U.S. Beef Exports to Western Canada: Exploiting Opportunities for Intra-Industry Trade

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Canada is a net exporter of live cattle and beef to the U.S. This is particularly true of Western Canada which has a relatively small population compared to the resource base capable of producing beef cattle. The agricultural output of the Canadian prairies (a northern extension of the U.S. plains) is surplus to regional requirements. Dryland grain farming is the major agricultural activity with wheat and barley being the most important crops. The surplus leaves the prairies either as a primary commodity (like most of the wheat) or highly processed in the form of red meat (as is the case with most of the barley). Canadians prefer to export as much of their crop and livestock surplus as possible in the form of high value-added products. This is due to the employment and other multiple effects. Exports of beef from the Western Canadian provinces to the U.S. are significant and have been increasing.

Due to the clear competitive advantage of Western Canada beef processors, how is it that some U.S. agribusiness firms can "buck the trend" and export beef to Western Canada? The answer lies in analyzing beef as a highly differentiated product with particular price and consumption characteristics. When we view beef in this light, there are likely to be several niche markets which producers can successfully exploit. This is exactly what a small number of U.S. agribusiness firms have been doing over the last few years (Lutz and Scheer; Ross and Lutz).

Between 1980 and 1988, exports of beef to Western Canada increased from 1,000 tonnes to 8,300 tonnes. Hence, while not yet a large market, it does suggest one of consistent and steady growth. Intra-industry trade tends to be complex and to understand why this opportunity arises we must examine the consumption characteristics of Canadian consumers, Western Canadian beef production, the regulatory environment and the current characteristics of the beef products traded. Once we develop an understanding of the intra-industry trade opportunity, we can identify the significant factors which are likely to affect future export trends.

The Western Canadian Beef Market

Canadian and U.S. beef consumers share several consumption characteristics which might lead potential exporters to treat them as interchangeable. This would be unwise as subtle differences in tastes exist which provide the key to a successful export program. Canadian consumers are relatively wealthy—gross domestic product per capita was about U.S. $20,000 in 1989, up from U.S. $14,000 in 1986. Per capita consumption of beef has, however, been declining as a result of many factors. These include an aging population, slower growth in real incomes, the price competitiveness of poultry, and concerns over health and fitness (Boutin and Kerr). All of these trends are similar to those in the U.S.

While never as high as in the U.S., beef consumption in Canada has not decreased as dramatically over the last decade as in the U.S. There are two major reasons for this. First, the relative price of chicken has not declined to the same degree as it has in the U.S. (Atkins et al.). This is because the Canadian poultry industry practices supply management. As a result, chicken prices in Canada are considerably higher than in the U.S. and, hence, beef consumption indirectly encouraged. Second, Canadian beef tends to be leaner than U.S. beef and therefore consumers have had less concerns about the healthfulness of the product (Considine et al.). This preference for a lean product is the most important aspect of differences in consumption between Canada and the U.S.

The premium Canadian grade, A1, correlates well with U.S. Select and is considerably leaner than U.S. Choice. Of course, there has been a trend toward consumption of leaner beef by a subset of U.S. consumers, particularly on the west coast (Branson et al.). We can explain, in part, the movement away from graded product in the U.S. in favour of ungraded "no-roll"[1] by this trend. While lean U.S. "no-roll" product is discounted in the U.S., in Canada it may command a price premium. As a result of this product differentiation, there is a growing market for U.S. no-roll beef in Canada. It is in this subset of beef product where there has been the greatest growth in U.S. exports to Western Canada. However, as we will discuss later, it is only certain primal and sub-primal cuts which exhibit significant export potential.

Ninety-five percent of the Canadian population lives within 200 miles of the U.S. border. This suggests that transport costs for exporting U.S. agribusiness firms will not be significantly different from those to Seattle, Great Falls or Grand Forks. The heavily urbanized population in Western Canada means a firm's marketing can be targeted by efforts to a few centers with transport concentrated on a few well developed routes. Furthermore, the urban population is relatively wealthy and has access to a variety of restaurants. A well developed hotel, restaurant, and institutional (HRI) wholesale trade means few customer calls. The retail industry is much more concentrated than in the U.S.

with a few supermarket chains dominating the market. About 70 percent of food sales arise from these chains. Again, this suggests a concentrated rather than broad based marketing strategy for U.S. exporters.

In short, while there are many similarities between the Canadian and U.S. beef market, there are differences between consumers. As a result, there are opportunities to create market niches for U.S. products. In particular, the Canadian preference for lean product and the concentrated nature of the marketing channels provide these opportunities. Exporters must, however, compete with Canadian firms in the Canadian domestic market.

The Canadian Beef Industry

Production in Western Canada is similar to that in the U.S. It is a two-stage procedure where the cow-calf operations and feedlots are normally separate enterprises. For the most part, climatic conditions are not suitable for corn production and as a result, barley is the major animal feed. Feeder cattle arrive at feedlots at about the same age as U.S. feeders. The feeding period is approximately 120 days, about 20 days less than U.S. animals which reflects the Canadian preference for leaner beef.

The beef herd in Canada is geared to producing a very lean animal. In 1972 Canada changed its grading system in response to the changing consumer preference for leaner beef (Considine et al.). Large numbers of European cattle (Charolais, Simmental, Limousin) were imported to cross with domestic Hereford and Angus (Kerr, 1982). The offspring of Hereford and Angus brood cows bred to European bulls is the primary commercial animal produced today.

The drive for lean beef, however, may have progressed too far. The Canadian grading system takes no account of marbling. The premium grade, A1, is primarily determined by minimal external fat cover (.2 to .5 inches). Other grades, A2, A3 and A4, are determined by increasing quantities of external fat cover. The result is that Canadian feedlots produce a carcass with little or no intra-muscular fat.

There is, of course, a trade-off between reduced intra-muscular fat and the taste of the cooked product (Branson et al.). As a result, there is some concern that consumers find Canadian beef bland. This is particularly true for the HRI trade where cooking quality is extremely important. Hence, there is a market niche for U.S. no-roll product which has a minimal amount of external fat and a slight degree of marbling—slightly less than U.S. Choice.

The Regulatory Environment

Federally inspected plants must inspect and grade all Canadian beef which moves either between provinces or for export. This means that all Canadian beef moving into retail chains or the HRI trade is graded. On the other hand, grading is not required by U.S. regulations. Grading is not required by either U.S. or Canadian standards for beef exported to Canada (Lutz and Scheer). As a result, U.S. no-roll product can sometimes compete on a price basis in Canada. Lean U.S. beef which meets A1 standards receives a premium in Canada. The U.S. domestic market discounts U.S. no-roll. Hence, if U.S. no-roll is lean it may be able to secure a price near to the Canadian premium price if exported. Since there is no regulatory quality control on no-roll beef, its quality may vary considerably. As a result, Canadian consumers (who have come to expect A1 product in the retail counter and A2, A3 and A4 in the restaurant) can be sold "inferior quality"—according to official Canadian grading standards—no-roll as a perfect substitute for Canadian A1. In fact, the no-roll product may be preferred if it is slightly marbled. As a result, if U.S. no-roll is price competitive it will be purchased by Canadian wholesalers.

Exporting to Canada should become easier over time as a result of the Canada-U.S. Trade Agreement (CUSTA) which came into effect on January 1, 1989. The Agreement will mean that all tariffs on imports of beef into either country will be removed over a ten year period. While not large, the existing tariffs still provide a barrier in an industry where profits are often measured in cents rather than dollars per pound. More important, as the current tariff structure increases as the proportion of value-added increases, the removal of tariffs should encourage the movement of value-added product (Kerr, 1988).

The provisions of the CUSTA also enabled mutual exemption from the two countries' respective beef import laws. While Canada has never invoked its Act regarding U.S. product, the removal of the threat should aid market access over the long run. Border inspection procedures are also being streamlined and made less arbitrary. In addition, there is a commitment to negotiate the harmonization of industry standards. Over the long term, all of this should provide for more secure access to the Canadian market.

U.S. Beef Exports to Canada

Before examining beef imports in detail, we will present a brief review of Canadian international trade in beef. Table 1 provides a summary of beef and cattle (converted to equivalent carcass weight) trade for the period 1982 to 1988. In volume, Canada has been a consistent net exporter over the entire

Table 1.
Canadian Trade in beef and Cattle, 1982-1988

	1982	1983	1984	1985	1986	1987	1988
				tonnes			
Exports							
U.S.	178,295	148,485	171,637	178,677	139,549	138,180	190,493
$000	317,170	292,974	379,191	399,371	349,236	379,013	535,002
% total value	94	96	97	95	94	95	95
Other	4,917	4,357	4,300	4,322	4,072	3,201	4,027
$000	18,848	12,691	12,793	17,395	18,400	15,444	19,623
% total value	6	4	3	4	5	4	4
Total	183,162	152,841	175,937	182,999	143,621	141,380	194,520
$000	336,018	305,665	391,964	416,766	367,636	394,457	554,625
Imports							
U.S.	32,052	35,356	33,254	35,850	39,938	52,389	50,342
$000	115,668	126,508	142,735	157,716	158,534	232,072	232,398
% total value	47	49	46	52	51	56	51
Other	47,650	47,220	57,502	55,963	55,956	64,232	72,970
$000	128,124	133,061	167,957	148,239	153,199	179,885	219,341
% total value	53	51	54	48	49	44	49
Total	79,702	82,576	90,756	91,812	19,894	16,621	123,312
$000	243,792	259,524	310,692	305,955	311,733	411,957	451,739
$/tonne	3,059	3,143	3,423	3,332	3,251	3,532	3,663
Net Exports							
Tonnes	103,461	70,266	85,181	91,187	47,726	24,760	71,208
$000	92,226	46,141	81,272	110,811	55,903	-17,500	102,886

Source: Statistics Canada and Agriculture Canada.

period. This has also been true in value terms except 1987. The quantity of exports has varied considerably while the value of imports has increased steadily.

In 1988 Canadian imports had reached 123,312 tonnes. The major source of increased imports has been the U.S. In 1982, imports from the U.S. were 32,052 tonnes, increasing consistently to 50,342 tonnes in 1988. If one considers only beef (and not the trade in live animals) Canada had a consistent trade surplus with the U.S.

To explain such intra-industry trade, one would expect there would be a difference in the quality of surplus product between the trading partners. One would also expect geographic differences in market surpluses or deficits. We can attribute major difference in the quality of beef exported from the two countries to differences in the mix of animals slaughtered. In the U.S. seventy-seven percent of the slaughter consists of beef animals and twenty-three percent is from dairy herds. In Canada, thirty-one percent of the national herd are dairy animals and only sixty-nine percent are beef animals. As dairy cows are, on average, heavier and are culled at a more rapid rate than beef breeding cows, the proportion of manufacturing beef in the Canadian slaughter is relatively high. In 1988, seventy-seven percent of the Canadian slaughter was fed production and twenty-three percent non-fed. The figures for the U.S. are eighty-one and nineteen percent respectively (Ross and Lutz).

The higher proportion of non-fed cattle slaughtered in Canada means there is a relatively larger supply of manufacturing beef. As a result, cow beef prices have tended to be lower in Canada than in the U.S. It also means there is a relative shortage of fed beef and, at least in the deficit production areas of the country, a higher price. Ontario and Quebec have very large dairy industries but are not self-sufficient in beef production. Hence, Canadian exports from Central Canada have been slaughter cows and manufacturing quality beef. On the other hand, live cattle imports to Central Canada have tended to be fed beef animals and beef imports consist of higher quality cuts from fed cattle. This quality difference, however, cannot explain northward movements of beef into Western Canada because the West has a very small dairy industry and is a large surplus producer of fed beef.

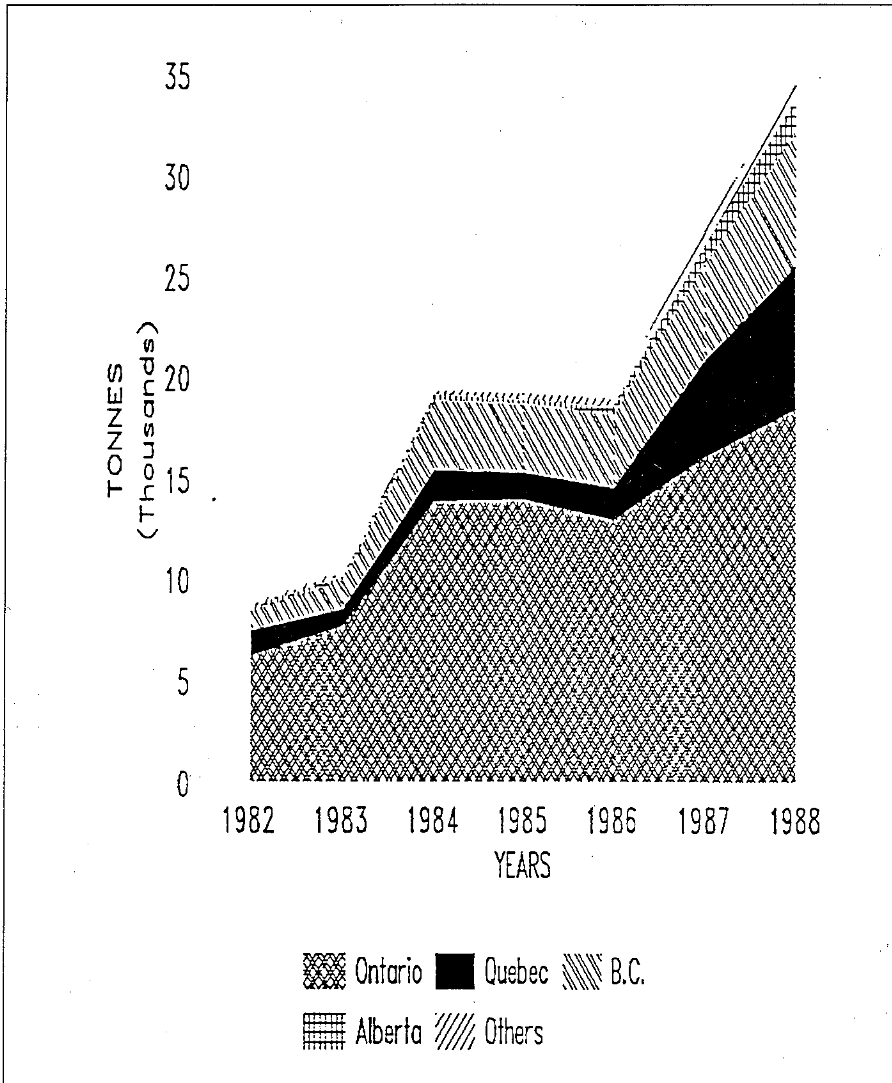
Canada collects data on imports by province of entry. This means where the product crosses the border. We must use such statistics with caution as some beef will enter Canada in one province and then be trans-shipped to another province for final consumption. For our purposes, however, this limitation is not too severe since our interest is in movements of beef into Western Canada. Because of the distances between the Western Canadian and Central Canadian markets, no trans-shipments of beef between regions is likely to take place. Typically, four provinces account for over 95 percent of all imports (Figure 1).

Ontario and Quebec are the largest importing provinces. On the other hand, in Western Canada, B.C. and Alberta show consistent increases in imports. Only small and sporadic imports are reported for the western province of Manitoba and there have not been any imports reported for Saskatchewan.

Canada also collects statistics on beef imports from the U.S. by place of origin, aggregated by U.S. Census Sub-Divisions. These consist of several states. We provide imports from the various U.S. Census Sub-Divisions in Table 2 along with a listing of the states that make up the individual divisions. We can identify three major flows of product: shipments from the corn belt into Ontario and Quebec, from the Pacific Northwest into Western Canada and small movements up the Eastern Seaboard.

We can also identify three major categories of beef imports from the U.S.: fresh boneless beef, frozen boneless beef, and fresh or frozen bone-in beef. We

Figure 1:
Beef Imports from the United States by Province of Entry 1982–1988 (Tonnes).



report these in Table 3. Fresh boneless beef has always held the largest share of total imports, followed by bone-in product. The smallest category is frozen boneless beef. These figures reflect the previous discussion which suggested

Table 2.
Canadian Beef Imports from the United States by Place of Origin—1986

	Quantity -tonnes-	Value ($000)	Unit Value 4/tonnes
West North Central	5,875	34,143	5.81
Pacific 1	2,934	15,672	5.34
South Atlantic 2	2,862	9,467	3.31
East North Central 1	2,067	12,593	6.09
New England 2	1,224	8,493	6.94
Mid-Atlantic 1	1,221	7,063	5.79
East North Central 2	1,053	5,542	5.26
West South Central 2	981	5,781	6.30
Total U.S.	19,241	104,572	5.43

West North Central—Iowa, Kansas, Missouri, Nebraska
Pacific 1—Alaska, Oregon, Washington
South Atlantic 2—Florida, Georgia, South Carolina
East North Central 1—Michigan, Ohio
New England 2—Connecticut, Maine, Rhode Island
Mid-Atlantic—New Jersey, New York, Pennsylvania
East North Central—Illinois, Indiana, Wisconsin
West South Central—Oklahoma, Texas
Source: Statistics Canada.

Table 3.
Canadian Beef Imports from the United States by Major Products

Product	Quantity		Value		Unit Value
	Tonnes	Percent	$000	Percent	$/Tonne
Fresh Boneless Beef	13,520	100.0	79,000	100.0	5,843.20
Loins	8,382	62.0	55,063	69.7	6,569.20
Hips	2,658	19.7	11,455	14.5	4,309.63
Ribs	730	5.4	4,977	6.3	6,817.81
Briskets	230	1.7	711	0.9	3,091.30
Other	1,520	11.2	6,794	8.6	4,469.74
Fresh Boneless Beef	1,558	100.0	7,700	100.0	4,942.23
Loins	650	41.7	4,088	53.1	6,289.23
Hips	70	4.5	254	3.3	362.86
Ribs	131	8.4	832	10.8	6,351.15
Fores	69	4.4	177	2.3	256.52
Other	638	40.9	2,349	30.5	3,681.82
Fresh/Frozen Bone-in beef	4,160	100.0	17,700	100.0	4,251.81
Carcasses	1,860	44.7	5,275	29.8	2,836.02
Fresh Loins	404	9.7	2,513	14.2	6,220.30
Fresh Hips	354	8.5	1,575	8.9	4,449.15
Fresh Ribs	807	19.4	4,814	27.2	5,965.30
Fresh Hind Cuts	383	9.2	1,434	8.1	3,744.13
Other	352	8.5	2,088	11.8	5,931.82
Total Imports	19,241		104,576		5,435.06

Source: Statistics Canada.

there are likely shortages of high quality fed beef in Canada and surplus quantities of frozen beef.

Loins and hips represent the majority of Canadian imports, 81 percent in the fresh boneless beef category are cuts from the rear of the animal—loins, hips and hind cuts—make up about 60 percent of fresh bone-in product (Lutz and Scheer). Cuts from the hind quarters are also showing the most growth. This is significant as it suggests a reason for intra-industry imports into Western Canada which is, on aggregate, a net surplus producer of fed beef.

In Canada, the front quarters have always been a difficult product to sell. This is because the front quarter often has a larger percentage of low quality cuts. This means that it must compete with manufacturing beef which tends to be relatively lower priced in Canada compared to the U.S. This is due to the size of the dairy herd. The industry in Western Canada sells considerable quantities of beef into the Central Canadian market. This means that the relative price of a front quarter in Canada will be lower than in the U.S. Thus, a higher price is charged for the hind quarters to offset the loss on the front quarters. As a result, under certain circumstances, there is a market opportunity for hind quarters to move into Canada profitably from the U.S. Gillis et al. support this conclusion on the export potential of Canadian beef primals. They found almost no export opportunities for the hip and loin. This suggests that these primals would often have been imported. So, these cuts are the export niche that must be exploited in the market in Western Canada.

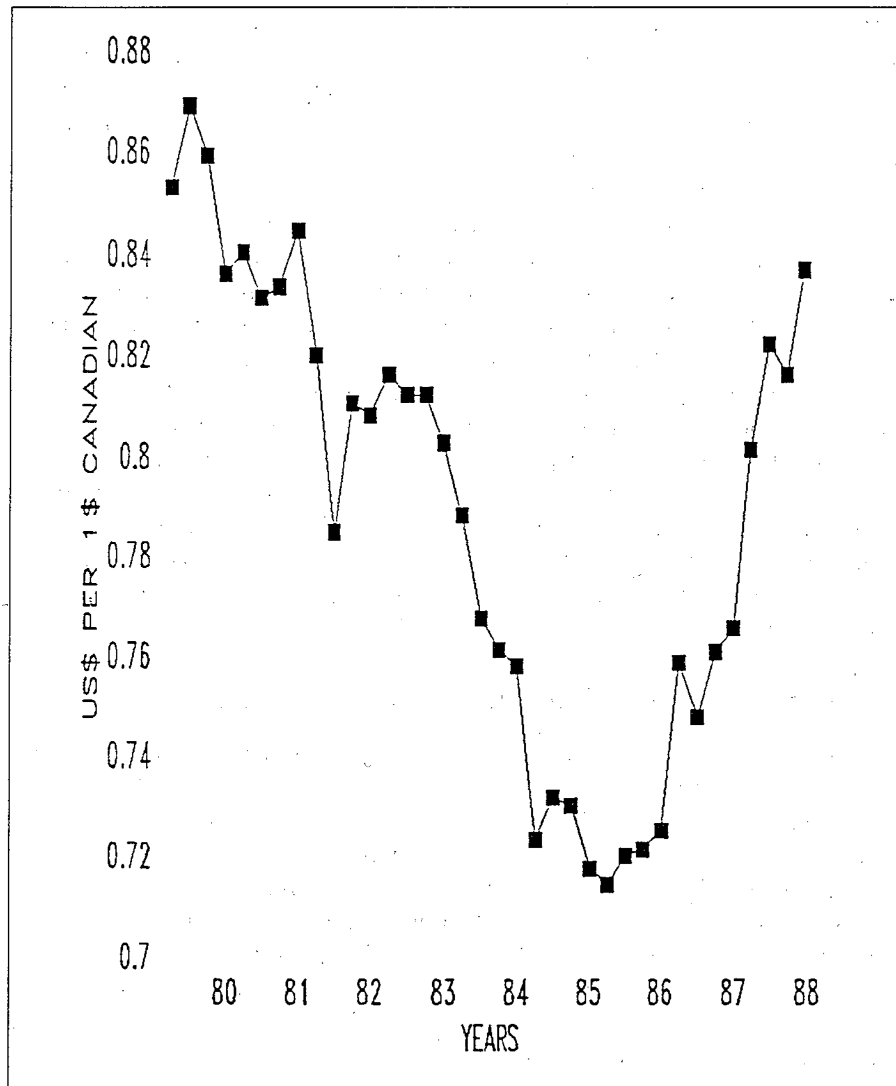
Factors Which May Affect Export Opportunities in the Future

There are several factors which any potential exporter should watch as they may alter the competitive position of exports over time. The first is the exchange rate between the U.S. and Canadian dollar. Opportunities for U.S. exporters have improved over the last few years because the Canadian dollar has appreciated against the U.S. dollar (Figure 2). If the Canadian dollar were to return to the level of the mid-1980's, then export opportunities will be constrained.

The reason for the appreciation of the Canadian dollar has been the concern of the Bank of Canada (the Canadian equivalent of the Federal Reserve System) about inflationary pressures. As a result, the Bank of Canada has been following a tight monetary policy with resulting high interest rates. The high interest rates encourage capital inflow from the U.S. driving up the value of the Canadian dollar. The movements of the Canadian dollar over the intermediate term bears watching by those contemplating exporting to Canada.

The second development which should be monitored is an attempt to reintroduce marbling into the Canadian grading system. If the experiment is successful, Canadian producers will likely alter their production processes and

Figure 2:
US/Canada Exchange Rates (1980–1988 Quarterly).



produce cattle with a greater degree of marbling than at present. This would reduce the competitive advantage of U.S. no-roll as a differentiated product.

A third development also relates to grading. As part of the regulatory harmonization arising from the CUSTA, the Canadian beef industry is studying the issue of allowing reciprocal grading. This would mean that beef produced in the U.S. but destined for the Canadian market could be graded to Canadian standards and vice versa. This could be a two-edged sword. On the one hand, if such grading is voluntary, it would allow the selection of some no-roll product for grading to Canadian standards. Then it should receive the price premiums associated with Canadian A1. On the other hand, if reciprocal grading is approved, then the Canadian government might try and make grading compulsory as it is for domestic beef. This would add to costs and likely have a detrimental effect on what are now U.S. exports of ungraded beef.

It is not clear whether, under the provisions of the CUSTA, the Canadian government could impose compulsory grading of beef exports to Canada as this may constitute a new trade barrier. As such, it would require a determination by a bilateral disputes panel set-up under the terms of the CUSTA.

Conclusions

The basic conclusion reached is that it is possible for U.S. processors to "buck the trend" and sell beef to Western Canada. The export window is quite small, however, since it is based on product differentiation. The market is likely to be for fresh, boneless, loin or hip cuts. If these can be competitively priced while carrying slightly increased marbling over the standard Canadian product, then it will continue to be possible to export to Canada. The exchange rate and developments in the Canadian industry pertaining to grading should be closely monitored by U.S. exporters.

Notes

1. The term "no-roll" relates to the absence of the grade indicator which is applied to the carcass with a roller.

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