The North American Beef Cattle Industry

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Introduction

Despite varied historical and cultural paths in different countries, beef cattle production has played a major role in North America since the Spanish first brought cattle to the Americas.[1] Vast land areas including large areas of land marginal for intensive agriculture, the availability of inexpensive animal feed resources, and the natural complimentarity of crop and livestock production imply that the beef cattle industry has the potential to continue to be a very important part of North American agriculture.

However, rapid economic growth and continued population growth in developing countries; expanding global trade opportunities; animal and human health issues; food safety concerns; competition for feed production; and competition with other animal industries for feed resources all suggest new opportunities and new threats for cattle production in North America.

Economic Integration and NAFTA

In the absence of artificial barriers, markets organize production and trade flows to efficiently provide the optimal set of products for consumers. Open markets are thus organized taking into consideration resource availability and quality; transportation and geographical features; and the location of demand centers. In the short and intermediate time run, the availability and quality of infrastructure may have significant impacts on the location and level of production in different regions. In the long run, infrastructure will change and develop according to underlying economic forces.

In the vast majority of cases, the artificial barriers that alter or impede market flows are political in nature. Country borders typically represent some of the most severe disruptions to the economic landscape. Limitations in or the absence of trade creates different price signals that impact production patterns and resource values in economically adjacent markets. In the situation where adjacent markets have evolved over time in the presence of significant barriers, reducing or eliminating such barriers allows economic forces to revalue resources and reorganize production into the optimal larger-scale market solution.

Thus, the majority of free trade "impacts," as in the case of the North American Free Trade Agreement (NAFTA), are really questions related to the transition from a more constrained trade environment to a less constrained trade environment. There can be little doubt that expanded trade represents net positive benefits as long as trade is voluntary; trade would not occur if it were not beneficial.[2] Although beneficial in total to the whole economy, this transition may indeed be economically painful for individual firms or industries as markets adjust relative output and input values in response to expanded trade opportunities. Previously viable economic activities may be rendered less profitable or unprofitable, but only when there is a better economic opportunity available. It is never efficient for resources to remain indefinitely unemployed. Resources that remain indefinitely underutilized or unemployed constrain economies from reaching their full potential.

Thus, when expanded trade makes a particular enterprise unprofitable, it is because the market is encouraging those resources to be used in a new or different manner. Nevertheless, questions about the equity of the impacts of transition are appropriately the subject of policy considerations about how to offset or mitigate the impacts for those negatively affected. However, those questions are ignored here in order to focus on the task of determining what the economic landscape will look like after the transition. It should be noted, however; that quickly and correctly determining the direction and magnitude of change is likely to materially reduce the length and depth of the transition period.

Canada – U.S. Beef Cattle Industry Integration

Having begun with generally closer economic ties and with the benefit of a more common cultural and economic background, the cattle and beef industries of Canada and the U.S. have already achieved a high level of economic integration. Following the implementation of first the Canadian-U.S. Free Trade Agreement and then the North American Free Trade

[1] The term North America will be used here to refer collectively to Canada, Mexico, and the United States.

[2] This is not to say that market solutions are always socially optimal. Positive or negative externalities may lead to over or under-provision of some goods. Conceptually, however, social policies to correct or mitigate market failures can be incorporated into the market framework, and trade in a (modified) market environment is still presumed to be beneficial on balance if trade is voluntary.

Agreement, the pace of integration increased. The abundance of inexpensive grain in the interior of Canada, enhanced by the elimination of the Canadian rail transportation subsidies in 1995, has resulted in rapid development of animal production in the western provinces of Canada. Canada, which previously exported feeder and fed cattle to the U.S., has added meat packing facilities and increased cattle feeding and is set to be a significant exporter of beef. Instead of exporting cattle, Canada will likely export more meat and, in fact, may represent a significant source of demand for U.S. feeder cattle, especially from the Pacific Northwest. It should be noted that, while these changes affect the specific type of product flows, these developments have not materially affected the overall supply and demand conditions of the two countries taken together.

With a relatively small population and a mature economy, Canada is likely to remain a net exporter of beef, primarily to the U.S. However, bilateral movement of beef occurs because of the vast east to west expanse of the two countries. Geography and transportation costs dictate that it is efficient for beef products from western Canada to move south and west into western U.S. demand centers, while beef moves north and east from the U.S. Midwest into the population centers of eastern Canada.

Mexico – U.S. Beef Cattle Industry Integration

In general, the economies of the U.S. and Mexico have been more widely separated, not only economically, but also historically and culturally as well. Nevertheless, the cattle and beef industries of the two countries have been more integrated compared to many other markets, with significant numbers of Mexican cattle exported to the U.S. and, more recently, rapid growth in Mexican imports of U.S. beef. In the past, the Mexican cattle industry has consisted effectively of two different industries separated by geography, climate, and production type. The cattle industry in the arid and semiarid regions of northern Mexico has historically focused on exportation of feeder steers to the U.S. Cattle production in this region is similar to the southern U.S. with extensive use of European crossbreeding. Much of the temperate and tropical regions consist of dual-purpose beef/dairy production or beef production with heavily Zebu-dominated genetics. Rapidly developing national and international economic forces are integrating these diverse production regions with new economic signals and changes in domestic animal and product flows.

Nearly half of the 196 million hectares (485 million acres) in Mexico is arid and semiarid and much of the remaining temperate and tropical areas are too steep or are otherwise unsuitable for crop production. There is no doubt that cattle production will continue to be an important component of Mexican agriculture. At the same time, only about 13 percent of the country is suitable for crop production and the challenge of meeting food demand and feed production for animals will loom even larger in the future. Currently about 49 percent of the feed grain needs in Mexico are being produced domestically, while less than 10 percent of oilseeds used for protein feed are produced in the country. A relative abundance of forage resources and a relative shortage of concentrate feeds mean that cattle and meat production in Mexico may evolve with a different structure than exists in Canada and the U.S.

At the present time, the same economic forces that draw cattle from diverse U.S. states to the central and southern plains of the U.S. also attract many of the available animals from northern Mexico. Indeed, feeder cattle from northern Mexico are as close or closer to the stocker and feedlot production areas of the southern plains than are cattle from the southeastern part of the U.S. For example, using Dallas, Texas as a central location for many stocker cattle, cattle from Monterrey, Nuevo Leon are closer, at 560 miles, than cattle from Birmingham, Alabama; Nashville, Tennessee; St. Louis, Missouri; or Omaha, Nebraska. Cattle from Chihuahua, Chihuahua are closer, at 850 miles, to Dallas, Texas than cattle from Wyoming, eastern Georgia, and virtually all of Florida.

Cattle feeding in North America generally occurs where feed is produced. Because cattle require relatively large amounts of grain per unit of beef produced, it is more economical to ship lightweight animals to areas of excess feed production. In the U.S. and Canada, a well-developed infrastructure for transportation and cold storage also means that it is more efficient to slaughter and process beef where cattle are fed and ship meat to demand centers. This is true not only because it is more efficient to ship meat products compared to live animals, but also because different products are moving to different markets directly from the source. Therefore, it is not surprising that meat products move from, for example, Amarillo, Texas to Mexico City, 1400 miles away just as meat moves from Amarillo, Texas to Los Angeles, California, 1100 miles away. This is especially true given that there is a good chance that it is middle meats (rib and loin products) going to Los Angeles and end meats (chuck and round products) going to Mexico City.

Beef Demand and Meat Marketing in Mexico

Strong, though slowing, population growth in Mexico, combined with rapid, if sometimes volatile, economic growth means that Mexico will be an exciting and dynamic food market in years to come. The U.S. and Canada, with relatively slow population growth and mature economies, will remain large markets with comparatively less growth potential.

At the current time, the meat industry in Mexico is a combination of the traditional slaughter and marketing system and the new system, which approaches that of the U.S. and Canada. In the traditional system, typical of developing economies, cattle are produced on forage or with limited grain feeding, then shipped to demand centers to be slaughtered and marketed with little or no cold storage. The evolving new system in Mexico, primarily located jointly with feedlots, utilizes slaughter and processing in packing plants with higher standards of sanitation and food safety, cold storage, and refrigerated transportation of meat to demand centers. This type of federally inspected (TIF) slaughter costs 1.5 to 2 times as much as the traditional slaughter system. Higher cost grain-fed animals and higher slaughter costs combined with relatively expensive refrigerated shipping makes this meat, like imported meat, more expensive than traditionally produced and marketed meat products. In both the old and new systems, the majority of beef is marketed as carcasses or in carcass units.

Driven by economic growth and changing lifestyles, meat marketing in Mexico is changing rapidly from traditional meat

shops and local markets to modern supermarkets and restaurants, which offer higher quality TIF produced meat, supplemented with specific meat cuts from the U.S. For example, data for meat imported by several major supermarket chains in Mexico in 1999 (representing nearly 40 percent of total imports) indicates that 78 percent of the imports are chucks and rounds, with variety meats accounting for another 13 percent of the total.

Beef demand in Mexico is much more diverse compared to that of the U.S. and Canada. Increasingly affluent Mexicans are increasing both the quantity and quality of beef demand. This is most notable in the north where preferences are growing rapidly for grain fed beef and U.S. style cuts from the rib and loin. However, in central and southern Mexico, strong traditional preferences remain for very lean meat and traditional cuts which utilize the end meats, especially the round. Tourism and business travelers provide a basis for high quality meat demand in specific locations (e.g. Mexico City, Acapulco, Cancun), but the overall quantity is increasingly small compared to the growing domestic demand. Although the market for high quality meat is growing rapidly for retail and restaurant consumption, the majority of the market is still extremely price conscious and less quality conscious. (This refers to quality in the sense of fattening or marbling, but it should be remembered that consumer preferences in Mexico may not even use the same criteria to define quality as would be used in the U.S. and Canada.) Demands for vegetable protein sources, variety meats, and low quality products are being replaced by muscle meats, but cultural preferences for some products, e.g. beans and menudo, ensure that demand for these products will continue to be important. In the event of severe adverse economic conditions, demand for these products will quickly replace higher cost products.

Although Mexico is likely to remain a net importer of beef, limited or niche market possibilities exist for Mexican beef exports to the U.S. For example, the Mexicali region of Baja California is particularly well positioned geographically to take advantage of the large Hispanic population in southern California and provide Mexican style cuts and products. It is also possible that, as Mexican demand for higher quality meat grows, some lower quality meat could be available to export to the U.S., thereby replacing some of the meat that the U.S. currently imports from Australia or New Zealand.

Summary

A more fully integrated North American cattle and beef industry offers significant mutual advantages for each member of NAFTA. The vast geographical expanse of North America not only ensures the likelihood of cattle production, but also means that freely flowing cattle and beef products will improve the spatial organization of markets on the continent. Moreover, cultural and economic variability means that there is high complementarity between markets in the three countries in which expanded trade improves the supply and demand balance for the many diverse products demanded by consumers.

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