beef is underdeveloped relative to more developed Asian countries. The chilled and cold storage infrastructure in China is reportedly very weak.[63] For imported beef, there are reportedly few

[56] Ibid.

[57] Brown and Waldron, "Case Study: Beef Industry China," May 2003, 1–2.

[58] USDA, FAS, *China, Peoples Republic of: Agricultural Situation - The 11th Five-Year Plan on Food and Drug Safety*, July 16, 2007.

[59] In September 2006, the United States formally questioned China on the restrictions on U.S. beef (contained in its June 2006 offer) at the WTO Committee on Sanitary and Phytosanitary Measures. The United States pointed out that China was not even following OIE trade guidelines for countries with "undetermined risk." WTO, Committee on Sanitary and Phytosanitary Measures, "Transitional Review Mechanism," September 15, 2006.

[60] China became a full member of the OIE at the General Session meeting in Paris in May 2007.

[61] USDA, FAS, *China: Livestock and Products Semiannual, 2008*, March 1, 2008, 4.

[62] AMI, USITC written testimony, November 15, 2007, 2.

[63] USMEF, *Greater China Beef*, October 2007, 1; and *Ashburton Guardian*, "New China Deal Not Universally Popular," April 11, 2008.

companies that have extensive distribution networks throughout China. Moreover, there are a limited number of wholesalers that can distribute products between urban markets. Distribution and marketing issues are viewed as a major constraint to the expansion of U.S. export market share once China reopens its market to U.S. beef.[64]

Tariff Treatment

China's tariffs on beef and offal products are currently 12–25 percent (table 8.5). For most leading beef imports (fresh and frozen bone-in and boneless beef, and offal), China's NTR tariffs are 12 percent. China's tariffs on fresh and frozen carcasses and half carcasses are higher, at 20 percent and 25 percent, respectively. China recently completed a FTA with New Zealand in April 2008, which will reduce beef tariffs on New Zealand beef each year starting in October 2008, with most tariffs going to zero in 2015.[65] China also maintains a 13 percent value added tax; according to U.S. industry sources, this tax will constrain imports from the United States.[66] Moreover, certain agricultural producers in China are not required to pay the tax.[67] Hong Kong's tariffs on all beef and offal products are zero.

Technical Barriers

The U.S. beef industry indicates that China maintains a number of TBTs that could constrain U.S. exports when the market reopens. China currently restricts beef that is produced with hormones and ractopamine (a drug that promotes muscle growth), which could pose problems for U.S. beef exports.[68] Another

TABLE 8.5 Beef: China's NTR duty rates, 2008

HS subheading		NTR rate %
020110	Fresh/chilled carcass	20
020120	Fresh/chilled bone-in	12
020130	Fresh/chilled boneless	12
020210	Frozen carcass	25
020220	Frozen bone-In	12
020230	Frozen boneless	12
020610	Fresh/chilled edible offal	12
020621	Frozen edible offal, tongue	12
020622	Frozen edible offal, liver	12
020629	Frozen edible offal, other	12
021020	Salted, in brine, or dried	12
160250	Prepared or preserved beef	12

Source: China Customs Press, "Import and Export Tariffs of the People's Republic of China," 2008.

[64] Agriculture and Agri-Food Canada, Agri-Food Trade Service, "The Meat Products Market in China," April 1, 2006.

[65] New Zealand and China concluded an FTA on April 7, 2008, which is expected to enter into force on October 1, 2008. New Zealand-China Free Trade Agreement Tariff Finder (accessed April 1, 2008).

[66] U.S. industry representative, telephone interview by Commission staff, July 17, 2008.

[67] For additional information on VAT exemption of certain agricultural products in China, see USDA, FAS, *China: Trade Policy Monitoring VAT, 2007,* March 19, 2007.

[68] Industry representative, email message to Commission staff, May 29, 2008.

potential technical barrier concerns inconsistencies between U.S. and Chinese standards for chemical residues and microbiological limits, which may lead to rejected beef shipments.[69] In addition, U.S. beef exporters have commented that, prior to the ban, China maintained vague sanitary requirements and cumbersome documentation procedures.[70]

Hong Kong maintains a zero tolerance for bone fragments, which has led to the delisting of many U.S. plants. Hong Kong maintains onerous certification requirements for U.S. beef processing plants. For example, to comply with Hong Kong's sanitary requirements for removing SRMs, U.S. plants must use dedicated hand and power tools and use separate sanitizing equipment for these tools,[71] making processing for the Hong Kong market expensive and burdensome. Consequently, because of the additional cost, only a few U.S. plants are certified to export to Hong Kong under the USDA EV program.[72]

Support for Domestic Production

China's government provides minimal support to its farmers.[73] However, China's livestock industry, including its beef sector, has benefited from certain government policies. The development of the commercial livestock sector (and small-scale specialized household operations) was facilitated by government policies that encouraged investment in livestock genetics, management practices, and slaughtering and processing facilities.[74] Other support includes financial assistance for grain feeds and technical assistance from MOA staff with artificial insemination practices.[75] In addition, certain tax policies have benefited cattle producers, and the government has created programs to establish beef production zones in China.[76]

[69] USDA, FSIS, "Export Requirements for People's Republic of China," May 12, 2008.

[70] Kansas Asia Community Connection, "Beef Trade with China," undated (accessed January 24, 2008).

[71] USDA, Export Verification (EV) Program, December 29, 2005.

[72] Industry representative, interview by Commission staff, September 18, 2007.

[73] According to a USDA, ERS report, government support could increase dramatically and still be under the limits of China's WTO commitments. USDA, ERS, *China's Food and Agriculture: Issues for the 21st Century*, 3.

[74] In recent years, the central government has been transferring responsibility for these programs to regional governments, which has resulted in reduced funding. USDA, ERS, *China's Food and Agriculture: Issues for the 21st Century*, April 2002, 18.

[75] USDA, FAS, *China: Livestock and Products Semiannual, 2007*, March 1, 2007, 4.

[76] R-CALF USA, USITC written testimony, August 17, 2007, 6–7; and R-CALF USA, USITC Posthearing written testimony, September 20, 2007.

CHAPTER 9
Russia

Before the government of the Russian Federation (Russia) imposed a ban on nearly all imports of U.S. beef in December 2003, Russia was an important market for the U.S. industry (box 9.1). In 2003, Russia was the fifth-largest U.S. export market, and the United States was Russia's fourth-largest import supplier. After Russia implemented BSE-related import restrictions, U.S. exports to Russia declined from $52 million in 2003 to $721,000 in 2004. A series of factors may thwart attempts by U.S. beef producers to reenter the Russian market in large volumes. Beef-exporting producers in close geographic proximity, such as the EU and Ukraine, have a transportation advantage when selling the beef cuts and other products that Russian consumers prefer. Additionally, Argentina, Brazil, and Uruguay filled the beef demand left by the United States in 2004, and it may be difficult for the United States to fully regain its lost market share.

BOX 9.1 Summary of Russia's BSE-related events and restrictions on imports of U.S. beef

April 2003	Russia imposes TRQs on most beef imports from most countries.
December 2003	Following discovery of BSE in the United States, Russia restricts its market to U.S. beef.
November 2006	Russia and the United States sign a bilateral agreement in which Russia reopens its market to all U.S. beef from cattle under 30 months of age.
March 2007	OIE declares that the United States is a "controlled risk" with respect to BSE. Russia and the United States begin negotiations on new export certificates for U.S. beef to Russia.

Source: USDA, FAS, GAIN reports, various dates.

Russia's BSE-related import restrictions have not stemmed the decline of the Russian industry. Despite the broad ban on imports from the United States after December 2003 and the more limited bans on selected products from various other countries during 2002–07, the Russian industry experienced continuous declines in the cattle supply and production of beef. According to one source affiliated with the U.S. beef industry, per capita consumption of beef in recent years has been well below levels during the Soviet period, and therefore there is room for growth.[1]

U.S. industry representatives estimated that during 2004–07, Russia's import ban cost the U.S. beef industry $245 million (about $60 million annually)–$215 million in lost exports of offal and $30 million in lost exports of frozen beef.[2] During the three years prior to the ban (2001–03), according to U.S. census data, annual U.S. beef exports to Russia averaged $50.7 million. U.S. exporters did find alternative markets, but the exclusion of U.S. beef from Russia resulted in frozen livers and other frozen edible offal, for which Russia is the preferred market, being sold into less profitable markets.

[1] Brook, USMEF, "Global Outlook Symposium," October 29, 2007, Powerpoint slide 17.
[2] Ibid., Powerpoint slide 8.

Model simulation results indicate that losses in U.S. beef exports to Russia due to BSE measures totaled $253 million during 2004–07. Export losses were primarily in frozen livers and other edible offal. Model results indicate that the effect of the removal of Russian tariffs on U.S. beef over the same period would have increased U.S. exports to Russia by $54 million.

Russia Market Characteristics and Trends

Beef Consumption Trends

In 2007, Russia was the world's seventh-largest consumer of beef products, by volume (table 2.2). Russian consumption of beef in 2007 reached an estimated 2.42 mmt, slightly higher than the annual average of 2.40 mmt during 2002–07 (table 9.1). In 2007, approximately 57 percent of total consumption was supplied by domestic production of 1.38 mmt. This share has declined steadily during the period under review, as production has continuously declined while consumption has remained stable. On a per capita basis, annual consumption of beef ranged from a low of 16.2 kg in 2003 to a high of 17.1 kg in 2005, before falling back to 16.8 kg in 2007, well below one-half the U.S. per capita consumption level of 42.6 kg. During most of the 2002–07 period, Russia ranked 10th in the world in terms of per capita consumption among the world's leading markets (table 2.3).

Total consumption fell from 2002 through 2004, largely because of import supply restrictions (including new TRQs on U.S. and EU beef beginning in 2003, and initial problems administering them, as described below). These restrictions reportedly contributed to rising beef prices during at least part of the period.[3] Subsequently, however, imports from other countries filled the gap and consumption rose to roughly the same level in 2005 as in 2002.

Sources of Supply

Russian output of beef has been steadily declining since the demise of the Soviet Union.[4] In 2007, Russian beef production totaled 1.38 mmt (57 percent of domestic consumption), down by 23 percent from 1.74 mmt (71 percent of domestic consumption) in 2002.[5] The number of head of cattle similarly declined, from 33.7 million in 2002 to 26.3 million in 2007.

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[3] USDA, FAS, *Russian Federation: Livestock and Products, Meat Prices Outpace Inflation in 2004*, December 22, 2004, 2. The same source quoted the Russian Finance Minister as saying "the rise in meat prices by itself has contributed to inflation in 2004 [of 11.5–11.7 percent] by 1.2 percentage points," indicating that retail meat prices have risen faster than inflation. See also, USDA, FAS, *Russian Federation: Livestock and Products, Meat and Poultry Prices Keep Rising*, October 12, 2005; and World Bank, *Russia Economic Report*, November 2007, 10 (meat is 10.28 percent of CPI).

[4] USDA, FAS, *Russian Federation: Livestock and Products Annual, 2003*, August 22, 2003, 3; and USDA, FAS, *Livestock and Poultry: World Markets and Trade*, November 2007, 10–11. See also Sedik, "A Note on Soviet Per Capita Meat Consumption," (1993), 39–48 (explaining that USSR government financial assistance maintained high levels of beef production and consumption prior to 1991 and predicting a rationalization of the Russian beef sector from a reduction in such assistance).

[5] USDA, FAS, *Livestock and Poultry: World Markets and Trade*, November 2005, 19; and USDA, FAS, *Livestock and Poultry: World Markets and Trade*, November 2007, 10–11.

TABLE 9.1 Beef: Russia's production, consumption, trade, and key factors affecting demand, 2002–07

Market data	2002	2003	2004	2005	2006	2007
Production (1,000 mt cwe)	1,740	1,670	1,590	1,525	1,430	1,380
Imports (1,000 mt cwe)	708	709	719	978	939	1,050
Total supply (1,000 mt cwe)	2,448	2,379	2,309	2,503	2,369	2,430
Exports (1,000 mt cwe)	7	10	9	11	8	8
Domestic consumption (1,000 mt cwe)	2,441	2,369	2,300	2,492	2,361	2,422
Exchange rate (rubles/U.S.$)	31.3	30.7	28.8	28.3	27.2	25.6
GDP/capita (U.S.$/person)	1,692.3	1,860.8	2,315.0	2,664.9	3,148.0	3,606.2
Population (millions)	145.2	145.0	144.2	143.5	142.8	142.1
Wholesale beef price index (dairy beef)	100	115	152	188	218	214
Annual beef per capita consumption (kg)	16.9	16.2	15.7	17.1	16.3	16.8

Source: Production, consumption, and trade data taken from USDA, FAS, PS&D database unless otherwise noted. Exchange rate, GDP per capita, and population taken from IMF. Wholesale beef price index calculated from FAPRI database.

Note: Production, supply and consumption data are in carcass weight equivalent. These data are not directly comparable to product weight data.

The long-run decline in the Russian beef sector is largely the result of a shift in investment toward more financially attractive agricultural sectors such as pork, where capital turnover is higher and prices are rising more rapidly than for beef.[6]

Withdrawal of government financial support for Russia's livestock sector following the collapse of the Soviet system left the sector dependent on private investment and, according to the USDA, weakened the large agribusiness segment of the industry. By the 2000s, Russia's small farm sector (including rural household plots as well as small commercial farms) supplied more than 50 percent of all domestic meat, up from 20 percent under the Soviet system.[7] These small producers mainly furnish rural consumers with fresh beef, while imports of beef supply much of Russia's urban markets with frozen products.

According to one study, the leading imported beef products in Russia are, in declining order, liver, hearts, trimming, short ribs, rib eye, T-bone, tenderloin, strip loin, sirloin, and short plate.[8] Although a list of favored imported products is not a perfect measure of consumer preferences for various beef products, such a list suggests which cuts and offal Russian consumers prefer. This list roughly corresponds with the leading U.S. exports prior to the 2003 TRQ and BSE restrictions. Another source reports that "red meat [in the Russian market] generally falls into one of three price categories: cheap imported meat, mid-priced frozen imported and domestic meat, and high-end domestic chilled and

[6] See, e.g., USDA, FAS, *Russian Federation: Livestock and Products Annual, 2001*, August 3, 2001, 1 and 3; USDA, FAS, *Russian Federation: Livestock and Products, Livestock Production Falls Behind*, August 30, 2005, 1 and 3; USDA, FAS, *Russian Federation: Livestock and Products, 2004 Another Difficult Year for Russian Livestock Industry*, February 7, 2005, 3; USDA, FAS, *Russian Federation: Livestock and Products, Poultry and Meat Prices, 2007*, March 29, 2007, 3; USDA, FAS, *Russian Federation: Livestock and Products Annual, 2007*, October 12, 2007, 3–4.

[7] USDA, FAS, *Russian Federation: Livestock and Products, Household Plots*, March 1, 2004.

[8] USMEF, *Methodology and Results of the Value of Beef Exports Analysis*, July 2002, 17. Whether the order is by value or quantity was not indicated.

imported frozen meats. The primary determining factor in these categories appears to be the country of origin."[9]

Factors Affecting Beef Demand

Beef demand in Russia remains strong, despite rising prices, owing in large part to a robust Russian economy that has seen strong personal income growth and increasing overall domestic consumption as a result of Russia's oil and gas export-driven growth.[10] Factors that have influenced Russian demand for beef during the period include growth in per capita GDP and favorable trends (from the consumer's point of view) in exchange rates, both of which likely acted to boost beef demand. Exchange rate trends are described in the Trade section below. During 2002–07, Russia's per capita GDP grew by an estimated 113.1 percent in real terms (inflation-adjusted 2000 dollars) to an estimated $3,606. Approximately one-half of the average Russian's income is spent on food,[11] and therefore the growth in Russian income (as measured by per capita GDP) in recent years has caused an increase in demand for all forms of meat, including beef and beef products.[12] Incomes at all levels reportedly have grown,[13] and are expected to continue to grow in the near term.[14] While sausage has traditionally been a favorite meat product because of its low price, higher incomes have raised demand for higher-valued products. Although Russia's total population declined from 146.2 million in 2002 to 142.1 million in 2007, rising per capita incomes have offset the population decline, helping Russia's overall consumption of beef to remain constant.[15]

Alternative protein sources that compete with beef for consumer expenditures include pork, poultry, and seafood. Russian per capita consumption of beef, at 17.1 kg in 2007, is comparable to that of pork (19 kg), poultry (18 kg), and seafood (12 kg), according to the USDA. However, constraints on domestic beef production and restrictions on imports described below seem to have prevented growth in beef consumption similar to growth in other meat sectors. Compared with 2002, per capita consumption (by volume) of beef in 2007 was almost unchanged (down by 0.6 percent), while that of pork grew by 12 percent and poultry by 54 percent.[16]

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[9] USDA, FAS, *Russian Federation: Livestock and Products, Poultry and Meat Prices*, March 29, 2007, 4.

[10] USDA, FAS, *Livestock and Poultry: World Markets and Trade*, November 2007, 5; and EIU, *Country Report: Russia*, March 2008, 13–14.

[11] USDA, FAS, *Russian Federation: Livestock and Products Annual, 2007*, October 12, 2007, 9.

[12] USDA, FAS, *Russian Federation: Livestock and Products Annual, 2003*, August 22, 2003, 6.

[13] Ibid.

[14] EIU, *Country Report: Russia*, April 2008, 7.

[15] IMF, *International Financial Statistics*, February 2008, 946. The estimated population in 2007 is taken from CIA, *The World Factbook*, accessed February 21, 2008.

[16] USDA, FAS, *Livestock and Poultry: World Markets and Trade*, October 2006; and USDA, FAS, *Livestock and Poultry: World Markets and Trade*, November 2007.

Import Market Characteristics and Trends

Imports by Major Supplier

Russia is the world's second-largest importer of beef, accounting for 13 percent of total world imports by quantity (fourth-largest by value) in 2007 (table 2.6). On a value basis, total imports grew from $760.3 million in 2002 to a record $2.12 billion in 2006, before falling back to $1.7 billion in 2007, a net increase during the period of 124 percent (table 9.2). Traditionally, the EU was Russia's largest supplier (mainly of bone-in and boneless cuts), but it was supplanted by Brazil in 2005. Argentina has also emerged as an important supplier since 2005, particularly of high-quality offal, which would normally compete with the offal that has traditionally made up the bulk of U.S. exports to Russia. Ukraine has been the largest supplier of carcasses in most years during the period.

TABLE 9.2 Beef: Russia's imports, by leading suppliers, 2002–07 (million U.S. dollars)

Market	2002	2003	2004	2005	2006	2007
Brazil	46.2	101.5	242.6	565.0	756.2	975.3
Argentina	0.1	28.0	148.7	345.2	424.8	222.7
Paraguay	4.0	2.2	40.2	96.4	226.0	136.0
EU	349.4	251.5	274.6	206.4	238.4	128.2
Ukraine	205.0	225.5	168.5	145.3	5.8	95.1
Uruguay	11.8	6.5	0.8	5.8	187.1	68.8
Australia	10.9	9.4	20.4	36.0	73.3	55.0
Mongolia	14.2	9.5	5.2	3.6	5.3	6.5
New Zealand	0.4	0.5	1.4	4.8	6.1	5.6
Azerbaijan	0.0	0.0	0.5	0.9	1.1	2.6
Moldova	5.6	16.7	7.2	0.8	0.1	2.6
United States	57.1	52.2	0.7	1.9	0.2	0.1
ROW	55.7	67.1	115.5	134.6	197.7	1.8
Total	760.3	770.7	1,026.1	1,546.8	2,122.0	1,700.3

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total. ROW denotes rest of the world.

The United States supplied 10–20 percent of Russia's total beef imports until Russia imposed a TRQ affecting imports from the United States and, to a lesser extent, most other countries in 2003. This action was followed shortly by Russia's imposition of a ban on most U.S. beef. As a result of the ban, U.S. exports of beef products to Russia have been insignificant since 2003.

The 2003 BSE-related ban on imports of U.S. beef led to increased Russian imports from Argentina, Australia, Brazil, and other suppliers, some aided by favorable exchange rate trends, which soon filled the gap left by the reduction in U.S. supply. During 2002–07, total Russian imports of beef increased by nearly 50 percent, spurred in large part by declining domestic production.

In 2002–03, imports of frozen edible livers from the United States accounted for 77 percent of total Russian imports of this product. Such imports declined by 99 percent (by quantity) because of the BSE-related ban. While total Russian

imports of frozen livers have not quite reached pre-ban levels, much of the gap left by U.S. livers has been filled by increased imports from Australia and the EU.[17] Increased Australian exports of frozen livers to Russia, in turn, appear to have been mainly the result of increased Australian production caused by rising slaughter rates due to an extended drought in Australia, which in turn led to an overall increase in exports to the world.[18] Increased EU exports to Russia appear to have consisted mainly of exports diverted from Moldova and Ukraine (some of which perhaps were destined for Russia anyway) and were blocked by Russia's ban on beef products from or transshipped through Ukraine[19] and occurred despite a long-run decline in domestic EU cattle production.[20]

Russian health and safety-related restrictions on imports from other sources also had apparent diversion effects. The ban on Ukrainian cuts (reportedly caused by Russian concerns over food safety and third-country transshipment) opened the Russian market to exports from Argentina and Brazil. Such increased exports from those sources, in turn, appear to have been partly diverted from the EU, Egypt, and elsewhere, and may also have been the result of increased domestic production, especially in Brazil.[21]

Imports by Products

World

The overwhelming share of total beef products imported by Russia are frozen boneless cuts (HS 020230) (table 9.3). Imports of frozen boneless cuts totaled $1.4 billion in 2007, accounting for more than 80 percent of total beef imports in that year. Following frozen boneless cuts are frozen carcasses and fresh/chilled boneless cuts. Three categories of frozen offal (under heading 0206), if combined, account for $98 million, or 6 percent of the total. U.S. imports traditionally fell into this category, primarily frozen livers (HS 020622), and the data in table 9.3 show the sharp decline in total imports of frozen livers in 2004 immediately following the ban on imports of U.S. beef products. Imports from Argentina, Australia, and the EU have largely filled the gap in the Russian frozen liver supply.

[17] GTIS, Global Trade Atlas database.

[18] GTIS, Global Trade Atlas database; USDA, FAS, *Australia: Livestock and Products Semiannual, 2008*, March 20, 2008, 3–7.

[19] USDA, FAS, *Russian Federation: Livestock and Products Semiannual, 2006*, August. 2, 2006, 2 and 6; USDA, FAS, *Ukraine: Livestock and Products Annual, 2007*, October 11, 2007, 4; and USDA, FAS, *Russian Federation: Livestock and Products, Meat Smuggling Increasing*, July 13, 2005.

[20] GTIS, Global Trade Atlas database; USDA, FAS, *EU: Livestock and Products Annual, 2007*, July 20, 2007, 4, 5–8.

[21] GTIS, Global Trade Atlas database; USDA, FAS, *Livestock and Poultry: World Markets and Trade*, April 2008, 11 and 19.

TABLE 9.3 Beef: Russia's imports from the world, by HS subheading, 2002–07

HS subheading		2002	2003	2004	2005	2006	2007
		Quantity (*mt*)					
020110	Fresh/chilled carcass	1,273	2,608	2,053	3,982	4,341	3
020120	Fresh/chilled bone-in	2,317	2,129	1,206	1,151	1,877	446
020130	Fresh/chilled boneless	72,678	39,276	23,493	25,534	24,960	22,720
020210	Frozen carcass	130,280	132,632	99,342	90,267	59,168	37,175
020220	Frozen bone-in	33,238	4,410	1,329	3,179	4,412	2,269
020230	Frozen boneless	308,277	351,086	445,481	628,011	735,701	649,068
020610	Fresh/chilled edible offal	744	177	385	26	341	628
020621	Frozen edible offal, tongue	1,986	4,085	570	1,273	6,074	6,903
020622	Frozen edible offal, liver	69,595	61,924	21,346	30,663	40,433	43,479
020629	Frozen edible offal, other	19,225	18,993	19,145	20,348	28,422	26,700
021020	Salted, in brine, or dried	54	60	306	372	46	38
160250	Prepared or preserved beef	7,015	6,037	7,246	4,518	4,183	2,182
	Total	646,682	623,417	621,902	809,324	909,958	791,612
		Million *(U.S. dollars)*					
020110	Fresh/chilled carcass	1.6	3.8	4.2	9.9	12.9	([a])
020120	Fresh/chilled bone-in	3.4	3.4	2.8	3.4	6.5	3.1
020130	Fresh/chilled boneless	100.7	50.7	46.0	63.2	84.0	87.2
020210	Frozen carcass	180.7	179.4	193.4	212.7	162.4	101.1
020220	Frozen bone-in	29.3	5.5	2.6	6.4	9.7	7.0
020230	Frozen boneless	372.0	453.1	719.8	1,172.7	1,726.0	1,396.3
020610	Fresh/chilled edible offal	0.4	0.2	0.4	([a])	0.5	0.7
020621	Frozen edible offal, tongue	2.3	5.8	1.1	2.8	15.5	16.3
020622	Frozen edible offal, liver	45.6	43.4	21.8	39.2	56.1	53.1
020629	Frozen edible offal, other	11.4	13.1	16.8	23.5	34.2	28.6
021020	Salted, in brine, or dried	0.2	0.2	0.4	0.6	0.4	0.6
160250	Prepared or preserved beef	12.8	12.2	16.8	12.2	13.9	6.4
	Total	760.3	770.7	1,026.1	1,546.8	2,122.0	1,700.3
		Unit value *($/mt)*					
020110	Fresh/chilled carcass	1,240	1,448	2,028	2,496	2,966	2,500
020120	Fresh/chilled bone-in	1,485	1,581	2,316	2,947	3,478	6,851
020130	Fresh/chilled boneless	1,385	1,290	1,960	2,476	3,364	3,838
020210	Frozen carcass	1,387	1,353	1,947	2,356	2,744	2,720
020220	Frozen bone-in	881	1,242	1,978	2,022	2,190	3,069
020230	Frozen boneless	1,207	1,290	1,616	1,867	2,346	2,151
020610	Fresh/chilled edible offal	561	887	964	1,623	1,524	1,082
020621	Frozen edible offal, tongue	1,171	1,427	1,959	2,227	2,557	2,354
020622	Frozen edible offal, liver	656	701	1,020	1,278	1,387	1,222
020629	Frozen edible offal, other	593	689	877	1,155	1,204	1,072
021020	Salted, in brine, or dried	3,286	3,611	1,439	1,575	7,905	14,958
160250	Prepared or preserved beef	1,821	2,025	2,321	2,710	3,319	2,927
	Average	1,176	1,236	1,650	1,911	2,332	2,148

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total.

[a]Less than $50,000.

United States

In the years prior to the ban, Russian demand for U.S. beef was strong (table 9.4). In 2002 and 2003, before the first full year of the TRQ and BSE restrictions, U.S. prices exceeded average Russian import prices for product from competing suppliers for all beef products except frozen tongues.[22]

For several years prior to 2004, U.S. beef exports (mainly frozen livers, but also other offal such as hearts and kidneys)[23] to Russia ranged from $40 million to $60 million annually, making Russia consistently within the top 10 largest markets for U.S. exports of beef products. For Russia, in turn, the United States was also consistently a large source of imports, usually trailing only the EU and Ukraine.

An important Russian market channel for U.S. exports traditionally was the high-end HRI trade; U.S. beef products reportedly never were sold in Russian retail markets.[24] However, with the June 2007 lifting of the BSE ban and the gradual reentry of U.S. beef into the Russian market, the U.S. industry has expressed interest in Russia's retail market for high-end beef products.[25]

Animal Health, Sanitary, and Food Safety Regulations in Russia

Regulatory Framework

Responsibility for the administration of Russia's animal health, sanitary, and food safety laws lies with several agencies, most importantly: (1) the Federal Veterinary and Phytosanitary Surveillance Service (VPSS) of the Ministry of Agriculture; (2) the Federal Service for Protection of Consumer Rights and Human Well-Being (Rospotrebnadzor) of the Ministry of Health and Social Development; (3) the Federal Service for Technical Regulation and Metrology (Rostekhregulirovaniye) of the Ministry of Industry and Energy; (4) the Federal Customs Service (Russian acronym FTS); and (5) the Ministry of Economic Development and Trade (usually called MEDT in the West; some publications use the Russian acronym MERT).[26]

The VPSS enforces conformity with veterinary requirements with respect to imports and meat products shipped within Russia. The VPSS is similar to—and with respect to inspecting and approving U.S. meat exports to Russia, it works alongside with—the USDA's FSIS. Rospotrebnadzor is responsible for food and

[22] GTIS, Global Trade Atlas database.

[23] USMEF, *Methodology and Results of the Value of Beef Exports Analysis*, July 2002, 20.

[24] USMEF, *The Russian Beef Market: Market Assessment and Opportunities*, November 2007, 8. However, according to the same source, U.S. beef is approved for retail sale in Russia.

[25] See USMEF, *The Russian Beef Market: Market Assessment and Opportunities*, November 2007. "High end" beef is meat that satisfies USDA's definition of "Choice" or "Prime" grades of meat.

[26] USDA, FAS, *Russian Federation: Food and Agricultural Import Regulations and Standards: FAIRS Annual, 2007*, July 31, 2007, 5–6.

TABLE 9.4 Beef: Russia's imports from the United States, by HS subheading, 2002–07

HS subheading		2002	2003	2004	2005	2006	2007
		Quantity (*mt*)					
020110	Fresh/chilled carcass	0	2	0	0	0	0
020120	Fresh/chilled bone-in	0	0	0	0	0	0
020130	Fresh/chilled boneless	1,275	1,141	260	51	0	0
020210	Frozen carcass	63	44	0	11	0	0
020220	Frozen bone-in	104	66	0	0	0	3
020230	Frozen boneless	4,197	2,174	4	317	0	0
020610	Fresh/chilled edible offal	496	18	0	0	0	0
020621	Frozen edible offal, tongue	1,022	3,084	0	0	0	0
020622	Frozen edible offal, liver	53,778	47,789	544	2,855	260	121
020629	Frozen edible offal, other	7,638	8,085	98	0	0	52
021020	Salted, in brine, or dried	49	18	8	12	5	0
160250	Prepared or preserved beef	2	45	89	4	0	0
	Total	68,624	62,464	1,003	3,250	265	176
		Million *(U.S. dollars)*					
020110	Fresh/chilled carcass	0.0	([a])	0.0	0.0	0.0	0.0
020120	Fresh/chilled bone-in	0.0	0.0	0.0	0.0	0.0	0.0
020130	Fresh/chilled boneless	1.8	1.7	0.3	0.1	0.0	0.0
020210	Frozen carcass	0.8	0.5	0.0	([a])	0.0	0.0
020220	Frozen bone-in	0.3	0.2	0.0	0.0	0.0	([a])
020230	Frozen boneless	11.5	6.2	([a])	0.5	0.0	0.0
020610	Fresh/chilled edible offal	0.3	([a])	0.0	0.0	0.0	0.0
020621	Frozen edible offal, tongue	0.7	3.9	0.0	0.0	0.0	0.0
020622	Frozen edible offal, liver	36.4	33.8	0.2	1.2	0.2	0.1
020629	Frozen edible offal, other	5.2	5.7	0.1	0.0	0.0	([a])
021020	Salted, in brine, or dried	0.1	0.1	([a])	([a])	([a])	0.0
160250	Prepared or preserved beef	([a])	([a])	0.1	([a])	0.0	0.0
	Total	57.1	52.2	0.7	1.9	0.2	0.1
		Unit value *($/mt)*					
020110	Fresh/chilled carcass	([b])	2,273	([b])	([b])	([b])	([b])
020120	Fresh/chilled bone-in	([b])	([b])	([b])	([b])	([b])	([b])
020130	Fresh/chilled boneless	1,373	1,477	1,165	2,295	([b])	([b])
020210	Frozen carcass	12,645	11,934	([b])	1,963	([b])	([b])
020220	Frozen bone-in	3,002	3,596	([b])	([b])	([b])	5,540
020230	Frozen boneless	2,750	2,831	2,991	1,424	([b])	([b])
020610	Fresh/chilled edible offal	571	1,477	([b])	([b])	([b])	([b])
020621	Frozen edible offal, tongue	669	1,278	([b])	([b])	([b])	([b])
020622	Frozen edible offal, liver	678	707	413	432	697	657
020629	Frozen edible offal, other	680	711	872	([b])	([b])	865
021020	Salted, in brine, or dried	2,683	2,906	2,290	3,694	4,183	([b])
160250	Prepared or preserved beef	3,955	886	874	2,984	([b])	([b])
	Average	833	836	719	578	763	802

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total.

[a]Less than $50,000.
[b]Not applicable.

foodstuff safety. Rostekhregulirovaniye ensures that products conform to national standards and certification criteria. The FTS administers rules and regulations concerning customs fees and duties applied at the national and regional government levels. The MEDT regulates nontariff measures, such as import licensing and TRQ allocation.[27]

Russian animal health, sanitary, and food safety regulations, according to the USDA, are gradually and unevenly coming in line with international standards as Russia endeavors to accede to the WTO.[28] Russian regulations concerning BSE risks and beef imports appear consistent with OIE guidelines with the exceptions of a ban on all beef products from animals 30 months of age and older, and the fact that Russia considers the vertebral column in cattle under 30 months of age to be SRM.

Major Regulations

Russian beef imports face the same health and food safety regulations as do domestic products, but there are additional restrictions on certain imported products from certain countries that have or have had problems with BSE and other food safety issues.[29] Regulations that cover beef from all import sources include the requirement that the facilities where the meat is processed and packed be inspected and approved by VPSS veterinarians. Restrictions on how beef may be processed (including regulations similar to U.S. regulations on mixing of meat, deboning, etc.) and maximum permitted levels of contaminants, such as antibiotics and pesticides, are set by the VPSS. The importer of record for beef products applies to the VPSS for an import permit (containing the necessary sanitary requirements) and provides it to the foreign exporter, who in turn provides it to the home country government to establish the requirements to obtain an export health certificate.[30] Certification requires the following documentation (in Russian, typically provided to the VPSS by the importer): the contract between the buyer and seller, invoice, bill of lading, veterinary certificate, certificate of origin, and complete product label. Samples of the product are taken and tested and, if approved, a certificate is issued that can cover multiple lots from the approved foreign facility and is valid for one year.[31]

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[27] Ibid.

[28] USDA, FAS, *Russian Federation: Food and Agricultural Import Regulations and Standards: FAIRS Annual 2007*, July 31, 2007, 4; and *Russian Federation: Poultry and Products Semiannual, 2008*, March 5, 2008, 12. See also, USTR, *2008 National Trade Estimate Report on Foreign Trade Barriers*, March 28, 2008, 461–67.

[29] General regulations covering food safety are set forth in "Hygienic Requirements for Foodstuff Safety and Nutritional Value, SanPiN [abbreviation for "Sanitary Rules and Regulations"] 2.3.2.1078-01," (2002), as amended. See USDA, FAS, *Russian Federation: Food and Agricultural Import Regulations and Standards: Sanitary and Epidemiological Norms and Regulations*, September 11, 2002. Updates of these measures are described in subsequent USDA-FAS reports, including *Russian Federation: Food and Agricultural Import Regulations and Standards: FAIRS Annual 2007*, July 31, 2007.

[30] USDA, FAS, *Russian Federation: FAIRS Export Certificate Report Annual 2007*, October 10, 2007, 3.

[31] USDA, FAS, *Russian Federation: Food and Agricultural Import Regulations and Standards: FAIRS Annual 2007*, July 31, 2007, 19–20.

Measures Affecting Imports from the United States

U.S. beef products face additional regulations in Russia. From December 2003 to mid-2007, U.S. beef was ineligible for import because of BSE-related restrictions. Since mid-2007, only deboned beef, bone-in beef, and beef by-products derived from cattle less than 30 months of age are eligible for export to Russia. Such exports require an Export Certificate of Health (available to exporters from the USDA under the AMS EV program)[32] in addition to an import permit (issued to importers by the VPSS). As noted, the VPSS must inspect and approve U.S. processing and packing facilities before exports may take place. The cost of such inspection is borne by the facility owner. For nearly four years following the 2003 import ban on most U.S. beef products, no U.S. facilities were approved for export of the affected products to Russia.[33] As of April 2008, 39 such facilities had been approved.[34]

Some aspects of Russia's animal health and food safety regulations and their administration unnecessarily impede U.S. beef exports, according to the USTR. Most significant is Russia's refusal to import beef from cattle 30 months of age and older because of alleged BSE concerns. Because the United States has been designated by the OIE as a controlled risk country, this refusal is considered by the USTR and the U.S. beef industry to be unfounded.[35] Under the auspices of the 2006 bilateral meat agreement, the United States continues to negotiate with Russia to resolve this matter.[36]

Other Barriers to Imports from the United States

Tariff Treatment

Russian imports of beef from most countries are subject to tariffs and TRQs (table 9.5). Beef imports under HS headings 0206, 0210, and 1602 (including offal, the principal U.S. export) have compound tariffs (tariffs with both ad valorem and specific components) only. However, since 2003, beef imports under headings 0201 and 0202 (fresh or frozen meat) have been subject to TRQs.[37] Immediately following the 2003 TRQ implementation, Russia's beef imports fell sharply, reportedly because of problems with administration. In preparation for possible WTO accession, Russia has lowered the over-quota allocation of the TRQs.[38] However, such problems were eventually resolved, annual TRQ allocations to importers were normalized, and total imports rose.[39]

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[32] Program requirements as they apply to meat exports to Russia are available from the Agricultural Marketing Service Web site http://www.ams.usda.gov.

[33] USDA, FAS, *Russian Federation: Food and Agricultural Import Regulations and Standards: FAIRS Annual 2007*, July 31, 2007, 15.

[34] USDA, FSIS, *Eligible Plants List (Beef)—Russian Federation*, July 8, 2008.

[35] USTR, *2008 National Trade Estimate Report on Foreign Trade Barriers*, March 28, 2008, 468.

[36] Ibid.

[37] In addition, poultry is subject to similar TRQs. These meat TRQs apply to all exporters except for Ukraine, Belarus, Kazakhstan, and certain other Commonwealth of Independent States (CIS) members that have formed a customs union with Russia.

[38] USDA, FAS, *Russian Federation: Livestock and Products, Russian Imports Plummet in Early 2004*, July 11, 2004, 1–2.

[39] Ibid., 2.

TABLE 9.5 Beef: Russia's TRQs and NTR duty rates, 2008

HS subheading		In-quota[a]	Over-quota[a, b]
020110	Fresh/chilled carcass	15% but not < €0.2/kg	30% but not < €0.3/kg
020120	Fresh/chilled bone-in	15% but not < €0.2/kg	30% but not < €0.3/kg
020130	Fresh/chilled boneless	15% but not < €0.2/kg	30% but not < €0.3/kg
020210	Frozen carcass	15% but not < €0.15/kg	30% but not < €0.3/kg
020220	Frozen bone-in	15% but not < €0.15/kg	30% but not < €0.3/kg
020230	Frozen boneless	15% but not < €0.15/kg	30% but not < €0.3/kg
020610	Fresh/chilled edible offal	15% but not < €0.15/kg	
020621	Frozen edible offal, tongue	20% but not < €0.8/kg	
020622	Frozen edible offal, liver	15% but not < €0.15/kg	
020629	Frozen edible offal, other	15% but not < €0.15/kg	
021020	Salted, in brine, or dried	15% but not < €0.4/kg	
160250	Prepared or preserved beef	20% but not < €0.5/kg	

Source: Russian Customs Service (http://www.customs.ru/ru/tariffs); Interfax News Agency.

[a]The following quantities were the 2008 country-specific TRQ allocations for the specified HS headings: HS 0201: EU, 28,400 mt; all other, 500 mt; total 28,900 mt; HS 0202: EU, 351,600 mt; United States, 18,300 mt; Paraguay, 3,000 mt; all other, 72,100 mt; total 445,000 mt; Grand total, 473,900 mt.
[b]For U.S. products, the over-quota tariff is the same as the in-quota tariff; see text for more information.

Beginning in 2005, following the United States-Russia Meat Agreement signed that year, TRQs were made country specific, including an allocation under HS 0202 (frozen beef) for the United States, which has since been made ineffective with the equalization of in- and over-quota tariffs for U.S. beef.[40] Russia reportedly plans to eliminate country specific quotas after 2009.[41] In recent years, tariffs on HS 0201 and 0202 from an initial level in 2003 of 60 percent but not less than €0.6/kg[42], to their current (2008) level of 30 percent but not less than €0.3/kg.[43] The TRQs on beef imports are scheduled for elimination in 2009.

All imports of U.S. beef under HS 0201 and 0202 are no longer covered by the TRQ and are subject to the in-quota tariff rates, under the terms of the 2005 United States-Russia Meat Agreement and the United States-Russia WTO Bilateral Market Access Agreement.[44] Imports of such U.S. products remain constrained, however, by BSE restrictions.

The U.S. industry and USDA initially expected U.S. exports of edible offal to Russia to benefit from the TRQs imposed in 2003 because the TRQs do not apply to edible offal, only to fresh/frozen beef, which can be substitutes.[45] Therefore,

[40] USTR, "Results of Bilateral Negotiations on Russia's Accession to the World Trade Organization," November 19, 2006; and "Factsheet on United States-Russia WTO Bilateral Market Access Agreement," November 10, 2006.
[41] USTR, *2008 National Trade Estimate Report on Foreign Trade Barriers*, March 28, 2008, 461.
[42] Using an exchange rate of €1=$1.47 (August 28, 2008), €0.6/kg would equal approximately $1.94/lb
[43] USDA, FAS, *Russian Federation: Livestock and Products, Import Duties on Meat Changed*, February 1, 2008, 1.;
[44] USTR, *2007 Trade Policy Agenda and 2006 Annual Report*, March 2008, 145; and "Results of Bilateral Negotiations on Russia's Accession to the World Trade Organization," November 19, 2006.
[45] USDA, FAS, *Russian Federation: Livestock and Products Annual, 2003*, August 22, 2003, 14.

when the TRQs were implemented, supplies of affected beef cuts and other products other than edible offal tightened and prices rose. Industry members reportedly anticipated that some Russian importers would replace some of those beef products with edible offal, including imports from the United States. Total Russian imports of edible offal, such as livers and tongues, increased after 2003, but the increased supplies came from Australia and a number of South American suppliers, whose prices for edible offal during much of the 2004–07 period were lower than prices paid for imports from the United States.[46]

Technical Barriers

Other U.S. concerns about trade barriers include uneven application of Russian customs regulations in different ports of entry and the government's practice of providing customs agents with unpublished recommendations on minimum import unit valuations, which can effectively serve as price floors on which to base ad valorem import tariffs.[47] An additional concern is Russia's import licensing program, which includes complex procedures that add to importers' costs and can create delays in shipping U.S. exports to their final Russian buyers.[48]

Another form of import limitation was announced in November 2007, when Russian customs issued a new list of approved declaration sites for imports of meat and meat products.[49] Missing were several far eastern and northwestern Russian ports that had previously accounted for more than 85 percent of all meat imports.[50] Following protests by importers and processors, the implementation of this new list was postponed until April 15, 2008.[51]

The Russian government implemented a new health and safety system that took effect on January 1, 2008, in which all beef imports, whether for further processing or retail, are treated the same. This reportedly amounts to a much stricter health and safety system than was previously in place for meat destined for further processing. In the past, much of the U.S. beef imported by Russia was edible offal destined for further processing.[52]

The VPSS plans to add the United States to the list of countries whose meat and poultry shipments, including beef, will be subject to electronic verification. The system is designed to detect counterfeit veterinary certificates. Russian veterinary officials have publicly stated that they are targeting U.S.-origin meat and poultry

[46] GTIS, Global Trade Atlas database.

[47] USTR, *2008 National Trade Estimate Report on Foreign Trade Barriers*, March 28, 2008, 463.

[48] Ibid., April 2, 2007, 492.

[49] USDA, FAS, *Russian Federation: Trade Policy Monitoring: Russian Customs Limits Ports of Entry for Meat, 2007*, November 28, 2007.

[50] USDA, FAS, *Russian Federation: Livestock and Products, Additional Information on Points of Entry for Meat Products*, December 12, 2007; and *Russian Federation: Livestock and Products: Semiannual, 2008*, March 5, 2008, 18.

[51] USDA, FAS, *Russian Federation: Trade Policy Monitoring, Implementation Date Extended on Points of Entry for Meat Imports*, January 30, 2008; and *Russian Federation: Livestock and Products Semiannual, 2008*, March 5, 2008, 18.

[52] USDA, FAS, *Russian Federation: Livestock and Products Semiannual, 2008*, March 5, 2008, 21.

products because of an increasing number of errors in the documents accompanying imports of those goods.[53]

In May 2008, Russia's Ministry of Justice stated that it is considering banning the use of frozen meat in sausages and other processed meat products. The initial plans were initiated by Rospotrebnadzor. Reports indicate that this would have a significant impact on beef imports from all sources, as the majority of imports are frozen and much of these frozen imports are used to make sausages.[54] No final decision on this policy has been made.

During 2002–07, certain technical restrictions on beef imports from countries that compete with the United States in the Russian market were imposed. The key restrictions are summarized in the tabulation below.

Selected restrictions on Russian imports of non-U.S. beef products, 2002–07

Year(s)	Country	Restriction
2003–07	Canada	Meat and livestock banned following a BSE outbreak in Canada.
2004	China and Brazil	All uncooked livestock products banned following a FMD outbreak.
Various	EU	Meat and livestock banned following BSE outbreaks in EU countries; currently only Bulgaria and Romania are subject to BSE restrictions.
2005–07	Brazil	Partial ban (selected geographic areas) following FMD outbreaks.
2006	Ukraine	All livestock products, after disagreements over product quality and allegations of transshipping third-country products.
2005–06	Moldova	All livestock products, after disagreements over product quality and allegations of transshipping third-country products.

Sources: USDA, FAS, various GAIN Reports; "New Russian Label Requirements For Meat From Brazil Effective January 1," Meatingplace.com, November 5, 2007, and "Russia Reopens Meat Imports From Eight Brazilian States," Meatingplace.com, November 27, 2007, retrieved November 29, 2007; The World Bank, *Food Safety and Agricultural Health Management in CIS Countries*, Agriculture and Rural Development Department, 2007, appendix 1.

Support for Domestic Production

Russian government support of the beef sector in recent years has mainly taken the form of price support through import protection; production support through efforts to attract new investment by streamlining bureaucratic processes at the federal, regional, and local levels; and support of certain input industries, such as equipment, energy, and fodder, to sustain production in those industries and keep

[53] USDA, FAS, *Russian Federation: Livestock and Products Annual, 2007*, October 12, 2007, 12.

[54] World Poultry, "Russia: Ban Use of Frozen Poultry, Beef, Pork," May 22, 2008.

costs low for cattle farmers and processors.[55] For example, beginning in 2006, duty-free treatment was accorded to agricultural machinery and equipment that is not produced domestically.[56] In addition, efforts are being made to control the smuggling of beef into Russia, a problem attributed partly to government beef import restrictions.[57] Local governments in wealthy regions, such as in oil-producing areas, are investing directly in beef producers that sell their product to local governments for the institutional sector, and providing extension services similar to those provided to U.S. agriculture.[58]

[55] See, e.g., USDA, FAS, *Russian Federation: Livestock and Products, Poor Feed Situation*, January 29, 2004, 7–9; and USDA, FAS, *Russian Federation: Livestock and Products Annual, 2003*, August 22, 2003, 4–5. ("Ironically, protection from the demands of local bureaucrats and assistance in completing [legal forms and procedures] are considered significant [regional and local government] assistance.")

[56] USDA, FAS, *Russian Federation: Livestock and Products Semiannual, 2007*, March 15, 2007, 4.

[57] USDA, FAS, *Russian Federation: Livestock and Products, Meat Smuggling Increasing*, July 13, 2005; and *Russian Federation: Livestock and Products, Meat and Poultry Prices Update*, April 3, 2006, 1.

[58] USDA, FAS, *Russian Federation: Livestock and Products Annual, 2003*, August 22, 2003, 5. An example is the city of Moscow, which has invested in, and provided soft loans to, beef and other food-product producers in exchange for supplies of those products in an effort to "significantly reduce the cost of products coming to Moscow, particularly by reducing the number of middlemen."

CHAPTER 10
Canada

The Canadian and U.S. cattle and beef sectors are highly integrated as a result of their geographic proximity and similar production systems and consumer demand characteristics. Large multinational companies have operations on both sides of the border, and with minimal trade restrictions, live cattle and beef move both ways across the border largely in response to relative prices and other market factors in each country. In 2002, the United States was the leading supplier of beef imports to Canada; valued at almost $300 million, U.S. beef represented more than 50 percent of total Canadian beef imports.

In 2003, bilateral trade in cattle and beef between Canada and the United States was significantly disrupted by the discovery of BSE in both countries (box 10.1). The first discovery came in May 2003 when a dairy cow in western Canada tested positive for BSE. In response, the United States immediately closed the border to Canadian live cattle and beef. The second discovery occurred in December 2003 when a case of BSE was confirmed in the United States, leading to the immediate ban on certain U.S. cattle and beef imports into Canada.

BOX 10.1 Summary of Canada's and U.S. BSE-related restrictions on imports of cattle and beef

Canadian response to December 2003 BSE case in the United States:

December 2003	Banned all imports except of boneless beef from cattle under 30 months of age and fed cattle for immediate slaughter
March 2005	Permitted imports of feeder cattle under 30 months of age
June 2006	Permitted imports of live cattle born after 1999 and of all beef and beef products

U.S. response to May 2003 BSE case in Canada:

May 2003	Closed market to Canadian beef and cattle imports
August 2003	Permitted imports of boneless meat from cattle under 30 months of age
April 2004	Permitted imports of beef liver and veal from calves under 36 weeks
July 2005	Allowed import of fed cattle under 30 months of age for immediate slaughter and of feeder cattle slaughtered while still under 30 months of age
November 2007	Permitted imports of live cattle born after March 1999 and of all beef

Source: USDA, FAS, GAIN reports, various dates.

Although relatively brief, the Canadian import restrictions on bilateral cattle and beef trade due to BSE resulted in a significant loss to the U.S. beef industry. After the discovery of BSE in the U.S. herd, U.S. beef exports to Canada fell substantially in 2004. By 2006, however, the Canadian border reopened to most U.S. cattle and beef products, and U.S. beef exports rebounded to exceed 2003 levels. Moreover, as a consequence of BSE-related bans on U.S. beef in other world markets, Canada became a primary outlet for U.S. beef exports, which more than doubled in value from 2002 to 2007.

Model simulation results indicate overall lost U.S. exports to Canada due to BSE-related restrictions were $242 million during 2004–07.[1] Export losses were primarily accounted for by chilled boneless beef cuts in 2004 and 2005, which totaled $267 million. As U.S. beef products already have duty-free access to the Canadian market, model results indicate that the removal of global tariffs and TRQs on U.S. beef exports would lead to a decline in U.S. exports to Canada.

Canada Market Characteristics and Trends

Beef Consumption Trends

Canada was the 11th largest consumer of beef in 2007, accounting for 2 percent of global consumption. On a per capita basis, Canada is the world's seventh-largest beef consuming country at 33 kg (table 2.3). In comparison, U.S. per capita beef consumption in 2007 was 42.6 kg. Since 2002, per capita beef consumption has remained stable, at 31–33 kg, despite the disruption to the market caused by the discovery of BSE infection. Meanwhile, annual per capita broiler meat (poultry) consumption increased 5 percent to 32.6 kg, and per capita pork consumption declined 10 percent to 23.4 kg.[2]

From 2002 to 2007, total domestic consumption grew steadily from 977,000 mt cwe to 1.1 mmt cwe, an increase of 12 percent (table 10.1). The closing of foreign markets to Canadian beef and cattle following the discovery of BSE in May 2003 contributed to above-average domestic consumption. The loss of major export markets led to higher domestic supplies of beef and cattle (particularly lower-quality cuts), lower prices (Canadian beef prices declined 15 percent in 2003 compared with 2002, and retail beef prices declined 24 percent from May to September 2003),[3] and higher consumption. The only year-on-year decline in consumption occurred from 2003 to 2004, which was largely a consequence of strong consumption in 2003. As exports resumed in 2004, consumption fell, even though domestic production was significantly higher. In every year from 2004 through 2007, consumption increased in response to income and population growth, in spite of a steady rise in prices.

Sources of Supply

Canada's beef supply can be split broadly into four types—high-quality, grain-fed beef from animals raised primarily for beef production; lower-quality beef derived from cull cattle (cattle not raised specifically for the purpose of beef production); imported grain-fed beef; and imported grass-fed beef. Fed cattle are pastured (grass-fed), backgrounded (forage-fed), and then finished (grain-fed) in intensive feedlot operations, a process which creates tender, marbled beef. This

[1] Model results indicate that BSE-related restrictions resulted in a decline in U.S. beef exports to Canada of $346 million in 2004 and 2005, and an increase in U.S. beef exports to Canada of $104 million in 2006 and 2007.

[2] USDA, FAS, *Livestock and Poultry: World Markets and Trade*, 2008 Forecast, November 2007, 20–22.

[3] High-value beef cut prices remained strong because of the high demand of barbeque season, high foodservice demand, and low levels of imports. Statistics Canada, "Food Consumption," May 26, 2004.

TABLE 10.1 Beef: Canada's production, consumption, trade, and key factors affecting demand, 2002–07

Market data	2002	2003	2004	2005	2006	2007
Beginning stocks (1,000 mt cwe)	33	33	49	42	41	49
Production (1,000 mt cwe)	1,294	1,184	1,496	1,523	1,391	1,310
Imports (1,000 mt cwe)	340	304	123	151	180	242
Total supply (1,000 mt cwe)	1,667	1,521	1,668	1,716	1,612	1,601
Exports (1,000 mt cwe)	657	413	603	596	477	457
Domestic consumption (1,000 mt cwe)	977	1,059	1,023	1,079	1,086	1,099
Ending Stocks (1,000 mt cwe)	33	49	42	41	49	45
Exchange rate (C$/U.S.$)	1.57	1.40	1.30	1.21	1.13	1.07
GDP/capita (U.S.$/person)	23,458	27,450	31,112	35,199	39,141	42,738
Population (millions)	31.3	31.6	31.9	32.3	32.6	32.9
Wholesale beef price index	100.0	85.2	79.5	86.6	89.4	90.4
Annual beef per capita consumption (kg)	31.1	32.9	31.5	32.9	32.8	32.6

Sources: Production, consumption, and trade data from USDA, FAS, PS&D database unless otherwise noted. Exchange rate, GDP per capita, and population data from IMF. Wholesale beef price index calculated from FAPRI database.

Note: Production, supply, and consumption data are in carcass weight equivalent. These data are not directly comparable to product weight data.

high-quality beef, produced largely in western Canada, is typically sold, both domestically and abroad, as boxed beef or muscle cuts to the HRI sector and retail outlets. Most Canadian beef exports are shipped from western Canada[4] to population centers in the western United States to take advantage of the close proximity of, and lower transportation costs to, the western U.S. markets.[5]

The Canadian beef industry also produces lower-quality beef from cull cattle, typically older beef cattle (often used for reproduction) and dairy cattle (used for milk production). The primary product derived from cull cattle is boneless lean beef,[6] often used for grinding. In Canada, the number of fed cattle slaughtered outnumbered cull cattle by ratios of 6:1 to 11:1 during 2002–07.[7] However, cull cattle represents 20–30 percent of the total slaughter in eastern Canada.

Although production exceeds consumption, Canada imports considerable amounts of beef. In 2002, prior to the discovery of BSE in Canada, imports accounted for approximately one-third of Canadian consumption. By 2004, after the discovery of BSE in the United States, imports represented only 12 percent of consumption. With the resumption of trade with the United States, imports grew to 22 percent of consumption in 2007. Most beef imported from the United States is high-quality, grain-fed boxed Choice cuts. However, certain other products are also imported because of premiums received in Canada versus the United States. For example, Select and No-roll (ungraded) beef are discounted in the United States due to lower levels of marbling than Choice grades, but receive premiums in the Canadian market where they are competitive in the lean fed-beef market.[8] Typically, products are shipped from the midwestern United States to markets in

[4] Western Canada accounts for 70–75 percent of total Canadian slaughter.

[5] In 2007, the United States accounted for 79 percent of all Canadian beef exports.

[6] The lean-to-fat ratio is typically 85 percent.

[7] In 2002 the ratio was 7:1, increasing to a peak of 11:1 in 2004 and dropping to under 6:1 in 2007. Cattle owners held cull cattle in their herds resulting in a decline in cull cattle slaughter during 2005–07. Informa Economics, "Understanding the Value of Commercial Cow Beef in Canada," December 2005, 23.

[8] Young, Barber, and Fetterly, "Report on Canadian Beef Supply and Disposition with Quality Categorization," June 1997, 1.

eastern Canada because of lower transportation costs than shipping from western Canada.

Other beef suppliers to the Canadian market, such as Australia, New Zealand, and Uruguay, produce lean boneless grass-fed beef that is highly substitutable with Canadian beef from cull cattle.[9] Approximately 60 percent of Canada's non-U.S. beef imports are used for grinding and other manufacturing purposes, and the remainder is sold as certain whole muscle cuts.[10] New Zealand also ships 90–95 percent lean beef from bulls, filling a niche market for lean deli products.[11] Argentina and Brazil primarily supply the Canadian market with cooked and canned beef. There are no unprocessed beef imports from either country because of Canada's foot and mouth disease restrictions.

Factors Affecting Beef Demand

Several factors influenced the rise in Canadian beef demand during 2002–07. Population and income growth were the leading factors, while domestic meat price trends also contributed to rising beef consumption. BSE-related issues do not seem to have reduced Canada's beef demand. Canada's population grew by 5.1 percent over the period, from 31.3 million in 2002 to 32.9 million in 2007.[12] Moreover, per capita GDP growth nearly doubled in nominal terms, from $23,458 in 2002 to $42,738 in 2007, which also stimulated strong demand for beef.[13] Income growth was greatest in the middle- and high-income population segments; these segments likely registered more rapid growth in beef consumption.

Beef price trends in the Canadian market also have likely stimulated consumer beef demand. Wholesale prices fell sharply during 2002–04 (declining 20.5 percent), before rising slightly by 2007 for an overall decline of 9.6 percent during 2002–07 (table 10.1). In contrast, the wholesale prices of alternative meat products such as poultry and pork increased over the same period. Supply restrictions on alternative protein sources including poultry (Canadian poultry imports also are subject to a TRQ)[14] and seafood (because of supply restrictions from heavily fished resource stocks)[15] also contributed to consumers shifting meat purchases to beef.

The discovery of BSE in Canada in May 2003 and in the United States in December 2003 did not have a significant negative impact on Canadian demand for beef products. According to a national survey conducted shortly after the discovery of BSE, Canadian consumers reportedly were confident that the

[9] Informa Economics, "Understanding the Value of Commercial Cow Beef in Canada," December 2005, 3.
[10] Ibid., 23.
[11] Ibid., 45.
[12] IMF, International Financial Statistics, July 2008, 278.
[13] Ibid.
[14] USDA, FAS, *Canada: Poultry and Products Annual, 2007*, September 4, 2007, 3 and 7.
[15] USDA, FAS, *Canada: Fishery Products Annual, 2007*, September 28, 2007, 3–15.

government had taken the necessary steps to ensure the safety of the domestic beef supply.[16]

Import Market Characteristics and Trends

Imports by Major Supplier

The United States was Canada's largest supplier of imported beef during 2002–07. Despite of the discovery of BSE in the United States in 2003, the import market share of U.S. beef in the Canadian market remained high during the period, at 34–76 percent of total beef imports (table 10.2). From 2002 through 2007, several key dynamics of the Canadian beef and cattle industry drove U.S. and Canadian beef trade. Prior to the U.S. ban on Canadian cattle and beef, Canada exported approximately 1 million head of cattle to the United States, representing nearly one-third of annual domestic slaughter. With the closure of the U.S. market in May 2003, the Canadian beef slaughter industry was faced with a sudden increase in the supply of cattle for slaughter that was in excess of its slaughtering capacity. Domestic slaughter capacity expanded, but not rapidly enough to immediately handle the large number of cull cattle typically exported and slaughtered in the United States.[17] Consequently in 2004, this increase in domestic supply corresponded to a decrease of imports from the United States by $233 million, or 70 percent, while total imports decreased by 49 percent.

The gradual reopening of the U.S. market from 2005 to the present has led to a fivefold increase in the value of Canadian imports of U.S. beef. In 2007, imports of U.S. beef accounted for 76 percent of total Canadian imports. At the same time, the Canadian HRI sector experienced increased purchasing power because of the appreciation of the Canadian dollar against the U.S. dollar, which further drove Canadian demand for high-quality U.S. beef.[18] This sustained demand, particularly for high-quality beef from fed cattle, fueled the quick recovery of imports of U.S. beef after the significant losses sustained in 2004.

Canadian beef imports from Australia and New Zealand trended downward from 2002 to 2007. As previously discussed, the increased domestic beef supply stemming from the discovery of BSE in Canada depressed imports from both Australia and New Zealand. The subsequent discovery of BSE in the United States further depressed Canadian imports from Australia and New Zealand via trade diversion. The absence of the United States and Canada from the Japanese and Korean markets created a void that was in part filled by increased shipments from Australia and New Zealand to East Asia.

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[16] Reportedly, shortly after the discovery of BSE in Canada, 80 percent of Canadians were confident that eating beef was safe, in part because the Canadian government took precautionary measures well in advance for the detection of BSE, took post detection measures that were scientifically based, and adhered to international standards set by the OIE. CFIA, "Technical Overview of BSE in Canada," March 2005; and CFIA, "BSE Surveillance Testing," September 20, 2004, 3.

[17] Slaughter capacity increased from 3.5 million to 5.1 million head between 2003 and 2006. Cattle Network, "Canadian Cattle Slaughter Capacity Growth Seen Slowing," April 11, 2006; and CBEF, "Our Industry," undated (accessed March 26, 2008).

[18] USDA, FAS, *Canada: Livestock and Products Semiannual, 2008*, February 28, 2008, 7.

TABLE 10.2 Beef: Canada's imports, by leading suppliers, 2002–07 (million U.S. dollars)

Market	2002	2003	2004	2005	2006	2007
United States	299.0	332.8	99.9	210.7	438.0	609.1
New Zealand	94.5	89.5	78.3	80.6	69.1	77.5
Uruguay	3.0	63.6	74.0	40.8	26.0	58.2
Australia	174.1	72.9	29.3	24.8	35.1	44.0
Brazil	3.9	6.4	4.2	9.6	4.2	9.7
Argentina	3.4	2.4	3.4	5.3	3.6	3.8
ROW	0.0	0.1	0.1	0.2	0.1	0.5
Total	577.9	567.7	289.6	372.0	576.2	802.8

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total. ROW denotes rest of the world.

Imports by Products

World

During 2002–07, approximately 75 percent of Canadian beef imports were boneless cuts of beef, both chilled (HS 020130) and frozen (HS 020230) (table 10.3). Chilled beef is generally sold in the retail sector, while frozen beef typically goes to the food service segment or for processing.[19] The value of Canadian imports fell through 2004, but then rose to end the period 39 percent higher than the 2002 level. Volumes followed a similar pattern, but ended the period 13 percent lower than 2002 levels. This volume decrease was due largely to a substantial increase in the AUV of chilled beef cuts during the period. [20] The largest declines in total Canadian imports were frozen beef cuts, mostly supplied by countries other than the United States. Canada, similar to the United States, imports little offal.

United States

During 2002–07, Canadian import volumes of U.S. chilled bone-in beef and boneless beef increased by 178 percent and 49 percent, respectively, despite higher overall unit prices (table 10.4). These two import categories, which account for the majority of Canadian imports of U.S. beef, were high-value beef products, with AUVs higher than most other products, such as frozen beef cuts and offal. The AUVs for chilled boneless and bone-in beef rose substantially through 2005 and 2006, then declined somewhat in 2007. The rise in price for those products was likely due to a domestic shortage when Canadian slaughter capacity was overcome by cull cattle versus fed cattle. The subsequent decline in prices may have occurred in response to the expansion of Canadian slaughter capacity. In addition, the reopening of the U.S. border in 2005 to live Canadian cattle improved the ability of the Canadian slaughter industry to rebalance their production of low-quality beef versus high-quality beef.

[19] CCA, written submission to the USITC, May 6, 2008, 20.

[20] AUVs for chilled bone-in beef increased by 136 percent, and for chilled boneless by 33 percent, during 2002–07.

TABLE 10.3 Beef: Canada's imports from the world, by HS subheading, 2002–07

HS subheading		2002	2003	2004	2005	2006	2007
		Quantity *(mt)*					
020110	Fresh/chilled carcass	60	23	25	0	0	0
020120	Fresh/chilled bone-in	5,277	5,183	845	2,115	6,945	10,972
020130	Fresh/chilled boneless	70,668	63,011	16,899	23,184	60,861	88,000
020210	Frozen carcass	116	0	0	0	0	0
020220	Frozen bone-in	2,172	1,763	293	627	1,007	1,379
020230	Frozen boneless	114,216	103,741	59,969	51,263	42,561	59,133
020610	Fresh/chilled edible offal	1,961	1,916	140	135	785	1,169
020621	Frozen edible offal, tongue	47	16	0	18	0	0
020622	Frozen edible offal, liver	1,260	922	467	531	808	1,466
020629	Frozen edible offal, other	10,793	8,231	3,799	7,014	6,411	6,337
021020	Salted, in brine, or dried	70	33	150	210	325	11
160250	Prepared or preserved beef	21,358	23,535	11,045	22,079	24,377	29,612
	Total	227,997	208,372	93,629	107,175	144,079	198,078
		Million *(U.S. dollars)*					
020110	Fresh/chilled carcass	0.1	0.1	0.2	0.0	0.0	0.0
020120	Fresh/chilled bone-in	20.4	28.5	5.3	18.3	64.5	100.3
020130	Fresh/chilled boneless	234.2	244.0	78.6	119.1	280.5	388.3
020210	Frozen carcass	0.1	0.0	0.0	0.0	0.0	0.0
020220	Frozen bone-in	6.8	5.9	1.2	2.7	3.8	5.8
020230	Frozen boneless	227.0	194.4	149.3	137.4	115.6	169.3
020610	Fresh/chilled edible offal	1.7	2.0	0.1	0.2	1.2	2.0
020621	Frozen edible offal, tongue	0.1	0.1	0.0	([a])	0.0	0.0
020622	Frozen edible offal, liver	2.5	2.2	1.0	1.2	1.1	1.6
020629	Frozen edible offal, other	7.9	6.2	3.7	6.0	6.7	10.1
021020	Salted, in brine, or dried	0.5	0.2	2.6	2.1	3.6	0.2
160250	Prepared or preserved beef	76.6	84.3	47.6	84.9	99.2	125.0
	Total	577.9	567.7	289.6	372.0	576.2	802.8
		Unit value *($/mt)*					
020110	Fresh/chilled carcass	2,231	2,517	6,893	([b])	([b])	([b])
020120	Fresh/chilled bone-in	3,875	5,491	6,277	8,670	9,288	9,139
020130	Fresh/chilled boneless	3,314	3,873	4,653	5,136	4,609	4,417
020210	Frozen carcass	763	([b])	([b])	([b])	([b])	([b])
020220	Frozen bone-in	3,129	3,321	4,264	4,342	3,817	4,199
020230	Frozen boneless	1,988	1,874	2,489	2,680	2,716	2,863
020610	Fresh/chilled edible offal	881	1,026	1,025	1,515	1,548	1,684
020621	Frozen edible offal, tongue	1,302	3,677	([b])	1,253	([b])	([b])
020622	Frozen edible offal, liver	2,010	2,382	2,131	2,328	1,318	1,085
020629	Frozen edible offal, other	734	751	969	857	1,042	1,590
021020	Salted, in brine, or dried	6,868	6,628	17,321	9,973	10,956	14,752
160250	Prepared or preserved beef	3,584	3,582	4,306	3,846	4,070	4,222
	Average	2,535	2,725	3,093	3,471	3,999	4,053

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total.

[a]Less than $50,000.
[b]Not applicable.

Provinces in western Canada (mostly Alberta) account for 70–75 percent of the national slaughter, while 70 percent of the population lives in eastern provinces (e.g., Ontario and Quebec) where Canadian demand for high-quality beef is greatest. Canadian and U.S. high-quality beef production and trade is marketed north-south rather than east-west. It is based on transportation links between beef production centers and population centers where beef is consumed. For example, western Canadian slaughter facilities export beef products mainly to western U.S. cities, and midwestern U.S. slaughter facilities export beef to eastern Canadian cities.

Animal Health, Sanitary, and Food Safety Regulations in Canada

Regulatory Framework

The principal animal health and food safety regulations in Canada that affected U.S. beef imports are those related to BSE concerns. In Canada, the institutions responsible for measures to minimize the likelihood of outbreaks and spread of BSE within the cattle population and to protect consumers from associated health risks are Health Canada and the Canadian Food Inspection Agency (CFIA).[21] Health Canada establishes food safety standards, while the CFIA is the enforcing agency. The CFIA also establishes and enforces animal health standards. In effect, the CFIA is responsible for most aspects of animal health and food safety regulations in Canada, from livestock production to the end of the beef marketing chain.

The CFIA and Health Canada established several measures to prevent a possible BSE outbreak in the Canadian cattle herd and prevent the spread of the disease to Canadians prior to the actual occurrence in 2003. As early as 1990, Canada restricted imports of cattle from the United Kingdom and Ireland. In 1992, a National BSE Surveillance Program, now under the auspices of the CFIA, was established through the collaborative efforts of federal and provincial governments, universities, and private veterinarians to determine the incidence of BSE in Canada and the effectiveness of the BSE control programs.[22] By 1994, cattle import restrictions were expanded to include all cattle and beef products from any country with native cases of BSE. The following year, the cattle import restrictions were altered to allow cattle imports only from countries recognized by the Canadian government as BSE free. In 1997, the CFIA introduced a prohibition on the feeding of meat and bone meal made from ruminants to other ruminant animals. An enhanced feed ban was established in July 2007 requiring the removal of SRMs which were already required to be removed for human consumption from all animal feeds, pet foods, and fertilizers. Canada also introduced a prohibition on the use of fertilizers and animal feeds containing ruminant animal derivatives.[23] In 2001, an industry-initiated cattle identification

[21] CFIA was established in 1997 to eliminate overlap and duplication of food inspection at the federal level. CFIA, "Technical Overview of BSE in Canada," March 2005; CCA and BIC, "Canadian Meat Inspection," March 2006, 2.

[22] Surveillance testing expanded in 2004 after the discovery of BSE in Canada in May 2003.

[23] CFIA, "Canada Changes Import Regulations for U.S. Commodities," March 29, 2005.

TABLE 10.4 Beef: Canada's imports from the United States, by HS subheading, 2002–07

HS subheading		2002	2003	2004	2005	2006	2007
		Quantity *(mt)*					
020110	Fresh/chilled carcass	1	0	0	0	0	0
020120	Fresh/chilled bone-in	3,858	4,447	480	1,955	6,681	10,733
020130	Fresh/chilled boneless	56,438	52,545	9,921	19,323	56,322	84,384
020210	Frozen carcass	0	0	0	0	0	0
020220	Frozen bone-in	1,158	1,134	91	356	632	965
020230	Frozen boneless	5,370	5,087	1,399	3,754	4,312	4,269
020610	Fresh/chilled edible offal	1,961	1,878	116	135	785	1,085
020621	Frozen edible offal, tongue	45	5	0	0	0	0
020622	Frozen edible offal, liver	1,210	868	373	512	747	1,290
020629	Frozen edible offal, other	10,631	8,137	3,545	6,846	6,403	6,328
021020	Salted, in brine, or dried	67	31	57	210	325	9
160250	Prepared or preserved beef	17,302	18,463	7,729	16,389	21,526	24,629
	Total	98,041	92,595	23,711	49,481	97,732	133,692
		Million *(U.S. dollars)*					
020110	Fresh/chilled carcass	([a])	0.0	0.0	0.0	0.0	0.0
020120	Fresh/chilled bone-in	15.4	25.0	3.6	17.4	62.6	98.6
020130	Fresh/chilled boneless	184.0	201.5	47.6	101.0	255.4	365.7
020210	Frozen carcass	0.0	0.0	0.0	0.0	0.0	0.0
020220	Frozen bone-in	4.8	4.0	0.5	1.5	2.5	4.1
020230	Frozen boneless	14.0	16.5	4.7	12.5	14.8	17.2
020610	Fresh/chilled edible offal	1.7	1.9	0.1	0.2	1.2	1.8
020621	Frozen edible offal, tongue	0.1	([a])	0.0	0.0	0.0	0.0
020622	Frozen edible offal, liver	2.5	2.1	0.9	1.2	1.0	1.3
020629	Frozen edible offal, other	7.8	6.0	3.3	5.8	6.7	10.0
021020	Salted, in brine, or dried	0.5	0.2	0.4	2.1	3.6	0.1
160250	Prepared or preserved beef	68.4	75.3	38.7	69.0	90.3	110.3
	Total	299.0	332.8	99.9	210.7	438.0	609.1
		Unit value *($/mt)*					
020110	Fresh/chilled carcass	2,590	([b])	([b])	([b])	([b])	([b])
020120	Fresh/chilled bone-in	3,993	5,629	7,402	8,892	9,368	9,187
020130	Fresh/chilled boneless	3,260	3,835	4,801	5,229	4,536	4,334
020210	Frozen carcass	([b])	([b])	([b])	([b])	([b])	([b])
020220	Frozen bone-in	4,106	3,559	5,292	4,135	3,940	4,262
020230	Frozen boneless	2,603	3,250	3,330	3,324	3,430	4,029
020610	Fresh/chilled edible offal	881	1,026	1,115	1,504	1,545	1,641
020621	Frozen edible offal, tongue	1,276	1,444	([b])	([b])	([b])	([b])
020622	Frozen edible offal, liver	2,063	2,474	2,440	2,377	1,296	984
020629	Frozen edible offal, other	731	743	944	846	1,041	1,583
021020	Salted, in brine, or dried	6,944	6,629	7,223	9,958	10,956	11,658
160250	Prepared or preserved beef	3,953	4,078	5,013	4,209	4,195	4,479
	Average	3,050	3,594	4,212	4,257	4,482	4,556

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total.

[a]Less than $50,000.
[b]Not applicable.

program[24] was introduced to speed up the tracing, containment, and elimination of any serious disease from the Canadian cattle herd. The program is run by the Canadian Cattle Identification Agency and enforced by the CFIA.

Measures Affecting Imports from the United States

The CFIA is also responsible for import regulations related to food safety and animal health. Immediately following the U.S. discovery of BSE in December 2003, the CFIA introduced regulations on imports of U.S. beef cattle and certain beef products. These regulations permitted imports of boneless beef from cattle under 30 months of age, as well as imports of live cattle destined for immediate slaughter. However, imports of bone-in beef products and other products with high-risk materials were restricted.[25] To comply, the USDA, under the AMS EV program, certifies that U.S. beef for export meets the import control measures for BSE in the importing country.[26]

Certain import regulations were relaxed on March 29, 2005, when feeder cattle under 30 months of age and fed cattle for immediate slaughter were removed from the list of prohibited commodities. Import regulations were further loosened on June 29, 2006, when imports were permitted of beef from cattle OTM if processed by an approved slaughter process and with all SRM removed.[27] However, Canada continues to maintain prohibitions on imports of certain high-risk products.[28]

Comparison with International Standards

Canadian animal health, sanitary, and food safety regulations are largely consistent with OIE guidelines.[29] In 2005, Canada, Mexico, and the United States established a harmonized approach to BSE risk mitigation. The intention of this approach was to normalize North American beef trade, effectively address BSE risk, and promote an international BSE strategy consistent with guidelines set forth by the OIE.[30] In May 2007, the OIE designated Canada and the United States as controlled risk countries with respect to BSE.

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[24] The program involves tagging cattle with an individual ID number when leaving their herd of origin.

[25] For more detailed list of examples of prohibited and permitted commodities see USDA, FAS, *Canada: Livestock and Products Semiannual, 2004*, January 30, 2004, 8.

[26] USDA, FAS, *Canada: Livestock and Products Annual, 2006*, September 6, 2006, 8.

[27] CFIA, "Update to Import Restrictions," August 2, 2006.

[28] High-risk products include meat-and-bone meal, beef produced from air injection stunning techniques, and SRMs including skulls, brains and eyes, small intestines, and tonsils.

[29] For example, Canada continued to import boneless beef and cattle for immediate slaughter, consistent with OIE guidelines for "undetermined BSE risk," following the discovery of BSE in the U.S. herd.

[30] USDA, "Canada, Mexico, and United States Release Harmonized North American BSE Strategy," April 1, 2005.

Other Barriers to Imports from the United States

Tariff Treatment

Beef imports of all types, including cattle, from the United States enter Canada duty free under NAFTA. Beef imports from certain countries with which Canada has preferential trade arrangements are also duty free. However, Canadian beef imports from the remaining countries are subject to TRQs and tariffs. Beef offal imports are duty free on a NTR basis (table 10.5).

TABLE 10.5 Beef: Canada's TRQs and NTR duty rates, 2008

HS subheading		In-quota[a]	Over-quota (%)	NTR rate (%)
020110	Fresh/chilled carcass	Free	[b]26.5	([c])
020120	Fresh/chilled bone-in	Free	[b]26.5	([c])
020130	Fresh/chilled boneless	Free	[b]26.5	([c])
020210	Frozen carcass	Free	[b]26.5	([c])
020220	Frozen bone-in	Free	[b]26.5	([c])
020230	Frozen boneless	Free	[b]26.5	([c])
020610	Fresh/chilled edible offal	([c])	([c])	Free
020621	Frozen edible offal, tongue	([c])	([c])	Free
020622	Frozen edible offal, liver	([c])	([c])	Free
020629	Frozen edible offal, other	([c])	([c])	Free
021020	Salted, in brine, or dried	([c])	([c])	Free
1602.50.10	Prepared meals	([c])	([c])	[d]11
1602.50.91	Preserved in cans/jars	([c])	([c])	[e]9.5
1602.50.99	Other beef preparations	([c])	([c])	Free

Source: Canada's Harmonized Tariff Schedule.

[a]Beef originating from outside NAFTA is subject to an overall global minimum access commitment of 76,409 mt. Australia's minimum access commitment is 35,000 mt and New Zealand's minimum access commitment is 29,600 mt.

[b]Duty-free access for United States, Mexico, commonwealth Caribbean nations, Chile, and least developed countries.

[c]Not applicable.

[d]Duty-free access for United States, Mexico, commonwealth Caribbean nations, Chile, Costa Rica. Duty rate of 5 percent for countries qualified under General Preferences.

[e]Duty-free access for United States, Mexico, commonwealth Caribbean nations, Chile, Costa Rica, least developed countries, and countries qualified under General Preferences.

Established under the Uruguay Round Agreement, Canada maintains a TRQ on muscle cuts and carcasses. A global minimum access commitment of 76,409 mt is available duty-free for all non-NAFTA trading partners and includes 35,000 mt designated for Australia and 29,600 mt for New Zealand.[31] Imports in excess of the global minimum incur a tariff of 26.5 percent.[32] Other beef products are subject to tariffs ranging from free to 11 percent.

[31] Under the Uruguay Round Agreement, though New Zealand and Australia have country-specific quantities of the global minimum access commitment, they are allowed to import greater quantities without incurring the 26.5 percent tariff if total imports are below 76,409 mt.

[32] USDA, FAS, *Canada: Livestock and Products Annual, 2007*, October 3, 2007, 13.

Canada has traditionally granted additional duty-free access, in the form of supplementary import permits,[33] above the global commitment when a domestic purchaser cannot find a domestic supplier offering product equivalent to a foreign product at an equivalent price.[34] Reportedly, products imported with supplementary import permits are typically purchased by the convenience food sector, which requires a stable and reliable supply of very specific beef cuts that are often not reliably supplied within Canada. For Canadian processors, it is often more lucrative to export certain beef cuts to the U.S. market than to supply the specific needs of the convenience food sector. In 2002, Canada authorized 65,082 mt of supplementary imports duty free above the 76,409 mt TRQ threshold. Following the discovery of BSE in Canada, the use of supplementary import permits was temporarily suspended, from June 2003 to April 2004, due to excess domestic supplies.[35]

Support for Domestic Production

Canada provides limited government support for domestic beef production. The OECD estimates that the average price paid for beef by consumers in Canada, as measured by the Consumer NPC, was nearly equivalent to the border price throughout 2002–07. In 2002, the value of gross transfers to beef and veal producers was 12 percent of farm gate receipts. In 2006, the value of commodity-specific support to beef and veal producers was 2.1 percent of farm gate receipts (table 10.6). The highest levels under each measure occurred in 2003 and 2004, the years the Canadian beef and cattle industries were most affected by BSE.

TABLE 10.6 Beef: OECD estimates of Canada's support for production, 2002–06

Measure	2002	2003	2004	2005	2006
Producer support estimate (PSE)[a]	12	26	[b]25	([c])	([c])
Single commodity transfers (SCT)[d]	([c])	([c])	6.4	2.5	2.1
Consumer NPC[e]	1.02	1.02	1.00	1.00	1.00

Source: OECD, *Agricultural Policies in OECD Countries*, 2005 and 2007.

[a]Percent PSE is equal to total transfers to producers as a percentage of receipts.
[b]Preliminary estimate.
[c]Not available.
[d]Percent SCT is equal to commodity-specific transfers as a percentage of receipts.
[e]Consumer NPC is the ratio of the price for beef and veal paid by consumers to the border price.

[33] Reportedly, the supplementary import permits are one reason that Canada exported such a high percentage of its cull cattle prior to its BSE discovery. The permits are primarily used for low-cost beef (e.g., ground meat and low-priced cuts) from Australia and New Zealand, which competed directly with Canadian cull cattle beef products. Canadian cattle producers exported the cull cattle to the United States where they fetch higher prices. USDA, FAS, *Canada: Livestock and Products Semiannual, 2007*, March 6, 2007, 7.

[34] Importers must contact domestic suppliers prior to the issuance of a supplementary import permit. If the importer is unable to find a domestic supplier that can provide the product at an equivalent price, the permit is issued. Senate of Canada, *Cattle Slaughter Capacity in Canada*, May 2005, 29–30.

[35] USDA, FAS, *Canada: Livestock and Products Annual, 2004*, September 1, 2004, 8; and Senate of Canada, "Cattle Slaughter Capacity in Canada," May 2005, 30.

Canadian government support in response to BSE in 2003 and 2004 was provided both at the federal and provincial level. Programs totaling nearly $400 million were implemented in 2004 to encourage increased slaughter capacity, provide funds to beef producers affected by the BSE discovery, and offset additional costs of BSE-related programs.[36] Part of this funding, approximately $51 million, was designated under the Loan Loss Reserve Program to support loans for the expansion and establishment of small- and medium-sized slaughter facilities. Other federal programs provided financial assistance to beef producers affected by low cattle prices. One example is the Canada Cull Animal Program, which provided eligible producers support on a per head basis. Federal and provincial funds were also allocated to offset BSE surveillance costs incurred by cattle producers, meat processors, and veterinarians following the expansion of the National BSE Surveillance Program in 2004.[37]

[36] Senate of Canada, "Cattle Slaughter Capacity in Canada," May 2005, 4.
[37] Alberta ARD, "Information about the Major BSE Recovery Programs," December 20, 2007.

CHAPTER 11
Mexico

Despite differences in production systems, the Mexican and U.S. cattle and beef sectors are becoming increasingly integrated. Integration occurs mostly along the border where the northern Mexican beef industry is an important source of feeder cattle for feedlots in the United States. Duty-free access under NAFTA has encouraged cross-border movement of live cattle and beef largely in response to market factors, despite the presence of limited Mexican antidumping duties on certain U.S. beef products. In addition, strong income growth has led to increased Mexican demand for high-quality, grain-fed beef.

The United States is the largest supplier of beef imports to Mexico. In 2007, imports from the United States, valued at $833 million, represented more than 80 percent of Mexican imports from all countries. From 2003 to 2007, imports of U.S. beef increased both because of income-led growth in Mexican beef consumption and because several other important beef markets restricted imports of U.S. beef after December 2003. However, from 2003 to 2004, U.S. beef exports to Mexico declined by 38 percent, from $708 million to $436 million, as a result of BSE-related restrictions. The partial reopening of the Mexican market to U.S. beef in 2004 and subsequent steps towards normalized beef trade limited U.S. beef industry losses in the Mexican market and increased the importance of the Mexican market to U.S. beef producers (box 11.1). U.S. beef export sales to Mexico peaked in 2006 at nearly $870 billion, 23 percent greater than in 2002 and double their 2004 levels. During 2004–07, Mexico accounted for over one-half of U.S. beef exports.

BOX 11.1 Summary of Mexico's BSE-related events and restrictions on imports of U.S. cattle and beef

December 2003	Following the discovery of BSE in a cow in the United States, Mexico closes its market to U.S cattle and beef.
March 2004	Imports of U.S. beef resume, limited to boneless beef from cattle under 30 months of age.
April 2004	Imports of U.S. veal and various offal from cattle under 30 months of age resume.
May 2004	Imports of U.S. tripe and marinated boneless beef from cattle under 30 months of age resume.
August 2004	Imports of U.S. certain beef-based preparations resume.
July 2005	Imports of U.S. sausages and breeding bulls resume.
February 2006	Imports of U.S. bone-in beef from cattle under 30 months of age resume.
March 2008	Imports of U.S. breeding cattle born since 1999 resume, despite continued ban on most U.S. live cattle (except as listed and dairy cattle under 24 months of age). U.S. beef from cattle over 30 months of age and ground beef remain prohibited from import.

Source: USDA, FAS, GAIN reports, various dates.

Model simulation results indicate that losses in U.S. exports to Mexico as a result of BSE-related restrictions totaled $390 million for 2004–07. Export losses were primarily limited to chilled boneless beef cuts in 2004, and chilled and frozen bone-in beef cuts between 2004 and 2006. As U.S. beef products already have duty-free access to the Mexico market, model results indicate that the removal of global tariffs and TRQs on U.S. beef exports would lead to a decline in U.S. exports to Mexico.

Mexico Market Characteristics and Trends

Beef Consumption Trends

On a per capita basis, Mexico was the world's eighth-largest beef consuming country and the third largest in Latin America behind Argentina and Uruguay in 2007 (table 2.3). Annual Mexican beef consumption was 23 kg per capita (table 11.1), higher than pork (14 kg) but below poultry (28 kg).[1] Since 2002, annual per capita beef consumption has remained stable at 22–24 kg, despite the disruption to imports caused by BSE. Mexican per capita beef consumption fell by 6 percent in 2003, but subsequently increased by 5 percent during 2004–07. Comparatively, per capita pork consumption increased by 9 percent and poultry consumption increased by 19 percent during 2002–07.[2]

TABLE 11.1 Beef: Mexico's production, consumption, trade, and key factors affecting demand, 2002–07

Market data	2002	2003	2004	2005	2006	2007
Production (1,000 mt cwe)	1,930	1,950	2,099	2,125	2,175	2,200
Imports (1,000 mt cwe)	503	381	296	335	383	410
Total supply (1,000 mt cwe)	2,433	2,331	2,395	2,460	2,558	2,610
Exports (1,000 mt cwe)	10	12	19	32	39	42
Domestic consumption (1,000 mt cwe)	2,423	2,319	2,376	2,428	2,519	2,568
Exchange rate (MX peso/U.S.$)	9.66	10.79	11.29	10.90	10.90	10.93
GDP/capita (U.S.$/person)	6,436	6,244	6,698	7,447	8,066	8,426
Population (millions)	100.8	102.3	102.1	103.1	104.1	105.2
Wholesale beef price index (domestic)	100	101.6	98.3	110.9	112.6	114.6
Annual beef per capita consumption (kg)	23.5	22.2	22.4	22.7	23.3	23.3

Sources: Production, consumption, and trade data taken from USDA, FAS, PS&D database and *Livestock and Poultry: World Markets and Trade* unless otherwise noted. Exchange rate, GDP per capita, and population data taken from IMF. Wholesale domestic beef price index estimated by Commission from carcass price data reported by FAS.

Note: Production, supply, and consumption data are in carcass weight equivalent. These data are not directly comparable to product weight data.

The only year-on-year decline in Mexico's domestic beef consumption occurred from 2002 to 2003, decreasing from 2.4 mmt cwe to 2.3 mmt cwe[3] due to reduced supplies. Beef supplies had declined at this time because of decreased imports from Canada in 2003. Domestic production was unable to make up the difference. Mexico's total domestic beef consumption grew 11 percent, from 2.3 mmt cwe to 2.6 mmt cwe, during 2003–07.[4] This overall increase in beef consumption was largely a result of an increase in per capita income and population growth, and abundant supplies.

[1] USDA, FAS, *Livestock and Poultry: World Markets and Trade, 2008 Forecast*, November 2007.

[2] Ibid., November 2007, 20–22.

[3] Pork consumption grew by 4 percent and poultry grew by 8 percent between 2002 and 2003.

[4] In 2007, poultry consumption was 3.1 mmt and pork consumption was 1.6 mmt cwe. USDA, FAS, *Livestock and Poultry: World Markets and Trade, 2008 Forecast,* November 2007, 10–14.

Sources of Supply

The Mexican beef industry is broadly split into two regions. The industry in the southern part of the country focuses on multipurpose cattle production for beef and dairy production for the domestic market, while the industry in the north concentrates more on feeder cattle exports to the United States and fed-cattle beef production (similar to that in the United States) for both the domestic and export market.

The beef industry in southern Mexico raises Brahman and related hybrid breeds on mixed farming and grazing operations.[5] Cattle are fed predominately on pasture and forage with low nutritional value. This beef production is focused on supplying the Mexican domestic market,[6] which has traditionally preferred lean, grass-fed beef. This beef is typically sold on the wholesale market as a whole carcass, and consumed as small European-style cuts or in stews, soups, or other dishes that tenderize the meat.[7]

The beef industry in northern Mexico is made up of medium-scale producers of European beef breeds focused on supplying the United States with feeder cattle and local markets with U.S.-style beef.[8] Beef production in this region is similar to that of the United States, albeit less concentrated.[9] Owing to growing demand for grain-fed beef in Mexico, an increasing number of cattle from the southern industry are being finished in the north, where most Mexican feedlots are located.[10] The Mexican industry is increasingly utilizing a feeding system similar to that in the United States (albeit less intensive and with a shorter production cycle)[11] and improving domestic beef quality.[12] Many Mexican firms involved in cattle feeding are integrated firms with feeding, slaughter, and processing capacities targeting production to particular Mexican retail markets.[13]

Most Mexican beef imports are grain-fed beef supplied by the United States and Canada. They consist of cuts such as inside rounds, boneless chuck, outside rounds, and beef offal (tripe, outside skirt, and livers).[14] Other traditional imports include gooseneck round, clod, knuckle, brisket, and lips.[15] U.S. beef is typically imported boxed and purchased on a cut basis. Approximately 70 percent of U.S. imports are purchased by retail establishments, the HRI sector accounts for another 20 percent, and the remainder is imported by processors.[16] Retail outlets, which cater to higher-income population segments, account for approximately

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[5] Cattle are used for both dairy and beef purposes.

[6] USDA, FAS, *Mexico: Livestock and Products Annual, 2004*, July 23, 2004.

[7] Peel, "Comparative Advantage and Labor Issues," May 21, 2008, 14.

[8] USDA, ERS, "Market Integration of the North American Animal Products Complex," May 2005, 4.

[9] The average operation has 140 head of cattle. USDA, FAS, *Mexico: Livestock and Products Annual, 2004*, July 23, 2004; and USDA, FAS, *Mexico: Livestock and Products Annual, 2005*, September 1, 2005, 11.

[10] Peel, "The Mexican Cattle and Beef Industry," Spring 2005, 15–16.

[11] Cattle are slaughtered 6–18 months earlier than in the United States.

[12] Peel, "Comparative Advantage and Labor Issues," May 21, 2008, 7–14.

[13] Ibid., 14.

[14] USMEF, "Mexico Beef," October 2007.

[15] USMEF, *Methodology and Results of the Value of Beef Exports Analysis,* July 2002, 16.

[16] USMEF, "Mexico Beef," October 2007.

one-half of the volume of Mexican beef consumed.[17] Retailers prefer boxed beef imports to domestic product for a number of reasons. The domestic market primarily supplies carcasses, a classification that tends not differentiate between steers and cull dairy cows, causing quality and consistency issues. The purchase of carcasses also requires supermarkets to take on some unwanted cuts and parts. Further, domestic beef deliveries are not as reliable as imported product.[18]

Factors Affecting Beef Demand

A number of factors influenced Mexican beef demand during 2002–07. Population and income growth increased beef demand throughout the period, while short supplies, related to BSE-related import restrictions, led to higher prices that tempered beef demand in certain segments. In the wake of the discovery of BSE in the United States, Mexican consumer confidence in the safety of U.S. beef remained strong, so that consumption patterns were mostly affected by economic factors (e.g., beef price and quality, population growth, and income growth) rather than food safety concerns.[19]

Mexico's population grew by 4 percent during 2002–07, while per capita income grew by an estimated 31 percent. Income growth was greatest in the middle- and high-income population segments, and these segments registered more rapid beef consumption growth. Increased demand by tourists and fast-food and supermarket chains also contributed to growth in beef consumption, and these sectors are likely to offer future growth opportunities.[20]

Following the closure of the Mexican market to Canadian and U.S. beef imports, retail beef prices in Mexico increased by an average of 15 percent, while carcass prices rose by 14 percent and outdoor market prices increased by 9 percent.[21] Based on the wholesale price index, beef prices increased by 2 percent from 2002 through 2003 and 15 percent from 2002 through 2007 (table 11.1). During the same period, the wholesale price indexes for pork and poultry decreased slightly. Lower-income populations were significantly affected by the relative price increase of beef compared to other protein sources such as poultry, lower-quality pork, and dry beans.[22]

Mexican consumers generally prefer domestic grass-fed lean beef.[23] Domestic supplies, however, are not always consistent in quality. This has led to increased imports from South American suppliers into the traditional Mexican market because the quality is consistent with consumer preferences.[24] However, rising incomes, especially in urban areas, are contributing to increased demand for high-quality, grain-fed beef, which is primarily supplied by the United States.

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[17] USDA, FAS, *Mexico: Livestock and Products, BSE Update 2004*, January 12, 2004, 2.
[18] Ibid.
[19] USDA, FAS, *Mexico: Livestock and Products Semiannual, 2004*, January 27, 2004, 4.
[20] USDA, FAS, *Mexico: Livestock and Products Annual, 2007*, October 1, 2007, 16.
[21] USDA, FAS, *Mexico: Livestock and Products Semiannual, 2004*, January 27, 2004, 4.
[22] USDA, FAS, *Mexico: Livestock and Products, BSE Update, 2004*, January 12, 2004, 3; and USDA, FAS, *Mexico: Livestock and Products Semiannual, 2008*, March 7, 2008, 11.
[23] Peel, "Comparative Advantage and Labor Issues," May 21, 2008, 18.
[24] Mexican beef imports from South American are limited because of high Mexican import tariffs and FMD-related sanitary restrictions. Peel, "Comparative Advantage and Labor Issues," May 21, 2008, 18; and USDA, FAS, *Mexico: Livestock and Products Semiannual, 2008*, March 7, 2008, 12.

Following the import restrictions on U.S. beef, Mexican producers modified production practices to provide more higher-quality, grain-finished beef to compete in the high-income market.

Import Market Characteristics and Trends

Imports by Major Supplier

In 2002, 96 percent of Mexican beef imports were supplied by the United States (81 percent) and Canada (15 percent) (table 11.2). In May 2003, Mexico banned imports of beef from Canada following the discovery of BSE in that country. Mexico partially reopened its borders to Canadian beef in October 2003. Following the discovery of BSE in the United States, Mexican imports of U.S. beef fell from $708 million in 2003 to $436 million in 2004, and accounted for only 60 percent of Mexican imports in 2004. Imports from Canada increased by 218 percent from 2003 to 2004, and compensated for about 60 percent of the drop in imports from the United States. Imports from several other countries (including Brazil, Chile, Costa Rica, Nicaragua, New Zealand, and Uruguay,) also rose from 2003 to 2004, increasing by about $21 million, while imports from Australia declined. Overall Mexican beef imports fell only moderately on a value basis from 2003 to 2004, from $823 million to $722 million, or by 12 percent.

TABLE 11.2 Beef: Mexico's imports, by leading suppliers, 2002–07 (million U.S. dollars)

Market	2002	2003	2004	2005	2006	2007
United States	708.0	708.1	435.6	665.4	868.5	833.6
Canada	127.2	72.6	230.7	152.6	122.9	142.7
Uruguay	0.0	0.4	0.5	0.3	2.6	15.7
Australia	17.8	17.0	9.5	10.2	7.8	7.6
Chile	0.0	0.0	11.3	28.7	9.6	7.5
New Zealand	7.7	16.8	18.9	21.5	12.9	6.7
Panama	9.7	7.4	6.6	5.3	6.1	4.6
Costa Rica	0.3	1.0	4.1	5.1	3.6	4.2
Nicaragua	0.0	0.0	4.4	2.2	1.5	2.1
Brazil	0.0	0.0	0.1	0.3	0.8	0.8
ROW	0.0	0.0	0.0	0.2	0.3	0.1
Total	870.7	823.3	721.8	891.9	1,036.1	1,025.4

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total. ROW denotes rest of the world.

The decline in Mexican imports of Australian and New Zealand beef resulted from these countries focusing on Asian markets that had closed their borders to North American beef. Mexican imports of beef from Uruguay increased significantly in 2007 because Mexico lifted a 2001 FMD-related ban on imports of chilled boneless beef from Uruguay in May 2007.[25]

[25] USDA, FAS, *Uruguay: Livestock and Products Annual, 2007*, September 14, 2007, 3.

Imports by Products

World

From 2002 through 2007, Mexican imports of beef were predominately chilled boneless beef cuts (HS 020130) and beef offal [26] (table 11.3). Chilled beef is generally sold in the retail and HRI sectors, while frozen beef offal is generally consumed by lower-income consumers in rural areas.[27] The value of Mexican imports fell by 17 percent through 2004, but ended the period 18 percent higher than the 2002 level. Import quantities also fell from 2002 to 2004 and then increased, but remained lower in 2007 compared with 2002. This decline was largely because of a substantial increase in the AUVs for chilled beef cuts during the period.[28] Chilled beef cuts accounted for the majority of the value and volume of beef imports during the period. These products also accounted for the majority of U.S. beef imports during the period.

United States

The value of Mexican imports of U.S. beef recovered to pre-BSE levels by 2006. The greater increase in the value of imports than volume indicates a substantial increase in the AUVs for chilled boneless beef cuts (33 percent) and beef offal (130 percent) during 2002–07 (table 11.4). The rise in AUVs was likely driven by decreased supplies and increased demand for higher-quality beef cuts, such as chilled boneless beef, in the retail and HRI sectors. Increased demand from the retail and HRI sectors, which are primarily served by U.S. beef,[29] resulted in overall Mexican beef import levels being driven by imports of U.S. chilled boneless beef during 2002–07. Mexican imports of U.S. chilled boneless beef increased by $156 million (29 percent), and Mexico's total beef imports from all sources increased $154.7 million (17.7 percent)

Beef offal import values and volume rose at a faster pace than chilled boneless beef, likely due to more pronounced effects of marketing and promotion efforts, trade diversion, and a strong peso and Mexican economy.[30] Mexican imports of beef offal from the United States increased by 63 percent on a value basis, or by $44 million, from 2002 through 2007. The U.S. industry promoted the nutritional value of beef offal and provided information regarding new value cuts of beef offal to consumers. Mexico was able to import more high-quality beef offal due to the U.S. industry's loss of other, more profitable beef offal export markets. For example, the closure of the high-value and high-volume Japanese market for U.S. beef tongue resulted in a diversion of trade to Mexico.

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[26] HS 020610 (chilled offal), HS 020621 (frozen tongues), HS 020622 (frozen livers), and HS 020629 (other frozen offal).

[27] USDA, FAS, *Mexico: Livestock and Products Semiannual, 2004*, January 27, 2004, 5.

[28] The quality differences between chilled beef and frozen beef are indicated by AUVs through the period, with chilled boneless beef having a substantially higher AUV than frozen boneless beef.

[29] USMEF, "Mexico Beef," October, 2007.

[30] Reportedly, one U.S. industry group planned 56 seminars throughout Mexico to better inform Mexicans about the nutritional benefits of red meat and the attributes of U.S. beef. Herlihy, "U.S. Meat Export Federation Takes Long Term View of Exports, Imports;" *High Plains Midwest Ag Journal*, "U.S. Red Meat Exports," March 14, 2007.

TABLE 11.3 Beef: Mexico's imports from the world, by HS subheading, 2002–07

HS subheading		2002	2003	2004	2005	2006	2007
		Quantity *(mt)*					
020110	Fresh/chilled carcass	4,199	1,435	430	313	381	1,038
020120	Fresh/chilled bone-in	18,706	11,831	140	111	2,254	5,064
020130	Fresh/chilled boneless	226,085	193,536	167,739	185,404	236,683	213,819
020210	Frozen carcass	685	486	237	292	115	55
020220	Frozen bone-in	2,102	1,588	1,168	763	1,356	2,785
020230	Frozen boneless	35,117	30,630	24,784	28,435	15,552	14,703
020610	Fresh/chilled edible offal	3,882	1,619	3,159	4,500	4,170	4,305
020621	Frozen edible offal, tongue	3,909	1,381	5,650	12,377	9,771	12,449
020622	Frozen edible offal, liver	3,250	3,987	6,439	5,775	4,865	4,834
020629	Frozen edible offal, other	52,785	57,548	31,988	40,831	39,772	41,045
021020	Salted, in brine, or dried	141	338	24	73	288	51
160250	Prepared or preserved beef	785	1,139	424	952	980	1,391
	Total	351,646	305,519	242,183	279,828	316,188	301,539
		Million (*U.S. dollars*)					
020110	Fresh/chilled carcass	10.2	3.4	0.6	1.1	1.6	3.6
020120	Fresh/chilled bone-in	51.4	35.3	0.2	0.2	6.8	17.5
020130	Fresh/chilled boneless	639.9	613.9	582.6	687.8	855.2	804.2
020210	Frozen carcass	2.0	0.9	0.6	0.6	0.3	0.1
020220	Frozen bone-in	4.7	4.8	2.1	1.5	3.2	6.0
020230	Frozen boneless	73.5	72.3	61.1	78.2	44.5	43.4
020610	Fresh/chilled edible offal	10.8	5.3	11.2	16.1	15.1	20.0
020621	Frozen edible offal, tongue	5.6	3.6	10.2	26.6	27.0	41.2
020622	Frozen edible offal, liver	2.8	4.1	6.6	3.1	3.1	3.1
020629	Frozen edible offal, other	66.4	74.4	45.5	73.3	74.4	81.7
021020	Salted, in brine, or dried	0.6	1.7	0.1	0.5	1.7	0.3
160250	Prepared or preserved beef	2.7	3.7	1.0	3.1	3.3	4.1
	Total	870.7	823.3	721.8	891.9	1,036.1	1,025.4
		Unit value *($/mt)*					
020110	Fresh/chilled carcass	2,440	2,396	1,479	3,373	4,153	3,483
020120	Fresh/chilled bone-in	2,747	2,985	1,713	1,351	3,018	3,462
020130	Fresh/chilled boneless	2,830	3,172	3,473	3,710	3,613	3,761
020210	Frozen carcass	2,884	1,758	2,382	1,999	2,253	2,028
020220	Frozen bone-in	2,257	3,016	1,834	1,972	2,369	2,172
020230	Frozen boneless	2,093	2,360	2,466	2,749	2,863	2,953
020610	Fresh/chilled edible offal	2,788	3,296	3,541	3,585	3,612	4,650
020621	Frozen edible offal, tongue	1,429	2,573	1,803	2,146	2,764	3,306
020622	Frozen edible offal, liver	873	1,016	1,020	540	642	638
020629	Frozen edible offal, other	1,258	1,292	1,422	1,796	1,870	1,993
021020	Salted, in brine, or dried	4,573	5,018	2,447	6,177	5,918	6,527
160250	Prepared or preserved beef	3,378	3,276	2,421	3,255	3,374	2,953
	Average	2,476	2,695	2,980	3,187	3,277	3,401

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total.

TABLE 11.4 Beef: Mexico's imports from the United States, by HS subheading, 2002–07

HS subheading		2002	2003	2004	2005	2006	2007
		Quantity *(mt)*					
020110	Fresh/chilled carcass	4,194	1,435	430	242	175	428
020120	Fresh/chilled bone-in	14,418	10,761	41	0	2,014	4,465
020130	Fresh/chilled boneless	183,434	170,961	102,880	141,086	204,247	180,143
020210	Frozen carcass	685	464	155	100	94	55
020220	Frozen bone-in	1,475	1,394	56	44	991	2,076
020230	Frozen boneless	22,379	17,310	10,386	10,517	5,171	3,105
020610	Fresh/chilled edible offal	1,570	481	667	1,901	1,518	811
020621	Frozen edible offal, tongue	3,611	1,298	3,297	10,899	8,363	11,065
020622	Frozen edible offal, liver	3,128	3,878	5,132	5,503	4,693	3,948
020629	Frozen edible offal, other	46,088	51,502	20,681	32,266	32,279	33,757
021020	Salted, in brine, or dried	141	338	20	73	274	51
160250	Prepared or preserved beef	691	972	91	404	397	619
	Total	281,814	260,795	143,838	203,035	260,217	240,524
		Million (*U.S. dollars*)					
020110	Fresh/chilled carcass	10.2	3.4	0.6	0.7	0.4	1.3
020120	Fresh/chilled bone-in	42.6	32.7	0.1	0.0	6.2	16.2
020130	Fresh/chilled boneless	530.2	545.5	364.2	536.4	745.1	686.2
020210	Frozen carcass	2.0	0.8	0.4	0.2	0.2	0.1
020220	Frozen bone-in	3.7	4.2	0.1	0.1	2.6	4.5
020230	Frozen boneless	47.4	41.7	24.5	29.8	15.0	9.9
020610	Fresh/chilled edible offal	3.2	1.7	2.1	7.1	6.2	3.8
020621	Frozen edible offal, tongue	4.9	3.4	6.1	23.9	23.5	36.7
020622	Frozen edible offal, liver	2.8	4.0	5.9	3.0	3.1	2.5
020629	Frozen edible offal, other	58.0	65.6	31.4	61.3	62.4	69.1
021020	Salted, in brine, or dried	0.6	1.7	0.0	0.5	1.7	0.3
160250	Prepared or preserved beef	2.4	3.3	0.2	2.3	2.2	2.7
	Total	708.0	708.1	435.6	665.4	868.5	833.4
		Unit value *($/mt)*					
020110	Fresh/chilled carcass	2,439	2,396	1,479	2,979	2,419	3,023
020120	Fresh/chilled bone-in	2,952	3,038	1,895	N/A	3,077	3,639
020130	Fresh/chilled boneless	2,890	3,191	3,540	3,802	3,648	3,809
020210	Frozen carcass	2,884	1,753	2,399	2,185	2,258	2,028
020220	Frozen bone-in	2,505	3,044	1,662	3,241	2,594	2,184
020230	Frozen boneless	2,119	2,410	2,363	2,831	2,897	3,177
020610	Fresh/chilled edible offal	2,011	3,595	3,098	3,724	4,071	4,743
020621	Frozen edible offal, tongue	1,363	2,614	1,836	2,195	2,809	3,320
020622	Frozen edible offal, liver	886	1,028	1,146	548	650	643
020629	Frozen edible offal, other	1,258	1,273	1,517	1,901	1,935	2,047
021020	Salted, in brine, or dried	4,573	5,018	1,494	6,177	6,110	6,527
160250	Prepared or preserved beef	3,529	3,402	2,716	5,713	5,451	4,305
	Average	2,512	2,715	3,028	3,277	3,338	3,465

Source: GTIS, Global Trade Atlas database.

Note: Data are derived from reporting-partner exports. Due to rounding, numbers may not add to total.

Although tongue receives a larger premium in Japan, the Mexican market still provides a premium over sales in the U.S. market.[31]

Animal Health, Sanitary, and Food Safety Regulations in Mexico

Regulatory Framework

During 2002–07, Mexican imports of U.S. beef were primarily affected by BSE-related food safety and animal health regulations in Mexico. Several federal ministries establish regulations within their own jurisdictions. The principal ministries involved in the administration of animal health, sanitary, and food safety laws regarding cattle and beef are the Ministry of Agriculture, Livestock, Rural Development, Fisheries, and Food (SAGARPA) under the auspices of its National Service for Animal Health, Food Safety, and Agricultural and Food Quality Assurance (SENASICA) and the Ministry of Health (SSA).[32]

SENASICA establishes and regulates animal health and food safety standards relating to agricultural resources, including the protection of domestic agriculture from pests and diseases. It also ensures that farm production and processing meet both domestic and international meat inspection and live animal health standards.[33] As part of its mandate, SENASICA regulates and certifies federally inspected slaughter plants.[34]

The SSA is legally responsible for national food safety in domestic and imported food products[35] and establishes specifications relating to animal health, carcass preparation, storage, transport, and sales for federally inspected and municipal slaughter plants.[36] The SSA, through its Federal Commission for the Protection Against Sanitary Risks, also provides sanitary regulation and promotion of the production, commercialization, import, and export of food products.[37]

Similar to the United States and Canada, Mexico took several precautionary steps to help minimize the risk of BSE within the country following BSE outbreaks in Europe. In 1992, imports of live cattle and beef were restricted from countries

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[31] See chap. 5, box 5.2.

[32] The National Standards Office of the Ministry of Economy coordinates the regulatory process between these ministries.

[33] SENASICA Web site. http://senasicaw.senasica.sagarpa.gob.mx/portal/html/senasica_principal/senasica/senasica.html (accessed June 5, 2008); and Caballero, et al., "Agriculture, Rural Development and Land Policies," 2002, 266.

[34] USDA, FSIS, "Final Report of an Audit Carried out in Mexico Covering Mexico's Meat and processed Poultry Inspection System," June 29, 2006, 8.

[35] Caballero, et al., "Agriculture, Rural Development and Land Policies," 2002, 266.

[36] USDA, FAS, *Mexico: Livestock and Products, Mexico Publishes Official Rule on Health Specifications*, November 29, 2004, 2.

[37] The responsibilities of the Federal Commission for the Protection against Sanitary Risks cover a broad range of areas including goods, services, dangerous substances, health-related technologies, and work health, of which food is one area. Federal Commission for the Protection Against Sanitary Risks Web site. http://www.cofepris.gob.mx/idiomas_cofepris/ingles/what_cofepris.htm (accessed June 5, 2008).

with incidences of BSE,[38] and the National Epidemiological Surveillance System was established in 1996.[39] In 1999–2000, Mexico prohibited the use of meat and bone meal for use as animal feed and established animal feed regulations, including restrictions on imported rendered products in animal feed from countries with BSE.[40] In 2004, the National System for Individual Identification of Bovine Animals was launched by SAGARPA, establishing a cattle identification program to monitor and perform health inspections, control animal movement, provide genetic management of the animal population, and promote Mexican products through traceability.[41]

Measures Affecting Imports from the United States

SENASICA implemented a ban on U.S. cattle and beef imports following the December 2003 BSE discovery in the United States.[42] On March 3, 2004,[43] Mexico announced that it would reopen its market to U.S. boneless beef imports with the implementation of safety measures by the United States to guard against any risk of BSE contamination.[44] Although the dual responsibility of SSA and SENASICA over food safety has occasionally resulted in an inconsistent list of BSE-related import restrictions on U.S. beef products,[45] Mexico has, for the most part, adopted import regulations similar to those of the United States and Canada. Import regulations on U.S. beef and cattle were relaxed a number of times in 2004 and 2005.[46]

In February 2006, Mexico further liberalized U.S. beef trade by accepting bone-in beef from cattle less than 30 months of age, but live cattle imports from the United States remained restricted.[47] Imports of U.S. dairy cattle under 24 months of age were permitted in October 2006,[48] and imports of breeding cattle from the United States and Canada were permitted in March 2008, as part of a trilateral agreement.[49] Mexico only prohibits imports of six U.S. beef products because of BSE concerns as of October 2007,[50] including ground beef and certain offal.[51]

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[38] In 1995 verification procedures for import inspection points were established. Agra Europe, "Ireland Seeks End to Beef Ban in Mexico," January 14, 1994.

[39] SAGARPA, SENASICA, "Normas Oficiales Mexicanas en Material de Salud Animal," undated (accessed June 5, 2008).

[40] USDA, FAS, *Mexico: Livestock and Products, Mexico Publishes Official Mexican Standard*, July 6, 2001, 1.

[41] Bonnet and Villaret, "A French Consultant's View," May 29, 2004, 103.

[42] This ban was similar to a ban on Canadian cattle and beef in May 2003 following the first case of BSE there.

[43] USDA, "Mexico Expands Market Access to U.S. Beef Exports," April 9, 2004.

[44] A similar reopening to Canadian beef occurred in October 2003. Agriculture and Agri-Food Canada, "Bi-weekly Bulletin: Mexico," March 31, 2006, 4; Bloomberg, "Mexico Extends Ban," December 26, 2003; and USDA, FAS, *Mexico: Livestock and Products Annual, 2004*, July 23, 2004, 12.

[45] USDA FAS, *Mexico: Livestock and Products, Mexico BSE Update (Third Edition)*, March 11, 2004, 3.

[46] Reportedly, Mexico has not provided greater access to Canadian beef than U.S. beef due to the pressure of possible trade actions by the United States. CBEF, "Inside the Export Marketplace," January 2007, 5.

[47] Doud and McWright, "Trade Issues Overview," May-June 2006, 34.

[48] USDA, FAS, *Mexico: Livestock and Products Annual, 2007*, October 1, 2007, 13.

[49] Pore, "Mexico to Resume Allowing Imports of U.S. Breeding Cattle," March 31, 2008.

[50] USMEF, "Mexico Beef," October 2007.

[51] USTR, *2008 National Trade Estimate Report on Foreign Trade Barriers: Mexico*, March 28, 2008, 2.

Most Mexican animal health, sanitary, and food safety regulations are consistent with international standards. In March 2005, Mexico signed a trilateral agreement with the United States and Canada establishing the basis for harmonization (and eventual normalization) of standards relating to cattle and beef trade, similar to the USDA's minimum risk rule.[52] Mexico is expected to adopt regulations for imports of U.S. beef that are consistent with OIE standards for a controlled risk country.[53] However, several current import restrictions are considered noncompliant with OIE standards, such as Mexico's ban on imports of live beef cattle for slaughter and beef from cattle over 30 months of age.[54]

Other Barriers to Imports from the United States

Tariff Treatment

Mexico maintains NTR duty rates, established under the Uruguay Round Agreement, of 10–25 percent on beef imports,[55] but these were phased out on imports from Canada and the United States under NAFTA (table 11.5). The final tariff on beef under NAFTA, on edible beef offal, was phased out on January 1, 2003.[56] Mexico also maintains antidumping duties on imports of certain U.S. beef products, including certain boneless and bone-in beef cuts \$0.07–0.80 per kg (box 11.2).[57] Reportedly, these duties cause a loss of \$100–\$500 million in revenue annually for U.S. beef exporters because of reduced shipments and altered product trading patterns.[58]

[52] USDA FAS, *Mexico: Livestock and Products Annual, 2005*, September 1, 2005, 13.

[53] Doud, "Live Cattle Trade with Canada," January-February 2008; and Parker and Doud, "United States Expands Post-BSE Trade with Canada," November-December 2007, 25.

[54] Since the United States was designated a controlled risk country for BSE, OIE guidelines state that cattle from the United States are eligible for import if it can be demonstrated that they were born after a feed ban was effectively enforced. Similarly, OIE guidelines state that all beef from cattle OTM be eligible for import except mechanically separated meat from the skull and vertebral column of cattle OTM. USTR, *2008 National Trade Estimate Report on Foreign Trade Barriers: Mexico*, March 28, 2008, 2; and *Reuters*, "Mexico to Ease Import Restrictions for U.S. Cattle," March 28, 2008.

[55] USDA, FAS, *Mexico: Livestock and Products Annual, 2003*, August 21, 2003, 5; and Mexican Harmonized Tariff Schedule.

[56] Agriculture and Agri-Food Canada, "Overview of the Mexican Cattle and Beef Sector," January 28, 2004.

[57] Antidumping duties are established by company and some U.S. companies are exempt from the duties. Despite these duties, due to the concentrated nature of the U.S. industry, most U.S. boneless and bone-in beef exports to Mexico are subject to duties of \$0.13 per kg or less. During 2002–07 the AUV of chilled and frozen boneless and bone-in beef was \$3.00 per kg (\$6.6/lb) and \$2.41 per kg (\$5.31/lb), respectively. USDA, "Mexico Announces Final Antidumping Duties on Imports of U.S. Beef," October 18, 2000; and USDA, FAS, *Mexico: Livestock and Products, Mexico Announces the Continuance of Compensatory Duties on Beef Imports*, April 25, 2006, 1.

[58] USTR, *2008 National Trade Estimate Report on Foreign Trade Barriers*, March 28, 2008.

TABLE 11.5 Beef: Mexico's NTR duty rates, 2008

HS subheading		NTR rate (%)[a]
020110	Fresh/chilled carcass	20
020120	Fresh/chilled bone-in	20
020130	Fresh/chilled boneless	20
020210	Frozen carcass	25
020220	Frozen bone-in	25
020230	Frozen boneless	25
020610	Fresh/chilled edible offal	20
020621	Frozen edible offal, tongue	20
020622	Frozen edible offal, liver	20
020629	Frozen edible offal, other	20
021020	Salted, in brine, or dried	10
160250	Prepared meals	20

Source: Mexico's Harmonized Tariff Schedule.

[a]Imports from the United States and Canada receive duty-free access.

BOX 11.2 Mexico-U.S. beef trade dispute

Beef and cattle have been the subject of several antidumping duty investigations filed by the respective U.S. and Mexican beef and cattle industries under domestic antidumping duty statutes. Mexico imposed antidumping duties on U.S. beef imports in 2000. The U.S. industry challenged this action under NAFTA dispute settlement provisions and received a ruling that was in part favorable to the United States. In response, Mexico has reduced the product coverage of its antidumping duty order. This dispute is described in greater detail below. The U.S. cattle industry filed an antidumping duty petition in 1998 with the U.S. Department of Commerce and the Commission alleging (1) that imports of live cattle from Mexico and Canada were being sold in the United States at less than fair value (LTFV) and that imports of live cattle from Canada were being subsidized, and (2) that an industry in the United States was materially injured or threatened with material injury by reason of such LTFV and subsidized imports. In 2000, the Commission made negative injury determinations in its investigations; as a result, no U.S. antidumping duties or countervailing duties were imposed on U.S. imports of live cattle from Mexico or Canada.

In 1998, the Mexican industry filed an antidumping petition with the Mexican Secretariat of Economy (SECOFI), and in April 2000, SECOFI imposed antidumping duties on imports of most U.S. beef products. In June 2000 and June 2003, the U.S. industry filed a complaint under the NAFTA and WTO dispute settlement provisions, respectively, with respect to the Mexican antidumping duties. In the complaint, the U.S. industry alleged that Mexico's determination was inconsistent with Mexico's antidumping law. In March 2004, the NAFTA dispute panel found that Mexico did not sufficiently demonstrate that U.S. beef imports caused damage to the Mexican industry.[1] In October 2004, Mexico complied with the ruling by removing duties on carcasses, by abolishing the requirement for a certificate of proof of USDA grading and exportation within 30 days of slaughter, and providing certain antidumping duty exemptions for products graded USDA Prime or Angus beef. However, antidumping duties on boneless and bone-in beef cuts were maintained. Following a sunset review of the April 2000 antidumping duties on U.S. beef imports in 2006, the duties were continued for 5 years, as modified to comply with the NAFTA panel ruling.[2]

[1] USDA, FAS, *Mexico Livestock and Products: Mexico Announces the Continuance of Compensatory Duties on Beef Imports*, April 25, 2006, 1; NAFTA Binational Panel Decisions, MEX-USA-00-1904-02.

[2] USDA, FAS, *Mexico Livestock and Products: Mexico Announces the Continuance of Compensatory Duties on Beef Imports*, April 25, 2006, 1.

Support for Domestic Production

Mexico provides limited government support for domestic beef production. The OECD estimates that the average price paid for beef by consumers in Mexico was maintained at approximately 100 percent of the border price since 2002 (measured at the farm gate). In 2002, the value of gross transfers to beef and veal producers was equivalent to 12 percent of farm gate receipts. In 2006, the value of commodity-specific support to beef and veal producers was equivalent to 6.3 percent of farm gate receipts (table 11.6).

TABLE 11.6 Beef: OECD estimates of Mexico's support for production, 2002–06

Measure	2002	2003	2004	2005	2006
Producer support estimate (PSE)[a]	12	10	([b])	([b])	([b])
Single commodity transfers (SCT)[c]	([b])	([b])	5.2	8.2	6.3
Consumer NPC[d]	1.09	1.00	1.00	1.00	1.00

Source: OECD, *Agricultural Policies in OECD Countries*, 2005 and 2007.

[a]Percent PSE is equal to total transfers to producers as a percentage of receipts.
[b]Not available.
[c]Percent SCT is equal to commodity-specific transfers as a percentage of receipts.
[d]Consumer NPC is the ratio of the price for beef and veal paid by consumers to the border price.

Mexican government support for the beef industry is limited to support for producers that send cattle to be slaughtered in federally inspected plants and support for herd and genetic improvements. The Mexican government provides 110 pesos (U.S. $10) per head to cattle slaughtered in a federally inspected plant, which costs 30–50 percent more than for cattle slaughtered in municipal slaughter facilities.[59] The government support covers approximately one-half of these slaughtering costs; however, total support is limited as numerous plants are not federally inspected.[60] The Mexican government also supports funding for herd and genetic improvements, provided that certain animal health standards, management practices, and herd composition criteria are met. Financial assistance also is provided to cattle buyers who import certain genetically high-quality cattle.[61] In addition, approximately 300–500 pesos (U.S. $27–45) is given to producers on a per head basis to enhance pastureland, which in turn improves the quality of the herd. The program is not widely used owing to administrative issues and cumbersome regulations.[62]

[59] USDA, FAS, *Mexico: Livestock and Products Annual, 2005*, September 1, 2005, 11.
[60] USDA, FAS, *Mexico: Livestock and Products Annual, 2007*, October 1, 2007.
[61] USDA, FAS, *Mexico: Livestock and Products Annual, 2003*, August 21, 2003, 6.
[62] USDA, FAS, *Mexico: Livestock and Products Annual, 2007*, October 1, 2007, 15.

CHAPTER 12

Estimates of Impacts of Trade Restrictions on U.S. Beef Exports and Production

Introduction

This chapter describes the estimated economic impacts of foreign market BSE-related restrictions on U.S. and Canadian exports imposed during 2004–07 and the effects of other identified restrictions on U.S. beef exports.

The ITC model simulations estimated that the long-term effect of the 2004–07 BSE restrictions was a decline in the value of annual U.S. exports of beef products ranging from $3.1 billion in 2004 to $2.5 billion in 2007. The 2004 bans were more restrictive than the 2007 bans. The most affected categories were bone-in beef products (U.S. exports declined by 73–94 percent by value) and beef carcasses (U.S. exports declined by 64–84 percent). U.S. exports of offal and boneless beef declined by 50–77 percent.

The ITC model simulations estimated that the BSE restrictions caused a decrease in U.S. beef prices, which over time caused the supply of U.S. beef cattle to decline by 4–6 percent. The U.S. beef cattle industry is estimated to have lost $1.1–1.4 billion in annual revenue during 2004–07, a 6–9 percent decline. The beef packing industry is estimated to have lost between $1.5–2.7 billion in annual revenue, or a 5–7 percent decline.[1]

The removal of all other identified restrictions on imports from the United States, including tariffs and TRQs and other quantifiable trade barriers, would cause U.S. export sales to increase by an additional $1.4–1.8 billion, a 36–38 percent increase. U.S. exports of beef carcasses, bone-in beef products, and boneless beef products would increase by 26–32 percent. Beef offal exports would increase by 16–18 percent. It is estimated that the producer price for U.S. beef cattle would increase by 1.1–1.3percent. As a result of increased prices, the supply of U.S. beef cattle would expand by 2.9–3.0 percent. The U.S. beef cattle industry would gain an estimated $628 million to $1.1 billion in revenue, or about 4.2–4.3 percent. The supply of U.S. beef meat would increase by about 3 percent, and U.S. beef meat producer prices would increase by 0.4–0.6 percent.

[1] The model simulations estimate the long-run impacts on exports and production by country, given time for markets and producers to adjust. Since cattle and beef producers cannot significantly shift into or out of beef production in a single year, the simulations should be seen as the long-term changes that would be expected if conditions in a given year were to continue over a long enough time for producers to fully adjust to market conditions.

The quantitative analysis in this report is based on a simulation framework that consists of a PE model and a GE model. The model focuses on bilateral trade in beef products between the United States and other markets. The effects for U.S. beef imports and exports are specified at the HS six-digit subheading level. Effects for U.S. beef production and consumption are specified at a more aggregate level because of the lack of comprehensive statistics. This analysis estimates the long-run effects of the BSE-related bans and all other identified restrictions on U.S. beef exports that would be expected if producers and traders had sufficient time to fully adjust to new market conditions.[2]

Simulated Effects

The PE model simulates the effects of BSE-related restrictions on beef imports from the United States and Canada by selected trade partners and the effects of other identified restrictions on imports of U.S. and Canadian beef.[3] The following tabulation lists the 12 HS six-digit beef products identified in the PE model. Certain effects outside the scope of the PE model are estimated by the GE model. The estimated effects are disaggregated by product, and they are consistent with economy-wide adjustments.

	Beef product specification in the simulation framework
1	HS 020110: Fresh/chilled carcass
2	HS 020120: Fresh/chilled bone-in
3	HS 020130: Fresh/chilled boneless
4	HS 020210: Frozen carcass
5	HS 020220: Frozen bone-in
6	HS 020230: Frozen boneless
7	HS 020610: Fresh/chilled edible offal
8	HS 020621: Frozen edible offal, tongues
9	HS 020622: Frozen edible offal, livers
10	HS 020629: Frozen edible offal, other
11	HS 021020: Salted, in brine, or dried
12	HS 160250: Prepared or preserved beef

Two sets of simulations were performed. The first set estimated the effects of BSE-related restrictions by selected trade partners on imports of U.S. and Canadian beef that were in effect each year from 2004 to 2007. The second set estimated the effects of all other identified restrictions that trading partners placed on beef imports from the United States during the same time period. In particular, the effects of all other identified restrictions on imports of U.S. beef were estimated by simulating the absence of these restrictions. All simulations are based on data that describe beef markets in the absence of the BSE-related

[2] App. G describes the simulation framework used in this report.

[3] Because BSE-related restrictions were applied to Canadian beef exports in mid-2003 and to U.S. beef exports in December 2003, it is not possible to separate the effects of these restrictions using annual data. Additionally, the EU expanded from 15 to 25 members in May 2004.

restrictions. The estimated revenue loss is the difference between a simulated equilibrium without the BSE-related restrictions and an equilibrium with the restrictions. These data were developed with the simulation framework using 2001 and 2003 statistics. The methodology is discussed in appendix G.

Effects of BSE-Related Restrictions

Table 12.1 shows estimated effects on the volume of U.S. exports for the 12 six-digit beef products. The estimated effects on U.S. exports suggest that the BSE-related measures became less restrictive over time for most products. U.S. exports are estimated to have declined by 59–95 percent in 2004, by 43–97 percent in 2005, by 40–93 percent in 2006, and by 22–84 percent in 2007 from the estimated levels in the absence of the BSE-related measures. As a result of these bans, U.S. export prices are estimated to have declined substantially for most beef products. U.S. export prices of HS 160250 (prepared or preserved beef) and HS 020130 (fresh/chilled boneless) are estimated to have risen because U.S. exports of these two products declined, even though the BSE bans for these products were less restrictive than those for other beef products.

Table 12.2 shows declines in U.S. exports, by value, for each year during 2004–07. Three beef product categories (HS 020130 fresh/chilled boneless, HS 020230 frozen boneless, and HS 020220 frozen bone-in) accounted for more than 80 percent of the reduction in U.S. export revenue.

Table 12.3 shows estimated effects on the volume of exports of four broad categories of beef products—beef offal, beef carcasses, bone-in beef, and boneless beef—from the United States and other countries. The most affected categories of U.S exports are estimated to have been bone-in beef products (exports declined by 59–94 percent) and beef carcasses (exports declined by 54–84 percent). U.S. exports of offal declined by 46–77 percent and those of boneless beef declined by 40–77 percent. As U.S. and Canadian exports decreased, exports from Australia and New Zealand increased substantially. Mexican exports also increased, but from a small base. Korean exports of beef meat products decreased because their prices in the world market increased less than their prices in the domestic market.

Table 12.4 shows estimated effects on U.S. exports of all beef products, by country of destination. U.S. exports to Korea and Japan were affected the most by the BSE-related measures because the BSE-related measures of these two countries were quite restrictive and because the United States had historically exported large quantities of beef to these two countries.

TABLE 12.1 Estimated effects of BSE-related restrictions: Changes in U.S. export volumes and prices, by six-digit level product, percentage change

HS heading	Product	2004	2005	2006	2007
		Volume of exports			
020110	Fresh/chilled carcass	-86.5	-65.7	-60.0	-50.0
020120	Fresh/chilled bone-in	-91.2	-62.6	-44.9	-37.4
020130	Fresh/chilled boneless	-72.8	-54.3	-41.7	-35.1
020210	Frozen carcass	-81.0	-73.7	-70.6	-59.8
020220	Frozen bone-in	-94.5	-96.6	-93.3	-66.6
020230	Frozen boneless	-85.1	-79.6	-56.1	-47.2
020610	Fresh/chilled edible offal	-71.2	-57.3	-54.6	-21.9
020621	Frozen edible offal, tongue	-79.5	-71.0	-70.3	-62.9
020622	Frozen edible offal, liver	-71.3	-43.4	-45.1	-41.2
020629	Frozen edible offal, other	-78.4	-48.2	-47.8	-43.9
021020	Salted, in brine, or dried	-79.8	-69.0	-53.1	-83.8
160250	Prepared or preserved beef	-59.1	-49.7	-40.1	-34.5
		Price of exports			
020110	Fresh/chilled carcass	-57.8	-20.4	-18.6	-13.9
020120	Fresh/chilled bone-in	-81.6	-21.5	-5.8	-4.1
020130	Fresh/chilled boneless	-16.9	2.6	1.7	0.5
020210	Frozen carcass	-32.9	-44.2	-46.1	-35.6
020220	Frozen bone-in	-90.1	-96.9	-94.4	-58.6
020230	Frozen boneless	-62.8	-64.8	-30.3	-23.6
020610	Fresh/chilled edible offal	-21.1	-37.2	-33.6	21.2
020621	Frozen edible offal, tongue	-49.8	-62.6	-62.3	-55.0
020622	Frozen edible offal, liver	-21.2	-8.6	-14.4	-16.8
020629	Frozen edible offal, other	-46.2	-18.9	-20	-21.8
021020	Salted, in brine, or dried	-47.1	-44.8	-27.4	-93.2
160250	Prepared or preserved beef	117.4	45.1	18.4	10.4

Source: Commission calculations with simulation framework discussed in appendix G.

TABLE 12.2 Estimated effects of BSE-related restrictions: Changes in value of U.S. exports, by six-digit HS level, dollar change and percentage change

HS heading	2004		2005		2006		2007	
	Million $	*Percent*	*Million $*	*Percent*	*Million $*	*Percent*	*Million $*	*Percent*
020110	-10.1	-94.3	-8.4	-72.6	-8.9	-67.4	-8.8	-56.9
020120	-85.8	-98.3	-66.5	-70.6	-52.3	-48.1	-51.3	-39.9
020130	-1,266.3	-77.4	-933.4	-53.1	-809.9	-40.6	-801.4	-34.8
020210	-6.6	-87.2	-7.1	-85.3	-8.0	-84.1	-8.3	-74.1
020220	-382.9	-99.4	-424.5	-99.8	-482.5	-99.6	-474.3	-86.2
020230	-934.0	-94.4	-1,003.5	-92.8	-845.6	-69.4	-821.6	-59.6
020610	-13.0	-77.2	-12.8	-73.1	-12.4	-69.8	-0.9	-5.4
020621	-96.4	-89.7	-99.6	-89.1	-99.5	-88.8	-91.3	-83.3
020622	-59.6	-77.3	-40.1	-48.2	-47.8	-53.0	-49.7	-51.1
020629	-220.5	-88.3	-152.6	-57.9	-160.7	-58.2	-159.7	-56.1
021020	-9.4	-89.3	-9.4	-82.8	-8.2	-65.9	-13.5	-98.9
160250	-11.8	-11.0	-30.9	-26.9	-37.6	-29.0	-40.8	-27.6
Total	-3,096.2	-84.1	-2,788.9	-70.1	-2,573.4	-57.6	-2,521.5	-49.9

Source: Commission calculations with simulation framework discussed in appendix G.

TABLE 12.3 Estimated effects of BSE-related restrictions: Changes in beef export volumes for four categories of beef products, by exporting country, percentage change

	Bone in				Boneless				Carcasses				Offal			
Country	2004	2005	2006	2007	2004	2005	2006	2007	2004	2005	2006	2007	2004	2005	2006	2007
Argentina	7.8	7.6	5.2	4.6	4.0	3.8	2.8	2.3	54.0	54.3	55.9	39.1	9.3	3.0	2.6	1.8
Australia	110.8	112.7	109.3	86.2	66.7	66.7	60.6	45.2	160.7	165.0	164.5	132.4	59.6	56.8	51.6	38.9
Brazil	10.1	10.4	7.7	6.6	5.0	4.5	2.3	1.7	53.0	53.0	53.9	37.4	10.9	8.4	8.0	7.9
Canada	-58.6	-59.5	-32.9	-0.4	-6.2	-6.7	0.9	3.1	-3.4	-2.3	1.8	2.0	-17.9	-10.7	-8.3	-4.8
China	24.3	22.7	15.6	6.5	35.0	34.6	27.6	18.6	44.7	44.0	42.1	25.7	5.0	5.0	4.3	3.9
EU-15	1.2	1.1	0.6	0.6	1.5	1.4	0.8	0.9	0.9	0.9	0.4	0.4	3.0	3.1	3.2	3.9
EU-12	2.7	1.3	1.2	0.3	3.7	1.8	1.5	0.6	2.0	1.0	1.2	0.2	20.8	10.1	12.5	13.4
Indonesia	6.8	6.3	9.8	24.5	21.1	21.3	25.4	37.0	8.0	7.1	10.8	25.0	3.8	2.4	40.7	52.5
Japan	-8.9	-9.9	-13.1	-12.1	-4.3	-4.8	-8.5	-9.2	13.5	12.4	16.5	8.3	80.1	38.1	31.1	18.8
Korea	-49.3	-51.6	-56.5	-54.2	-54.4	-57.3	-60.6	-56.2	-44.9	-49.4	-53.1	-51.1	51.0	26.1	21.0	14.6
Mexico	81.3	45.5	22.3	12.6	27.6	24.8	16.1	12.4	172.3	169.4	168.8	139.4	24.1	3.7	4.2	9.0
New Zealand	87.0	87.1	84.5	68.3	33.4	31.1	27.0	19.5	21.3	16.9	7.5	4.1	35.6	31.9	28.3	21.1
Russia	6.0	4.9	3.1	1.6	0.9	0.0	-2.9	-3.7	-1.1	-1.6	-6.1	-5.6	9.8	3.1	2.2	0.6
Uruguay	3.4	3.6	1.4	0.8	11.2	8.5	3.5	2.1	48.7	49.8	49.3	37.0	12.4	7.8	3.8	2.0
United States	-93.7	-81.9	-73.0	-58.8	-76.5	-61.4	-46.5	-39.3	-83.9	-68.7	-63.9	-53.8	-76.9	-51.6	-51.4	-45.6
ROW	3.4	2.8	2.0	1.5	4.8	4.4	3.9	3.1	5.2	5.0	4.9	4.6	15.7	9.0	9.6	8.6

Source: Commission calculations with simulation framework discussed in appendix G.

Note: ROW denotes the rest of the world.

TABLE 12.4 Estimated effects of BSE-related restrictions: Changes in value of U.S. beef exports, by country of destination (million dollars)

Country	2004	2005	2006	2007	2004–07
Argentina	0	0	0	0	0
Australia	0	1	0	0	1
Brazil	0	0	0	0	0
Canada	-204	-142	52	52	-242
China	-118	-135	-131	-126	-510
EU-15	-4	-4	0	11	3
EU-12	4	2	0	-2	4
Indonesia	16	21	-19	-20	-2
Japan	-1,347	-1,436	-1,506	-1,443	-5732
Korea	-821	-897	-1,012	-1,005	-3735
Mexico	-368	-14	1	-9	-390
New Zealand	0	0	0	0	0
Russia	-55	-59	-66	-73	-253
Uruguay	0	0	-1	0	-1
ROW	-198	-125	111	93	-119
Total	-3,095	-2,788	-2,571	-2,521	-10,975

Source: Commission calculations with simulation framework discussed in appendix G.

Note: ROW denotes the rest of the world.

Tables 12.5 and 12.6 show estimated effects on the volumes and prices of beef meat trade, domestic production, and demand. U.S. exports of beef meat are estimated to have declined by 42–77 percent in volume, while prices of U.S. exports declined by 12–30 percent. As a result of the numerous restrictions on imports of U.S. and Canadian beef, the U.S. supply of beef meat to the domestic and foreign markets (that is, domestic production) is estimated to have declined by 4–6 percent. Domestic demand for U.S. beef increased, but because of a decline in the demand for imported beef,[4] overall demand for beef is estimated to have declined by about 1 percent.

Table 12.5 shows that Australia is estimated to have filled most of the void left by restrictions on imports of U.S. and Canadian beef. To induce this increase in Australian supply, however, Australian beef export prices are estimated to have increased by 24–32 percent (table 12.6).

Tables 12.7 and 12.8 show estimated effects for the beef cattle industry. The relative producer price for U.S. beef cattle is estimated to have declined by 2–3 percent because of the BSE-related restrictions. As a result of lower prices, the supply of U.S. beef cattle declined by 4–6 percent.

[4] BSE-related restrictions on exports of U.S. and Canadian beef reduced the supply of beef available in the world market; thus, U.S. import prices are estimated to have increased.

TABLE 12.5 Estimated effects of BSE-related restrictions: Changes in beef meat volumes, percentage change

	Domestic production				Exports				Imports				Demand for domestic and imported products			
Country	2004	2005	2006	2007	2004	2005	2006	2007	2004	2005	2006	2007	2004	2005	2006	2007
Argentina	0.7	0.6	0.4	0.3	4.4	4.2	3.3	2.6	14.0	2.1	0.7	0.5	0.1	0.0	0.0	0.0
Australia	42.0	42.2	38.9	29.5	68.3	68.5	62.6	46.9	-7.1	0.9	-7.7	-4.5	0.1	-0.2	-0.2	-0.1
Brazil	0.9	0.8	0.5	0.3	5.2	4.6	2.5	1.8	-1.6	-1.1	0.1	0.2	0.1	0.1	0.1	0.1
Canada	2.1	0.1	-0.8	1.0	-9.9	-10.3	-2.0	2.7	-30.6	-21.4	-2.4	-0.1	-1.9	-1.7	-0.7	-0.4
China	2.2	2.2	1.8	1.4	46.2	45.1	36.2	23.3	-34.6	-35.8	-28.5	-21.6	-0.3	-0.3	-0.3	-0.2
EU-15	0.6	0.6	0.3	0.3	1.3	1.2	0.7	0.7	-0.7	-0.6	-0.2	-0.2	0.0	0.0	0.0	0.0
EU-12	0.2	0.3	0.4	0.4	3.0	1.4	1.3	0.3	-2.4	-1.2	-3.6	-3.7	-0.1	0.1	0.1	0.2
Indonesia	-2.3	-3.5	21.2	27.3	7.5	6.9	10.4	24.9	5.6	7.6	-16.2	-16.2	1.2	1.4	-1.5	-1.0
Japan	26.9	27.0	23.7	16.9	-4.5	-5.1	-8.7	-9.3	-29.0	-30.9	-30.7	-27.0	-11.2	-11.6	-10.4	-8.0
Korea	26.8	26.6	24.9	19.7	-52.7	-55.8	-59.5	-55.6	-27.7	-29.5	-30.6	-27.2	-13.7	-14.5	-14.7	-12.4
Mexico	3.4	0.9	0.6	0.4	37.0	27.8	16.5	12.2	-31.5	-9.2	-6.1	-3.9	-1.6	-0.7	-0.8	-0.5
New Zealand	29.9	28.3	25.4	18.9	36.5	34.6	30.8	22.7	-11.6	-10.9	-8.7	-5.8	-0.2	-0.6	-0.8	-0.5
Russia	1.3	1.1	1.1	1.0	-0.2	-1.1	-5.4	-5.4	3.8	3.5	4.1	4.1	3.2	3.0	3.4	3.3
Uruguay	9.0	6.8	3.0	1.7	10.9	8.3	3.5	2.1	-49.1	-40.1	-57.2	-8.1	0.7	0.4	0.1	0.2
United States	-6.0	-5.1	-4.2	-3.8	-76.8	-63.0	-49.2	-41.6	-18.8	-18.3	-17.3	-13.0	-1.5	-1.3	-1.3	-1.0
ROW	1.2	1.0	0.3	0.3	4.9	4.5	4.1	3.4	-8.1	-6.9	-1.0	-1.0	-0.1	-0.2	0.0	0.0

Source: Commission calculations with simulation framework discussed in appendix G.

Note: ROW denotes the rest of the world.

TABLE 12.6 Estimated effects of BSE-related restrictions: Changes in beef meat prices, percentage change

	Producer price				Export price				Price of imports				Aggregate demand price (domestic and imported products)			
Country	2004	2005	2006	2007	2004	2005	2006	2007	2004	2005	2006	2007	2004	2005	2006	2007
Argentina	1.3	1.3	1.1	0.8	2.3	2.2	1.8	1.4	-7.3	-0.2	0.5	0.4	1.1	1.1	1.0	0.7
Australia	22.8	25.7	26.4	19.8	28.1	31.1	31.5	23.7	18.1	14.2	22.7	15.8	12.5	15.0	16.5	12.4
Brazil	1.6	1.6	1.4	1.1	2.7	2.5	1.9	1.5	2.5	2.1	1.3	0.9	1.4	1.4	1.3	1.0
Canada	7.9	6.0	3.8	3.3	4.6	3.1	3.5	3.7	47.3	32.6	6.5	2.5	16.9	14.2	5.3	2.7
China	2.1	2.2	2.0	1.7	11.7	11.5	9.7	6.8	36.7	38.6	28.5	20.4	3.2	3.3	2.9	2.5
EU-15	0.7	0.7	1.3	0.7	0.9	0.9	1.4	0.8	1.3	1.3	1.5	0.9	0.9	0.9	1.3	0.7
EU-12	0.3	0.6	0.8	0.9	1.0	0.9	1.0	0.9	1.9	1.5	3.4	3.8	0.3	0.6	0.9	1.1
Indonesia	0.0	-0.4	1.9	-5.2	2.4	2.1	-0.5	-5.6	-5.2	-7.5	30.4	25.3	-2.4	-3.7	17.0	12.1
Japan	27.3	28.6	26.3	20.6	18.6	19.6	17.1	13.2	87.6	93.1	85.8	65.1	61.6	63.8	56.6	41.5
Korea	83.4	89.9	95.9	79.1	43.3	46.0	47.8	39.8	166.7	180.4	189.8	149.4	137.0	146.5	152.6	120.5
Mexico	5.8	1.8	2.8	1.1	13.5	8.0	6.7	3.9	38.9	9.0	7.5	3.9	9.0	2.7	3.6	1.6
New Zealand	19.0	21.5	23.0	16.9	20.5	23.0	24.3	17.8	22.3	24.0	23.7	16.6	12.8	15.3	17.0	12.5
Russia	4.9	4.6	4.8	4.7	4.6	4.0	3.1	3.0	3.3	3.1	3.0	2.8	3.7	3.4	3.5	3.3
Uruguay	5.6	4.9	3.0	2.0	6.0	5.3	3.2	2.1	64.0	46.4	81.6	7.8	4.1	3.8	3.2	1.8
United States	-0.8	-0.6	-0.3	-0.7	-30.1	-21.5	-14.9	-12.4	16.0	15.6	14.7	10.2	2.0	1.9	1.9	1.1
ROW	1.7	1.5	1.1	0.9	2.6	2.4	2.0	1.7	8.3	7.0	1.7	1.6	2.4	2.1	1.1	1.0

Source: Commission calculations with simulation framework discussed in appendix G.

Note: ROW denotes the rest of the world.

TABLE 12.7 Estimated effects of BSE-related restrictions: Changes for beef cattle industry, percentage change

	Supply volume				Producer price			
Country	2004	2005	2006	2007	2004	2005	2006	2007
Argentina	0.4	0.3	0.2	0.1	2.4	2.3	1.9	1.4
Australia	33.1	32.5	29.3	22.7	57.9	64.9	66.3	47.2
Brazil	0.5	0.5	0.1	0.1	3.1	3.0	2.6	1.9
Canada	0.4	-1.2	-1.7	0.4	14.0	10.6	6.2	5.4
China	1.5	1.6	1.3	1.0	4.4	4.5	4.0	3.3
EU-15	0.2	0.2	-0.1	0.0	2.0	2.2	3.0	1.9
EU-12	0.0	0.0	0.1	0.1	0.9	1.8	2.3	2.3
Indonesia	-2.4	-3.3	15.2	19.7	0.3	-1.2	23.7	19.8
Japan	23.3	23.3	20.4	14.5	40.1	42.1	38.7	29.6
Korea	24.3	24.1	22.6	17.9	92.4	99.7	106.5	86.9
Mexico	1.1	0.1	-0.4	0.0	15.2	4.8	7.2	2.6
New Zealand	25.6	23.6	20.6	15.6	35.3	39.8	42.4	30.3
Russia	-0.4	-0.4	-0.7	-0.3	11.8	11.2	12.3	10.0
Uruguay	7.1	5.2	2.0	1.1	13.1	11.6	7.1	4.5
United States	-5.6	-4.8	-4.1	-3.6	-3.4	-2.4	-1.6	-2.0
ROW	0.5	0.3	-0.1	0.0	4.5	4.0	2.8	2.3

Source: Commission calculations with simulation framework discussed in appendix G.

Note: ROW denotes the rest of the world.

The U.S. beef cattle industry is estimated to have lost $1.1–1.4 billion in annual revenue, or about 5–9 percent (table 12.8). Despite large beef exports from Brazil and Argentina, beef cattle production in these two countries did not expand significantly, because most of the countries that banned U.S. and Canadian beef were not importing beef from Brazil and Argentina due to FMD restrictions.

The impact of BSE-related restrictions on the U.S. beef cattle and beef packer industries changed over the period, as restrictions changed in some importing countries and as U.S. exporters developed alternate markets. Table 12.9 summarizes the estimated revenue effects of the BSE-related measures for the U.S. beef industry. Each column presents the simulated long-run effects of the BSE-related restrictions that were in effect in a given year. It is estimated that the BSE-related measures in effect in 2004 caused the long-run annual sales revenue of the U.S. beef packing industry to decline by $2.7 billion, or 7.4 percent. The loss in sales revenue generally declined over time, and in 2007 the BSE-related measures in effect caused the long-run annual sales revenue of the U.S. beef packing industry to decline by $2.3 billion, or 5.7 percent of total sales. Most of the loss in sales revenue was in beef meat.

TABLE 12.8 Estimated effects of BSE-related restrictions: Changes in revenues of beef cattle industry, dollar change and percentage change

	Million dollar change				Percentage change			
Country	2004	2005	2006	2007	2004	2005	2006	2007
Argentina	66	64	55	44	3	3	2	1
Australia	1,859	2,023	2,026	1,493	110	118	115	81
Brazil	184	175	147	118	4	3	3	2
Canada	229	128	70	72	14	9	4	6
China	160	178	166	145	6	6	5	4
EU-15	199	156	214	181	2	2	3	2
EU-12	7	15	20	22	1	2	2	2
Indonesia	-1	0	-5	-8	-2	-4	42	43
Japan	988	1,148	1,235	1,256	73	75	67	48
Korea	840	1,020	1,250	1,241	139	148	153	120
Mexico	352	101	138	55	16	5	7	3
New Zealand	473	495	501	369	70	73	72	51
Russia	11	11	13	15	11	11	12	10
Uruguay	43	36	20	14	21	17	9	6
United States	-1,325	-1,179	-1,064	-1,410	-9	-7	-5	-6
ROW	384	337	220	193	5	4	3	2

Source: Commission calculations with simulation framework discussed in appendix G.

Note: ROW denotes the rest of the world.

TABLE 12.9 Estimated effects of BSE-related restrictions by year: Changes in sales revenue by the U.S. beef packer and beef cattle industries (million dollars)

Item	2004	2005	2006	2007
Beef meat: packer sales	-2,376	-2,047	-1,185	-2,016
Beef offal: packer sales	-330	-262	-269	-256
Total for beef packer industry	-2,706	-2,309	-1,454	-2,272
Beef cattle industry sales	-1,325	-1,179	-1,064	-1,410

Source: Commission calculations with simulation framework discussed in appendix G.

Effects of All Other Identified Restrictions on Imports from the United States

This section discusses the effects obtained by simulating the removal of tariffs and TRQs that restrict imports of U.S. beef by all economies in the model (the AUVs of these restrictions are listed in appendix table G.3).

Table 12.10 shows estimated effects of the removal of tariffs and TRQs on the volume of U.S. exports and imports for the 12 HS six-digit beef products. The estimated effects for U.S. exports suggest that the removal of these restrictions would cause global demand for U.S. beef exports to increase by 13–34 percent, by volume, depending on the product. The export prices of a few U.S. beef

TABLE 12.10 Estimated effects of removing tariffs and TRQs on U.S. beef products: Changes in U.S. export volumes and prices, by six-digit HS level, percentage change

HS heading	Product	2004	2005	2006	2007
		Volume of exports			
020110	Fresh/chilled carcass	27.9	27.5	26.6	25.5
020120	Fresh/chilled bone-in	25.2	24.8	24.1	23.2
020130	Fresh/chilled boneless	30.9	30.4	29.5	28.4
020210	Frozen carcass	28.9	28.5	27.6	26.6
020220	Frozen bone-in	30.1	29.5	28.7	27.6
020230	Frozen boneless	33.8	33.1	32.2	31.0
020610	Fresh/chilled edible offal	19.7	19.7	19.0	18.2
020621	Frozen edible offal, tongue	14.3	14.3	13.8	13.2
020622	Frozen edible offal, liver	15.6	16.0	15.3	14.5
020629	Frozen edible offal, other	18.6	19.1	18.4	17.5
021020	Salted, in brine, or dried	22.3	21.8	21.1	20.3
160250	Prepared or preserved beef	26.7	26.3	25.6	24.7
		Price of exports			
020110	Fresh/chilled carcass	5.1	5.1	5.0	4.9
020120	Fresh/chilled bone-in	0.1	0.2	0.2	0.3
020130	Fresh/chilled boneless	6.2	6.2	6.1	6.0
020210	Frozen carcass	6.2	6.2	6.2	6.1
020220	Frozen bone-in	5.3	5.2	5.2	5.1
020230	Frozen boneless	9.3	9.1	9.0	8.9
020610	Fresh/chilled edible offal	10.1	10.2	10.3	10.4
020621	Frozen edible offal, tongue	3.6	3.7	3.9	4.2
020622	Frozen edible offal, liver	5.1	5.7	5.8	5.9
020629	Frozen edible offal, other	8.8	9.5	9.5	9.5
021020	Salted, in brine, or dried	-7.7	-7.7	-7.4	-7.1
160250	Prepared or preserved beef	-0.8	-0.7	-0.5	-0.2

Source: Commission calculations with simulation framework discussed in appendix G.

products (HS 020120 fresh/chilled bone-in, HS 020629 other frozen edible offal, and HS 160250 prepared or preserved beef) either do not increase much or decline, because the tariffs and TRQs for these products are not as restrictive as those for other U.S. beef products. Export prices of other U.S. beef products would increase by 4–10 percent. Table 12.11 shows that U.S. export sales are estimated to increase by $1.4–1.8 billion, or 36–38 percent.

Table 12.12 shows estimated effects of the removal of tariffs and TRQs on U.S. exports of all beef products, by country of destination. U.S. exports to Korea and Japan would be affected the most by the removal of tariffs and TRQs on imports of U.S. beef.

TABLE 12.11 Estimated effects of removing tariffs and TRQs on U.S. beef products: Changes in value of U.S. exports, by six-digit HS level product, dollar change and percentage change

HS heading	2004		2005		2006		2007	
	Million $	*Percent*	*Million $*	*Percent*	*Million $*	*Percent*	*Million $*	*Percent*
020110	4	35	4	34	4	33	5	32
020120	22	25	24	25	26	24	30	24
020130	638	39	675	38	731	37	830	36
020210	3	37	3	36	3	36	4	34
020220	143	37	154	36	168	35	188	34
020230	456	46	489	45	527	44	588	43
020610	5	32	6	32	5	31	5	30
020621	20	18	21	19	20	18	20	18
020622	16	21	19	23	20	22	21	21
020629	72	29	80	30	81	30	82	29
021020	1	13	1	12	1	12	2	12
160250	27	26	29	25	32	25	36	24
Total	1,408	38	1,504	38	1,619	37	1,810	36

Source: Commission calculations with simulation framework discussed in appendix G.

TABLE 12.12 Estimated effects of removing tariffs and TRQs on U.S. beef products: Changes in value of U.S. exports, by country of destination, value (million dollars)

Country	2004	2005	2006	2007	2004–07
Argentina	0	0	0	0	0
Australia	0	0	0	0	0
Brazil	0	0	0	0	0
Canada	-16	-16	-18	-19	-69
China	4	4	5	6	19
EU-15	41	42	45	48	176
EU-12	2	13	13	13	41
Indonesia	0	0	0	0	0
Japan	922	972	1,038	1,156	4,088
Korea	298	318	344	380	1,340
Mexico	-22	-23	-23	-24	-92
New Zealand	0	0	0	0	0
Russia	12	13	14	15	54
Uruguay	0	0	0	0	0
ROW	165	180	202	236	783
Total	1,406	1,503	1,620	1,811	6,340

Source: Commission calculations with simulation framework discussed in appendix G.

Note: ROW denotes the rest of the world.

Table 12.13 lists estimated effects for U.S. exports of beef offal, beef carcasses, bone-in beef products, and boneless beef products. Exports of the three beef meat categories would expand by 26–32 percent. Beef offal exports would expand only by an estimated 17 percent because current tariffs and TRQs on beef offal are not as restrictive as those on beef meat products.

TABLE 12.13 Estimated effects of removing tariffs and TRQs on U.S. beef products: Changes in U.S. beef export volumes for four categories of beef products, percentage change

Product	2004	2005	2006	2007
Bone in	29.2	28.7	27.8	26.8
Boneless	32.0	31.5	30.5	29.4
Carcasses	28.3	27.9	27.0	26.0
Offal	17.1	17.5	16.8	16.0

Source: Commission calculations with simulation framework discussed in appendix G.

Table 12.14 shows that overall exports of U.S. beef meat would increase by 30 percent if these restrictions were removed. Because of the increased demand for U.S. beef exports, the supply (domestic production) of U.S. beef meat would increase by about 3 percent. U.S. beef meat producer prices would increase by about 0.5 percent (table 12.15). As a result of increased competition from the United States in global beef markets, the price of U.S. beef imports would decline by about 1 percent and U.S. imports would increase by 1-2 percent.

TABLE 12.14 Estimated effects of removing tariffs and TRQs on U.S. beef products: Changes in U.S. beef meat volumes, percentage change

Product	2004	2005	2006	2007
Domestic production	3.2	3.2	3.1	3.0
Exports	31.4	30.8	29.9	28.8
Imports	1.1	1.3	1.6	2.0
Demand for domestic and imported	0.3	0.3	0.2	0.2

Source: Commission calculations with simulation framework discussed in appendix G.

TABLE 12.15 Estimated effects of removing tariffs and TRQs on U.S. beef products: Changes in U.S. beef meat prices, percentage change

Item	2004	2005	2006	2007
Producer price	0.4	0.4	0.5	0.6
Export price	6.6	6.5	6.5	6.4
Price of imports	-1.0	-1.1	-1.2	-1.4
Demand price (domestic and imported products)	-0.4	-0.4	-0.3	-0.2

Source: Commission calculations with simulation framework discussed in appendix G.

Table 12.16 shows estimated effects of the removal of tariffs and TRQs on the U.S. beef cattle industry. It is estimated that the producer price for U.S. beef cattle would increase by 1.1–1.3 percent. As a result of increased prices, the supply of U.S. beef cattle would expand by 3 percent. The U.S. beef cattle industry is estimated to gain $628 million–$1.085 billion in revenue, or about 4.2–4.3 percent.

TABLE 12.16 Estimated effects of removing tariffs and TRQs on U.S. beef products: Changes for U.S. beef cattle industry

Item	2004	2005	2006	2007
Supply volume, percentage change	3.0	3.0	3.0	2.9
Producer price, percentage change	1.1	1.2	1.3	1.3
Producer revenue				
Million dollar change	628	716	857	1,085
Percentage change	4.2	4.3	4.3	4.3

Source: Commission calculations with simulation framework discussed in appendix G.

Table 12.17 summarizes the estimated effects for the U.S. beef packing industry. It is estimated that the elimination of tariffs and TRQs would have increased the combined domestic and export sales of the U.S. beef packing industry by $1.3 billion in 2004, or about 3.8 percent of total sales. Estimated effects increase over time, and in 2007, the U.S. beef packing industry is estimated to gain $1.8 billion in sales. Most of the increases in sales are in beef meat.

TABLE 12.17 Estimated effects of removing tariffs and TRQs by year: Changes in sales revenue by the U.S. beef packer industry

Item	2004	2005	2006	2007
Beef meat: Packer sales	1,233	1,326	1,448	1,649
Beef offal: Packer sales	105	114	116	116
Total for beef packer industry	1,338	1,440	1,564	1,765

Source: Commission calculations with simulation framework discussed in appendix G.

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APPENDIX A
REQUEST LETTERS

United States Senate

COMMITTEE ON FINANCE
WASHINGTON, DC 20510-6200

August 7, 2007

The Honorable Daniel Pearson
Chairman
U.S. International Trade Commission
500 E Street, S.W.
Washington, DC 20436

Dear Chairman Pearson:

The future sustainability of the U.S. beef industry is highly dependent on access to global markets. Currently, restrictions on U.S. beef exports related to concerns over bovine spongiform encephalopathy (BSE), especially by Japan and South Korea, have hurt the domestic industry.

I am writing to request that the U.S. International Trade Commission (ITC) conduct an investigation under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)) regarding the effects of animal health, sanitary, and food safety measures on beef trade between the United States and its major trading partners. The report should cover the period 2002-2007, or the period from 2002 to the latest year for which data are available.

To the extent possible, the report should include the following:

- an overview of the U.S. and global markets for beef, including production, consumption, exports, and imports;
- information on animal health, sanitary, and food safety measures facing U.S. and other major beef exporters in major destination markets;
- information on other barriers to U.S. beef exports in major destination markets, including high tariffs, quotas, and import licensing and distribution systems; and,
- a qualitative and, to the extent possible, quantitative analysis of the economic effects of foreign animal health, sanitary, and food safety measures on U.S. beef exports.

The Commission should provide its completed report no later than ten months from receipt of this request. As we intend to make the report available to the public, we request that it not contain confidential business information.

Sincerely,

Max Baucus

United States Senate

COMMITTEE ON FINANCE

WASHINGTON, DC 20510–6200

January 29, 2008

The Honorable Daniel Pearson
Chairman
U.S. International Trade Commission
500 E St. SW
Washington, DC 20436

Dear Chairman Pearson:

In order to gain a better understanding of the economic effects of animal health, sanitary, and food safety measures on global beef trade, on August 7, 2007, I requested, pursuant to section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)), that the Commission institute an investigation and provide a report that provides an analysis of the effect of such measures. I asked that the Commission provide its report to the Committee no later than ten months from receipt of the request, or by June 6, 2008.

I am amending my request, and now ask that the Commission provide its completed report no later than September 8, 2008.

Sincerely,

Max Baucus

Max Baucus

APPENDIX B
FEDERAL REGISTER NOTICES

of Oregon was allowed to retain the collections for preservation.

In l959, human remains representing a minimum of eight individuals were removed from site 45–KL–18, also known as the Fountain Bar site, Klickitat County, WA, during an excavation by the University of Oregon prior to construction of the John Day Dam. No known individuals were identified. The 105 associated funerary objects are 1 net sinker, 3 projectile points, 1 preform, 1 chopper, 1 flaked cobble, 1 burin, 5 worked flakes, 5 uncategorized flakes, 3 pebbles, 1 worked antler, 3 dentalia, 6 lots of dentalia (i.e. 4 dentalium vials, 2 boxes of dentalia), 6 shell beads, 1 strand of shell beads, 3 shell pendants, 1 graphite pendant, 3 large disk beaks, 1 vial of large disk beads, 3 small disk beads, 2 small disk bead strands, 33 glass beads, 10 steatite beads, 1 large bead strand, 3 vials of large beads, 1 vial of small beads, 4 vials of assorted beads, 1 individual bead, and 1 vial of yellow ochre.

Site 45–KL–18 extends from the mouth of Rock Creek for more than two miles eastward along the now–inundated, north side shoreline of the Columbia River. The site is described as a severely–looted, vandalized and eroded lithic scatter and cemetery. Although no dates of occupation were obtained by the researchers, the burials were characterized as prehistoric. Based on the associated funerary objects, the human remains have been determined to be Native American.

In l959, human remains representing a minimum of six individuals were removed from the Harrison Site (35–GM–1), on the east bank of the John Day River at its confluence with the Columbia River, Gilliam County, OR, by University of Oregon in conjunction with studies undertaken prior to construction of the John Day Dam. No known individuals were identified. The 12 associated funerary objects are 5 stone drills, 1 bolas stone, 2 flakes, 3 red ochre pieces, and 1 soapstone item.

The Harrison Site is described as a camp site with a burial area and petroglyphs. Prior to federal acquisition of this property, the original landowners excavated much of the site area. No dates of site occupation were obtained by the researchers. Based on the associated artifacts, the human remains have been determined to be Native American.

The sites described above are within the traditional lands of the present–day Confederated Tribes of the Warm Springs Reservation of Oregon. The Confederated Tribes of the Warm Springs Reservation of Oregon are composed of three Wasco bands, four Warm Springs bands, and Northern Paiutes. The Columbia River–based Wasco were the easternmost group of Chinookan–speaking Indians. The Sahaptin–speaking Warm Springs bands lived farther east along the Columbia River and its tributaries. Northern Paiutes, who spoke a Uto–Aztecan language, historically occupied much of southeastern Oregon.

Officials of the U.S. Army Corps of Engineers, Portland District have determined that, pursuant to 25 U.S.C. 3001 (9–10), the human remains described above represent the physical remains of at least 14 individuals of Native American ancestry. Officials of the U.S. Army Corps of Engineers, Portland District have also determined that, pursuant to 25 U.S.C. 3001 (3)(A), the 117 objects described above are reasonably believed to have been placed with or near individual human remains at the time of death or later as part of the death rite or ceremony. Lastly, officials of the U.S. Army Corps of Engineers, Portland District have determined that, pursuant to 25 U.S.C. 3001 (2), there is a relationship of shared group identity that can be reasonably traced between the Native American human remains and associated funerary objects and the Confederated Tribes of the Warm Springs Reservation of Oregon.

Representatives of any other Indian tribe that believes itself to be culturally affiliated with the human remains and associated funerary objects should contact Daniel Mulligan, NAGPRA Coordinator, Environmental Resources Branch, U.S. Army Corps of Engineers, Portland District, P. O. Box 2946, Portland, OR 97208–2946, telephone (503) 808–4768, before October 19, 2007. Repatriation of the human remains and associated funerary objects to the Confederated Tribes of the Warm Springs Reservation of Oregon may proceed after this date if no additional claimants come forward.

The U.S. Army Corps of Engineers, Portland District is responsible for notifying the Confederated Tribes of the Warm Springs Reservation of Oregon that this notice has been published.

Dated: August 30, 2007.

Sherry Hutt,

Manager, National NAGPRA Program.

[FR Doc. E7–18487 Filed 9–18–07; 8:45 am]

BILLING CODE 4312–50–S

INTERNATIONAL TRADE COMMISSION

[Inv. No. 332–488]

Global Beef Trade: Effects of Animal Health, Sanitary, Food Safety, and Other Measures on U.S. Beef Exports

AGENCY: United States International Trade Commission.

ACTION: Institution of investigation and scheduling of hearing.

SUMMARY: Following receipt on August 7, 2007, of a request from the United States Senate Committee on Finance (Committee) under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332(g)), the Commission instituted investigation No. 332–488, *Global Beef Trade: Effects of Animal Health, Sanitary, Food Safety, and Other Measures on U.S. Beef Exports.*

DATES: *October 15, 2007:* Deadline for filing requests to appear at public hearing.

October 22, 2007: Deadline for filing pre-hearing briefs and statements.

November 15, 2007: Public hearing.

November 23, 2007: Deadline for filing post-hearing briefs and statements.

February 29, 2008: Deadline for all other submissions.

June 6, 2008: Transmittal of Commission report to the Senate Committee on Finance.

ADDRESSES: All Commission offices, including the Commission's hearing rooms, are located in the United States International Trade Commission Building, 500 E Street, SW., Washington, DC. All written submissions should be addressed to the Secretary, United States International Trade Commission, 500 E Street, SW., Washington, DC 20436. The public record for this investigation may be viewed on the Commission's electronic docket (EDIS) at *http://edis.usitc.gov.*

FOR FURTHER INFORMATION CONTACT: Project leader John N. Giamalva (202–205–3329 or *john.giamalva@usitc.gov*) or deputy project leader Joe Kowalski (202–205–3323 or *joseph.kowalski@usitc.gov*) for information specific to this investigation. For more information on legal aspects of the investigation, contact William Gearhart of the Commission's Office of the General Counsel at 202–205–3091 or *william.gearhart@usitc.gov.* The media should contact Margaret O'Laughlin, Office of External Relations at 202–205–1819 or *margaret.olaughlin@usitc.gov.* Hearing impaired individuals are advised that information on this matter

can be obtained by contacting the TDD terminal at 202–205–1810. General information concerning the Commission may also be obtained by accessing its internet server (*http://www.usitc.gov*). The public record for this investigation may be viewed on the Commission's electronic docket (EDIS-ONLINE) at *http://edis.usitc.gov.* Persons with mobility impairments who will need special assistance in gaining access to the Commission should contact the Office of the Secretary at 202–205–2000.

Background: As requested by the Committee, the Commission will conduct an investigation under section 332(g) and prepare a report regarding the effects of animal health, sanitary, and food safety measures on beef trade between the United States and its major trading partners. The Commission's report will cover the period 2002–2007, to the extent data are available.

As requested by the Committee, the Commission will include the following information in its report, to the extent possible: (1) An overview of the U.S. and global markets for beef, including production, consumption, exports, and imports; (2) information on animal health, sanitary, and food safety measures facing U.S. and other major beef exporters in major destination markets; (3) information on other barriers to U.S. beef exports in major destination markets, including high tariffs, quotas, and import licensing and distribution systems; and (4) a qualitative and, to the extent possible, quantitative analysis of the economic effects of foreign animal health, sanitary, and food safety measures on U.S. beef exports. The Commission expects to deliver the report to the Committee by June 6, 2008.

Public Hearing: A public hearing in connection with this investigation will be held at the U.S. International Trade Commission Building, 500 E Street SW., Washington, DC, beginning at 9:30 a.m. on November 15, 2007. Requests to appear at the public hearing should be filed with the Secretary, no later than 5:15 p.m., October 18, 2007, in accordance with the requirements in the ''Written Submissions'' section below. In the event that, as of the close of business on October 18, 2007, no witnesses are scheduled to appear at the hearing, the hearing will be canceled. Any person interested in attending the hearing as an observer or nonparticipant may call the Secretary to the Commission (202–205–2000) after October 15, 2007, for information concerning whether the hearing will be held.

Written Submissions: In lieu of or in addition to participating in the hearing, interested parties are invited to submit written statements and briefs concerning this investigation. All written submissions, including requests to appear at the hearing, statements, and briefs, should be addressed to the Secretary. Pre-hearing briefs and statements should be filed not later than 5:15 p.m., October 22, 2007; and post-hearing briefs and statements should be filed not later than 5:15 p.m., November 23, 2007. All other submissions should be filed not later than 5:15 p.m., February 29, 2008. All written submissions must conform with the provisions of section 201.8 of the Commission's *Rules of Practice and Procedure* (19 CFR 201.8). Section 201.8 requires that a signed original (or a copy so designated) and fourteen (14) copies of each document be filed. In the event that confidential treatment of a document is requested, at least four (4) additional copies must be filed, in which the confidential information must be deleted (see the following paragraph for further information regarding confidential business information). The Commission's rules authorize filing submissions with the Secretary by facsimile or electronic means only to the extent permitted by section 201.8 of the rules (see Handbook for Electronic Filing Procedures, *http://www.usitc.gov/secretary/fed_reg_notices/rules/documents/handbook_on_electronic_filing.pdf).* Persons with questions regarding electronic filing should contact the Secretary (202–205–2000).

Any submissions that contain confidential business information must also conform with the requirements of section 201.6 of the *Commission's Rules of Practice and Procedure* (19 CFR 201.6). Section 201.6 of the rules requires that the cover of the document and the individual pages be clearly marked as to whether they are the ''confidential'' or ''non-confidential'' version, and that the confidential business information be clearly identified by means of brackets. All written submissions, except for confidential business information, will be made available in the Office of the Secretary to the Commission for inspection by interested parties.

In its request letter, the Committee states that it intends to make the Commission's report available to the public, in its entirety, and asked that the Commission not include any confidential business information in the report it sends to the Committee. Consequently, the report that the Commission sends to the Committee will not contain any such information. Any confidential business information received by the Commission in this investigation and used in preparing the report will not be published in a manner that would reveal the operations of the individual or firm supplying the information.

Issued: September 13, 2007.

By order of the Commission.

Marilyn R. Abbott,

Secretary to the Commission.

[FR Doc. E7–18407 Filed 9–18–07; 8:45 am]

BILLING CODE 7020–02–P

INTERNATIONAL TRADE COMMISSION

[Investigation No. 332–493]

Advice Concerning Possible Modifications to the U.S. Generalized System of Preferences, 2007 Review of Additions and Removals

AGENCY: United States International Trade Commission.

ACTION: Institution of investigation and scheduling of hearing.

SUMMARY: Following receipt on September 6, 2007 of a request from the United States Trade Representative (USTR) under section 332(g) of the Tariff Act of 1930 (19 U.S.C. 1332 (g)), the Commission instituted investigation No. 332–493, *Advice Concerning Possible Modifications to the U.S. Generalized System of Preferences, 2007 Review of Additions and Removals.*

DATES: *September 25, 2007:* Deadline for filing requests to appear at the public hearing.

September 26, 2007: Deadline for filing pre-hearing briefs and statements.

October 16, 2007: Public hearing.

October 24, 2007: Deadline for filing post-hearing briefs and statements and other written submissions.

December 19, 2007: Transmittal of report to USTR.

ADDRESSES: All Commission offices, including the Commission's hearing rooms, are located in the United States International Trade Commission Building, 500 E Street, SW., Washington, DC. All written submissions, including requests to appear at the hearing, statements, and briefs, should be addressed to the Secretary, United States International Trade Commission, 500 E Street, SW., Washington, DC 20436.

FOR FURTHER INFORMATION CONTACT: Information may be obtained from Cynthia B. Foreso, Project Leader, Office of Industries (202–205–3348 or *cynthia.foreso@usitc.gov)* or Eric Land, Deputy Project Leader, Office of

Authority: Federal Advisory Committee Act, Pub. L. 92–463, 5 U.S.C. Appendix 1, and the Office of Management and Budget's Circular No. A–63, Revised.

Dated: February 1, 2008.

Chris C. Oynes,

Associate Director for Offshore Minerals Management.

[FR Doc. E8–3288 Filed 2–20–08; 8:45 am]

BILLING CODE 4310–MR–P

INTERNATIONAL TRADE COMMISSION

[Investigation No. 337–TA–603]

In the Matter of: Certain DVD Players and Recorders and Certain Products Containing Same; Notice of Commission Issuance of a Limited Exclusion Order Against the Infringing Products of Respondents Found in Default; Termination of Investigation

AGENCY: U.S. International Trade Commission.

ACTION: Notice.

SUMMARY: Notice is hereby given that the U.S. International Trade Commission has issued a limited exclusion order against the infringing products of Dongguan GVG Digital Products Ltd. and GVG Digital Technology Holdings Ltd. (collectively, the ''GVG respondents''), who were previously found in default, and has terminated the above-captioned investigation under section 337 of the Tariff Act of 1930, as amended, 19 U.S.C. 1337 (''section 337'').

FOR FURTHER INFORMATION CONTACT: Paul M. Bartkowski, Office of the General Counsel, U.S. International Trade Commission, 500 E Street, SW., Washington, DC 20436, telephone (202) 708–5432. Copies of non-confidential documents filed in connection with this investigation are or will be available for inspection during official business hours (8:45 a.m. to 5:15 p.m.) in the Office of the Secretary, U.S. International Trade Commission, 500 E Street, SW., Washington, DC 20436, telephone (202) 205–2000. General information concerning the Commission may also be obtained by accessing its Internet server (*http://www.usitc.gov*). The public record for this investigation may be viewed on the Commission's electronic docket (EDIS) at *http://edis.usitc.gov.* Hearing-impaired persons are advised that information on this matter can be obtained by contacting the Commission's TDD terminal on (202) 205–1810.

SUPPLEMENTARY INFORMATION: This investigation was instituted on May 8, 2007, based on a complaint filed by Toshiba Corporation of Tokyo, Japan and Toshiba America Consumer Products, L.L.C., of Wayne, New Jersey (collectively, ''Toshiba''). The complaint, as supplemented, alleges violations of section 337 of the Tariff Act of 1930 (19 U.S.C. 1337) in the importation into the United States, the sale for importation, and the sale within the United States after importation of certain DVD players and recorders and certain products containing the same by reason of infringement of certain claims of U.S. Patent Nos.: 5,587,991; 5,870,523; and 5,956,306. The complaint named over a dozen respondents, including the GVG respondents.

On June 25, 2007, Toshiba filed a motion for an order to show cause and for subsequent default judgment against the GVG respondents. On July 10, 2007, the ALJ issued an order requiring the GVG respondents to show cause by July 24, 2007, why they should not be found in default. No response to the show-cause order was received from either of the GVG respondents. Subsequently, the GVG respondents were found in default. All other respondents have been terminated from this investigation. Accordingly, the Commission requested briefing from interested parties and the public on remedy, the public interest, and bonding.

The Commission investigative attorney and Toshiba submitted briefing responsive to the Commission's request on January 4, 2008, and each proposed a limited exclusion order directed to the GVG respondents' accused products, and recommended allowing entry under bond of 100 percent of entered value during the period of Presidential review.

The Commission found that each of the statutory requirements of section 337(g)(1)(A)–(E), 19 U.S.C. 1337(g)(1)(A)–(E), has been met with respect to the defaulting respondents. Accordingly, pursuant to section 337(g)(1), 19 U.S.C. 1337(g)(1), and Commission rule 210.16(c), 19 CFR 210.16(c), the Commission presumed the facts alleged in the complaint to be true.

The Commission determined that the appropriate form of relief in this investigation is a limited exclusion order prohibiting the unlicensed entry of certain DVD players and recorders and products containing same by reason of infringement of claims 6 and 7 of U.S. Patent No. 5,587,991, claim 31 of U.S. Patent No. 5,870,523, and claim 4 of U.S. Patent No. 5,956,306, and that are manufactured abroad by or on behalf of, or imported by or on behalf of, the GVG respondents. The Commission further determined that the public interest factors enumerated in section 337(g)(1), 19 U.S.C. 1337(g)(1), do not preclude issuance of the limited exclusion order. Finally, the Commission determined that the bond under the limited exclusion order during the Presidential review period shall be in the amount of 100 percent of the entered value of the imported articles. The Commission's order was delivered to the President and the United States Trade Representative on the day of its issuance.

The Commission has terminated this investigation. The authority for the Commission's determination is contained in section 337 of the Tariff Act of 1930, as amended (19 U.S.C. 1337), and sections 210.16(c) and 210.41 of the Commission's Rules of Practice and Procedure (19 CFR 210.16(c) and § 210.41).

Issued: February 15, 2008.

By order of the Commission.

Marilyn R. Abbott,

Secretary to the Commission.

[FR Doc. E8–3205 Filed 2–20–08; 8:45 am]

BILLING CODE 7020–02–P

INTERNATIONAL TRADE COMMISSION

[Investigation No. 332–488]

Global Beef Trade: Effects of Animal Health, Sanitary, Food Safety, and Other Measures on U.S. Beef Exports

AGENCY: United States International Trade Commission.

ACTION: Change in deadline for filing written submissions and change in date for transmitting report.

SUMMARY: Following receipt of a letter dated January 29, 2008, from the Committee on Finance of the United States Senate (Committee) delaying the date for transmitting its report in investigation No. 332–488, *Global Beef Trade: Effects of Animal Health, Sanitary, Food Safety, and Other Measures on U.S. Beef Exports,* the Commission extended the time for filing written submissions in the investigation to May 6, 2008, and extended the time for transmitting its report to September 8, 2008.

January 30, 2008: Receipt of letter from the Committee.

May 6, 2008: New deadline for filing written submissions.

September 8, 2008: New date for transmitting the Commission's report to the Committee.

Background: In its original request, the Committee asked that the Commission provide its report in the

investigation by June 6, 2008. In its January 29, 2008, letter the Committee extended the time for providing the report to September 8, 2008. Following receipt of the Committee's letter, the Commission adjusted its internal work schedule and also extended the deadline for filing written submissions relating to the investigation from February 29, 2008, to May 6, 2008.

The Commission published notice of institution of the investigation in the **Federal Register** on September 19, 2007 (72 FR 53603). The notice is also available on the Commission Web site at *http://www.usitc.gov.* All other information about the investigation, including a description of the subject matter to be addressed, contact information, procedures for filing written submissions, and Commission addresses, remains the same as in the original notice. The public record for this investigation may be viewed on the Commission's electronic docket (EDIS) at: *http://www.usitc.gov/secretary/edis.htm.*

Issued: February 14, 2008.

By order of the Commission.

Marilyn R. Abbott,

Secretary to the Commission.

[FR Doc. E8–3128 Filed 2–20–08; 8:45 am]

BILLING CODE 7020–02–P

DEPARTMENT OF JUSTICE

Lodging of Consent Decree Under the Clean Water Act

Notice is hereby given that a proposed Consent Decree in *United States of America; Kansas Department of Health and Environment; and Roderick L. Bremby, Secretary, Kansas Department of Health and Environment* v. *Cyprus Amax Minerals Company,* Civil Action No. 08–1046–JTM–DWB, was lodged on February 13, 2008, with the United States District Court for the District of Kansas. The Consent Decree requires Cyprus Amax Minerals Company to pay $1,200,000.00 to resolve the claims of the United States and State of Kansas under Section 311(f) of the Clean Water Act, 33 U.S.C. 1321(f), and Kansas state law for natural resource damages at the Cherokee County Superfund Site (the ''Site'').

For thirty (30) days after the date of this publication, the Department of Justice will receive comments relating to the Consent Decree. Comments should be addressed to the Assistant Attorney General, Environment and Natural Resources Division, and either e-mailed to *pubcomment-ees.enrd@usdoj.gov* or mailed to P.O. Box 7611, U.S. Department of Justice, Washington, DC 20044–7611. In either case, the comments should refer to *United States* v. *Cyprus Amax Minerals Co.,* DOJ Ref. #90–11–2–1081A.

The proposed consent decree may be examined at the office of the United States Attorney, District of Kansas, 1200 Epic Center, 301 N. Main, Wichita, KS 67202. During the public comment period, the proposed consent decree may also be examined on this Department of Justice Web site: *http://www.usdoj.gov/enrd/Consent_Decrees.html.* A copy of the Consent Decree may also be obtained by mail from the Consent Decree Library, P.O. Box 7611, U.S. Department of Justice, Washington, DC 20044–7611, or by faxing or e-mailing a request to Tonia Fleetwood (*tonia.fleetwood@usdoj.gov*), fax no. (202) 514–0097, phone confirmation number (202) 514–1547. In requesting a copy from the Consent Decree Library, please enclose a check in the amount of $6.00 (25 cents per page reproduction cost) payable to the United States Treasury or, if by e-mail or fax, forward a check in that amount to the Consent Decree Library at the stated address.

Robert E. Maher, Jr.,

Assistant Section Chief, Environmental Enforcement Section, Environment and Natural Resources Division.

[FR Doc. E8–3140 Filed 2–20–08; 8:45 am]

BILLING CODE 4410–15–P

DEPARTMENT OF JUSTICE

Notice of Lodging of Settlement Agreement Pursuant to the Comprehensive Environmental Response, Compensation, and Liability Act (''CERCLA'')

Notice is hereby given that on February 8, 2008, a proposed Settlement Agreement in *In re Troy Mills, Incorporated* No. 1:01–bk–13341, was lodged with the United States Bankruptcy Court for the Northern District of West Virginia.

On March 19, 2004, the United States, on behalf of the Environmental Protection Agency (''EPA''), filed a Proof of Claim under Section 107(a) of the Comprehensive Environmental Response, Compensation, and Liability Act, as amended (''CERCLA''), 42 U.S.C. 9607(a), against the Debtor seeking recovery of $1,100,838 in past costs, plus all future costs incurred by EPA in responding to the release or threat of release of hazardous substances at the Troy Mills Superfund Site (''Site'') in Troy, New Hampshire. The Settlement Agreement provides that the United States will have an allowed administrative claim against the Debtor in the amount of $14,000,000 and be allowed to place a lien for this amount on Debtor's property at the Site. Additionally, Troy Mills will provide an easement to the State of New Hampshire protecting groundwater and the remedy at the Site.

The Department of Justice will receive for a period of thirty (30) days from the date of this publication comments relating to the Settlement Agreement. Comments should be addressed to the Assistant Attorney General, Environment and Natural Resources Division, and either e-mailed to *pubcomment-ees.enrd@usdoj.gov* or mailed to P.O. Box 7611, U.S. Department of Justice, Washington, DC 20044–7611. In either case, the comments should refer to *In re Troy Mills, Incorporated* No. 1:01–bk–13341, D.J. Ref. 90–11–3–08049.

The Settlement Agreement may be examined at the Office of the United States Attorney, Northern District of West Virginia, P.O. Box 591, Wheeling, WV 26003–0011 and at U.S. EPA Region I, One Congress Street, Suite 1100 SES, Boston, MA 02114–2023 (contact Senior Enforcement Counsel David Peterson). During the public comment period, the Settlement Agreement may also be examined on the following Department of Justice Web site, *http://www.usdoj.gov/enrd/Consent_Decrees.html.* A copy of the Settlement Agreement may also be obtained by mail from the Consent Decree Library, P.O. Box 7611, U.S. Department of Justice, Washington, DC 20044–7611 or by faxing or e-mailing a request to Tonia Fleetwood (*tonia.fleetwood@usdoj.gov*), fax no. (202) 514–0097, phone confirmation number (202) 514–1547. In requesting a copy from the Consent Decree Library, please enclose a check in the amount of $2.75 (25 cents per page reproduction cost) payable to the U.S. Treasury.

Ronald G. Gluck,

Assistant Chief, Environmental, Enforcement Section, Environment and Natural Resources Division.

[FR Doc. E8–2954 Filed 2–20–08; 8:45 am]

BILLING CODE 4410–15–P

DEPARTMENT OF JUSTICE

Drug Enforcement Administration

Importer of Controlled Substances; Notice of Registration

By Notice dated November 6, 2007 and published in the **Federal Register** on November 16, 2007, (72 FR 64680–

APPENDIX C
PROFILES OF MAJOR BEEF EXPORTING COUNTRIES

Profiles of Major Beef Exporting Countries

This appendix provides an overview of selected beef exporting countries during 2002–07.[1] Information is presented on production, consumption, and trade for Brazil, Argentina, Uruguay, Australia, and New Zealand.[2] Information is also included on the major animal health and sanitary measures affecting beef exports of these countries.

Brazil

Brazil emerged as a major player in the global beef market during 2002–07. In 2007, Brazil was the leading global beef exporter and ranked second in production. Ample natural resources, a suitable climate, a large and increasingly affluent domestic market, and export opportunities contributed to Brazil's rise.

Production

In 2005, Brazil surpassed the EU to become the second-largest producer of beef (table 2.1). Brazil accounted for 15.7 percent (by volume) of global production in 2007. This represents an increase of 2.5 percent from 2002 and was driven by higher domestic demand and increasing exports (table C.1).[3] Exports captured an increasing share of production during the period under review, reaching 23 percent in 2006 and 2007.

TABLE C.1 Beef: Brazil's production, export share of production, and consumption, 2002–07

Market data	2002	2003	2004	2005	2006	2007	Change 2002–07 (*percent*)
Production (1,000 mt cwe)	7,240	7,385	7,975	8,592	9,020	9,470	31
Export share of production (percent)	12	16	20	21	23	23	11
Consumption (1,000 mt cwe)	6,445	6,285	6,417	6,795	6,964	7,311	13

Source: USDA, FAS, PS&D database.

Brazil has the world's largest domestic cattle herd, nearly 200 million head in 2007, which is about twice the size of the U.S. herd.[4] The Brazilian cattle herd primarily consists of Nelore breeds, which are suited to Brazil's tropical climate. The majority of cattle are raised and finished on pasture. Cattle in feedlots account for only 2 percent of total production.[5]

[1] For the purpose of this investigation beef and offal are defined as products classified by the harmonized system under: 020110, 020120, 020130, 020210, 020220, 020230, 020610, 020621, 020622, 020629, 021020, and 160250.

[2] Although the EU is currently a large exporter of beef, it has become a net beef importer during the period under review. India primarily produces and exports meat from water buffalo and is not considered a major competitor for the purpose of this study.

[3] USDA, FAS, *Brazil: Livestock and Products Annual, 2007*, September 24, 2007, 6.

[4] USDA, FAS, *Brazil: Livestock and Products Annual, 2007*, September 24, 2007, 3.

[5] MLA, *Market Briefs: Brazil*, December, 2007, 5.

Biofuel production is affecting beef production in Brazil, as record crop prices are inducing farmers to increase acreage of sugarcane and soybeans. The majority of the domestic herd is located in the center-west (Mato Grosso, Goias, and Mato Grosso so Sul); however, cropland expansion is contributing to a shift in cattle production to the north of Brazil.[6] This shift is affecting productivity, as pastures are less productive in the north.

In addition to expanding domestically, Brazilian companies have pursued acquisitions throughout the world. In 2007, Brazilian companies purchased meatpacking plants in Australia, Italy, and the United States. JBS (Brazil) purchased Swift and Co. (U.S.) to become the largest meat packer in the world with a slaughtering capacity of over 51,000 head per day.[7] These plants allow Brazilian companies to access markets, such as Japan and Korea, which they would not be able to do with domestic Brazilian production because of FMD concerns.

Consumption

Brazil was the fourth-largest consumer of beef in 2007, accounting for about 12 percent of global consumption (table 2.2). This represents a slight increase compared with the level in 2002. Brazil ranked fifth in global per capita consumption in 2007, at 37 kg (table 2.3). This was up about 4 percent compared with the 2002 level. The increase was driven mainly by recent economic stability and rising per capita GDP.[8] In addition, increasing feed grain prices have raised the relative prices of chicken and pork.[9] Domestic production supplied the great bulk of Brazilian beef consumption during 2002–07.

Exports

Brazil is the world's largest exporter of beef (table 2.4). Brazilian beef exports increased 158 percent in quantity and 293 percent in value during 2002–07 (table C.2). Much of this increase was accounted for by exports to Russia (which rose more than 2,000 percent), the EU (170 percent), and Egypt (461 percent). In 2007, these countries accounted for 58 percent of the total quantity of Brazilian beef exports.

The EU has remained Brazil's largest market for beef during 2002–07. In 2007, the AUV of EU imports from Brazil was higher than Brazil's global average and indicates exports of high-value cuts. Recent developments, however, may be affecting these trade flows. In late 2007, the EU raised questions about Brazil's beef production system and in early 2008 decertified all Brazilian plants, effectively banning EU imports of Brazilian beef. Recertification of individual Brazilian export plants is currently underway. The uncertainty and time required

[6] Ibid., 4.
[7] Ibid., 9.
[8] USDA, FAS, *Brazil: Livestock and Products Annual, 2007*, September 24, 2007, 6.
[9] MLA, *Market Briefs: Brazil*, December 2007, 9.

TABLE C.2 Beef: Brazil's exports, by principal market, 2002–07

Market	2002	2003	2004	2006	2006	2007	Change 2002–07
	Quantity (*mt*)						Percent
EU	204,001	243,176	313,017	380,175	397,101	286,635	41
Russia	39,330	84,617	158,330	302,366	325,895	453,379	1,053
Egypt	49,270	77,847	122,634	152,539	207,002	183,345	272
United States	46,528	49,868	55,630	51,830	63,488	66,036	42
Hong Kong	35,937	48,877	53,997	54,439	67,585	90,975	153
ROW	239,081	327,801	460,191	388,670	445,749	506,031	112
Total	614,147	832,186	1,163,799	1,330,021	1,506,819	1,586,403	158
	Million *(U.S. dollars)*						
EU	493	638	992	1,137	1,387	1,330	170
Russia	46	102	243	565	756	975	2,013
Egypt	62	95	174	262	376	347	461
United States	119	149	198	206	275	327	174
Hong Kong	39	62	78	74	111	183	371
ROW	347	500	803	770	985	1,191	243
Total	1,107	1,545	2,487	3,014	3,890	4,354	293
	Unit value (*$/mt*)						
EU	2,416	2,622	3,169	2,992	3,494	4,640	92
Russia	1,173	1,200	1,532	1,869	2,321	2,151	83
Egypt	1,257	1,220	1,423	1,717	1,819	1,894	51
United States	2,567	2,992	3,551	3,976	4,328	4,958	93
Hong Kong	1,080	1,273	1,450	1,367	1,636	2,011	86
ROW	1,453	1,525	1,744	1,980	2,209	2,353	62
Average	1,802	1,857	2,137	2,266	2,582	2,744	52

Source: GTIS, Global Trade Atlas database.

Note: ROW denotes rest of the world.

to resume trade may limit the supply of Brazilian exports to the EU in the near future.[10]

The substantial growth of Brazilian exports to Russia corresponds to the discovery of BSE in the United States in 2003 and to Russia's strong economic growth stemming from oil and gas revenues. Russia and Brazil signed a meat inspection protocol in January 2008 that if implemented, will facilitate exports.[11] Despite increasing 83 percent during 2002–07, the AUV of Brazilian beef exports to Russia remained below Brazil's global average, indicating exports of lower-value cuts.

Although Brazil is currently the world's largest beef exporter, it is unable to access 60 percent of the world beef market due to FMD restrictions.[12] Recurring outbreaks of FMD currently limit Brazil to shipping thermally processed beef to

[10] USDA, FAS, *EU-27: Livestock and Products EU suspends Brazil beef imports; at least temporary 2008*, February 29, 2008, 2.

[11] USDA, FAS, *Russian Federation: Livestock and Products Semiannual, 2008*, March 5, 2008, 20.

[12] MLA, *Market Briefs: Brazil*, December 2007, 13.

Japan, Korea, and the United States.[13] Brazil is recognized by the OIE has having a controlled risk of BSE.[14]

Argentina

Argentina is a major beef producer, consumer, and exporter and is the leading global beef consumer on a per capita basis. Argentina imports virtually no beef. Government policies aimed at maintaining low domestic market prices have affected beef production and exports in recent years.

Production

Argentina continued as the fifth-largest beef producer in 2007, accounting for over 5 percent of global production (table 2.1). Argentine beef production increased 19 percent during 2002–07, but was flat during 2004–07 (table C.3). The share of production that is exported rose during 2002–05 but fell in 2006 and 2007. The increase in production was due to high domestic demand and increased market access for exports. The trends since 2005 reflected government policies aimed at maintaining low domestic market prices.

TABLE C.3 Beef: Argentina's production, export share of production, and consumption, 2002–07

Market data	2002	2003	2004	2005	2006	2007	Change 2002–07 (*percent*)
Production (1,000 mt cwe)	2,700	2,800	3,130	3,200	3,100	3,200	19
Export share of production (percent)	13	14	20	24	18	17	4
Consumption (1,000 mt cwe)	2,364	2,430	2,519	2,451	2,553	2,673	13

Source: USDA, FAS, PS&D database.

Argentine beef production is primarily grass fed with limited grain supplements. Argentina banned the use of growth hormones and antibiotics in 2004. These characteristics of production enable Argentina to market beef exports as healthy and natural. There has been little growth in Argentina's domestic cattle herd, with increased beef production stemming from increased carcass weights. In 2007, the herd was approximately 51 million head, approximately one-half the size of the U.S. herd.[15]

Certain domestic measures, such as minimum slaughter weights and price controls, have contributed to producer uncertainty. As a result, some producers have converted operations from cattle production to growing grains and soybeans.[16] This shift in operations was followed by a shift of cattle operations from the center of the country to the less arable northern section of the country.

[13] OIE, List of Foot and Mouth Disease (FMD) free countries, April 25, 2008.
[14] A further description of OIE risk categories for BSE is found in chap. 4.
[15] USDA, FAS, *Argentina: Livestock and Products Annual, 2007*, December 26, 2007, 5.
[16] USDA, ERS, "Global Market Opportunities Drive Beef Production Decisions in Argentina and Uruguay," April 2008, 25.

These areas are susceptible to FMD outbreaks because of their proximity to neighboring countries with FMD.

Consumption

Argentina was the world's largest per capita consumer of beef during 2002–07, with such consumption totaling approximately 66 kg in 2007 (table 2.2; table 2.3). Consumption is high, in part, because beef is inexpensive relative to other food products and is a staple component of the Argentine diet.[17] Beef plays a major role in Argentine household budgets, accounting for about 4.5 percent of the Argentine inflation index.[18] In 2005, higher beef prices in the export market created inflationary pressure in the domestic market. Consequently, the Argentine government began to enact a series of policies aimed at stabilizing domestic supplies and prices at the expense of exports.[19] This resulted in an initial decline in consumption during 2005 followed by increased consumption in the following years. Virtually all Argentine beef consumption is supplied by domestic production.

Exports

Argentine beef exports increased 207 percent during 2002–07, making Argentina the fourth-largest exporter in 2007 (table C.4; table 2.4). The factors contributing to Argentina's growth as a global beef exporter are similar to those affecting Brazil. Argentine beef exporters have focused on expanding exports of high-quality premium cuts, especially to the EU and Russia.[20] Exports to the EU declined in quantity by nearly one-third but more than doubled in value during 2002–07. This reflected a substantial increase in unit values, as Argentina's production practices enabled it to export premium products. Also, Argentina benefits from a portion of the "Hilton Quota," which increased to 29,000 mt in 2008.[21] The AUV of beef exported to the EU is much higher than for other markets. Argentine exports were also aided by trade restrictions placed on Brazil by the EU in 2007.[22] As the EU currently limits the number of Brazilian plants eligible to export, Argentina has increased exports to the EU market in response to the resulting shortfall.

Argentine beef exports to Russia increased from $122,000 in 2002 to $222 million in 2007. While Russia is Argentina's second-largest market by value, it is the largest by quantity. Exports were primarily led by lower-value frozen boneless cuts, with an AUV of less than $2,000 per mt. There are

[17] USDA, FAS, *Argentina: Livestock and Products Semiannual 2008*, February 29, 2008, 3.

[18] USDA, ERS, "Global Market Opportunities Drive Beef Production Decisions in Argentina and Uruguay," April 2008, 25.

[19] USDA, FAS, *Argentina: Livestock and Products, Argentine Government Takes Measures to Discourage Beef Exports*, December 2, 2005, 2.

[20] USDA, FAS, *Argentina: Livestock and Products Annual, 2006*, August 25, 2006, 4.

[21] The "Hilton Quota" is the name of the EU quota that is devoted for high-quality, high-value beef imports. It is discussed in chap. 7.

[22] USDA, FAS, *Argentina: Livestock and Products Annual, 2007*, December 26, 2007, 3.

TABLE C.4 Beef: Argentina's exports, by principal market, 2002–07

Market	2002	2003	2004	2006	2006	2007	Change 2002–07
	Quantity (*mt*)						Percent
EU	113,443	92,135	113,565	97,567	73,190	77,989	-31
Russia	125	23,881	96,445	194,045	192,428	119,915	95,832
Chile	251	20,269	15,110	59,137	28,120	58,161	23,072
Israel	10,368	20,008	33,752	28,002	22,320	27,364	164
United States	20,825	20,782	27,848	25,155	19,873	16,370	-21
ROW	110,298	111,227	185,376	173,115	110,289	152,907	39
Total	255,310	288,302	472,095	577,021	446,220	452,937	77
	Million *(U.S. dollars)*						
EU	297	333	461	497	501	625	110
Russia	0.1	28	149	345	425	222	182,093
Chile	0.2	32	30	143	91	181	76,814
Israel	15	31	64	61	62	78	418
United States	55	55	84	87	81	65	19
ROW	117	141	273	268	195	318	172
Total	485	620	1,061	1,403	1,355	1,489	207
	Unit value *($/mt*)						
EU	2,620	3,611	4,060	5,097	6,867	8,012	206
Russia	976	1,175	1,541	1,779	2,208	1,857	90
Chile	936	1,580	2,004	2,422	3,239	3,108	232
Israel	1,459	1,549	1,904	2,193	2,790	2,864	96
United States	2,644	2,669	3,006	3,463	4,090	3,997	51
ROW	1,058	1,267	1,474	1,550	1,765	2,078	96
Average	1,898	2,151	2,248	2,431	3,039	3,291	73

Source: GTIS, Global Trade Atlas database.

Note: ROW denotes rest of the world.

indications that the Russian market, historically a market for low-value cuts, is shifting toward buying higher-value muscle cuts.[23] If this trend continues, Argentina's main competitor will be Brazil, given the continued absence of U.S. beef in the Russian market.

While Argentina is recognized as having a negligible risk of BSE by the OIE, trade is limited by FMD concerns. Reoccurring outbreaks in the surrounding region, coupled with porous borders, mean that FMD will be a concern until the entire region is able to control it. Many countries, such as Japan, Korea, and the United States, only allow thermally processed products from Argentina due to FMD concerns. Disease concerns, government interventions, and farmer protests have left Argentina's beef supply and exports for 2008 uncertain.

Uruguay

Although Uruguay is not among the major global beef producers and exporters, its beef production and exports have increased substantially during 2002–07.

[23] Japanese industry representative, interview with Commission staff, April 15, 2008, Tokyo, Japan.

Uruguay is also the second-largest global beef consumer in per capita terms. In addition, Uruguay is recognized as FMD free with vaccination and as a low-risk BSE producer. Thus, Uruguay has the potential to greatly increase its exports of beef.

Production

Uruguayan beef production increased by 50 percent during 2002–06 before declining by 14 percent in 2007 (table C.5). Production has steadily increased since Uruguay's first achievement of FMD-free status in 1995 and is tied to its orientation toward exports.[24] The decrease in 2007 was the result of an insufficient cattle supply stemming from competition for land use. High crop prices have induced some producers to rent land to foreign investors to grow crops such as soybeans.[25]

TABLE C.5 Beef: Uruguay's production, export share of production, and consumption, 2002–07

Market data	2002	2003	2004	2005	2006	2007	Change 2002–07 (*percent*)
Production (1,000 mt cwe)	425	450	544	600	640	550	29
Export share of production (percent)	53	63	65	70	72	70	17
Consumption (1,000 mt cwe)	203	168	192	190	184	169	-17

Source: USDA, FAS, PS&D database.

Production is heavily influenced by Uruguay's ability to export beef. Uruguay, possessing a temperate climate allowing for year-round grazing, primarily raises grass-fed beef. In addition to the focus on grass-fed beef, Uruguay has instituted a mandatory ID/traceability system and has banned the use both of growth hormones and animal protein in feed. Uruguay markets these factors as safe and natural in an effort to expand export markets. Due to its grass-fed system and feed ban, Uruguay is recognized as a country with negligible BSE risk.[26]

In 2007, Uruguay's domestic cattle herd was approximately 12 million head, roughly one-ninth the size of the U.S. cattle population.[27] Cattle numbers are increasing, but beef production is increasing faster. This is the result of higher slaughter weights because most heavy carcasses are destined for export.[28] The domestic herd is composed of approximately 75 percent Hereford, 20 percent Angus, and 5–7 percent dairy cows.[29]

[24] USDA, ERS, "Global Market Opportunities Drive Beef Production Decisions in Argentina and Uruguay," April 2008, 25.

[25] USDA, FAS, *Uruguay: Livestock and Products Annual, 2007*, September 14, 2007, 5.

[26] As of April 25, 2008. OIE, *BSE Resolution No. XXIV*.

[27] USDA, FAS, *Uruguay: Livestock and Products Annual, 2007*, September 14, 2007, 9.

[28] Clement, "Uruguayan beef to the German Market: A SWOT analysis," 2008, 8.

[29] USDA, ERS, "Beef Production, Markets, and Trade in Argentina and Uruguay: An Overview," September 2007, 3.

Consumption

Uruguay was the second-largest global beef consumer in 2007, in per capita terms, at 53 kg (table 2.2; table 2.3)[30] but, with a population of less than 3.5 million, accounted for less than 1 percent of world consumption that year. Total consumption has decreased by 17 percent during 2002–07. The largest decrease occurred in 2003. This corresponded to the OIE designating Uruguay as FMD free with vaccination and the subsequent reopening of export markets. Imports supply a minor share of Uruguayan beef consumption. Beef is the most popular animal protein consumed in Uruguay. The most popular cut is rib plate but there is increasing demand for less expensive cuts. This is a result of the upward price pressure from increased exports.[31]

Exports

The beef sector is an important component of the Uruguayan economy, accounting for 25 percent of the country's total export value.[32] Uruguayan beef exports increased 218 percent during 2002–07, making Uruguay the seventh-largest global beef exporter, by value, in 2007 (table 2.4; table C.6). Currently, Uruguay exports approximately 70 percent of its beef production. This increase from 53 percent in 2002 is a result of the facilitation of exports by the government of Uruguay as well as Uruguay's status of FMD free with vaccination.[33] This has resulted in Uruguay increasing its market share in many international markets (table C.6).

The reopening of the U.S. market in 2003 was responsible for the bulk of Uruguay's increased exports. While the United States does not recognize Uruguay as free from FMD, it allows beef imports under certain conditions.[34] The United States accounted for 36 percent of Uruguay's beef exports by value and 43 percent by quantity in 2007. The AUV of beef exported to the United States was much lower than beef exported for the EU market. The main beef cuts exported to the United States in 2006 were frozen boneless fore and hindquarters and trimmings.[35] These cuts are primarily used for the manufacture of ground beef.

In addition to increased exports to the United States, Uruguay has realized substantial export growth to the EU. Uruguay's ID/traceability system was the first such system sanctioned by the EU.[36] Whereas the United States mainly imports beef to be used as ground meat, the EU imports more expensive cuts under the Hilton Quota. In 2007 the EU accounted for 12 percent of total exports

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[30] USDA, FAS, *Uruguay: Livestock and Products Annual, 2007*, September 14, 2007, 5.
[31] Ibid., 6.
[32] Clement, "Uruguayan beef to the German Market: A SWOT analysis," 2008, 5.
[33] USDA, ERS, "Beef Production, Markets, and Trade in Argentina and Uruguay: An Overview," September 2007, 2.
[34] 9 CFR 94.22.
[35] USDA, FAS, *Uruguay: Livestock and Products Annual, 2007*, September 14, 2007, 4.
[36] Clement, "Uruguayan beef to the German Market: A SWOT analysis," 2008, 7.

TABLE C.6 Beef: Uruguay's exports, by principal market, 2002–07

Market	2002	2003	2004	2006	2006	2007	Change 2002–07
	Quantity (*mt*)						Percent
United States	3,311	54,067	154,553	202,361	111,517	121,132	3,558
EU	38,122	22,810	21,601	28,265	34,811	33,729	-12
Russia	11,735	7,068	633	3,505	72,140	27,741	136
Canada	1,838	38,736	28,936	14,588	8,803	21,264	1,057
Israel	27,326	21,743	9,493	7,069	16,100	11,338	-59
ROW	81,454	62,680	42,140	47,033	92,782	67,453	-17
Total	163,786	207,105	257,357	302,822	336,153	282,656	73
	Million (*U.S. dollars*)						
United States	8	114	355	476	287	315	3,627
EU	98	80	105	136	198	224	129
Russia	12	6	1	6	187	69	483
Canada	3	64	74	41	26	58	1,858
Israel	48	37	22	18	49	37	-23
ROW	106	89	81	96	244	173	63
Total	275	389	638	773	991	876	218
	Unit value *($/mt)*						
United States	2,555	2,106	2,294	2,354	2,573	2,603	2
EU	2,568	3,486	4,864	4,808	5,674	6,641	158
Russia	1,005	914	1,202	1,666	2,593	2,479	146
Canada	1,617	1,641	2,559	2,796	2,949	2,736	69
Israel	1,741	1,691	2,321	2,589	3,038	3,229	86
ROW	1,307	1,423	1,933	2,034	2,632	2,566	96
Average	1,680	1,880	2,479	2,552	2,947	3,099	85

Source: GTIS, Global Trade Atlas database.

Note: ROW denotes rest of the world.

by quantity but 24 percent by value, indicating the prevalence high-value cuts.[37] Uruguay has gained market share in the EU due, in part, to events limiting imports of Brazilian and Argentine beef.

Uruguay was recognized by the OIE as FMD free with vaccination in 2002. OIE guidelines permit the export of all cuts of fresh and frozen beef to any country in accordance with the provisions of Chapter 2.2.10 of the OIE's Terrestrial Code.[38] In practice, Uruguay does not have access to Korean or Japanese markets due to FMD concerns.[39] Continuing FMD concerns are a result of problems in Uruguay's geographic neighbors, Brazil and Argentina. Both countries have experienced repeated outbreaks of FMD, and porous borders heighten the perception of FMD risk (held by many countries) regarding Uruguayan beef exports.

[37] Ibid., 11.

[38] OIE, List of Food and Mouth Disease (FMD) free countries, April 25, 2008.

[39] Japanese industry representative, interview with Commission staff, April 15, 2008, Tokyo, Japan.

Australia

Although Australia ranked eighth among leading global beef producers in 2007, it was the second-largest beef exporter that year (table 2.1). Australia benefits from ample natural resources, although recent droughts have affected beef production and exports.

Production

Australian beef production has remained relatively constant in recent years, accounting for approximately 4 percent of global production in 2007 (table 2.1). Production increased 5 percent during this time, with an average of two-thirds of production destined for export (table C.7). The domestic market, Japan, Korea, and the United States accounted for 95 percent of total Australian production in 2005.[40] Severe droughts throughout the period contributed to increased slaughter numbers at lower carcass weights. Consequently, current beef production may be constrained by herd rebuilding.

TABLE C.7 Beef: Australia's production, export share of production, and consumption, 2002–07

Market data	2002	2003	2004	2005	2006	2007	Change 2002–07 (*percent*)
Production (1,000 mt cwe)	2,089	2,073	2,081	2,102	2,183	2,197	5
Export share of production (percent)	64	60	66	66	66	64	0
Consumption (1,000 mt cwe)	718	808	771	759	747	743	3

Source: USDA, FAS, PS&D database.

Australia's domestic beef system is a hybrid of grass-fed and grain-fed. While cattle are primarily fed by foraging on pasture, Australia has developed a feedlot industry with a capacity of almost 1 million head. This expansion was, in part, due to the BSE-related ban on exports of U.S. grain-fed beef that provided an opportunity to access the Japanese market, where consumers prefer grain-finished beef.[41] In fact, some Australian feedlots were purchased by Japanese companies to provide a consistent supply for the Japanese market.[42] The primary feed grains are sorghum, wheat, and barley.

There are two kinds of beef cattle production in Australia. In the north (Queensland, the Northern Territory, and upper regions of Western Australia), cattle are run extensively on large cattle ranches where they graze on pastures. The breeds used here are from Indian stock and are well suited for the hot climate.[43] The main product of this sector is manufacturing beef destined for the United States. In the south, cattle are grazed more intensively on smaller farms with pastures and feed crops. The temperate climate dictates the use of animals

[40] USDA, FAS, *Australia: Livestock and Products Annual, 2005*, September 23, 2005, 1.

[41] Japanese meat industry representative, interview with Commission staff, April 15, 2008, Tokyo, Japan.

[42] Ibid.

[43] ABARE, "Korean and Australian Beef: markets and prospects for trade," December 2004, 19, 20.

from British stock. The industry here supplies smaller, younger animals primarily destined for the Australian domestic market and for the Japanese market. Feedlots in the north and the south are located close to grain-growing areas.[44] In 2007, Australia's domestic cattle herd was approximately 29 million head, approximately one-third the size of the U.S. herd.[45]

Consumption

In terms of annual per capita consumption, Australia ranked sixth, at 37 kg in 2007 (table 2.3). However, relative to large beef consuming countries, Australian consumption is small, accounting for less than 2 percent of global consumption in 2007. Australian beef consumption grew 3 percent from 718,000 mt in 2002 to 743,000 mt in 2007. Growth was uneven, with a large increase in 2003 and a gradual decline through 2007. This trend corresponds to the beginning of a severe drought in 2002 that led to higher slaughter rates.[46] Falling prices, caused by increased slaughter as a result of drought, led to increases in consumption.[47]

The domestic market is important for Australia's beef industry and accounts for, on average, one-third of total production. Similar to the United States, beef consumption is well established in Australia. Of the approximately 35 percent of Australian production that is consumed domestically, 68 percent is sold through retail channels, with food service representing 27 percent, and processing accounting for the other 5 percent.[48]

Exports

In 2007, Australia was the world's second-largest exporter of beef (table 2.4). Australia's beef exports increased 7 percent by quantity and 75 percent by value during 2002–07 (table C.8). The bulk of this increase resulted from export growth to Japan and Korea and corresponded to the absence of the United States from both markets due to BSE-related restrictions.

In 2002, Japan and Korea accounted for 39 percent of the value of Australian beef exports. In 2007, this share grew to 61 percent. The growth of these markets resulted both from an expansion of exports of grass-fed beef and a large increase in exports of grain-fed beef. Exports to Japan primarily consist of chilled full sets and frozen trimmings.[49] Unlike the United States, which shipped specific cuts desired by the Japanese market, Australian full sets leave importers with undesirable cuts. Tenderloins and chuck rolls are the most popular chilled beef cuts exported to Korea, while bone-in quarters and short ribs are the most popular

[44] MLA, "Australian Beef Production," udated.
[45] USDA, FAS, *Australia: Livestock and Products Annual, 2007*, September 20, 2007, 11.
[46] USDA, FAS, *Australia: Livestock and Products Semiannual, 2003*, February 5, 2003, 8.
[47] ABARE, "Australian Beef Industry," 2003, 8.
[48] MLA, "Domestic Markets," undated.
[49] ABARE, "Korean and Australian Beef: Markets and Prospects for Trade," December 2004, 55.

TABLE C.8 Beef: Australia's exports, by principal market, 2002–07

Market	2002	2003	2004	2006	2006	2007	Change 2002–07
	Quantity (*mt*)						Percent
Japan	251,056	303,735	437,656	458,695	450,850	417,208	66
United States	393,386	382,164	360,016	327,662	306,113	302,605	-23
Korea	97,837	75,751	116,646	146,279	187,953	184,367	88
Taiwan	36,697	33,701	29,193	34,736	31,572	32,428	-12
Indonesia	28,721	26,949	16,939	19,841	28,694	41,896	46
ROW	234,145	153,267	116,438	108,907	132,425	139,589	-40
Total	1,041,843	975,567	1,076,887	1,096,121	1,137,605	1,118,093	7
	Million (*U.S. dollars*)						
Japan	715	988	1,859	2,091	1,899	1,794	151
United States	884	916	1,036	933	923	974	10
Korea	207	194	396	511	685	738	256
Taiwan	86	88	99	126	110	109	27
Indonesia	40	40	33	42	55	93	131
ROW	452	329	306	305	396	455	1
Total	2,384	2,556	3,729	4,008	4,068	4,163	75
	Unit value (*$/mt*)						
Japan	2,849	3,254	4,247	4,559	4,211	4,300	51
United States	2,246	2,396	2,878	2,848	3,014	3,217	43
Korea	2,119	2,564	3,398	3,492	3,646	4,000	89
Taiwan	2,339	2,617	3,386	3,637	3,476	3,358	44
Indonesia	1,406	1,502	1,958	2,092	1,932	2,227	58
ROW	1,929	2,148	2,625	2,804	2,992	3,331	73
Average	2,288	2,620	3,463	3,657	3,576	3,723	63

Source: GTIS, Global Trade Atlas database.

Note: ROW denotes rest of the world.

frozen cuts.[50] Despite the rise in exports, the inability of Australian producers to supply specific cuts (rather than full sets) is a marketing disadvantage.[51]

The U.S. market, while no longer Australia's leading export destination, remains significant. Australian exports to the United States consist mainly of lean grass-fed trim. This trim is mixed with higher-fat content domestic trim to produce various grades of lean ground beef.[52] This is a low-value product with an AUV well below that for Australia's global exports. The recent appreciation of the Australian dollar relative to the U.S. dollar, however, is decreasing the cost competitiveness of Australian trim in the U.S. domestic market.

[50] Ibid., 56.

[51] Japanese industry representative, interview with Commission staff, April 15, 2008, Tokyo, Japan.

[52] For example, a retail package of ground beef marked 93/7 indicates a lower fat content versus a package marked 80/20.

Approximately 70 percent of total Australian beef exports are shipped frozen.[53] In 2007, over 85 percent of exports to the United States were shipped frozen, approximately 81 percent to Korea, and 53 percent to Japan. This larger percentage of fresh or chilled beef destined for the Japanese market may indicate a consumer preference and willingness to pay a premium.

Australian beef exports are enhanced by the industry's disease-free status. The OIE recognizes Australia as free from FMD and having a negligible risk of BSE. These designations enable Australia to export beef globally without facing constraints posed by animal disease-related regulations. However, market forces dictate that producers in Australia reportedly must adhere to more stringent BSE-related regulations in order to ship to Japan.[54]

New Zealand

New Zealand is not among the global leaders in beef production and consumption. However, owing to a large dairy cow herd and favorable resources and climate, New Zealand is a long-standing beef exporter. New Zealand's disease-free status benefits its beef exports.

Production

New Zealand is not a major global beef producer, accounting for 1 percent of the global total. However, 80 percent of production is destined for export markets (table C.9). Production increased irregularly by 4 percent during 2000–07. Increases in 2003 and 2004 resulted from higher prices in Asian export markets that led to increased slaughter.[55] The subsequent decline resulted from retention of dairy cows for milk production and the appreciation of the New Zealand dollar relative to the U.S. dollar.[56]

New Zealand is a major dairy exporter, and its beef production is highly dependent on culled dairy cows. Nearly 60 percent of cattle slated for export beef production are culled dairy cows.57 Recent increases in global dairy prices may affect future beef production if more cows are kept for dairy herd building. The

TABLE C.9 Beef: New Zealand's production, export share of production, and consumption, 2002–07

Market data	2002	2003	2004	2005	2006	2007	Change 2002–07 (*percent*)
Production (1,000 mt cwe)	589	693	720	699	645	610	4
Export share of production (percent)	81	79	83	83	82	81	0
Consumption (1,000 mt cwe)	132	157	136	130	124	126	-5

Source: USDA, FAS, PS&D database.

[53] GTIS, Global Trade Atlas database.
[54] Japanese meat industry representative, interview with Commission staff, April 15, 2008, Tokyo, Japan.
[55] USDA, FAS, *New Zealand: Livestock and Products Annual, 2004*, August 25, 2004, 5–6.
[56] USDA, FAS, *New Zealand: Livestock and Products Annual, 2006*, September 22, 2006, 2.
[57] Ibid., 5.

current record-high dairy prices are inducing some farms to convert from beef to dairy.[58] Large capital requirements and a time lag to convert from beef to dairy production may take several years to manifest. This trend would result in an even greater proportion of beef originating from culled dairy cows, which could limit New Zealand's ability to export higher-quality beef to Asian markets.

New Zealand has a temperate climate with mild winters that allow year-round pasture grazing. Due to the high price of grain relative to pasture, the majority of cattle in New Zealand are raised and finished on pasture. In 2007, New Zealand's cattle herd was about 9.6 million, about one-tenth the size of the U.S. herd.[59] The size of the herd has remained stable, with increasing dairy cows compensating for the decreasing beef cattle herd.

Consumption

New Zealand is not a large consumer of beef, accounting for less than one-half of 1 percent of the world total in 2007. In terms of per capita consumption, however, New Zealand ranked fourth in 2007, at 38 kg (table 2.3). Imports accounted for 6–14 percent of New Zealand beef consumption during 2002–07. Over 90 percent of imports originated from Australia and primarily consisted of prepared or preserved meat.[60]

Exports

In 2007, New Zealand was the world's fifth-largest exporter of beef and offal (table 2.4). New Zealand's beef exports increased 5 percent in quantity and 54 percent in value during 2002–07 (table C.10).[61] Exports to Japan and Korea account for much of this increase. Exports to these countries rose substantially in 2004, owing mainly to the absence of the United States from both markets because of BSE-related concerns. A small decline in exports in 2007 compared with the previous year represents a decrease in per head slaughter weights.[62]

In 2007, the United States remained New Zealand's largest export market for beef, accounting for 40 percent by value and 52 percent by quantity of total exports. Similar to Australia, most beef exports from New Zealand to the United States are grass-fed lean trim to be used in the production of ground beef. Other lower-value cuts, used in the production of pastrami and other similar products, are another important component of exports to the United States.[63]

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[58] USDA, FAS, *New Zealand: Livestock and Products Annual, 2007*, October 1, 2007, 4.
[59] USDA, FAS, PS&D database.
[60] GTIS, Global Trade Atlas database.
[61] USDA, FAS, *Livestock and Poultry: World Markets and Trade*, April 2008, 12.
[62] USDA, FAS, *New Zealand: Livestock and Products Annual, 2007*, October 1, 2007, 11.
[63] USDA, FAS, *New Zealand: Livestock and Products Annual, 2005*, September 1, 2005, 6.

TABLE C.10 Beef: New Zealand's exports, by principal market, 2002–07

Market	2002	2003	2004	2006	2006	2007	Change 2002–07
			Quantity (*mt*)				Percent
United States	205,992	225,623	213,989	204,629	188,638	170,477	-17
Japan	20,000	23,850	43,764	48,242	44,894	40,212	101
Korea	21,822	31,046	55,536	51,145	51,125	45,950	111
Taiwan	15,366	22,820	30,847	29,960	23,147	21,135	38
Canada	41,757	41,810	29,693	29,898	24,770	25,854	-38
ROW	62,935	82,389	91,035	87,567	79,804	81,968	30
Total	367,872	427,538	464,865	451,442	412,378	385,596	5
			Million *(U.S. dollars)*				
United States	472	523	619	602	544	510	8
Japan	49	75	189	244	191	177	263
Korea	44	73	159	165	162	155	252
Taiwan	43	72	115	119	89	87	104
Canada	95	90	78	81	69	77	-18
ROW	132	187	243	254	241	280	113
Total	833	1,019	1,403	1,464	1,295	1,287	54
			Unit value (*$/mt*)				
United States	2,289	2,320	2,894	2,940	2,883	2,991	31
Japan	2,435	3,131	4,320	5,051	4,246	4,397	81
Korea	2,024	2,341	2,860	3,227	3,164	3,379	67
Taiwan	2,789	3,145	3,716	3,966	3,836	4,132	48
Canada	2,264	2,141	2,638	2,697	2,791	2,997	32
ROW	2,090	2,269	2,666	2,898	3,022	3,419	64
Average	2,266	2,383	3,018	3,242	3,141	3,338	47

Source: GTIS, Global Trade Atlas database.

Note: ROW denotes rest of the world.

After increasing during 2002–04, New Zealand beef exports to the United States declined in subsequent years. Much of this decrease is attributable to trade diversion to Japan and Korea.[64] Following the United States, Japan and Korea were the next largest markets for New Zealand beef exports in 2007. An increase in exports to these markets was the result of the absence of U.S. beef exports and Australia's inability to meet demand. The AUV of New Zealand's beef exports to Japan and Korea is much greater than that for such exports to the United States, indicating that higher-value cuts are going to East Asia. However, due to its grass-fed system, New Zealand has a limited role in these markets. These Asian markets prefer well-marbled beef, consistent with grain-finished cattle. Approximately 80 percent of New Zealand's exports to Japan are destined for the food service industry.[65]

Similar to Australia, New Zealand's ability to export beef is enhanced by its disease-free status. The OIE recognizes New Zealand as free from FMD and

[64] USDA, FAS, *New Zealand: Livestock and Products Annual, 2007*, October 1, 2007, 12.

[65] Japanese meat industry representative, interview with Commission staff, April 15, 2008, Tokyo, Japan.

having a negligible risk of BSE. These designations enable New Zealand to export beef globally without facing constraints posed by animal disease-related regulations. However, New Zealand reportedly must adhere informally to more stringent BSE-related regulations in order to ship to Japan.[66]

[66] Ibid.

APPENDIX D
LITERATURE REVIEW

Review of Literature

A number of economic studies have examined the impact of animal health, sanitary, food safety, and other measures on U.S. beef exports. Many of these studies have focused on the impact of BSE on U.S. beef and beef products, while others have examined the role of FMD and EU restrictions on beef from cattle treated with growth hormones. Another study evaluated the welfare losses from Japanese beef quotas. These studies are discussed below in terms of their relevance for economic modeling and how such restrictions affect U.S. beef exports.

BSE Economic Effects

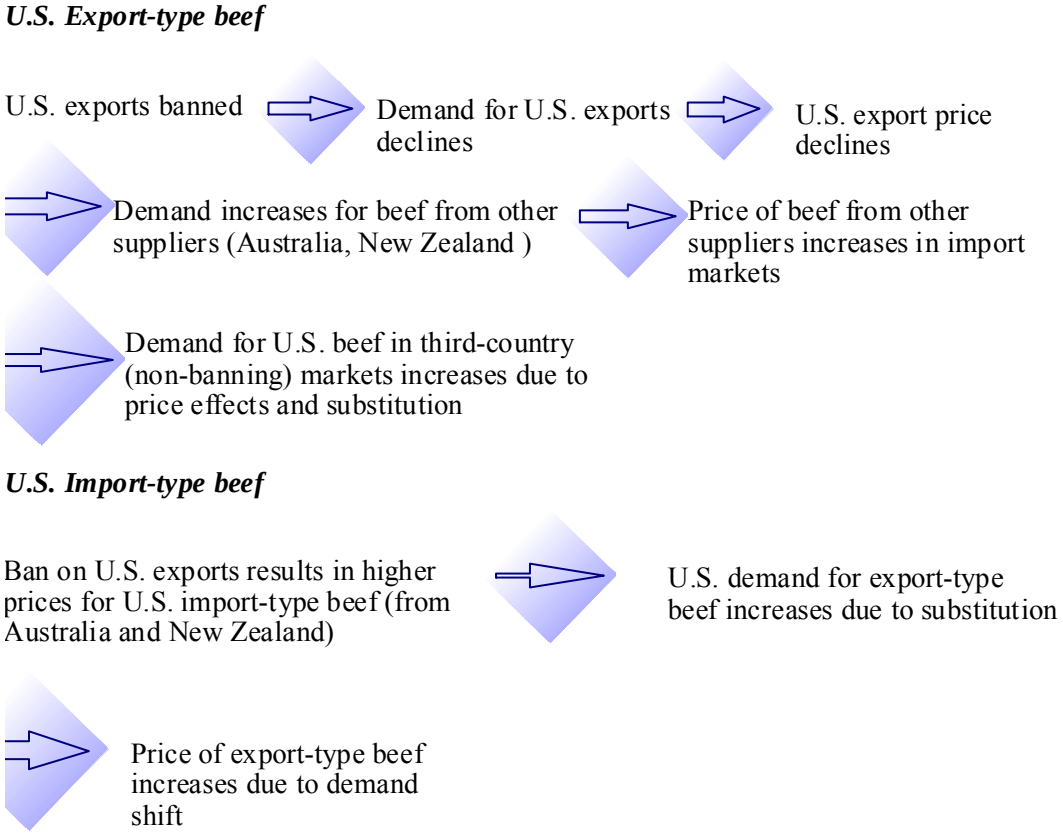
The Canadian Cattlemen's Association (CCA) provided an economic framework to show how animal health and food safety regulations affect markets in the context of simple simulation models of beef markets.[1] According to their analysis, the economic impact of beef industry bans and other regulations must be explored on a global basis due to the interrelationships of world markets and prices. Additionally, they note that a careful analysis should also consider the dynamic responses of markets over time. According to the CCA, bilateral beef and cattle restrictions result in changed price incentives that not only disrupt the affected bilateral trade flows, but other trade flows as well. The other major point made in the CCA brief is that international trade and the responses of importers and exporters in all markets tend to reduce the effect of unilateral restrictions on international trade.[2]

The CCA brief used graphical analysis to show that when a regulation or barrier interrupts the price linkage between an export region and an import region, the price falls in the export area and rises in the import area. If an importing country institutes a ban or otherwise restricts imports of beef or beef products because of the presence of a disease such as BSE or FMD, export demand will be reduced or eliminated, thus causing excess supply of cattle or beef at the original price, which in turn causes the price to fall in the exporting country. Further, these restrictions on imports of beef reduce the total supply of beef and raise the prices of imported beef in the restricting country.

The CCA brief separates beef trade into import-type beef and export-type beef, which takes into account the reality that beef is not a heterogeneous product and that many countries, such as the United States, both import and export beef. Figure D.1 summarizes the CCA's graphical analysis as to the price effects of a ban placed on U.S. beef exports by an importing country. The important points illustrated are that (1) the beef ban lowers U.S. prices for export-type beef, but this is moderated as the prices of substitute beef from countries such as Australia

[1] CCA, written submission to the Commission, Tab A, May 6, 2008.
[2] CCA, written submission to the Commission, 13.

FIGURE D.1 Price effects of BSE bans on U.S. beef



and New Zealand rise, and as demand increases in the domestic U.S. market and in third-country export markets; and (2) the beef ban raises the prices of U.S. imports of beef, also moderating the price effect of the beef ban as U.S. consumers switch to domestic beef at the expense of imports.

The CCA further illustrates the interrelationship of international beef markets through data showing the increase in New Zealand and Australian beef exports to Korea and Japan following the restrictions placed by those countries on U.S. beef imports. They further noted that restrictions placed by the United States on imports of Canadian cattle and beef in 2003 due to BSE concerns contributed to increased prices of beef in the United States. The CCA suggests that the reduction in U.S. imports of Canadian cattle and beef in 2004 helped to offset the loss of U.S. exports to Korea and Japan. The CCA also documented steady growth in U.S. imports of beef from South America following the United States placing restrictions on Canadian imports and the easing of those restrictions by the United States in 2005.

Coffey[3] examined the export market response to the December 2003 BSE case in the United States, in which a number of countries, including Canada, Japan, Korea, and Mexico, banned U.S. cattle and beef products. According to this study, in 2003 (prior to the BSE case) U.S. beef exports were valued at $3.95 billion and accounted for approximately 10 percent of U.S. beef production.[4] According to this analysis, the foreign country import bans increased the quantity of beef and beef products available for domestic use in the United States, thereby depressing prices below what they would have been without the bans. The authors estimated the impact of these bans on U.S. beef prices and domestic industry revenues in 2004.

Coffey developed a comparative static trade model to estimate the price and revenue effects of the 2003 beef export bans on two aggregate product categories: (1) beef and by-products, and (2) beef offal. Quantification of the revenue loss to the U.S. beef industry in 2004 required estimates of U.S. beef production and consumption, and the decline in total U.S. beef exports compared to what such exports would have been without the bans in 2004. Coffey et al. assumed a perfectly inelastic supply of U.S. beef and that all banned exports would be diverted to the U.S. market.[5] The effect of the BSE bans on U.S. producers in their model depended on how much higher domestic prices would have been if U.S. exports had not been restricted. Beef industry revenue losses in 2004 were calculated by multiplying the difference between the observed domestic price in 2004 and the estimated 2004 price without the bans by the quantity of beef produced in the United States in 2004.

The results were found to be sensitive to the estimates of the elasticity of demand for U.S. beef in the United States and in the rest of the world. To account for this sensitivity, the authors used three different demand elasticities for beef in the United States (-.57, -.67, -.77) and two different demand elasticities for the rest of the world (-1.0 and -2.0). The model results indicated that beef industry revenue losses in 2004 from bans on U.S. exports of beef and offal ranged from $3.2 billion to $4.7 billion, and that boxed beef prices and beef offal prices were 8–11 percent and 34–41 percent lower, respectively.[6] The study further estimated that reduced exports to Japan and Korea resulted in a decline in revenue of $45–66 per head of cattle.[7]

In the rule amending the FDA regulation on the use of certain cattle-origin materials in the food or feed of all animals, the FDA examined the potential for increased U.S. exports of U.S. beef and beef products to countries that have curtailed imports since December 2003 if the amended rule were adopted.[8] The

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[3] Coffey et al, *The Economic Impact of BSE on the U.S. Beef Industry* 2005.

[4] Ibid., 4.

[5] Coffey et al. assumed a short run production effect for 2004. They noted that over a longer period, producers would be able to adjust production. The longer time period for production adjustment is required due to the time lag between conception and slaughter. This study also assumed that exports in 2004 would have been equal to the exports in 2003 if the export bans had not been in place. It did not include any effects of increased U.S. consumption, reduced U.S. production, and higher U.S. prices on U.S. export demand.

[6] Coffey et al., *The Economic Impact of BSE on the U.S. Beef Industry* 2005, 29–30.

[7] Ibid., 4.

[8] 73 Fed. Reg. 22720 (April 25, 2008).

FDA estimated the effects of the export restrictions by using changes in beef prices and exports. The change in the beef price was imputed by estimating the decline in the domestic price needed to clear the market if beef intended for export were sold on the domestic market instead. This analysis required an elasticity of demand for beef (which the FDA estimated from the literature at -1.086) and an elasticity of beef supply (estimated at 0.5). The FDA assumed that exports would return to their previous share of production (9.6 percent) before the first BSE case in 1993. Using these assumptions—elasticities and export share—the FDA estimated that the beef price would rise by 3.4 percent.[9]

A paper by Wigle looked at the impact of BSE-related trade restrictions on Canadian exports of beef and cattle using the GTAP model, a global computable general equilibrium model.[10] The authors combined the GTAP model with a provincial model of Canada (Basic Model of Regional Trade, or BMRT). The BMRT includes both interprovincial and international trade, and domestic and imported products are treated as imperfect substitutes, with production technology based on constant returns to scale. The authors broke out the input-output data in BMRT into two aggregate groups, beef meat, and cattle and calves, and also separated out beef meat and beef processing into separate sectors. They used the GTAP to simulate world import and export price changes and changes in Canadian prices from restrictions on Canadian exports of cattle and calves. Changes in these variables plus associated volume changes were then used in the BMRT to simulate the welfare and sectoral effects in Canada.

Wigle estimated the impacts of three hypothetical restrictions on Canadian exports of cattle and beef: embargoes on all Canadian exports of cattle and beef by all trading partners; embargoes on all Canadian and U.S. exports; and embargoes on all U.S. and Canadian exports of cattle and beef by all trading partners, but open trade between the United States and Canada. Results showed that while Canadian producers were adversely impacted, other general equilibrium outputs such as gains to processors and/or consumers, and sectoral adjustments, partially offset those losses. The results also indicated that the negative effects on Canadian exporters were much less when trade continued between the United States and Canada.

EU Beef Hormone Ban

In regard to other nontariff barriers, a study conducted by the Iowa Farm Bureau Federation[11] examined the impact of the EU beef hormone ban on U.S. exports of beef from cattle treated with growth hormones. This ban effectively cut off U.S. beef exports to Europe. According to this study, Europe had not been a major market for U.S. beef prior to the ban. In July 1999, the WTO Dispute Settlement Board authorized the United States to suspend an offsetting $117 million worth of tariff concessions to the EU after it found that the ban was not scientifically

[9] 73 Fed. Reg. 22742.

[10] Wigle, Randall et al. "Impacts of BSE on World Trade in Cattle and Beef," 2007.

[11] Iowa Farm Bureau Federation, "The Economics of the E.U. Beef Hormone Ban and Carousel Retaliation," 2000.

justified.[12] This amount was the calculated value of annual U.S. beef sales to Europe that had been lost under the hormone ban. The study pointed out that the value of this loss of exports to the EU market was less than the value of U.S. exports sales to four other markets (Mexico, Canada, Japan, and Korea) in 1999.

FMD Effects on U.S. Exports

The CCA[13] also examined the impact that the presence of FMD has on beef exports and prices. The brief cites data that includes price premiums for FMD-free beef of 10–50 percent.[14] The brief notes that the probability of trade between countries diminishes the greater the prevalence of FMD in the exporting country, and with the restrictiveness of the FMD response in importing countries. There is trade diversion toward countries that are FMD free. Thus, a country such as the United States, which is FMD free, has the potential to increase its exports and receive higher prices.[15]

Other Nontariff Barriers Affecting U.S. Beef Exports

Yano estimated welfare losses of Japanese consumers from the Japanese quota on imported beef.[16] Although this paper does not examine the effect on U.S. exports, it estimates the deadweight loss from the imposition of the quota. The deadweight loss from a policy measure such as a quota is estimated from the reduced consumption of beef at higher prices due to the quota. Yano estimated a positive deadweight loss due to the Japanese beef quota, implying that the United States would be able to supply more beef to Japan if the quota were lifted.

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[12] The study by Lusk, Roosen, and Fox compared consumer valuation of beef steaks from cattle produced without growth hormones or genetically modified (GMO) corn in Germany, France, the United Kingdom and the United States. The study found that European consumers place a higher value on beef from cattle that have not been administered growth hormones or fed GMO corn. The study concludes that liberalizing the EU policy for growth hormones in cattle may have a welfare-reducing effect in the EU.

[13] CCA, 24–29.

[14] Ibid., 26.

[15] Ibid., 27. The submission notes that some countries will permit some imports of high-quality beef from countries that are not wholly FMD-free.

[16] Yano et al., "Welfare Losses from Nontariff Barriers," 2005.

APPENDIX E
HEARING WITNESSES

CALENDAR OF PUBLIC HEARING

Those listed below appeared as witnesses at the United States International Trade Commission's hearing:

Subject:	Global Beef Trade: Effect of Animal Health, Sanitary, Food Safety, and Other Measures on U.S. Beef Exports
Inv. No.:	332-488
Date and Time:	November 15, 2007 - 9:30 a.m.

Sessions were held in connection with this investigation in the Main Hearing Room (room 101), 500 E Street, S.W., Washington, D.C.

ORGANIZATION AND WITNESS:

American Meat Institute ("AMI")
Washington, D.C.

John J. Reddington, Vice President, International Trade

National Cattlemen's Beef Association ("NCBA")
Washington, D.C.

Jay H. Truitt, Vice President, Government Affairs

Olsson Frank Weeda Terman Bode Matz PC
Washington, D.C.
on behalf of

National Meat Association ("NMA")

Rosemary Mucklow, Director Emeritus

Philip C. Olsson) – OF COUNSEL

ORGANIZATION AND WITNESS:

North Dakota State University
Dickinson Research Extension Center
Dickinson, ND

Kris Ringwall, Ph.D., Director

Douglas A. Freeman, DVM, Ph.D., Professor and
Head of Veterinary and Microbiological Sciences

Ranchers-Cattlemen Action Legal Fund – United Stockgrowers
of America (R-CALF USA)
Billings, MT

Eric Nelson, Co-Chair, R-CALF USA Trade Committee

United States Cattlemen's Association
San Lucas, CA

Doug Zalesky, Regional Director

Blank Rome LLP
Washington, D.C.
on behalf of

Canadian Cattlemen's Association ("CCA")

Edward J. Farrell)
) – OF COUNSEL
Roberta Kienast Daghir)

-END-

APPENDIX F
SUMMARY OF VIEWS OF INTERESTED PARTIES

American Meat Institute[1]

The American Meat Institute (AMI) is a national trade association representing firms that process 95 percent of the red meat and 70 percent of the turkey produced in the United States and their suppliers. The AMI noted that it views the global reaction to the discovery of BSE in the United States in December 2003 as a case study in overreaction on the part of several importing countries, because BSE is not a contagious animal disease and the United States adopted measures more than a decade ago to prevent its spread through contaminated animal feed.

The AMI noted that the aftereffects of the BSE finding in the United States have been significant, especially in Japan and Korea, which accounted for 61 percent of U.S. beef exports in 2003 but only 4 percent in 2006. According to the AMI, neither country has applied OIE standards in order to resume imports, and both have been politically motivated to implement unusually strict inspection standards.

Canadian Cattlemen's Association[2]

The Canadian Cattlemen's Association (CCA) is a national organization that represents approximately 90,000 Canadian beef producers. The CCA works on issues that include trade, environment and animal care, fiscal and monetary policy, and grading/inspection. The CCA has also been actively involved in the development and implementation of measures in Canada to ensure the health and safety of beef products derived from Canadian cattle.

The CCA stated that a lack of flexible SPS regulations initially resulted in the closure of the U.S. market to all Canadian beef products. According to the CCA, newly available scientific information on threats from animal diseases may have suggested other possible resolutions. In addition, the CCA stated that by closing the U.S. market to Canadian beef upon finding Canada's first case of BSE, the United States gave other countries a justification for closing their markets to U.S. beef. The CCA emphasized the importance of regulatory flexibility and stated that regulatory bodies need to be able to respond quickly to threats and new scientific developments. The CCA also stated that regulatory restrictions should be based on science and should follow the standards and recommendations of the OIE. The CCA urged the United States to follow science-based international standards in order to facilitate dialogue with other trading partners.

The CCA also highlighted the importance of recognizing the impact that the closure of markets due to BSE has not just on bilateral trade but also on overall global trade flows and the global supply chain. The CCA claimed that the closure

[1] John J. Reddington, vice president, International Trade, American Meat Institute, testimony before U.S. International Trade Commission, November 15, 2007.

[2] Edward J. Farrell, of counsel, Canadian Cattleman's Association, written submission to the Commission, May 6, 2008.

of the U.S. market to Canadian beef resulted in structural changes to the North American market. The CCA asserted that new secondary suppliers have filled the supply void in global markets that was created by those markets being closed to U.S. beef. The CCA stated that new suppliers that have entered those markets will impact U.S. beef exports in the long term because they create competition that previously did not exist. According to the CCA, these suppliers will stay in the market even if the market is opened to U.S. beef. The CCA stated that these "ripple-effects" of market closures and the associated damage to the U.S. industry may be irreversible.

Creekstone Farms[3]

Creekstone Farms Premium Beef, LLC stated that it produces award-winning, Premium Black Angus beef for retailers and restaurants, and that its Premium Black Angus Beef program is one of the few branded programs certified by the USDA. In addition to supplying U.S. proprietors, Creekstone Farms exports its products to Europe, Latin America, and Asia.

Creekstone Farms stated that it opposes trade restrictions related to diseases such as BSE that are not supported by valid scientific data and that it endorses U.S. government efforts to remove these restrictions. However, Creekstone Farms stated that the U.S. government should allow voluntary testing for BSE by beef processors in response to market signals from consumers in the United States and other countries. The U.S. government currently prohibits such voluntary testing, and Creekstone Farms asserted that there is no sound policy reason to do so. Creekstone asserted that voluntary testing would allow Creekstone Farms to add value to its products by providing information relevant to, and wanted by, consumers.

Government of New Zealand[4]

The government of New Zealand, in response to statements made during the Commission's hearing, asserted that New Zealand has an active surveillance program in place for detection of BSE. In order to demonstrate that the surveillance programs are adequate and prevent the introduction of BSE, the New Zealand government asserted that the programs in New Zealand have been subject to thorough international inspection from the European Commission, the USDA, and the OIE, and that New Zealand supports and applies the BSE standards established by the OIE.

[3] Dennis Buhlke, president and CEO, Creekstone Farms Premium Beef, LLC, email submission to the Commission, November 23, 2007.

[4] Fiona Hutchinson, first secretary of the Embassy of New Zealand, written submission to the Commission, November 26, 2007.

Meat Importers Council of America[5]

The Meat Importers Council of America, Inc. (MICA) is an incorporated trade association representing the U.S. industry that imports mainly fresh frozen beef into the United States. MICA's members are importers and processors, who account for the majority of non-NAFTA imports of this product. MICA's associate members include port authorities, refrigerated warehouses, and customhouse brokers, who provide related services to the industry.

MICA asserted that global SPS measures have negatively affected U.S. beef exports during the past four years, especially to Japan and Korea. MICA reported that this negative impact on U.S. beef exports is the result of the failure of many countries to apply science-based measures when responding to SPS incidents such as BSE or FMD outbreaks.

However, MICA also asserted that the United States failed to apply science-based measures in responding to these outbreaks, and only since BSE restrictions were applied to U.S. beef exports has the United States recognized that internationally accepted, science-based standards should be applied, and then only in relation to BSE. MICA believes that the United States continues to fail to apply science-based restrictions on meat imports from countries that have been subject to FMD outbreaks but that have implemented control measures, and are now internationally recognized by the OIE as free of the disease with vaccination. MICA also reported that it views the U.S. regulatory system as too complex, prone to excessive delays, and subject to political interference.

Meat & Wool New Zealand Limited (M&WNZ) and the Meat Industry Association (MIA)[6]

M&WNZ is a company owned by New Zealand's sheep, beef, and goat farmers that was established by the New Zealand government. According to M&WNZ, one of the organization's primary goals is to maintain and expand market access for their products. The MIA is a trade association that represents the economic, compliance, regulatory, employment, and trade interests of New Zealand's meat processors, marketers, and exporters. In their joint submission, these two organizations stated that they represent the interests of the New Zealand meat industry (the NZ industry).

The NZ industry stated that while New Zealand and U.S. beef exporters compete in many of the same markets, they have a mutual interest in urging countries to adhere to international standards and eliminate the use of unjustifiable nontariff barriers. The NZ industry claimed that the United States placed an unnecessary burden on New Zealand beef exports to the United States in 2004 by requiring the removal of SRMs. The United States is New Zealand's largest export market;

[5] Laurie I. Bryant, executive director and secretary, Meat Importers Council of America, Inc., written submission to the Commission, May 6, 2008.

[6] M&WNZ and MIA, written submission to the Commission, May 6, 2008.

therefore, this requirement has added significant costs and has decreased revenue for producers. In addition, the NZ industry stated that losses were compounded when other export markets replicated the U.S. regulation. According to the industry, these requirements are not justified because the OIE has classified New Zealand as a negligible risk country for BSE. The NZ industry noted its concern that while the United States has relaxed restrictions and allowed some products to enter freely from other negligible risk countries without the removal of SRMs, this relaxation is not comprehensive of all products. The industry stated that it would prefer an approach that strictly adheres to international standards.

National Cattlemen's Beef Association[7]

The National Cattlemen's Beef Association (NCBA) is the national trade association representing U.S. cattle producers, with more than 28,000 individual members and 64 state affiliates, including breeding and cattle industry organization members. In total, the NCBA represents more than 230,000 cattle breeders, producers, and feeders. The NCBA works to advance the economic, political, and social interests of the U.S. cattle industry and advocate for the cattle industry's policy positions and economic interests.

The NCBA stated that access to the international marketplace is critical for U.S. beef producers, as specific cuts and other items often receive higher prices in export markets than domestically. The NCBA noted that prior to the discovery of BSE in the United States and the subsequent closure of two-thirds of U.S. beef export markets, the United States was the second-largest beef exporter in the world. The NCBA estimated the economic losses to the U.S. beef industry over the past four years (since the BSE finding in 2003) to be approximately $8 billion for exports to Japan and $7 billion for exports to Korea. The NCBA also asserted that other markets, with even longer-standing restrictions, have caused significant economic losses to the U.S. beef industry. These include the EU, with a ban on U.S. beef from cattle produced using growth hormones dating from 1987, and Mexico, with antidumping duties that have been in place since 2000.

National Meat Association[8]

The National Meat Association (NMA) is a trade association representing meat packers and processors, equipment manufacturers, and food suppliers who provide services to the meat industry. NMA members are from the United States, Canada, Mexico, and Australia, and include several members who are long-standing exporters to the Asian-Pacific Rim countries.

The NMA stated that the trade barriers that Korea has imposed on U.S. beef exports are based on unscientific and illegal reasons. The NMA noted that it views Korea's treatment of U.S. and domestic beef as inconsistent with regard to

[7] Jay H. Truitt, vice president, Government Affairs, National Cattlemen's Beef Association, testimony before U.S. International Trade Commission, November 15, 2007.

[8] Rosemary Mucklow, director emeritus, National Meat Association, testimony before the Commission, November 15, 2007.

BSE risk criteria, and likely in violation of the WTO's national treatment requirement because it treats imported U.S. beef more stringently than Korean beef.

North Dakota State University Dickinson Research Extension Center[9]

The Dickinson Research Extension Center (DREC) of North Dakota State University was established in 1905 by the North Dakota Legislature as a research location representative of the Missouri Plateau region. The goal was to develop research on crop production for farmers in the region and improve native and introduced forage crop production for cattle ranchers. The DREC has expanded its area from the original 160 acres to the current total of 4,916 acres, conducting range, beef, and swine research.

The DREC noted that there are two distinct products being produced in the livestock supply chain, the calf itself and the information about that calf. The DREC's animal identification project tagged 14,432 calves from 2004 to 2006. During this period, excluding the 19.5 percent of cattle that remained on the ranch or farm of birth, the DREC was able to trace 13 percent to backgrounding lots, 29.3 percent to feedlots, and 27.5 percent to harvest, with the remainder being untraceable. The DREC stated that animal identification and disease management are closely linked and should be conducted in tandem, especially where animals cross borders and there is the risk of highly pathogenic diseases such as FMD. The DREC asserted that the ability to rapidly identify animals and contain any infected stock is crucial to minimizing a disease outbreak.

The Ranchers-Cattlemen Action Legal Fund, United Stockgrowers of America (R-CALF USA)[10]

R-CALF USA is a national organization that represents U.S. cattle producers and affiliated organizations on international trade, marketing, and domestic issues. R-CALF USA asked that the Commission investigate the imbalance between health, sanitary, and food safety standards imposed by the United States and other countries. The organization contended that a mismatch in standards has caused U.S. cattle producers to lose significant market share around the world. U.S. exports of beef have fallen since BSE was first discovered in December 2003. According to R-CALF, lower levels of U.S. exports are due primarily to barriers in key export markets.

R-CALF USA stated that the major cause of the decline in U.S. beef exports has been a reaction to the discovery of an animal with BSE in the United States. R-CALF stated that numerous policy approaches in importing countries have

[9] Kris Ringwald, director, Dickinson Research Extension Center, North Dakota State University, testimony before the Commission, November 15, 2007.

[10] Eric Nelson, R-CALF USA, written submissions to the Commission, October 22, November 15, and November 23, 2007.

negatively impacted U.S. beef exports, including more stringent BSE mitigation measures and higher standards on imports relative to those practiced around the world. According to R-CALF USA, U.S. beef exports also are thwarted by certain market distortions that block access to export markets and make U.S. exports less competitive, such as low U.S. tariffs on cattle and beef in light of billions of dollars of domestic support and export subsidies that many major cattle-and beef-producing nations provide to their producers, including Australia, Brazil, Canada, China, the EU, Japan, and Korea. In addition to subsidies, R-CALF USA noted that state trading enterprises for beef and for cattle feedstuffs such as wheat have created additional market distortions by allowing other countries such as Canada and Australia to guarantee low feed prices.

R-CALF USA recommended that the United States work with its trading partners to eliminate the aforementioned market distortions and harmonize import safety standards regarding cattle and beef. R-CALF USA also proposed that the United States take measures consistent with OIE standards that will lower the risks of BSE within the United States and mitigate other countries' justifications for restricting imports of cattle and beef from the United States. Furthermore, R-CALF USA noted that it believes the U.S. approach to BSE must be one based on sound scientific evidence and should be applied in conjunction with the OIE. R-CALF also proposed the following specific actions to eliminate barriers:

- An indefinite delay of the USDA's proposal to allow imports of cattle, and beef from cattle over 30 months of age, from Canada.

- A reversal of the USDA policy to grant access to the U.S. cattle and beef market before the United States gains access in foreign countries.

- The adoption and enforcement by the United States of the more stringent BSE import standards that are applied and practiced by nearly all BSE-affected countries and which continue to apply to U.S. cattle and beef exports.

- Immediate steps to differentiate beef produced from imported cattle and beef produced exclusively from U.S. cattle, through the implementation of mandatory country-of-origin labeling for beef.

United States Cattlemen's Association[11]

The United States Cattlemen's Association (USCA) represents cow-calf producers and independent cattle feeders in the United States. The USCA stated that the beef trade between the United States and its trading partners is deeply distorted by several foreign measures, including the regulatory regimes of importing countries, particularly in regard to BSE, tariffs, and subsidy policies that influence global trade flows. The USCA stated its belief that until these measures are harmonized, global beef trade will remain distorted.

[11] Jon Wooster, president, USCA, written submission to the Commission, November 6, 2007.

The USCA asserted that the discovery of BSE in 2003 in the United States exacerbated an already distorted world market, characterized by high tariffs and nontariff barriers for U.S. beef in major markets. The USCA reported that the United States was quick to open its market to Canadian beef and cattle despite the initial finding of BSE in Canada in May 2003, but that other countries have delayed opening their markets to U.S. beef exports. The USCA stated that this disparity represents a serious failure by the OIE to establish a common set of standards for animal health and food safety.

APPENDIX G
ECONOMIC MODELING AND ASSUMPTIONS

Analytical Framework and Assumptions

Introduction

The quantitative analysis in this report is based on a simulation framework which consists of a PE model and a GE model. The PE model focuses on bilateral trade in beef products between the United States and other major markets. The GE model is the GTAP model, an economy-wide computable general equilibrium model of world trade specified at an aggregate product and sector level.[1] This appendix describes the simulation framework used in this report.

The PE model is used to simulate effects of BSE-related restrictions imposed by selected trading partners on beef imports from the United States and Canada, and effects of other identified restrictions on beef imports from the United States. The effects for bilateral trade in beef are specified at the HS six-digit level. Effects for beef production and consumption are specified at a more aggregate level because of lack of comprehensive statistics.

Table G.1 lists the 12 HS six-digit beef products that are identified in the PE model and the 10 aggregate product, or sector, categories in the GE model. In addition to the 12 six-digit level beef products, 2 meat categories (product numbers 11 and 14 in table G.1) are identified in the PE model to align the data in the PE model to the data in the GE model.

TABLE G.1 Product and sectoral specification in simulation framework

No.	Partial equilibrium model sectors	No.	General equilibrium model sectors
	Bovine Meat Products	1	Food grains
1	HS 020110: Fresh/chilled carcass	2	Feed grains
2	HS 020120: Fresh/chilled bone-in	3	Cattle and Animal products n.e.c.
3	HS 020130: Fresh/chilled boneless	4	Other farm products
4	HS 020210: Frozen carcass	5	Other natural resource industries
5	HS 020220: Frozen bone-in	6	Bovine Meat Products
6	HS 020230: Frozen boneless	7	Meat Products n.e.c.
7	HS 020610: Fresh/chilled edible offal	8	Other food products
8	HS 020621: Frozen edible offal, tongues	9	Other manufactures
9	HS 020622: Frozen edible offal, livers	10	Services
10	HS 020629: Frozen edible offal, other		
11	Rest of GE sector no. 6 Bovine Meat Products Meat Products n.e.c.		
12	HS 021020: Salted, in brine, or dried		
13	HS 160250: Prepared or preserved beef		
14	Rest of GE sector no. 7 Meat Products n.e.c.		

[1] Hertel, ed., *Global Trade Analysis*, January 1997.

Linking a PE Model to a GE Model

Several of the variables considered in this analysis are outside the scope of the PE model. These variables include livestock feed prices, other input costs for beef producers, other product prices for consumers of beef products, and household income. These variables may influence the estimated effects for beef trade, production, and consumption. The GE model provides estimates of the effects for the variables that are outside the scope of the PE model.

The GE model is linked to the PE model in the following way. The PE model estimates certain bilateral trade effects of restrictions on imports of U.S. and Canadian beef imposed by selected trading partners. Those estimated PE effects are passed to a GE simulation of the same restrictions, which estimates the effects of the variables that are outside the scope of the PE model such as the effects on household income. Finally, the GE effects are passed to a second-round PE simulation of the restraints to provide updated estimates of the effects on beef trade, production, and consumption, which are consistent with GE adjustments in all the economies.

Linking a PE model to a GE model not only provides a detailed beef model within a GE framework, but also provides an improved method of aggregating trade policy measures. Applied GE models are aggregate in their sectoral and product specification. At a minimum, their aggregation converts individual tariff lines into aggregates that conform to the higher-level statistics available for production and consumption. Thus, applied trade analysis in a GE framework relies on very aggregated trade policy measures.

The most common method of aggregating trade policy measures is based on import value weights. An important advantage of import value weights is that the necessary statistics are accessible at the HS six-digit level. The problem with this method is that if a tariff rate increases, import demand decreases, and the weight of that tariff declines and thereby reduce the importance of that tariff in the aggregate tariff.

Several authors have studied the implications of estimates of trade policy measures in aggregate GE models. Bach, Martin, and Stevens found that their estimate of economic welfare from China's trade reforms in the context of WTO accession was approximately doubled if appropriate tariff aggregators were used to account for tariff dispersion.[2] Bach and Martin subsequently defined ways in which a detailed set of tariffs may be aggregated consistently to provide measures of the impact of tariffs at the sectoral level.[3]

The Bach-Martin aggregation procedure was used by Martin, van der Mensbrugghe, and Manole to analyze EU tariff reform.[4] They estimated that

[2] Bach, Martin, and Stevens, "China and the WTO," September 1996.

[3] Bach and Martin, "Would the right tariff aggregator for policy analysis please stand up?," 2001.

[4] Martin, van der Mensbrugghe, and Manole, "Is the Devil in the Details?," May 2003.

global economic benefits from EU agricultural trade reform increased by over 150 percent under consistent aggregation of tariffs. They concluded that inappropriate aggregation may cause substantial underestimation of the global economic gains from trade reform. Subsequently, Manole and Martin analyzed and refined the tariff aggregators proposed by Bach and Martin and found that the economic welfare gains from trade liberalization are severely underestimated when using the traditional tariff aggregator.[5]

Grant, Hertel, and Rutherford developed a pragmatic solution to the problem of aggregating trade policy measures that is both tractable and readily implemented in standard applied analysis.[6] In the context of dairy products, Grant , Hertel, and Rutherford developed a disaggregated PE model of dairy products that tracks trade policy measures at the HS six-digit tariff line level. The PE model was embedded in a standard GE model of the global economy to provide a comprehensive analysis of trade policy reform.[7]

This report extends the Grant, Hertel, and Rutherford approach by expanding the scope of the PE model to cover not only trade but also supply and demand of beef products at the farm level, at the processing level, and at the final demand level. The advantage of linking a beef PE model to a GE model is that the beef PE model accounts for differences in product characteristics and bilateral trade policy measures at the HS six-digit level while the GE model provides for linkages with the rest of the economy, especially the rest of agriculture, both within the United States and major exporting countries and destination markets.

Specification of Simulations Performed

Two sets of simulations were performed with the PE-GE framework. The first set estimated the effects of BSE-related restrictions on exports of U.S. and Canadian beef put in place by certain economies in 2004, 2005, 2006, and 2007. The following tabulation lists the countries and regions that are specified in the simulation framework. Table G.2 lists the direct bilateral trade effects of the BSE-related restrictions on beef imports from the United States put in place by certain economies in 2004, 2005, 2006, and 2007. The percent declines in the volume of bilateral U.S. exports in table G.2 were computed by comparing observed trade statistics for 2004, 2005, 2006, and 2007 with trade statistics for 2003. These are the shocks that are simulated with the PE model. The absence of a bilateral trade effect in table G.2 indicates the lack of a BSE-related restriction on beef imports from the United States by a particular importer. For example, in 2004, Indonesia did not apply any restrictions on imports of U.S. product HS 020210 frozen carcass.

[5] Manole and Martin, "Keeping the Devil in the Details," September 2005.

[6] Grant, Hertel, and Rutherford, "Extending General Equilibrium to the Tariff Line," June 7, 2007.

[7] Other works applying a PE-GE approach are Narayanan, Hertel, and Horridge, "A Nested PE/GE Model for GTAP," and Jansson, Kuiper, Banse, Heckelei, and Adenaeuer, "Getting the best of both worlds," June 12, 2008.

Country and regional specification in simulation framework	
1	United States
2	Canada
3	Mexico
4	Argentina
5	Brazil
6	Uruguay
7	Japan
8	Korea
9	China, including Hong Kong
10	Indonesia
11	European Union – 15 Member States as of 1995
12	European Union – 12 Member States who joined since 2004
13	Russia
14	Australia
15	New Zealand
16	ROW

The second set of simulations estimated the effects of all other identified restrictions on beef imports from the United States in 2004, 2005, 2006, and 2007. Table G.3 lists the ad valorem tariff equivalents of all other identified restrictions on beef imports from the United States at the HS six-digit level by importing country.[8] In particular, the effects of all other identified restrictions on beef imports from the United States were estimated by simulating the removal of these restrictions.

[8] The source of these ad valorem equivalents is the MAcMap data, which were developed jointly by the International Trade Centre (UNCTAD-WTO, Geneva) and CEPII (Paris). The MAcMap data are discussed at http://www.cepii.fr/anglaisgraph/bdd/macmap.htm and by Bouët, Decreux, Fontagné, Jean, and Laborde, "A consistent, ad-valorem equivalent measure of applied protection across the world," December 2004.

TABLE G.2 BSE-related restrictions on imports of beef from the United States in 2004, 2005, 2006, and 2007, by importing country, percent change in volume of imports

Product	Argentina	Australia	Brazil	Canada	China	EU-15	EU-12	Indonesia	Japan	Korea	Mexico	N. Zealand	ROW	Uruguay	Russia
							2004 restrictions								
020110					-100.0	-32.0		-98.4	-100.0	-100.0	-81.5		-42.2	-99.8	-97.8
020120			-98.3	-85.9	-95.9	-69.2	-98.0	-68.8	-100.0	-99.5	-99.5		-37.9	-99.5	
020130				-76.5	-100.0		-24.2	-95.6	-99.9	-100.0	-33.3		-60.4	-53.5	-82.2
020210		-99.5			-100.0		-99.9		-100.0	-100.0	-54.3	-98.9	-78.6		-100.0
020220				-88.1	-99.5	-23.3	-99.9	-85.4	-99.5	-99.9	-97.8	-76.6	-65.6	-99.2	-100.0
020230		-90.0	-96.3	-73.7	-100.0	-35.9			-99.9	-99.9	-41.9	-50.7	-70.3	-26.0	-99.8
020610				-93.2	-78.6	-99.9		-90.8	-100.0	-100.0			-67.9		-99.6
020621				-98.6	-98.4		-99.3		-99.9	-100.0			-71.1		-100.0
020622			-99.9	-57.6	-99.8				-100.0	-97.9			-76.7		-99.3
020629	-22.6	-99.9		-44.7	-98.8	-32.3		-43.8	-96.6	-99.5	-52.8		-57.4	-95.9	-98.5
021020			-99.8			-99.9		-99.1	-99.7	-99.0	-93.1		-80.1		-64.9
160250		-100.0	-77.1	-48.8	-95.9			-100.0	-97.6	-99.3	-92.5	-99.8	-54.9	-98.7	
							2005 restrictions								
020110					-100.0			-98.4	-97.9	-100.0	-79.0			-93.9	-97.8
020120			-98.3	-29.2	-100.0		-98.0	-99.0	-99.8	-100.0	-100.0				
020130				-49.9	-99.1		-94.2	-85.9	-99.3	-100.0				-73.9	-93.1
020210		-99.5			-91.9		-99.9	-65.8	-99.6	-100.0	-73.1	-98.9	-61.7		-95.9
020220	-24.4	-99.0		-63.8	-100.0	-29.4	-68.0	-97.4	-100.0	-100.0	-96.6	-84.1	-68.5	-99.2	-100.0
020230			-96.3	-25.5	-100.0	-25.6			-99.9	-100.0	-29.6	-23.6	-45.4	-25.0	-92.7
020610				-89.3	-91.6	-75.4			-99.2	-90.8			-74.8		-99.6
020621				-98.6	-99.9				-100.0	-100.0			-77.1		-100.0
020622			-99.9	-43.3	-99.8				-96.9		-25.3				-96.4
020629	-98.9	-99.9			-100.0	-76.7	-56.7	-30.4	-96.6	-99.5				-99.9	-100.0
021020			-99.8					-99.1	-100.0	-99.0	-72.1		-42.1		
160250	-99.6				-98.2			-100.0	-100.0	-100.0	-30.2	-46.8	-64.3		-69.9
							2006 restrictions								
020110					-100.0			-98.4	-66.8	-100.0	-87.7			-99.8	-97.8
020120			-98.3		-98.0		-98.0	-99.0	-100.0	-100.0	-81.3			-99.5	
020130							-94.7	-100.0	-92.6	-99.8				-62.0	-100.0
020210		-99.5			-100.0		-99.9	-99.7	-98.3	-100.0	-73.9	-48.0	-55.5		-100.0
020220	-24.4	-99.0		-38.3	-100.0	-28.1	-99.9	-100.0	-100.0	-100.0	-39.4	-84.1	-37.8	-99.2	-100.0
020230		-57.3	-96.3		-86.4			-100.0	-97.3	-100.0	-64.5	-28.0		-46.7	-100.0
020610				-36.0		-84.3		-100.0	-99.0	-100.0			-83.9		-99.6
020621				-98.6	-97.4			-99.4	-99.8	-100.0			-83.6		-100.0
020622			-99.9	-54.9	-99.8	-78.6		-100.0	-100.0	-90.2	-22.4				-99.5
020629	-98.9	-99.9			-99.6	-64.5	-62.0	-100.0	-97.3	-99.8				-99.9	-100.0
021020			-99.8					-99.1	-100.0	-99.0			-82.5		-59.9
160250					-92.0			-97.8	-100.0	-100.0	-34.6		-59.0	-98.7	-99.7
							2007 restrictions								
020110					-93.3	-99.8		-98.4	-22.5	-100.0	-62.4		-27.9	-70.1	-97.9
020120			-98.3		-100.0		-98.0	-99.0	-97.1	-100.0	-51.0				
020130							-87.0	-100.0	-77.9	-85.0				-55.2	-100.0
020210		-99.5			-91.8		-99.9	-99.7	-100.0	-100.0	-86.3		-20.6		-100.0
020220	-24.4	-99.0			-100.0		-99.9	-100.0	-80.9	-100.0		-54.9	-35.0		-93.0
020230			-96.3		-46.2		-100.0	-100.0	-83.8	-70.0	-76.7				-100.0
020610						-99.9		-100.0		-100.0			-90.2		-99.6
020621				-98.6	-99.5			-99.4	-93.6	-100.0					-100.0
020622			-99.9	-40.9	-99.8			-100.0	-92.9	-54.5	-36.4				-99.8
020629	-99.0	-99.4			-98.9	-67.6	-99.99	-100.0	-98.9	-99.9				-99.9	-99.2
021020			-99.8	-48.9		-45.3		-99.1	-100.0	-99.0	-79.4		-67.7		-99.8
160250					-79.8			-98.1	-100.0	-100.0			-68.0		-99.8

Source: Compiled from UN COMTRADE database.

TABLE G.3 Ad valorem tariff equivalents of all other restrictions on imports of beef products from the United States, by importing country (percent)

Product	Argentina	Australia	Brazil	Canada & Mexico	China	EU	Indonesia	Japan	Korea	N. Zealand	ROW	Uruguay	Russia
020110	12	0	12	0	2	20	5	50	41	0	16	12	15
020120	12	0	11	0	6	21	5	50	41	0	21	11	15
020130	13	0	13	0	10	60	5	50	41	0	48	13	15
020210	11	0	12	0	14	20	5	50	41	0	15	12	15
020220	12	0	11	0	1	21	5	50	41	0	18	11	15
020230	14	0	13	0	6	49	5	50	41	0	24	14	15
020610	12	0	17	0	1	33	5	28	18	2	11	12	11
020621	11	0	11	0	1	0	5	13	19	0	9	11	20
020622	12	0	11	0	8	148	5	13	19	0	6	12	12
020629	12	0	12	0	9	148	5	28	18	5	16	11	12
021020	11	0	12	0	8	42	5	14	28	5	10	12	15
160250	17	0	17	0	10	32	5	30	74	2	20	18	20

Source: Bouët et al. “A consistent, ad-valorem equivalent measure of applied protection across the world," December 2004.

Each of the BSE-related simulations consists of the following three steps.

- A PE model simulation provides provisional estimates of the effects of restricting the quantity of U.S. and Canadian beef exports at the HS six-digit level for the 12 beef products. Among the outcomes of the PE simulation are estimates of the ad valorem tariff equivalents of these quantitative restrictions.

- These estimated tariff equivalents are passed to a GE model simulation to obtain estimates of the following effects (the relevant GTAP model variables are given in parentheses):
  - scale of the sector representing cattle and other animal products (qo_{ir}),
  - aggregate consumer price for non beef commodities (pp_{ir}),
  - aggregate prices for non livestock inputs for beef and other processors (pfe_{ijr} and pf_{ijr}),
  - regional income (y_r), and
  - international transportation costs (pt).

- The effects of the restraints are simulated again with a PE simulation that incorporates the estimates of the GE effects. This second-round PE simulation provides updated estimates of the effects on U.S. beef trade, production, and consumption. This method is also applied in the simulations of removing all other identified restrictions on beef imports from the United States.

To perform these simulations, statistics describing beef markets in the absence of the BSE-related restrictions were developed for 2004, 2005, 2006, and 2007. First, the GTAP data were updated from 2001 to 2003, and they were aligned with the HS six-digit trade statistics for 2003 in the PE model. Second, the GTAP data were updated from 2003 to 2004, 2005, 2006, and 2007 via simulations driven by observed changes in population, labor force, and GDP.[9] These simulations established GTAP data for 2004, 2005, 2006, and 2007 in the absence of the BSE-related restrictions on U.S. and Canadian beef exports. Third, macro economic information and aggregate beef information from the GTAP data for 2004–07 drove simulations with the PE model to establish PE data for 2004, 2005, 2006, and 2007 in the absence of the BSE-related restrictions on U.S. and Canadian beef exports. Thus, the simulated effects in this report are with respect to beef markets in the absence of the BSE-related restrictions. For example, the effects of the 2006 bans are obtained from a simulation of putting in place the bans specified in table G.2. Furthermore, the estimated effects of the 2006 bans are independent of the 2005 bans.

Studies of livestock-sector issues apply one of two approaches. One approach is that of dynamic, short-run analysis. Under this approach the analysis considers year-to-year changes or even quarter-to-quarter changes (e.g., Paarlberg et al.,

[9] In addition to the macro economic information passed to the GTAP model, other relevant micro-economic information was incorporated during these simulations: the U.S.-Australia Free Trade Agreement and high grain prices in 2006–07.

2008). The other approach is that of long-term analysis where the analysis considers changes between the market equilibrium before the policy change and the equilibrium after the policy change when all adjustments have taken place (e.g., Devadoss et al. 2006; Wigle et al. 2007).

Under the former approach, an analysis of the BSE-related bans would obtain short-run effects and sum them up to obtain the total effect of the bans. Under the later approach, the analysis would give the long-run effects of the BSE-related bans that would be expected if producers and traders had sufficient time to fully adjust to new market conditions. This report follows the latter approach.

The Partial Equilibrium Model

The PE model used in this report focuses on bilateral trade in 14 meat products between the United States and 15 major markets. In a simulation of a change in an exogenous variable, this PE model finds the prices that bring about equilibrium between supply and demand for each of the 14 meat products. Among the 14 meat products, there are 12 HS six-digit beef products; the other two aggregate products are non beef meat products, and they are included in the PE model to align it to the GE model. The meat products and the regions in the PE model are specified in table G.1 and tabulation.

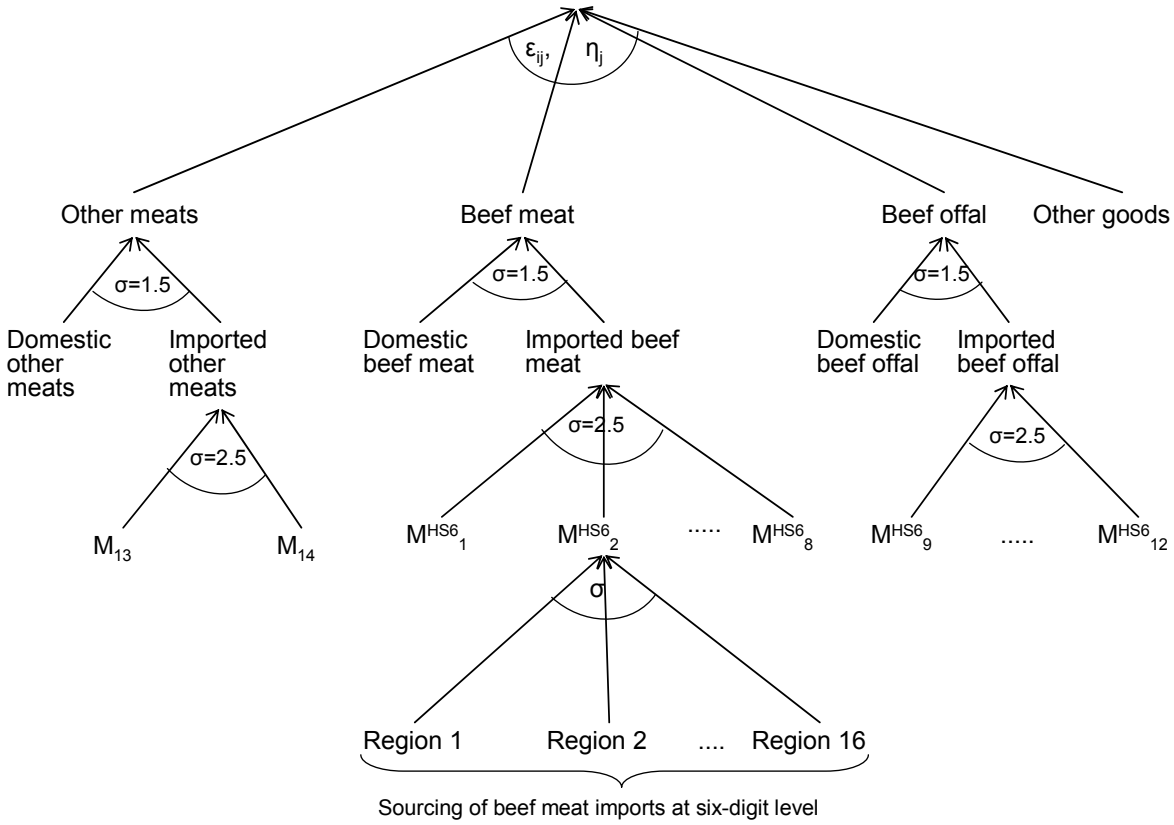
The PE model has a demand and a supply component. Figure G.1 shows the demand component of the PE model. In the top part of figure G.1, a representative economic agent in each region demands four aggregate goods: beef meat, beef offal, other meats, and other goods. The parameters that determine demands for these four commodities are own- and cross-price elasticities, ε_{ij}, and income elasticities, η_j. These elasticities are different from region to region in the model.[10] Regional income and the price of "other goods" are exogenous variables in the PE model. The GE model estimates effects for these two variables, which are then passed to the PE model in a second-round simulation.

The middle part in figure G.1 shows that the representative consumer in a region sources the three meats from domestic production and imports. The decision as to how much beef meat to import is a function of the import price relative to the price of domestic beef meat. A constant elasticity of substitution (CES) function is used to model this decision.[11] The CES, σ, is assigned the value 1.5.

[10] Price and income elasticities for the meat commodities are from Stout and Abler, "ERS/Penn State trade model documentation," August, 2004. Price and income elasticities for the other goods category are from the GTAP model.

[11] A CES production function is characterized by a constant percentage change in factor (e.g. labor and capital) proportions due to a percentage change in the marginal rate of technical substitution (Arrow et al., 1961).

FIGURE G.1 Partial equilibrium model: Regional demands for meats and other products



σ: CES substitution elasticity

Next, figure G.1 shows that total imports of a particular meat category are modeled as a CES aggregate of their component products. Imported beef meat is a CES aggregate of eight HS six-digit products, while beef offal is a CES aggregate of four six-digit products. This part of the model implies that if the price of a particular imported beef-meat HS six-digit product increases, the representative consumer would demand less of that imported product and more of the other imported beef-meat products. The CES takes the value of 2.5 for all three meat categories.

The bottom part of figure G.1 shows that the sourcing of imports of a particular six-digit beef meat product is modeled with a CES function and implies that if, for example, the price of frozen boneless beef meat from Australia increases, the representative consumer would demand less of the Australian product and more of frozen boneless beef meat from other regions. Similar sourcing equations apply to imports of beef offal and other meat products.

One of the assumptions of the modeling of demand in the PE model is that consumers differentiate the domestic product from the imported product. Consumers also are assumed to view imports of a particular product from a region as different from imports from all other regions. These two assumptions constitute the Armington assumption of product differentiation by country of origin, which is usually invoked in applied models of bilateral trade.[12]

Figure G.2 sketches the supply component of the PE model. The starting point is in the lower part of figure G.2, where supplies of cattle and other animals are modeled based on a constant elasticity of transformation (CET) production possibilities frontier with an elasticity of transformation σ^T.[13] This part of the model abstracts from the dynamics of livestock production and assumes that relative output prices determine the optimal allocation of farm-level resources (e.g., land, labor, etc.) in the production of beef animals and other animals. The scale of the farming operation is exogenous to the PE model. The GE model estimates effects for this variable, which are then passed to the PE model in a second-round simulation.

The two aggregate products "beef meat and offal" and "other meats" are produced by two processing sectors that demand meat animals and other inputs. Production in these two sectors is modeled with CES production functions that have an elasticity of substitution (σ) equal to 0.25. The beef processing sector supplies beef meat and beef offal in approximately fixed proportions. A CET function is used to model these supplies, and the elasticity of transformation is assigned a relatively small value, $\sigma^T = -0.10$.

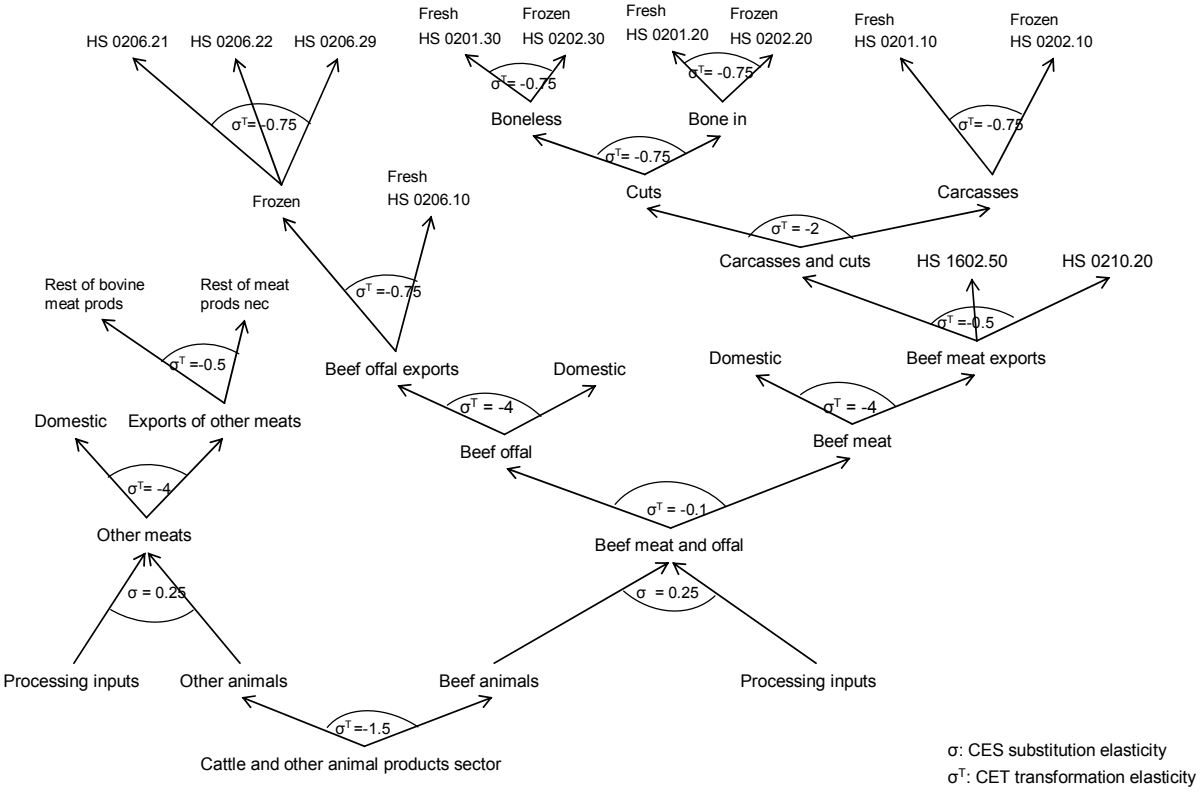
In the next stage in the PE model, meat supplied to the domestic market is differentiated from meat exports. CET production possibilities frontiers are applied to beef meat, beef offal, and other meats. The elasticity of transformation is assigned a large value ($\sigma^T = -4.0$), which implies that the degree of product differentiation between the product supplied to the domestic market and the product supplied to the export market is relatively small.

Regarding supplies to the domestic market, the model does not disaggregate beef meat and beef offal to six-digit HS level products. Exports of beef meat and beef offal, however, are modeled in more detail. For example, the model identifies exports of fresh offal (HS 020610) and three types of frozen offal: tongues (HS 020621), livers (HS 020622), and other offal (HS 020629). In particular, two CET production possibilities frontiers model offal exports at the HS six-digit level. The first CET production possibilities frontier models export supplies of fresh and aggregate frozen beef offal and has an elasticity of transformation of -0.75. The second CET production possibilities frontier models export supplies of frozen tongues, livers, and other beef offal.

[12] Armington, P.S. "A Theory of Demand for Products Distinguished by Place of Production." 1969, 16, 159–76.

[13] A CET production possibilities frontier is characterized by a constant percentage change in product-mix ratio to changes in the marginal rate of transformation (Powell and Gruen, 1968).

FIGURE G.2 Partial equilibrium model: Regional supplies of meat products



The GTAP Framework[14]

The GTAP framework consists of global data on international trade, inter industry relationships, national income accounts, and a simulation model. It allows for comparisons of the global economy in two environments: one in which the base values of policy instruments such as tariffs or export restrictions are unchanged, and one in which these measures are changed, or "shocked," to reflect the policies that are being studied. A policy change makes itself felt throughout the economies depicted in the model. The static model, by design, does not produce information about the speed with which changes occur or about what happens to various dimensions of the economies in the meantime. Rather, the simulation finds the new equilibrium of prices and quantities within the model that are consistent with the change in policy.

[14] For further information, see Hertel, ed., *Global Trade Analysis*, 1997.

In the GTAP model, domestic products and imports are consumed by firms, governments, and households. Product markets are assumed to be perfectly competitive (implying zero economic profits for the firms), with imports as imperfect substitutes for domestic products (i.e., consumers are aware of the source of the products and may distinguish between them based on the foreign or domestic origin), and sectoral production is determined by global demand and supply of the output.

Release 6.1 of the GTAP database covers trade in 56 commodity and service aggregates, or GTAP sectors, among 92 economies. For the purpose of the present analysis, the database has been aggregated into 16 economies and 10 sectors.

In addition to the data on bilateral trade in each of the sectors in the model, data are incorporated on the domestic production and use of each sector (including use in the production of other commodities and services); the supply and use of land, labor, and capital; population; and GDP. An additional component of the data is a set of parameters, which in the context of the model's equations determine economic behavior. These parameters are principally a set of elasticity values that determine, among other things, the extent to which imports and domestically produced goods are substitutes for one another.

Model Limitations

The probable economic effects of the restrictions in this report are the deviations of the relevant variables from their levels in the projected baseline at 2004, 2005, 2006, and 2007. As stated, changes in the variables of interest are calculated as percentage deviations from the baseline, and are quite stable with respect to changes in the baseline. That is to say, if the projected baseline were different, the marginal percent change effects of the bans on trade flows estimated by the model would likely be similar to those presented here, relative to the new baseline.

Estimated effects from the PE and GE models are based on established global trade patterns. The model is unable to estimate changes in trade in commodities that historically have not been traded. If a particular commodity is not traded between two economies, no model simulation will imply such a trade flow under any circumstance. Furthermore, patterns of trade may exist for such reasons as the distance between countries, the presence or absence of transport infrastructure, or cultural preferences, which are all imperfectly captured by the model. The models do not directly account for historical or cultural factors as determinants of trade patterns. The model assumes that these factors are unaffected by the trade policy change.

Economic models capture the most important factors for the question under consideration. However, they are limited in their ability to reflect the degree of

complexity evident in the real world.[15] Despite these limitations, the model presents a unified framework in which the likely effects of the policy can still be assessed.

[15] Examples of real-world complexities that are difficult to reflect in the model include the changing relative growth of different economies; politically motivated, export-oriented investment; relationships between multinational subsidiaries that influence trade patterns; and such things as catastrophic weather or violence that are inherently unpredictable (at least in their details).