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White Paper

The U.S. Ground Beef Market: Why Imports Help

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Executive Summary

The U.S. ground beef market is a complex supply/demand chain that channels domestic and imported ground beef products in a wide variety of forms to consumers. Ground beef is a mixture of domestic meat categorized as 50's (50 percent lean timmings/50 percent fat from U.S. grain-fed beef production) and leaner beef from grass-fed imported beef or older domestic cows (90 percent lean trimmings, known as 90's). By itself, our domestic supply of 50's is far too high in fat content for ground beef production and thus has little value. Its finished market value is dependent on a supply of 90's. In fact, most 50's would go into the waste stream unless mixed with leaner 90's.

Over time, the United States has increased production of 50's and reduced production of 90's, largely in response to economic factors. This obviously is counter to the trend of consumer preference for leaner meat products. Thus, a dilemma exists for the U.S. cattle industry. Does this imported beef harm the U.S. industry by causing lower prices and larger competing supplies? That is the question examined in this analysis.

Background

The comparative advantages of the agricultural systems of any country are shaped by a combination of economics and natural resource endowments. Nowhere is that more evident than with U.S. cattle, in both its beef and dairy systems.

Three major forces combine to make the U.S. beef production system very different from that of any other in the world and an incredible example of the successful application of the principle of comparative advantage. Those forces are:

1. a large, and relatively rich, beef and dairy consuming population,
2. over 350 million acres of highly productive cropland, and
3. large expanses of productive grasslands.

Because of these forces, we have built a unique system that produces grain-fed beef for both the domestic and export markets while our dairy production system, measured by milk per cow, is the world's most productive.

However, the domestic industry cannot produce all the types of beef demanded by the U.S. consumer at costs competitive with the rest of the world. Over time, a system has evolved in which the United States produces, consumes, exports, and imports large amounts of beef.

Table 1 on the next page presents some basic statistics on U.S. beef production and trade. The two-way trade we see in these numbers, and America's success in increasing exports over the past two decades, are examples of the successful application of comparative advantage.

However, the increase in U.S. beef exports did not occur solely because of comparative advantage. Opening export markets took years of negotiations on trade barriers. Currently, as can be seen in the following table, the three major destinations for U.S. beef are Japan, Korea, and Mexico.

IDEAS INITIATIVE IMPACT

The potential global market for high-quality U.S. grain-fed beef is far from saturated. China and other Asian destinations hold great promise for future growth. In addition, if the U.S.–European Union trade dispute over hormone use is ever resolved, U.S. exports to Europe could easily equal those to Japan or Korea.

The low production cost of U.S. grain-fed beef is a formidable barrier for other countries to overcome. Other countries with large beef cattle herds (Brazil, Argentina, Australia, and New Zealand) (1) do not have the grain to feed cattle; (2) lack a sufficient domestic market for fed beef; or, (3) lack the infrastructure to export beef. As a result, the United States is the only country in the world able to supply large volumes of high-quality fed beef. This is unlikely to change in the foreseeable future.

Table 1: U.S. Beef Production, Exports, and Imports (Million Pounds, Source: USDA)

Year	Production*	Exports	Imports	Deficit
1980	21,643	173	2,064	1,891
1990	22,634	1,006	2,356	1,350
2000	26,776	2,516	3,031	515
2001	26,018	2,271	3,164	893
2002	27,090	2,447	3,218	771
2003f	26,287	2,431	3,265	834

*Includes beef from imported cattle from Canada and Mexico

Ground Beef Market Characteristics

There are two main segments to the overall U.S. beef market. One is a high-value-per-pound segment associated with grain-fed beef, as seen in the form of tender steaks and roasts. The other is the beef we eat as ground meat (hamburger) that is too tough to consume without grinding. U.S. exports consist mostly of the high-value beef, and imports are mainly the beef ground for hamburger.

The beef that makes up the U.S. ground beef supply mainly consists of two products. One is 50 percent lean trimmings/50 percent fat—referred to as 50's—mostly from grain-fed cattle. The other is 90 percent lean trimmings (90's), mostly from grass-fed cattle. These two types of beef are blended into a variety of ground beef products for use in traditional restaurants, quick-serve restaurants, food service, food processing, and the retail ground beef trade.

America could produce lean, but not very tender, beef from grass-fed steers and heifers and use that to make lean hamburger. However, domestic producers are better off sending fed steers and heifers to feedlots to produce tender, high-value beef while producing a lesser amount of lower-value hamburger from beef and dairy cows as a secondary product. Through beef trade, particularly by importing beef for the hamburger market, American producers can focus on sending as many animals as possible through feedlots and thus increase their

Table 2: U.S. Beef Exports Major Destinations

(Million Pounds, Source: USDA)

Year	*Total*	*Japan*	*Korea*	*Mexico*	*Others*
1988	680	501	0	0	179
1989	1,023	716	58	75	174
1990	1,006	574	98	73	261
1991	1,189	534	150	173	332
1992	1,324	629	165	195	335
1993	1,275	720	116	120	319
1994	1,609	832	177	223	377
1995	1,821	1,004	272	92	453
1996	1,878	1,016	204	172	486
1997	2,136	1,054	262	313	507
1998	2,171	1,118	154	419	480
1999	2,417	1,101	308	466	542
2000	2,516	1,117	399	534	466
2001	2,271	1,005	346	532	388
2002	2,431	758	605	648	420

Table 3: U.S. Cattle Slaughter by Type

(Million Head, Source: USDA)

Year	*Total**	*Fed Steer & Heifer**	*Percent of total*	*Cows*	*Percent of total*
1975	40,911	21,383	52.3	11,553	20.4
1980	33,805	24,898	73.7	6,333	13.2
1985	36,290	26,777	73.8	7,392	16.0
1990	33,240	26,379	79.4	5,913	13.9
1995	35,639	27,448	77.0	6,277	14.1
2000	36,248	28,130	77.6	5,520	12.9
2001	35,364	26,901	76.1	5,774	13.6
2002	35,729	27,389	76.7	5,743	13.6

*Includes imported cattle

** Estimated based on thirteen states 1975-95; U.S. all feedlots 2000-2002

value. There is currently a $400–600 difference in the market value of a cow versus the more profitable fed steer or heifer. This trend represents a huge increase in value to the U.S. beef industry (roughly fifteen billion dollars per year).

The import pattern of beef into the United States reflects the mix of cattle American industry produces, especially in recent years. Available detailed data from USDA of beef imports from 1989 to 2002 shows that importation of boneless beef, most of which is for ground beef production, has increased steadily since 1996. As shown in Table 4, the increase was especially large in the last several years, as U.S. cow slaughter declined.

Table 4: U.S. Imports of Beef, Total and Boneless, 1989-2002

(Metric Tons, Source: FATUS Report, USDA)

Year	*Frozen Boneless Beef*	*Fresh Boneless Beef*	*Total Boneless Beef*
1989	541,876	59,820	601,696
1990	608,573	54,663	663,236
1991	610,918	62,513	673,431
1992	589,605	75,427	665,033
1993	559,550	85,681	645,232
1994	532,013	82,887	614,899
1995	457,189	65,935	523,124
1996	407,529	83,051	490,580
1997	464,844	117,657	582,501
1998	521,984	149,746	671,730
1999	533,583	203,534	737,117
2000	594,276	209,405	803,681
2001	609,930	244,927	854,856
2002	577,483	279,789	857,272

Impact on Cow/Calf Producers

The producers who own the beef cows, and thus provide the young animals to the feedlots, should understand the importance of the steers and heifers they raise compared to the cows in their herds. From an Iowa State University budget, and prices as of the week of June 14, 2003, it is obvious that the value of the cow is in the calves she pro-

Table 5: Enterprise Income from 100 Beef Cows, 2003

Income Item	*Price per Lb.*	*Annual Revenue*	*Percent of Revenue*
Heifer calf (26 head x 500 lb/head = 13,000 pounds)	$0.95	$12,350	26
Steer calf (46 head x 550 lb/head = 25,300 pounds)	$1.05	$26,565	55
Cull Cow (18 head x 1,150 lb/head = 20,700 pounds)	$0.45	$9,315	19
Total		*$48,230*	*100*

duces, as seen by Table 5 (Note: total sales of only 90 head of cows, rather than 100 head, results from a 20 percent heifer retention rate, a 92 percent calving rate, and 2 percent death loss).

If we take this one step further, and calculate the revenue to the entire cattle value chain, including the feedlot that buys the steers and heifers, the comparison looks like Table 6. Note that the contribution of cow sales has dropped from 19 percent to 13 percent.

Finally, if we look at the retail value of the beef produced from these 100 cows, we see that the contribution of cow beef to the total U.S. beef industry is only 9 percent of total retail sales. (Table 7)

Though only 9 percent of the total value, the beef from cull cows is important to supermarket sales and is the lifeblood of the U.S. fast-food industry. Production of ground beef would be terribly expensive without the low-cost U.S. cow beef that makes up a significant fraction of the total supply and without a significant portion of the 90's beef supply that comes from imports.

Imports as a Surprising Bonus

Some cattlemen believe that U.S. lean beef imports are harmful to their industry and should be sharply restricted. The thought process is that if the volume of imports were lower, the prices of beef would be higher due to a lower total supply. This may be true, but only in the short term. In the long term, the domestic supply of lean meat for ground beef would rise by cutting into the more profitable sales of high-quality beef—or consumers would shift even further from ground beef to poultry and pork.

The United States already restricts beef imports from all countries except Canada and Mexico via a tariff rate quota system. This effectively limits the quantity of beef that can be imported in any given year, and also raises its cost. The quota system, though highly modified over time, has been in place for decades. (To be fair to U.S. producers, similar restrictions are also in place in most other well-developed beef markets.)

The U.S. supply of fed beef will grow as the consumer market expands. But the U.S. lean beef supply will probably shrink slightly over time, not expand. Both products must be available to make up the ground beef supply consumers want. In that light, by ensuring an expanded supply of 90's beef, the fast-food industry is providing a huge long-term benefit for the health of the U.S. beef industry. In fact, this may be the only way the U.S. beef industry can continue to give consumers what they want in the way of lean ground beef in the future.

Table 6: Values of Cattle Industry Income From 100 Beef Cows

Income Item	*Price per Lb.*	*Annual Revenue*	*Percent of Revenue*
Fed Heifer (26 head x 1,100 lb = 28,600 pounds)	$0.77	$22,022	30
Fed Steer (46 head x 1,200 lb/head = 55,200 pounds)	$0.77	$42,504	58
Cull Cow (18 head x 1,150 lb/head = 20,700 pounds)	$0.45	$9,315	13
Total		*$73,841*	*100*

Table 7: Values of Retail Beef Sales From 100 Beef Cows

Income Item	*Price per Lb.*	*Annual Revenue*	*Percent of Revenue*
Fed Heifer (26 head x 515 lb/head = 13,390 pounds)	$3.65	$48,874	31
Fed Steer (46 head x 560 lb/head = 25,760 pounds)	$3.65	$94,024	60
Cull Cow (18 head x 420 lb/head = 7,560 pounds)	$1.85	$13,986	9
Total		*$156,884*	*100*

Current Lean Beef Situation

U.S. feedlots and Canadian imports supply fed cattle that yield 50's beef as a by-product of grain-fed beef production. By themselves 50's have little value, and are, in fact, mainly used to mix with lean beef to make hamburger to varying fat specifications. The rest of the world (mainly Australia and New Zealand) and U.S. cow slaughter supplies the 90's.

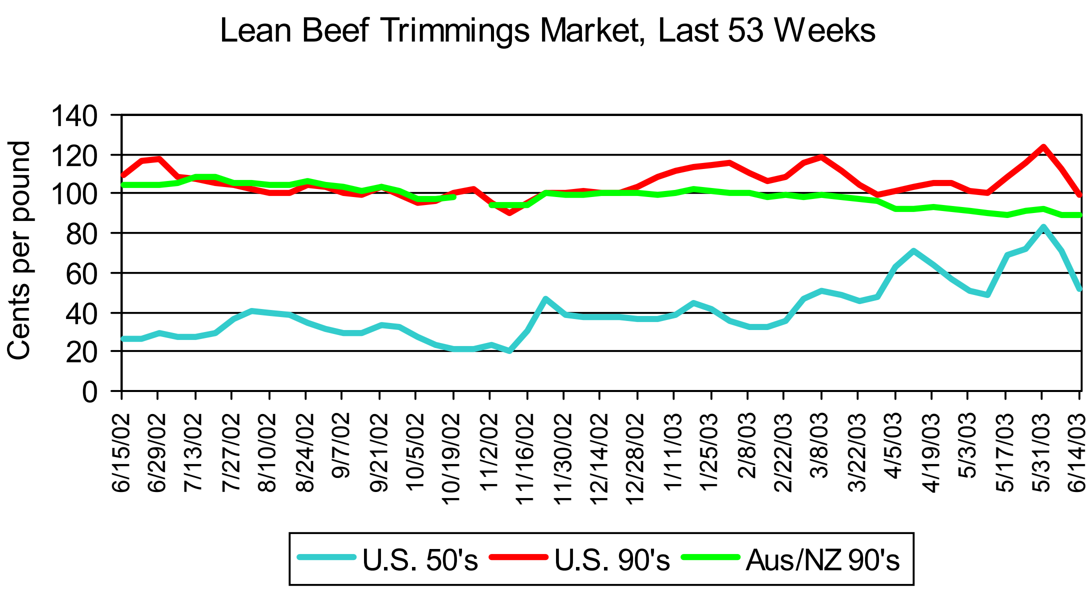
In mid-2003, a sharp drop in the availability of lean beef within the United States, due to a series of world and domestic events, plunged the U.S. beef market (and the ground beef market in particular) into a state of turmoil:

1. A Canadian occurrence of BSE ("mad cow" disease) in a single cow resulted in a ban on Canadian shipments of live cattle and beef into the United States, reducing the U.S. supply of 50's.
2. A significant portion (30–35 percent) of Canadian cattle imports were cows destined for the U.S. 90's supply, and they were banned from coming south until the BSE issue is resolved.
3. A reduction in the marketing weights of U.S. feedlot cattle has sharply cut the supply of 50 percent lean beef trimmings from this source.
4. A global drop in exportable 90's due to recent foot-and-mouth disease outbreaks in South America and a drought in Australia.

As shown in the following graph, the net effect of these events has been:

1. Increased price volatility of both 50's and domestic 90's
2. A sharp increase in the price of 50's
3. A sharp price discount for Australia/New Zealand 90's (normally priced close to the U.S. market)

Note in the figure below that the price of 50's had increased significantly, and that the premium price for domestic 90's started well before the Canadian BSE announcement of May 20, 2003.



Price outlook for the balance of 2003

As 2003 unfolds we should expect that the 50's price will fall as U.S. fed cattle marketing weights increase and the supply of Canadian imports resume. In fact, since cattle in Canada will be backed up and heavier than normal, there will be a surge in supply once the border reopens. This will cause negative repercussions in domestic market prices.

The outlook for the 90's price is much less certain. So far in 2003 the price of 90's has been held in check by a larger-than-normal dairy cow kill and the presence of heavily discounted import product. U.S. dairy cow slaughter rates should decline in the last half of the year, implying that the supply of U.S. 90's will decline. Ground beef demand has been excellent this year, and we could be looking at somewhat higher 90's pricing as we move into the fall and winter. The continued presence of lower-priced import product will help check the increase, but there will still be some upward pressure in the market.

Outlook for 2004 and Beyond

The long-term trend is for the United States to import more of its lean beef (low value) for the ground beef market and export more of its grain-fed (high-value) beef.

On the domestic demand side, an increasing U.S. population and economic growth argue for a slow but steady increase in the demand for all beef products.

On the export front, the United States has been very successful in increasing volume to Japan and Korea. Now, as China joins the WTO, it is dropping its tariff and state-trading barriers to beef imports. With very low Chinese beef production, very small beef imports, a rapidly increasing middle-income population, and rapid economic growth, China appears to be another Asian market with very significant volume potential for high-value U.S. beef.

On the supply side, the beef cattle cycle in the United States is entering a phase in which a slow herd rebuilding will occur. One effect of this rebuilding will be that over the next three to five years, beef cow numbers will increase. To make this happen, beef producers will keep cows longer, place more heifers into the cow herd, and send fewer heifers to feedlots. All three trends will reduce the domestic supply of both 50's and 90's. However, as the beef industry starts to grow again, this will boost the 50's supply significantly. The 90's supply from beef cows may also increase slightly, but not by as much as the 50's from fed beef.

Dairy cow numbers in the United States have been declining for over seventy five years. Although the trend flattened out in the last two years, there is no reason to expect that the basic forces calling for a smaller herd have changed. In fact, the failure to reduce cow numbers in the recent past has led to a crisis in milk prices and a surge in dairy cow slaughter in the first half of 2003. Over time, as the dairy cow herd continues to decrease slowly, domestic producers' ability to supply the 90's market from their own cattle will decline.

The U.S. market supply of 50's should be in much better shape after the next two to three years when the U.S. beef herd starts to grow again. Even so, the next few years should see a tight 50's market and higher, more volatile pricing.

Summary and Conclusions

The U.S. ground beef market faces an increasingly short supply of inexpensive lean beef (90's) because of growth in ground beef demand, the long-term trend toward fewer dairy cows, and the increasing specialization of the U.S. beef industry in the high-value end of the market.

There are cattle production systems in other parts of the world where lean beef can be, and should be, produced as a primary product. Over time, it makes sense for the United States to import more and more of its lean beef while selling more high-value fed beef, both domestically and in the export market.

The outlook for 50's, largely a byproduct of the production of the U.S. fed-beef supply, is for modest supply growth over time. While America has a shortage of this product in mid-2003, this appears to be due to short-run factors. This product is not normally imported into the United States from any country other than Canada, and there should be no need for significant imports in the foreseeable future.

Why Importing More Lean Beef Would Likely Be Profitable for the Cattle Industry

Normally, restricting the supply of a product causes an increase in price and a reduction in amount consumed. In the cattle industry, reducing 90's imports would cause an increase in the 90's price and would also cause an increase in cull cow prices. However, the effects don't stop there.

If the United States were to restrict the import of 90's, and their price increased as a result, the following would be implied:

1. A lower 90's supply to mix with 50's
2. A decrease in the supply of, and overall demand for, ground beef
3. A decrease in the amount of 50's needed to mix with 90's
4. A decline in the demand for 50's, the 50's price, and, ultimately, fed cattle prices
5. A lower incentive to produce America's competitive advantage, fed beef, and a higher incentive to produce lean beef, even though America does not have a competitive advantage in that market
6. An increase in the market share of chicken and pork products that can be substituted for lean ground beef in the U.S. market
7. A smaller, less profitable, less efficient, U.S. cattle industry

In other words, attempts on the part of the cattle industry to restrict imports of lean ground beef into the United States would very likely prove to be counterproductive for U.S cattle producer profitability. Increased imports of 90's over the foreseeable future will be required to maintain or improve the value of the domestic 50's supply, and the fed cattle prices upon which the industry is so highly dependent.

When one looks at the total picture, including the value of all the U.S. beef that goes into the ground beef supply, imports of lean beef actually enhance the value of the U.S. beef market and overall cattle prices. In addition, importing lean beef allows U.S. cattlemen to maximize their competitive advantage of fed beef production.

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