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# **Animal Products Markets in 2005 and Forecast for 2006**

# **Keithly Jones**

#### **Abstract**

Uncertainty continues to shape the forecasts for animal products markets in 2006. Potential and actual animal disease outbreaks, consumer sensitivities, volatile exchange rates, and growing competition from producers in other countries cloud U.S. trade prospects for major meats. Loss of U.S. trade market share, partly caused by disease outbreaks and related trade restrictions that have affected animal product exports since 2003, compounds the problem. The outlook for U.S. meat, poultry, and dairy markets in 2006 depends on how well domestic production adjusts to changes in input costs, the effect of exchange rates on trade, the continuing effects of disease and trade restrictions on exports, and the increasing competitiveness of emerging animal products exporters.

**Keywords:** Avian influenza, AI, bovine spongiform encephalopathy, BSE, animal products, beef, cattle, hogs, pork, sheep, lamb, poultry, broilers, turkey, eggs, trade restrictions

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### Introduction

Vulnerability and volatility shape the forecasts for animal product markets and trade in 2006 and beyond. This report examines how potential and recent actual animal disease outbreaks, shaken consumer confidence, volatile exchange rates, and growing competition from producers in other countries affect U.S. trade prospects for major meats.

Animal product producers in Australia, Brazil, and Argentina compete with U.S. producers for export market share, but they, too, face a number of limitations. On the one hand, feed grain constraints limit Australia's production of fed beef and thus its potential in satisfying the lucrative Japanese beef market. The United States was kept out of the Japanese market for over 2 years because of disease restrictions related to bovine spongiform encephalopathy (BSE, mad cow disease). On the other hand, Brazil and Argentina have ample feed, but exports to Japan are restricted by their own disease-related issues. In addition, Argentina imposed a beef export ban, which, while aimed at controlling domestic prices, excluded Argentine beef from most international markets.

Changes in input costs also create challenges. Corn is one of the primary ingredients in animal feed and often accounts for a significant portion of production costs. With higher energy costs and greater emphasis on ethanol as an alternative fuel, corn prices are forecast to rise significantly in 2006. Although distiller's grain, a byproduct of ethanol production, is used in animal feeding, it is by no means a perfect substitute, and its use is limited, especially for poultry and hogs.

The outlook for U.S. meat, poultry, and dairy markets in 2006 depends on how well domestic production adjusts to changes in input costs, the effects of exchange rates on imports and exports, the continuing effects of disease and trade restrictions on exports, and the increasing competitiveness of some emerging animal product exporters.

### **Beef Trade**

The United States is both an importer and exporter of beef and live cattle. In 2005, U.S. beef imports totaled 3.6 billion pounds, down 2 percent from the previous year (fig. 1). Cyclically low U.S. cow slaughter and loss of cow imports from Canada have kept processing beef imports at relatively high levels. Favorable exchange rates increased imports from Uruguay, but in 2006, U.S. beef imports are expected to decline almost 11 percent further, due to a weaker U.S. dollar and the increasing domestic cow slaughter replacing imported processing beef.

U.S. beef exports peaked in 2003 just before the discovery of a cow in the State of Washington with BSE. Immediately, thereafter, U.S. beef exports almost disappeared. Although markets are reopening in countries where market access has been regained, beef exports are still far below pre-BSE levels. As a result, formerly exported beef is staying on the domestic market, increasing the overall domestic supply of beef. Exports in 2005 were just over 698 million pounds, up over 50 percent from 2004, and are forecast for another year-over-year increase of 58 percent in 2006.

The 2003 discovery of BSE, as well as subsequent discoveries in 2005 and 2006, continues to hurt U.S. beef trade. Mathews et al. provide a full exposition on the chronology of BSE in North America. Beef exports are forecast at just over 1 billion pounds for 2006, nearly 50 percent higher than in 2005, as sales to existing markets have been strong and trade with Japan has now resumed. However, this forecast is significantly less than the 2.5 billion pounds exported in 2003 before the first North American BSE cases. Mexico and Canada are currently the largest markets for U.S. beef.

The reopening of export markets was set back somewhat by discovery of a second case of BSE in the U.S. in 2005, as well as by additional precautions now required by some other importing countries. Taiwan reopened its market to U.S. beef for a short period early in 2005, closed it after the report of the second case of BSE, but reopnend it in February 2006. In December 2005, Japan and several smaller Asian markets were reopened, but beef shipments to Japan were later halted pending completion of an investigation of a problem with a veal shipment. The shipment involved meat products not approved for export to Japan. While the meat shipment met the age requirements, it did not meet Japan's requirement for removal of bones and specified risk materials. On Thursday, July 26, 2006, Japan agreed to reopen its market to U.S. beef after an investigation of the U.S. inspection program. Under the agreement, the Japanese will accept shipments only of beef from cattle 20 months or younger from a list of 34 approved processing plants. Certification of the plants came following a month-long tour by a Japanese Agriculture Ministry advisory committee of 35 U.S. plants to ensure that they met required safeguards against BSE.

Animal disease and food safety threats have weighed on consumer confidence in many countries.<sup>2</sup> Consumers in importing countries often respond to disease outbreaks by reducing demand.<sup>3</sup> Even so, consumer confidence can be regained if consumers become convinced that they do not face significant risk.<sup>4</sup> Rebuilding consumer confidence, however, is a slow

<sup>1</sup>Kenneth H. Mathews, Jr., Monte Vandeveer, and Ronald Gustafson, *An Economic Chronology of Bovine Spongiform Encephalopathy in North America*, LDP-M-143-01, June 2006.

<sup>2</sup>See A. Smith, J. Young, and J. Gibson, "How Now, Mad-Cow? Consumer Confidence and Source Credibility," *European Journal of Marketing* 3311/12:1107-22, December 1999.

<sup>3</sup>See D. Smith, and P. Riethmuller, "Consumer Concerns About Food Safety in Australia and Japan," *International Journal of Social Economics* 26(6):724-42, June 1999.

<sup>4</sup>See W.K. Viscusi, "Alarmist Decisions with Divergent Risk Information," *The Economic Journal* 107(445):1657-67, November 1997.

process, and recurring disease outbreaks or marketing high-risk products will lengthen the recovery time. This delay was evident in Japan and is still evident in some other Asian countries where reopening markets to U.S. beef is slowed by reports of the second case of BSE in 2005 and the addition of extra precautions to ensure that what they felt were high-risk products did not reach their shores.

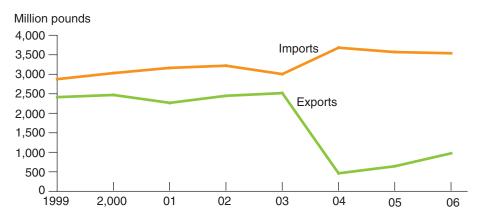
Competition among suppliers shapes animal product trade. Uncertainties, or vulnerabilities, that disrupt the livestock sector in one exporting country create opportunities for competitors. Exchange rate variations can influence beef trade forecasts. In 2005, the U.S. dollar depreciated relative to the currencies of most of its livestock trading partners. Imported products became more expensive to U.S buyers, while U.S. exports to other countries became less expensive. Along with exchange rate variations, which affect the relative prices of imported and exported products, vulnerabilities caused by disease outbreaks, or perceived threats of outbreaks, and the vagaries of weather also affect trade flows.

For example, several countries closed their markets to U.S. beef following announcement of the BSE case in Washington in 2003. To satisfy consumer demands, these countries turned to other beef-exporting countries, such as Australia. While many of the beef products supplied by alternative suppliers are not perfect substitutes for U.S. beef, they are close enough.

The longer export markets remain closed to U.S. exports, the greater the difficulty for the United States to regain its earlier market share when they reopen. Market recovery may be slow for the following reasons:

- Consumer habits often forestall re-establishment of past consumption patterns.<sup>5</sup>
- Many export arrangements are contractual, so when a market reopens, the flow of products from the past supplier is likely to be at a lower level because arrangements from the supplier, the buyer, or both may restrict immediate resumption of trade. In 2004, much of the Japanese import market for beef shifted to Australia. How much of that market the United

Figure 1 **U.S. beef trade, 1999-2006** 



Note: 2006 forecast.

Source: Economic Research Service, USDA, based on data from *Livestock, Dairy, and Poultry Outlook*, various monthly issues.

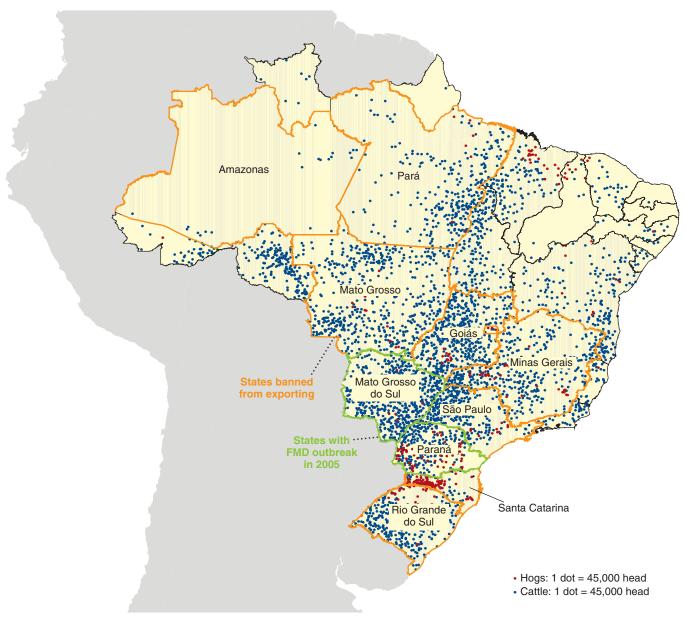
<sup>5</sup>Habit formation occurs when a consumer's level of satisfaction from current consumption depends in part on past consumption. Consumption may be affected by expenditure habits as well as taste and preferences.

States regains upon resumption of trade will depend heavily on Japan's preference for Australian beef as well as the contractual arrangements forged by the two countries.

- Price competition among exporters may affect consumer decisions, especially if the product is a close substitute.
- Consumer confidence in the safety of U.S. beef will be important. A large public outreach effort may be required to repair damage to the image of U.S. beef.

The October 2005 outbreak of foot-and-mouth disease (FMD) in one of Brazil's major beef-producing states, Mato Grosso do Sul (MGS), was also noteworthy for global beef trade. Apart from the outbreak's effect on consumer confidence, it also raised concerns over adjustments required in global meat markets because Brazil is the world's largest beef and poultry exporter and third-largest pork exporter. Following the FMD announcement, several countries imposed restrictions on imports of Brazilian beef and pork from MGS. Restrictions also affected sales from two neighboring states (fig. 2). MGS shares its western border with Paraguay and is Brazil's largest cattle-producing state, with over 19.8 million head in 2004 (12 percent of the country's cattle herd). MGS also accounts for the largest share of cattle slaughter in the country-16 percent, or 5.5 million head. The FMD outbreak, because Brazil's trade was restricted, created trade opportunities for competitors, such as Australia and Uruguay.

Figure 2
Distribution of cattle and hogs in Brazil, 2004



FMD - Foot and mouth disease.

Source: Instituto Brasileira de Geografia e Estatistica (Brazilian Institute of Geography and Statistics), 2004.

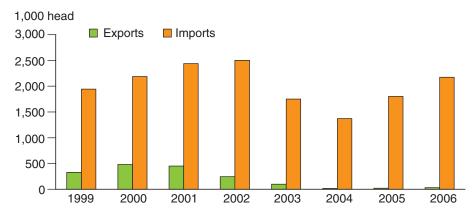
Cartographer: Chris Dicken, Economic Research Service, USDA. Brazil analyst: Constanza Valdes, Economic Research Service, USDA.

### **Live Cattle Trade**

All live cattle trade, though mostly limited to North America, has been beset by similar issues as those for beef trade. The main concerns for the United States are to protect human and animal health from BSE while providing for the importation of certain animals and commodities from minimal-risk regions. After the May 2003 BSE discovery in Canada, live animal imports from Canada into the United States were banned because Canada was no longer considered a minimal-risk region. A Federal court approved removal of the ban on July 14, 2005; the first cattle since implementation of the ban crossed from Canada into the United States on July 18, 2005. Only fed cattle younger than 30 months crossed the border initially, but feeder cattle followed shortly thereafter. However, monthly volumes were much less than during the pre-BSE period, likely because the ban is still in effect for animals older than 30 months. In 2005, 1.8 million head of live cattle were imported from Canada and Mexico, up 32 percent from 2004; in 2006, live imports are forecast to rise again—over 2.2 million head, up 24 percent from 2005 (fig. 3). A large share of 2005 live imports was lightweight feeder cattle from Mexico.

As U.S. live cattle imports declined during the ban on Canadian imports, so too did live exports to Canada. Live exports dropped to an all-time low of 16,000 head in 2004, increased to 22,000 head in 2005, and are forecast to increase to 40,000 head in 2006. The cause of much of the initial drop was probably that feeder cattle normally sent to Canada to be fed were kept in U.S. feedlots because they could not be re-exported back to the United States as fed cattle.





Note: 2006 forecast.

# **Hog/Pork Trade**

The U.S. hog industry appears to have benefited from the beef trade's vicissitudes. In 2005, pork exports hit a record 2.7 billion pounds, up 22 percent from 2004 (fig. 4). Exports were especially strong to South Korea, Canada, and Russia. Pork exports are forecast to expand even further in 2006, by about 13 percent to just over 3.0 billion pounds. Record U.S. pork exports went to Japan and South Korea, two of the countries that had banned imports of U.S. beef, with Japan purchasing over 1 billion pounds of pork from the United States in 2005. This pattern suggests a high degree of substitution between meat products by Japanese and South Korean consumers. U.S. pork continues to be a substitute for beef and poultry banned in many countries due to BSE or avian influenza (AI). The surge in pork exports may last only until the resumption of significant U.S. beef exports to Japan and South Korea, except where there are gains in consumption from habit formation. The forecast for pork exports is very uncertain as a result of such considerations.

In 2005, pork shipments to Mexico also reached a record high, although the growth was slower than to Japan and South Korea. Mexico has historically been the second-largest market for U.S. pork exports, but 2005 saw a slowing of growth in Mexican demand for U.S. pork. Much of the slow-down in pork demand growth may be due to increased demand for U.S. turkey because both pork and turkey are key sausage inputs. Mexico's pork imports are expected to increase in 2006, mainly as a result of expanded economic growth in that country.

Overall, U.S. pork exports for 2006 are expected to rise 13 percent, but uncertainties about the extent of the effects of AI- and BSE-related closure of beef and poultry markets in Japan and South Korea surround the forecast. First-quarter 2006 pork shipments to foreign markets were particularly strong, about 22 percent higher than January-March 2005.

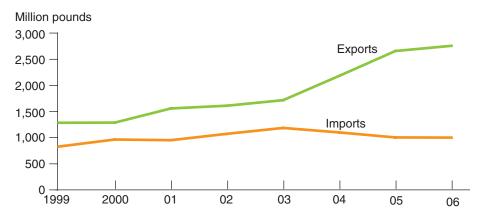
U.S. live hog imports in 2005 fell to 8.2 million head, a 3.7-percent decline from 2004, the first year-over-year decline in live hog imports from Canada in more than a decade (fig. 5). Whether the antidumping duty on U.S. grain corn contributed to the decline is unclear. Although the Canadian investigation into the alleged dumping and subsidizing of grain corn from the United States began on September 16, 2005, the provisional \$1.65-per-bushel duty was not imposed on imports of U.S. corn until December 15, 2005. A subsequent ruling on April 18, 2006, by the Canadian International Trade Tribunal deemed that U.S. grain corn imports had not injured the Canada's corn industry and lifted the duty immediately and refunded all provisional duties collected.

Live swine imports, almost exclusively from Canada, are expected to increase almost 9 percent in 2006, partly due to the negative effects of the relatively higher valued Canadian dollar on the international competitiveness of Canadian pork products. When the Canadian dollar appreciates in value, pork products from other countries become cheaper in Canadian dollar terms, creating competitive pressure for Canadian-produced pork products that are substitutes. As a result, Canadian producers would be

inclined to sell more animals into the live market, which is less competitive, introducing more feeder pigs into the "mix" of live hogs to be imported from Canada in 2006.

U.S. live swine exports are largely destined for Mexico. Export numbers have been highly variable recently, due mostly to policy changes in Mexico and to changes in Mexican meat prices. In 2005, live hog exports were 153,650 head, down 12 percent from 2004. Live exports are expected to increase to about 159,000 head in 2006.

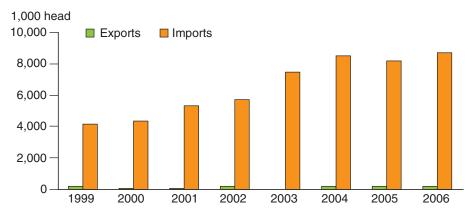
Figure 4 **U.S. pork trade, 1999-2006** 



Note: 2006 forecast.

Source: Economic Research Service, USDA, based on data from *Livestock, Dairy, and Poultry Outlook*, various monthly issues.

Figure 5 U.S. live hog trade, 1999-2006



Note: 2006 forecast.

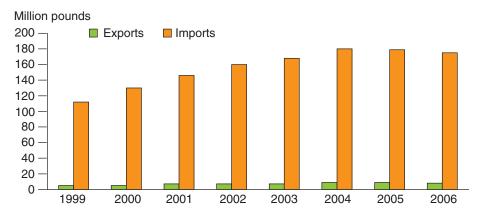
#### **Sheep and Lamb Trade**

Tight supplies and record high lamb prices in 2005 resulted in further retention and domestic herd rebuilding and opened the way for expanded lamb imports. Even though U.S. lamb prices were at record highs, tight supplies in Oceania limited U.S. imports in 2005. Imports of lamb and mutton in 2005 were 180 million pounds, unchanged from 2004 (fig. 6). Increased shipments from Australia late in 2005 helped to offset the reduced imports from New Zealand (fig. 7). In 2006, lamb and mutton imports are expected to be 185 million pounds, about 3 percent higher than in 2005, as the continuing high U.S. lamb retail price attracts imports.

U.S. lamb and mutton exports increased in 2005 to 9.3 million pounds, 11 percent above the 2004 level. Renewed strength in a number of Caribbean markets helped to offset the loss of the Japanese market when trade restrictions were implemented in the wake of the December 2003 BSE case. (Although BSE has never been found in sheep, trade restrictions were imposed on all ruminant products.) However, large year-over-year increases in lamb and mutton exports were seen for the Bahamas, St. Lucia, and Antigua and Barbuda.

Like cattle imports, live sheep imports from Canada were restricted after the May 2003 BSE discovery. Live trade resumed in July 2005, but only 1,920 live sheep were imported from Canada, 1 percent of 2002 pre-BSE live sheep import levels. The apparent adjustments needed to resume trade slowed the flow of live sheep from Canada. Sheep destined for the United States had to be younger than 12 months and had to be slaughtered upon entering. Because U.S. slaughter facilities typically slaughter only lambs that weight over 130 pounds, achieving the desired weight in less than 12 months may have been a problem.

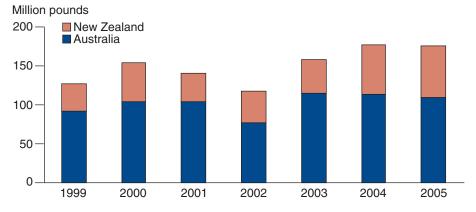
Figure 6 U.S. lamb and mutton trade, 1999-2006



Note: 2006 forecast.

Source: Economic Research Service, USDA, based on data from *Livestock, Dairy, and Poultry Outlook*, various monthly issues.

Figure 7
U.S. lamb and mutton imports from New Zealand and Australia, 1999-2005



# **Poultry and Egg Trade**

U.S. broiler meat exports are forecast to increase just over 5 percent in 2006, but the export situation is in a state of flux because AI outbreaks have dampened the demand for broilers in Asia, Central Asia, and Eastern Europe. Broiler exports in 2005 totaled 5.2 billion pounds, up nearly 9 percent from 2004 (fig. 8). However, shipments were much weaker than expected in the last quarter of the year as exports fell short of 2004 levels by 14 percent. December shipments to Russia, other countries of the former Soviet Union, the Baltic States, and Eastern Europe were down sharply because concerns about AI reduced consumer demand for poultry meat.

Experience has shown that poultry disease outbreaks result in short-term disruptions of consumption and trade. But, as consumers become more informed about AI, its mode of transmission, and how to handle and cook broiler meat, increased consumer acceptance of poultry products is expected, despite continued news about AI. In addition, low broiler prices should encourage price-sensitive consumers to buy more chicken. Thus, broiler exports through the first half 2006 are expected to exceed those of a year ago and accelerate even further in the last half of the year.

Turkey exports rose almost 29 percent in 2005, to a record 570 million pounds, with a very strong first half. Fourth-quarter 2005 turkey exports were 148 million pounds, up 11 percent from the previous year. Turkey exports are forecast to decline 3 percent, to 554 million pounds, in 2006. Shipments to Mexico were a record 354 million pounds last year but may be pressured by relatively low broiler meat prices. In 2005, Mexico accounted for over 60 percent of U.S. turkey shipments. One of the chief reasons for this increase in demand has been growth in the Mexican economy, which is expected to continue in 2006.

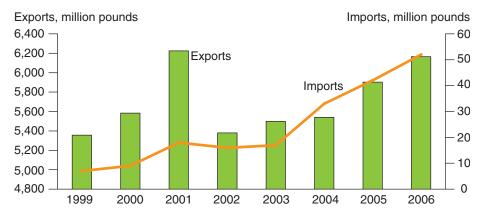
U.S. exports of shell eggs and products (in shell egg equivalent) rose from 167.5 million dozen in 2004 to 203.3 million dozen in 2005, or 21 percent, the highest export level since 1998 when exports reached 219 million dozen (fig. 9). Two main factors were behind the increase. Trade restrictions on U.S. shell eggs and products were lifted following recovery of U.S. layer flocks from the 2003-04 Low Pathogenic Avian Influenza (LPAI) outbreaks. Demand for shell eggs and products from Asian countries rose following the Highly Pathogenic Avian Influenza (HPAI) outbreaks in several Asian countries in late 2003 and 2004.

Asian countries have replaced the traditional countries (Canada and Mexico) participating in the North American Free Trade Agreement (NAFTA) as major importers of U.S. shell eggs and products. For example, U.S. exports of eggs and egg products (in shell egg equivalents) to Japan tripled from 15.7 million dozen in 2004 to 46.1 million dozen in 2005. Similarly, U.S. exports to Hong Kong rose from 14.5 to 24.8 million dozen, and exports to China increased from 2.3 to 5.3 million dozen. U.S. exports of shell eggs to major Asian markets (Japan, Hong Kong, China, South Korea, Thailand, and the Philippines) increased from 34.9 million dozen in 2004 to 81.7 million dozen in 2005, a rise of over 134 percent. The U.S. export share of total eggs and egg product to these six Asian countries grew to about 40 percent, up from only

21 percent in 2004. The rise in the U.S. egg and egg product export share to Asia nearly matched the decline in exports to the NAFTA countries, the export share of which dropped from 48 percent in 2004 to 31 percent in 2005.

U.S. exports of eggs to the European Union (EU) fell nearly 2 percent to 22.01 million dozen in 2005, but U.S. egg exports to individual EU countries both increased and decreased. U.S. exports rose from 5.3 to 7.5 million dozen for Spain and from 1.4 to 4.3 million dozen for Germany while declining from 12 million to 6.2 million for the United Kingdom. Other growing export markets for the United States include Brazil, rising to 2.7 million dozen from 660,000 dozen, and Israel, up to 4.4 million dozen from 1.2 million dozen in 2004. Most of the U.S. export growth in 2005 was in processed egg products, which increased from 61.1 million dozen in 2004 to 97.8 million dozen. Exports of shell eggs were up by 2.1 million dozen. Egg exports in 2006 are expected to decline slightly to 200 million dozen, as production by Asian countries previously infected with HPAI slowly recovers. However, U.S. exports to Europe will most likely strengthen, due mainly to competitive prices for U.S. eggs.

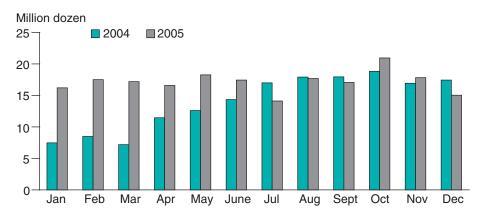
Figure 8 U.S. poultry trade, 1999-2006



Note: 2006 forecast.

Source: Economic Research Service, USDA, based on data from *Livestock, Dairy, and Poultry Outlook*, various monthly issues.

Figure 9
U.S. exports of shell eggs and egg products, 2004 and 2005

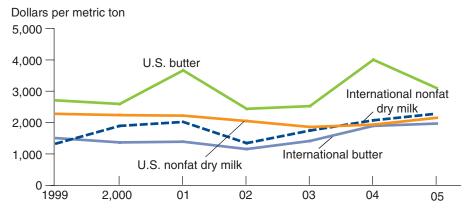


# **Dairy Trade**

Dairy product trade is largely influenced by exchange rate variability and competing supplies worldwide. The U.S. dollar was weak in 2005, but global supplies of dairy products remained generally tight. Lower production of nonfat dry milk in New Zealand, Australia, and the EU limited international market supplies. In 2005, international prices for nonfat dry milk averaged about \$2,000 per ton, 10-15 percent above those of 2004 (fig. 10). The strong export demand, coupled with international powder prices' exceeding 2004 levels, enabled the U.S. to expand exports of commercial nonfat dry milk powder. Tight supplies and strong demand also pushed international 2005 butter prices above 2004 levels. However, lower U.S. butter and cheese prices largely eliminated the incentive to ship over-quota levels of dairy products to the United States. Total U.S. imports of dairy products fell by more than one-half during 2005, primarily reflecting a virtual halt in over-quota imports of butter (down 97 percent) and a sharp decline in imports of American-type cheese (down 75 percent).

Although good global economic growth is expected to help maintain international demand for butter and nonfat dry milk powders in 2006, competition from other trading partners may remain limited by tight supplies. Milk production in Australia is forecast to decrease slightly during its 2006 marketing year, while New Zealand production likely will increase by about 4 percent. Milk production in the EU, constrained by quotas, is expected to grow less than 1 percent. As global demand for dairy products continues to remain firm, international prices in 2006 are expected to stay at or near last year's levels. U.S. prices are expected to remain fairly competitive, and exports are expected to remain strong. Increased world supply of nonfat dry milk powders is likely to result in reduced global export demand, lower export levels of U.S. products, and some weakening of prices.

Figure 10 U.S. and international dairy product prices, 1999-2005



# **Uncertainty Abounds in Meat Trade Outlook**

Potential and actual animal disease outbreaks, consumer sensitivities, volatile exchange rates, and growing competition from producers in other countries cloud U.S. trade prospects for major meats in 2006. The entire meat animal complex has the potential to be affected, directly or indirectly, by disease-related uncertainty. Pork appears to be a temporary beneficiary of the uncertainty among trade of other major animal products, and, as a result, expanded pork trade is expected.

The outlook for U.S. meat, poultry, and dairy markets in 2006 depends on the how well domestic production adjusts to changes in input costs, the effects of exchange rates on trade, the continuing effects of disease and trade restrictions on exports, and the increasing competitiveness of some of the emerging suppliers of animal products. Brazil and Australia have emerged as significant competitors to the United States in some animal products, but disease concerns in Brazil and resource limitations in Australia slow their ability to significantly erode the U.S. share of animal product trade.