

U.S. and Mexican Cattle and Beef Trade

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Introduction

Rapid change and volatility in cattle and beef trade patterns between the U.S. and Mexico before and after NAFTA have caused much discussion and concern about the impacts of NAFTA and expected future trade patterns. In reality, most of the dramatic changes the past two years are due to factors unrelated or only indirectly related to NAFTA. Factors which have had a much larger impact on cattle and beef trade include the Peso devaluation, the drought in northern Mexico, and the sharp drop in U.S. cattle prices. Moreover, the emerging patterns of cattle and beef trade are primarily the result of nearly a decade of change in trade policies and economic conditions on both sides of the border. NAFTA is an issue only because it represents the culmination of and commitment to those changes.

U.S./Mexican Cattle and Beef Trade Overview

Cattle trade between the U.S. and Mexico is dominated by Mexican exports of feeder cattle to the U.S. combined with a minor flow of breeding animals from the U.S. to Mexico. Mexican cattle exports to the U.S. since the mid 1980s have been significantly larger than in previous years (Figure 1). Over this same period Mexican cattle inventories peaked then declined to 20 year lows.

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Since 1973, annual Mexican cattle exports to the U.S. have averaged 2.4 percent of total Mexican herd inventories. Over the same period, Mexican herd inventories grew by an average of 0.3 percent annually. Prior to 1988², cattle were exported at the rate of 1.9 percent of herd inventories and the total inventory grew by 2.1 percent per year. Since 1988, average export rates have increased to 3.6 percent while herd size has declined by an average of 2.9 percent per year. After 1991, when essentially all trade barriers were removed, Mexican cattle exports have averaged 4.1 percent of total inventories while herd size has declined an average of 2 percent per year.

These numbers do not represent projections for the future, i.e., that exports will continue grow at higher rates or that Mexican cattle herd size will continue to shrink. Larger exports since 1991 were largely the result of attractive U.S. prices until 1994, and the peso devaluation and drought-forced liquidation in 1995. However, the numbers suggest that, historically, the maximum sustainable (in terms of domestic herd size) Mexican cattle export rate is between 2 and 3 percent annually. Changing conditions may alter this in the future. For example, growing domestic demand could result in smaller exports with constant production. On the other hand, increases in the quantity and quality of Mexican cattle production could allow for higher sustainable export rates.

In the short run, the dramatic herd liquidation in the last two years will necessitate more retention to rebuild herds. Moreover, at the current time, the combination of low U.S. prices and reduced beef production in Mexico has made exporting unattractive. For the next

²Beginning in 1988, Mexican cattle export quotas were replaced by a phased out export tariff. The export tariff was completely eliminated by September, 1992.

two to three years, reduced Mexican beef production, low U.S. prices and the need to rebuild Mexican cattle herds are likely to restrict cattle exports to the U.S.

For the past decade, Mexico has been a rapidly growing but volatile market for U.S. beef (Figure 2). Responding to generally growing Mexican demand and elimination of trade barriers, U.S. beef exports to Mexico doubled from 1987 to 1988 and again from 1990 to 1991. By 1991, Mexico had eliminated tariffs on meat except for variety meats. Tariffs on chilled and frozen beef were reimposed in November 1992 and removed again with the beginning of NAFTA in 1994. Mexican demand for U.S. beef resumed the barrier-free pace of 1991/1992 in 1994, reaching the highest level to date. The peso devaluation in December 1994 reduced Mexican purchases of U.S. beef by 54 percent in 1995. So far in 1996, U.S. exports of beef to Mexico are recovering, up 64 percent year over year in the first six months.

Mexico is an important and unique market for U.S. beef in several respects. First, the U.S. has inherit advantages over potential beef competitors in the Mexican beef market due to locational proximity and the NAFTA umbrella. Secondly, Mexico has been an important market for beef variety meats for many years. The difference between the two lines of Figure 2 indicate that volume of variety meat exports to Mexico has amounted to 20 to 40 thousand metric annually. Prior to 1988, the vast majority of U.S. beef exports to Mexico was mad up of variety meats. Thirdly, most of the rapid growth in beef exports to Mexico in recent years has been in carcass meats (Figure 2). Much of the growing beef demand in Mexico is for lower quality products such as Select grade meat as compared to the high quality meat exports to other major U.S. export markets of Japan and Canada. Thus, Mexico represents a complementary market for products than have lower demand both domestically and in other

major export markets.

Mexican Cattle and Beef Production

The twin questions of the potential demand for U.S. beef in Mexico and the prospects for Mexico to export feeder cattle to the U.S. both depend critically on how cattle and beef production in Mexico evolve in the coming years. Changes in either the quantity or quality of cattle and beef production may have significant impacts on the flows of live animals and meat between the two countries. Much of the following summary of cattle production in Mexico is taken from a more comprehensive discussion in Cockerham.

Cattle production is widespread across Mexico under widely varying climatic and physiographic conditions. The country can be broadly divided into three regions of cattle production; Northern, Central, and Southern, each representing about a third of cattle production. These regions roughly correspond to major geographic and climatic areas in the country. In spite of vastly different production environments, all of the regions share some general common attributes with respect to cattle production. In many cases, cattle production is relatively extensive in nature, under marginal conditions due to temperature, rainfall, altitude, soil type, slope, and/or range condition. Widespread limitations in water resources and forage quality result in low carrying capacities in many areas. Past and, to a lesser degree, present government policies have exacerbated these conditions in many instances by unintentionally contributing to overgrazing and lack of incentives for proper management of forage resources.

The Northern region of Mexico, which includes the important cattle-producing states

of Chihuahua, Coahuila, Durango, Sinaloa, Sonora, and Nuevo Leon, is a predominantly arid/semiarid, high altitude region. Carrying capacities are low and the region is heavily oriented to the production of feeder cattle.

Because of the region's proximity to the U.S., much of Mexico's cattle exports to the U.S. originate in this region. Producers in the Northern region have long exported higher quality animals to the U.S. and have consequently been more progressive in improving the quality of cattle with better genetics and management. Cattle produced in this region includes an increasing proportion of European cattle.

The Central region of the country is mostly mountains interspersed with broad valleys. The climate is temperate with moderate rainfall. Many of the valleys are quite fertile and support much crop production. In addition, this region contains a large percentage of the population including the major urban centers of Mexico City, Guadalajara, Puebla, and Leon. Demands for land to support crop production and growing cities have favored more intensive animal agriculture in the valleys with dairy production dominating. Less intensive beef cattle production occurs on the slopes and in forested regions. Both dairy and beef cattle rely on crop production for forage, utilizing double crop forage and grain as well as crop residues. Commercial cattle breeds in the region include Zebu and European as well as considerable dairy influence.

The Southern part of Mexico includes both wet and dry tropical regions. This region, along with the Pacific and Gulf coastal plains, includes the mountainous highlands of southernmost Mexico and the Yucatan Peninsula. Altitudes vary widely as does rainfall in this region. Rainfall tends to occur in more pronounced wet and dry patterns resulting in

widely variable seasonal forage conditions. Cattle production is widespread in the region often in small subsistence operations. Cattle are used for both milk and meat production and as a result Zebu cattle crossbred with dairy animals are common. The tropical climate of the regions make Zebu cattle very popular due to their ability to withstand insects, high temperatures and diseases.

Future Cattle Production in Mexico

Mexico has significant potential to increase both quantity and quality of cattle production although such increases are likely to take several years. Natural resource limitations of water and forage quality will continue to place limits on total production. The Mexican herd size peaked near 37 million head in the 1980s, a level that may represent the maximum feasible herd size. Achieving this limit probably depends, not only on recovery from the recent drought which has devastated rangelands in northern Mexico, but on generally improving range conditions across the country. Recent changes in laws relating to *ejidos* may lead to better management and improved conditions of *ejido* lands.

More generally, there may be greater opportunity to improve cattle quality (or the proportion of cattle that are of higher quality) rather than total quantity of production. Improvements and access to better technology, management, resources and infrastructure could do much to enhance quality and quantity of production. Use of better animal genetics, improving calving rates, and reducing death loss will all improve productivity of the beef cattle herd. Calving rates in Mexico are estimated to average 45-55 percent currently and improvements to 70 percent are quite feasible (Bredahl, et.al.; CAIE).

Improved health and nutritional management probably offers the greatest opportunity

for increasing productivity. Seasonal variability in forage quantity and quality make reliable access to supplemental feeds paramount. In tropical regions, severe mineral deficiencies contribute to poor productivity and seasonal variability of forage quality. Key to these improvements include; increased producer access to capital and financial resources, government commitment to infrastructure improvement, disease eradication, and education in animal and range production and management, and improved animal genetics.

Beef Production in Mexico

Historically, most Mexican beef production has been grass-fed beef. Feeder animals from Northern and Southern regions of the country are shipped to coastal areas to fatten on grass or a combination of grass and limited concentrate feeds. Animals for domestic consumption are typically slaughtered at two to three years of age and at lighter weights as compared to U.S. slaughter cattle.

In recent years, a small by growing cattle feedlot industry has developed, primarily in the Central regions near urban centers and in the Northern region. Feedlots primarily use grain sorghum and poor quality corn or, more recently, imported U.S. corn for cattle feed. Because Mexico remains a largely grain deficit country and because corn is viewed primarily as a food grain rather than a feedgrain, the Mexican feedlot industry is likely to remain at a competitive disadvantage to the U.S. for the foreseeable future. Like animal production, Mexican grain production may improve in quantity and quality over time, but resource limitations and rapidly growing food grain demand are likely to limit Mexico's developing feedlot industry.

Price Impacts of Mexican Cattle Imports

The impact of Mexican cattle imports on U.S. feeder cattle prices depends on both the total quantity of imports and the distribution of imports throughout the year. The current seasonal pattern ranges from a low of about 2 percent of the annual total imported in July and August to a high of 15 percent in December. Prior to 1988, exports were bunched in the last part of the year with December representing 25 percent of annual exports on average. This, in part, reflects the impact of the export quota. Exports in December and January have declined and a larger proportion of exports occur in February, March and April compared to the earlier period. This means that imports are increasingly spread out, thus reducing the impact in any given month.

Table 1 summarizes the estimated price impacts (in 1992 dollars) of Mexican cattle imports on three weight classes of lightweight feeder steers at Oklahoma City. Since most Mexican cattle imported into the U.S. are lightweight steers, price impacts were estimated for 300 to 400, 400 to 500, and 500 to 600 pound steers. The values reported in Table 1 are based on statistical estimates of a system of price equations for each weight group over the period 1973 - 1992 (Cockerham). In each equation, monthly average steer price, in a derived demand framework, is specified to be a function of output values, i.e. fed cattle price; prices of related inputs, such as corn, soybean meal, and hay prices; Mexican cattle imports and seasonal variables.

Table 1 indicates that, on average from 1988 through 1992, Mexican cattle imports had the greatest impact on 400 - 500 pound steer prices, reducing them by an average of \$0.44/cwt or about \$1.98 head. During this period, the average level of imports was 87,624 head per month or an annual average of 1.05 million head. Monthly imports ranged from

zero to a maximum of 304,053 head in January 1988. The highest monthly import level ever recorded was 336,228 head in December 1986. At these record levels, the price of 400 - 500 pound steers is reduced about \$2/cwt. This means a loss in value per head of about \$9.

Over the period 1988 - 1994, monthly import levels less than 150,000 head occurred 88 percent of the time. This means that 88 percent of the time, the impact of Mexican cattle imports was a reduction of 400 - 500 pound steer prices of \$1.05/cwt. or less. Seven percent of the time, monthly imports were in excess of 200,000 head and would have reduced the price of 400 to 500 pound steers by \$1.40/cwt. or more.

Regional impacts of imported cattle are certainly greater in areas closer to the border. Because of the size and distance of the Oklahoma City market from the border, it is assumed here that impacts measured at Oklahoma City are representative of national level impacts. It is also important to remember that the price impacts reported here represent loss in revenue to U.S. sellers of feeder cattle. Mexican cattle represent an input into stocker and feeding operations and thus benefit other cattle industry sectors as well as meat consumers. Moreover, cattle imports are only part of the bigger trade picture and must be balanced against the value of meat exports.

Beef Demand and Marketing in Mexico

Total beef demand in Mexico is the combined result of population and per capita consumption. Although population growth rates have slowed in recent years, the Mexican population is still growing rapidly and is currently estimated in excess of 93 million people. The rapid growth of recent years means that the population is very young with at least 50 percent less than 20 years of age. This suggests both a tremendous potential demand in

coming years as well as a tremendous challenge for economic growth and job creation in coming years (Jacques, et. al.).

Mexico has a strong cultural tradition of red meat consumption in addition to the dietary staples of corn and beans. Projected Mexican per capita beef consumption in 1996 is 19 kilograms, about 42 percent of the U.S. level of 45.3 kilograms per person. Income level is undoubtedly the biggest limitation to beef demand in Mexico. The average Mexican income level is about 10 percent of the U.S. level . Additionally, the average income level masks a wide range of income distribution. Despite general economic progress in recent years (and in spite of the devastating November 1994 Peso devaluation) an estimated 14 million Mexicans live in poverty (de la Calle). Many of these are unable to afford any meat on a regular basis and beans remain the primary source of dietary protein. Low income accounts for the large demand for low value products such as beef variety meats and grass-fed beef.

In addition to overall population growth, a growing middle income segment of the population has increased beef demand in terms of both quantity and quality. As incomes rise, especially from the lowest levels, demand for beef and other meats grow rapidly as consumer reduce dependence on beans for protein. Thus, total demand for beef grows with increasing incomes even if population is constant. Secondly, rising incomes increase demand for higher quality beef products. Thus variety meats are replaced with carcass meats and grass-fed beef gives way to grain-fed beef. In recent years, many Mexican retail stores have begun to augment or replace traditional grass-fed beef with grain-fed beef, both domestically produced and imported from the U.S. In most cases this grain-fed beef would be equivalent to Select

grade U.S. beef. For the most part, incomes are still not high enough to support demand for higher quality grain fed beef. Nevertheless, the switch from grass-fed to lower quality grain-fed beef represents a significant increase in overall beef quality.

The Mexican beef packing, processing, and wholesaling sectors represent additional bottlenecks to growing beef demand. Most of the operations are small, antiquated, high cost operations. The entire beef merchandising system is carcass-based with transportation, handling and storage based on overhead rail technology. The system utilizes relatively labor intensive processing with a high proportion occurring at the retail level. Lack of infrastructure in transportation, processing, cold storage and handling are limitations to modernizing the system and meeting growing demand. In many areas, meat is still marketed through street vendors and local meat shops utilizing a “wet” market, i.e., fresh slaughter and no refrigeration prior to consumer purchase of the products.

Mexican Demand for U.S. Beef

There are three identifiable emerging beef market segments in Mexico along with two traditionally strong market segments. Historically, the markets for variety meats and the high quality meat demand in tourist areas have been strong markets for U.S. beef in Mexico.

Mexican demand for variety meats may decline slowly but is likely to remain strong for many years. Although Mexican consumers may replace variety meats with higher quality products as incomes rise, the cultural taste for these products is likely to maintain some demand at all income levels.

Demand for beef in the tourist trade is not really a true Mexican demand for beef but

rather beef to satisfy American and other tourists who happen to be in Mexico. Nevertheless, the Mexican tourist industry is a very important and growing industry and will continue to provide a demand for U.S. beef.

An emerging beef market segment in Mexico is the demand for lower quality grain-fed beef at the retail level. This market represents the greatest growth potential for U.S. in terms of reaching the broadest base of Mexican consumers. Price is the primary consideration to make U.S. grain-fed beef affordable to Mexican consumers. This market is well suited to major U.S. packers who can supply large volumes of specific cuts of Select grade products for this market. One significant disadvantage is that U.S. boxed beef is inherently relatively expensive compared to domestic Mexican carcass beef.

Another emerging market segment for U.S. beef in Mexico is that for high quality, high valued products. This represents a truly Mexican counterpart to the tourist beef demand. Affluent Mexicans, increasingly familiar with upscale U.S. restaurants, are supporting a small but growing market for similar restaurants in Mexico. The emphasis in these markets is on high quality and price is less of an issue. Products are usually aged Prime or high Choice products. Some are based on Certified Angus Beef or similar type quality specifications. The small volumes and high service requirements of this market favors small to mid-size U.S. packers.

A final emerging market segment is that for processed meats. This includes a broad range of products including low-valued processed meats, such as sausages and frankfurters (often made with both beef and pork), to value-added products for increased convenience and

for the growing fast-food industry.

Summary

There appears to be much potential for increased beef demand in Mexico. Realization of such growth depends primarily on Mexico's ability to generate and sustain general economic growth that result in rising incomes and job creation for the swelling labor force. While there is considerable opportunity for increased quantity and quality of Mexican cattle and beef production, it is likely that growing demand for higher quality beef will exceed domestic production. The U.S. has a comparative advantage in fed beef production and meat packing and processing while Mexico has a relative advantage in feeder cattle production. It is reasonable to expect continued growth in Mexican feeder cattle exports to the U.S. and for the U.S. to export additional beef and processed meats to Mexico.

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Table 1. Average Monthly Price Impacts of Feeder Cattle Imports From Mexico (1992 dollars).

	300 - 400 pounds		400 - 500 pounds		500 - 600 pounds	
	\$/cwt	\$/head	\$/cwt	\$/head	\$/cwt	\$/head
73-92 avg.	-0.36	-1.26	-0.38	-1.74	-0.29	-1.58
88-92 avg.	-0.42	-1.49	-0.44	-1.98	-0.32	-1.78
Maximum	-1.85	-6.46	-1.98	-8.90	-1.48	-8.11
100,000 hd	-0.66	-2.30	-0.70	-3.16	-0.52	-2.88