Canadian vs. U.S. Fed Cattle Pricing and Marketing Practices and Viewpoints

by

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Since the early-to-mid 1990s, the U.S. beef industry has recognized the need to improve the quality and consistency of beef to halt a decline in beef demand. One approach believed to meet those objectives was value-based pricing. Several groups (cattle feeding firms, cattlemen organizations, breed associations, and beefpackers), initiated value based pricing systems, commonly referred to as grid pricing. The first large-scale marketing agreement with a pricing to value component was the Cactus Feeders-IBP agreement in the late 1980s. Premium-discount grids differ across packers and various agreements, but all have one common feature: price is established on each individual animal based on its carcass merit. One of the most appealing aspects of grid pricing is that, intuitively, higher valued cattle receive higher prices and lower valued cattle receive lower prices, thereby improving pricing accuracy and rewarding cattlemen who produce and market desirable types of cattle.

Most research on grid pricing to date has occurred in the U.S., though what has been learned is applicable in large part to Canada as well. However, less information is available on marketing and pricing practices of Canadian cattle feeders than in the U.S. Similarly, less is known about how Canadian cattle feeders view many of the issues related to fed cattle pricing and marketing and potential policy alternatives to address those issues.

The overriding objective of this report is to narrow the information gap that exists between Canada and the U.S. regarding what is known about cattle feeder pricing and marketing practices and cattle feeder viewpoints on related issues. This report presents similarities and differences between Canadian and U.S. cattle feeders' marketing and pricing practices as well as perceptions of pricing and marketing issues and potential policies based on surveys of cattle feeders conducted in both countries. In general, more similarities were found between cattle feeders in the two countries than differences.

This report is one of two from a National Beef Industry Development Fund project on pricing to value. The other describes a grid calculator developed for Canadian cattle producers, based on one for U.S. producers (*Canadian Grid Pricing Calculator and Examples*). The report contains several examples of using the grid calculator with sale lots of fed cattle from Canada. Notable differences were found between grid pricing structures and outcomes in the U.S. and Canada.

Description of U.S. and Canadian Surveys

Each of the surveys providing the basis for this research is described briefly and responses are summarized in Table 1. More emphasis in this paper is on the survey findings for Canadian cattle feeders but selected comparisons are made with U.S. survey respondents.

In 2002, about 1,500 questionnaires were mailed to cattle feeders in Iowa, Nebraska, Kansas, and Texas (Schroeder et al. 2002). Of those, 316 completed surveys were returned, a 21.1% response rate. The response by state and feedlot size is shown in Table 1. It should be noted that Iowa is comprised of many smaller, farmer feedlots. Feedlots in Nebraska and Kansas are a mix of larger commercial feedlots in the central and western sections of each state with some smaller farmer feedlots in the eastern portion. Texas feedlots are predominantly larger commercial feedlots in the panhandle region of the state. This 2002 survey focused on marketing and pricing practices of feedlots and perceptions of cattle feeders regarding marketing and pricing issues and potential policy alternatives. There was also an emphasis on reactions to then-recently implemented mandatory price reporting which is not addressed in this report (Grunewald, Schroeder, and Ward 2004).

In 2004, approximately 500 questionnaires were mailed to cattle feeders in Nebraska, Colorado, Kansas, and Texas (Ward 2005). Responses totaled 147, a 29.4% response rate. The focus of this 2004 survey was on factors affecting grid pricing use. Since 31 cattle feeders did not use grid pricing in 2003, the analysis included only 116 respondents who used grid pricing for some or all of the fed cattle they marketed in 2003. Table 1 shows the response distribution by state and size for those feedlots included in analyses of the survey data.

A survey of cattle feeders throughout Canada was conducted in 2005. A questionnaire was mailed to about 500 known cattle feeders. The survey instrument contained a combination of questions from the Schroeder et al. (2002) and Ward (2005) surveys, plus questions unique to the Canadian cattle feeding industry. Canadian cattle feeders returned 117 usable questionnaires, a 23.4% response rate. Note responses were dominated by cattle feeders in Alberta (Table 1). For the Canadian survey, comparisons among respondents are made between Alberta, the largest cattle feeding province, versus other Canadian provinces; and between the largest two size categories (marketings of more than 5,000 head) versus smaller feedlots.

Feedlot Profile

Canadian feedlots reported feeding calves almost equally with yearlings. Feedlots reported 51.0% of their fed cattle marketings in 2004 were calves and 49.0% were yearlings. Sixteen feedlots (14.0% of the total) fed only calves and another 13 feedlots (11.4%) fed only yearlings.

Two-thirds of fed cattle marketed from respondent feedlots (66.6%) purchased calves and yearlings from public auction markets. Another 16.2% of marketings were purchased directly from cow-calf producers or backgrounding lots and 9.9% of marketings had been raised on their ranch. Only 5.5% of fed cattle marketings were custom fed for ranchers and only 1.7% were

Table 1. U.S. and Canadian cattle feedlot surveys, by state/province and size

Year	State/Province	Returned	% Response
2002	Iowa	152	48.1
	Nebraska	66	20.9
	Kansas	50	15.8
	Texas	48	15.2
	Total	316	21.1
2004	Nebraska	42	36.5
	Colorado	15	13.0
	Kansas	32	27.8
	Texas	27	33.5
	Total*	116	23.2
2005	Alberta	86	73.5
	Saskatchewan	13	11.1
	Manitoba	8	6.8
	Other	10	8.6
	Total	117	23.4
Year	**Head marketed**	**Returned**	**% Response**
2002	Less than 5,000	170	53.8
	5,000-19,999	56	17.8
	20,000-49,999	36	11.5
	50,000-99,999	33	10.5
	More than 100,000	316	6.4
2004	Less than 5,000	25	21.6
	5,000-19,999	35	30.2
	20,000-49,999	22	19.0
	50,000-99,999	22	19.0
	More than 100,000	116	10.3
2005	Less than 1,000	220	18.8
	1,000-19,999	59	50.4
	More than 20,000	16	13.7
	Total	117	23.4

owned by packers. This latter figure does *not* represent the extent of packer ownership of fed cattle in Canada, only the extent of packer feeding in the respondent feedlots.

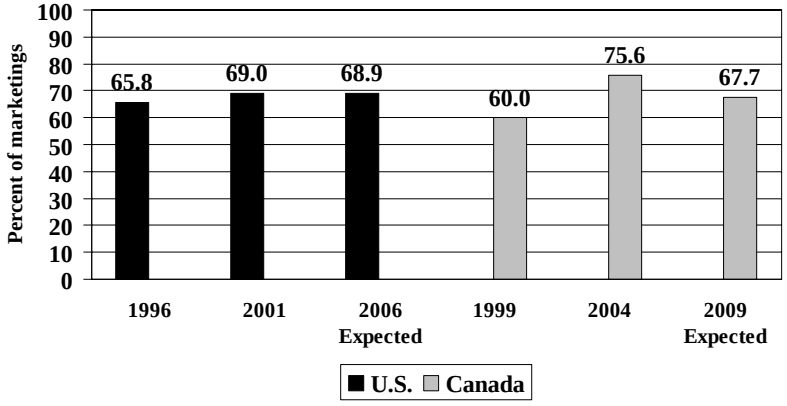
Competitive Environment

The percentage of fed cattle sold from respondent Canadian feedlots to the largest buyer increased between 1999 and 2004 from 60.0% to 75.6%, but feedlot managers expected a decline by 2009 to 67.7%. In 2004, 31 respondent feedlots in Canada (27.9% of the total) reported marketing all their cattle to a single packer. That number and percentage compared with 8 feedlots (8.1%) in 1999.

The percentage of fed cattle marketed to the largest buyer in Alberta was slightly higher compared with the percentage for other provinces combined in 2004 (76.8% for Alberta vs. 72.0% for other provinces). The percentage was also higher for larger feedlots (78.2%) compared with smaller feedlots (73.8%) for 2004.

On average, buyer concentration would appear to be slightly higher in Canada than in the U.S. In both countries, there are states/provinces with just one or a few major beef packing plants. However, in the U.S., fed cattle are procured by packers in adjacent states as well. Even so, feedlot respondents in the U.S. reported marketing 69.0% of fed cattle to the largest buyer in 2001 and expected the percentage to remain about the same (68.9%) in 2006 (Figure 1).

Figure 1. Percentage of marketings sold to the largest single buyer, U.S. and Canada, various years



In 1999, 67.9% of fed cattle were sold to packing plants located in Alberta. The second largest percentage (20.9%) was exported to U.S. packing plants. As expected, the border closing in 2003 markedly changed marketing patterns for many Canadian feeders. In 2004, 89.4% of fed

cattle were sold to plants in Alberta. However, the percentages sold to plants in Saskatchewan between 1999 and 2004 changed relatively little (4.2 and 4.9%, respectively) and similarly for Ontario (5.6 and 4.8%, respectively). Therefore, most of the change resulted from fewer fed cattle being exported to the U.S.

Pricing Practices

Research has documented the shift in risk when moving from live weight, cash-market trading to carcass weight, cash-market trading, to carcass weight, grid priced trading (Feuz, Fausti, and Wagner 1993; Feuz, Fausti, and Wagner 1995; Fausti and Feuz 1995). With live weight pricing, each animal in the pen receives the same live-weight price. Similarly, with carcass weight pricing, each animal in the pen receives the same dressed-weight price. However, with grid pricing, each animal receives an independent price consisting of a base dressed-weight price plus premiums and discounts associated with each animal's carcass characteristics. Commensurate with the shift in risk to cattle feeders from packers, there exists an opportunity for larger returns. While research has documented and verified this risk-return tradeoff, research also confirms that grid pricing increases the variability of prices and revenue (Ward and Lee 1999; Anderson and Zeuli 2001; McDonald and Schroeder 2003). This variability is introduced in many ways; for example, through the base price in grids, premiums-discounts for carcass traits, carcass attributes in pens of cattle sold, and plants where cattle are slaughtered.

Since each animal is priced independently with grid pricing, pricing accuracy should increase and the value of knowing or estimating how an animal will grade and yield is valuable. Research has focused on the pricing signaling function with grid pricing (Feuz 1999; Johnson and Ward 2005, 2006) as well as the significant value of information associated with knowing or estimating carcass characteristics (Schroeder and Graff 2000; Lusk et al. 2003). Schroeder and Graff simulated pricing 11,703 head of fed cattle with known carcass characteristics using the pricing method that resulted in the highest price among the three methods (live weight, dressed weight, and grid). Selling all carcasses using the pricing method having the highest price increased total revenue by nearly $35 per head compared with selling all cattle on a live weight basis. Thus, knowing carcass characteristics has significant value in grid pricing. Grid pricing has moved the industry closer to value based pricing and enabled the industry to increase coordination between stages in the supply chain when used in conjunction with strategic alliances (Brocklebank and Hobbs 2004; Tronstad and Unterschultz 2005).

Feedlot managers in the 2002 U.S. survey were asked to identify how cattle marketed from their feedlot were priced in 1996, 2001, and what they anticipated in 2006. Canadian feedlot managers in the 2005 survey were asked to identify how cattle marketed from their feedlot were priced in 1999, 2004, and what they anticipated in 2009. These questions were intended to provide a profile of recent, current, and future pricing practices so as to identify changes or trends over time. A summary of responses in presented in Table 2.

Canadian cattle feeders reduced their use of sealed bids (either live or dressed weight) between 1999 and 2004 (from 52.6% of marketings to 42.3%) and increased their use of grid pricing (from 3.8% to 8.0%). The use of rail (dressed weight) pricing increased slightly (from 30.5% to

Table 2. Dominant pricing methods used by U.S. and Canadian cattle feedlots

U.S.	**1996**	**2001**	**2006 Expected**
		(% of Marketings)	
Pricing method*			
Live weight cash market	53.5	28.7	18.2
Dressed weight cash market	36.6	25.9	17.7
Grid pricing	8.1	43.5	59.7
Contracting	1.5	1.8	2.9
Base price determination in grids**		2003	
Negotiated		23.5	
Formula tied to price quote		39.1	
Formula tied to packer's plant cost		29.6	
Canada	**1999**	**2004**	**2009 Expected**
		(% of Marketings)	
Pricing method***			
Sealed bids (live or dressed weight)	52.6	42.3	32.8
Rail (dressed weight) pricing	30.5	33.2	26.0
Grid pricing	3.8	8.0	19.4
Contracting	7.8	7.8	13.2
Base price determination in grids		2004	
Negotiated		22.2	
Formula tied to price quote		29.8	
Formula tied to packer's plant cost		37.8	

* 2002 survey
** Feedlots marketing more than 50% of the fed cattle with a grid, 2004 survey
*** 2005 survey

33.2%) while the extent of contracting (either basis contracts or fixed price contracts) remained the same at 7.8% for both years. The percentage use of pricing methods anticipated to be used by 2009 equalized somewhat. Use of sealed bids as a percentage of fed cattle marketed was anticipated to decline to 32.6%; rail pricing, to decline to 26.0%; grid pricing, to increase to 19.4%; and contracting, to increase to 13.2%. It should be noted that data reported by CanFax indicate a higher percentage of fed cattle marketings being sold by grid pricing for 2004 to 2006 than respondent feeders reported in the 2005 survey in Canada.

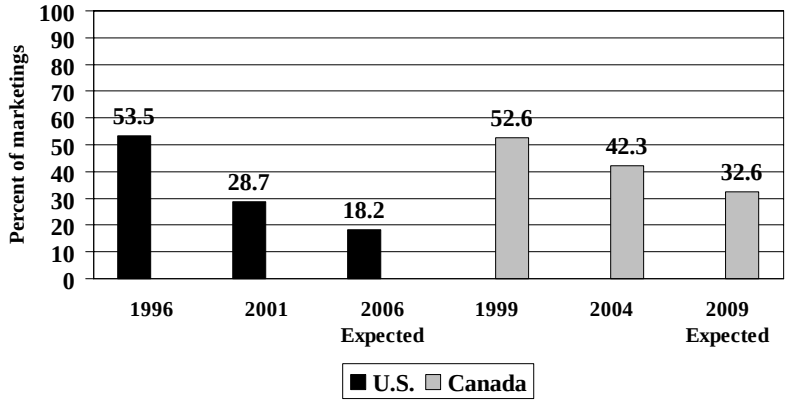
Findings from the survey in Canada differed somewhat from available reported procurement methods by packers, but for explainable reasons. Brocklebank and Hobbs (2004) reported industry data showing that the three largest packers in Alberta purchased 60% of their fed cattle supplies in 2002 on a cash (live weight) basis, 22% with some sort of marketing agreement, and 18% were packer owned. Survey data reported here did not include packer-owned purchases by packers nor did it specifically address marketing agreement purchases.

Sealed bid pricing was the predominant pricing method in Alberta, accounting for 50.5% of fed cattle marketings in 2004 by respondent feedlots, with rail pricing second (28.0%). In the other provinces combined, the reverse was found. Rail pricing accounted for 47.8% of marketings and sealed bid pricing, 19.8%. Grid pricing and contracting were both higher in other provinces (14.2% and 11.6%, respectively) than in Alberta (5.7 and 6.4%, respectively).

Smaller feedlots tended to use sealed bid pricing in 2004 somewhat more than larger feedlots (45.5% of total marketings vs. 37.6%). Larger feedlots relied more on rail pricing (38.3% of total marketings) compared with 29.8% for smaller feedlots. Grid pricing and contracting for smaller feedlot respondents were 6.1% and 9.4%, respectively; and for larger feedlots, 10.8% and 5.3%, respectively.

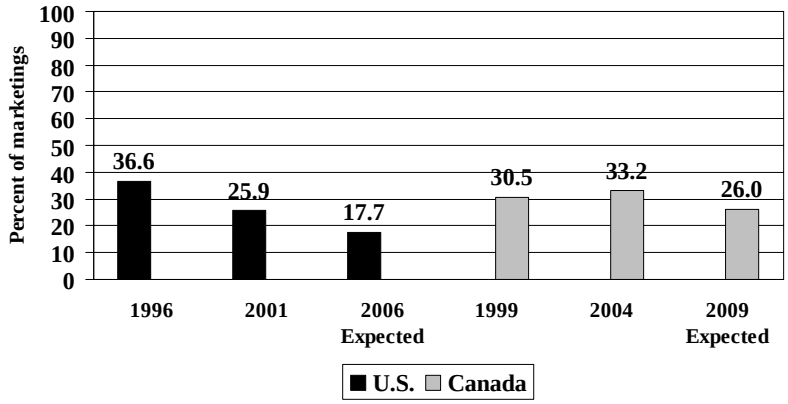
In the U.S., live weight pricing accounted for 53.5% of fed cattle marketings in 1996 but declined to 28.7% in 2001. As Figure 2 shows, the decline in cash market pricing, and expected further decline, has been slightly more pronounced in the U.S. than in Canada.

Figure 2. Percentage of marketings priced on a live weight or sealed bid basis, U.S. and Canada, various years



Dressed weight pricing declined also in the U.S., from 36.6% to 25.9%. Dressed weight or rail pricing in Canada increased from five years ago and is expected to remain at a higher level in 2009 than the level indicated by U.S. feeders for 2006 (Figure 3).

Figure 3. Percentage of marketings priced on a dressed weight or rail basis, U.S. and Canada, various years

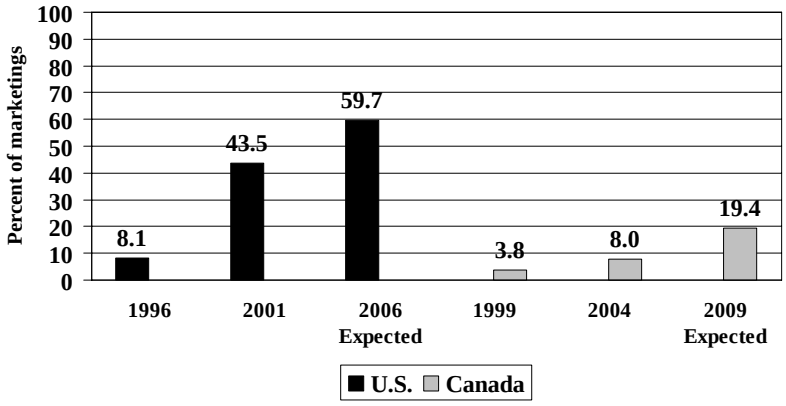


A significant change in the U.S. was the extent of grid pricing, which was more dramatic than the increase in grid pricing in Canada (Figure 4). Between 1996 and 2001, grid pricing among respondent feedlots increased from 8.1% to 43.5% of total fed cattle marketings. By 2006, grid pricing was expected to increase in the U.S. to 59.7% of total marketings, far exceeding live weight pricing (18.2%), dressed weight pricing (17.7%), and contracting (2.9%). However, other available data from mandatory price reports suggest grid pricing has not reached the level respondent feeders expected by 2006. For the first 6 months of 2006, data from mandatory price reports indicated grid pricing (with either a negotiated base price or formula base price) accounted for 42.9% of total packer purchases.

As noted, grid pricing consists of a base carcass-weight price in conjunction with a price grid or matrix of carcass premiums and discounts for carcass attributes. Thus, each animal receives a unique price reflecting its actual wholesale value. Unlike sealed bid or rail pricing, each animal in the sale lot receives the same price.

An issue in the U.S. has been how the base price in grids is discovered. This relates to the potential "lemons market" phenomenon. The majority of base price arrangements are formula prices tied to a reported cash market price or a plant average price where the cattle are expected to be slaughtered (Schroeder et al. 2002). The key issue is whether fewer, lower quality cattle marketed in the cash market comprise the base price for higher quality cattle marketed on a grid. Some evidence of that concern has been verified (Whitley 2002). Base prices can be negotiated between the packer and feedlot or be a formula tied to the cash market (for example, a specific market quote), tied to the cost of cattle purchased by the packer for the slaughter plant where the cattle will be harvested, or tied to another market such as the wholesale market (boxed beef cutout value) or futures market price.

Figure 4. Percentage of marketings priced on a grid basis, U.S. and Canada, various years



In Canada, a formula price tied to the plant average cost of cattle was the most common method of determining the base price in grids (Table 2). Respondents indicated marketing 37.8% of the cattle marketed with a grid in this manner. The next most common method was a formula tied to a cash market price quote (29.8%), followed by a negotiated base price (22.2%).

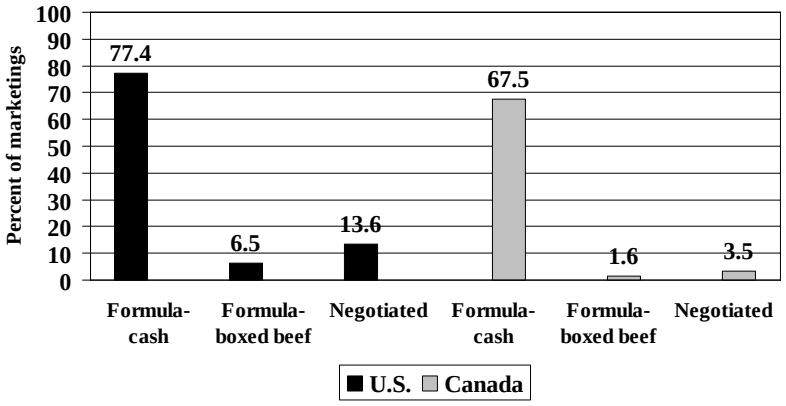
The most common method of determining the base price differed for feedlot respondents in Alberta compared with other provinces. Feedlot respondents in Alberta reported using a formula tied to the plant average cost of cattle (43.5% of total grid priced marketings) compared with 30.4% in other provinces. More common in other provinces was a formula tied to a cash market price quote (49.3%). Smaller feedlots tended to use a formula tied to a cash market price quote (40.6% of total grid priced marketings), whereas larger feedlots used a formula tied to the plant average cost of cattle (52.2%).

Feedlots responding to the 2004 survey in the U.S., were divided into those using grid pricing for 50% or less of their fed cattle marketings in 2003 and those using grid pricing for more than half their marketings. For the heaviest users of grid pricing, the base price was determined most frequently by a formula tied to quoted price (39.1% of total marketings), followed by using a formula tied to the plant average cost of cattle (29.6%) and a negotiated base price (23.5%). Figure 5 compares the U.S. survey results for 2002 with the Canadian survey. For both the U.S. and Canada, formula pricing tied to the cash market was most common.

Canadian-U.S. Grid Pricing Differences

One possible reason for less grid pricing of fed cattle as reported by cattle feeder respondents in Canada vs. the U.S. may be a lack of publicly available information of grid premiums and discounts. In the U.S., the Agricultural Marketing Service (AMS) of the U.S. Department of

Figure 5. Percentage of marketings priced on a grid with the base price discovered by a formula tied to the cash market (quoted price or plant average), U.S. (2001) and Canada (2000-04)



Agriculture (USDA) began publishing a voluntary weekly report of premiums and discounts for slaughter steers and heifers in November1996. The voluntary report continued until mandatory price reporting was implemented in April 2001. At that time, the weekly report came within the Livestock Mandatory Reporting Act and is now a mandated report (http://marketnews.usda.gov/portal/lg). The report provides considerable useful information for cattlemen wishing to use grid pricing. The report informs users of current premiums and discounts being paid for carcass characteristics and enables tracking premiums and discounts over time to see potential seasonal patterns and to understand how premiums and discounts change with market dynamics.

No comparable report exists in Canada. Unterschultz (2004) reported a grid he used to evaluate grid pricing for selected sets of cattle. Apart from premiums and discounts reported there, which are for a specific point in time, it is difficult to ascertain current premiums and discounts being paid by packers without contacting each packer directly. And developing historical information regarding movements of premiums and discounts over time is very difficult and not readily available. As a result of not having public data on premiums and discounts, the 2005 survey of Canadian cattle feeders asked feedlot managers to identify premiums and discounts for the spring months (predominantly for calves being fed) and in the fall (predominantly for yearlings being fed). Given the historic lower extent of grid pricing in Canada, survey data was limited and quite variable, but was adequate to provide some insight into grid pricing in Canada relative to the U.S.

Ward (2002b) developed a grid pricing calculator for fed cattle marketed in the U.S. with information from Untershultz (2004), the 2005 survey of Canadian feeders, and industry contacts in Canada (see the companion report from this project, *Canadian Grid Pricing Calculator and Examples*). The Canadian grid calculator resembles the U.S. version with some distinct

differences, in part due to slaughter cattle grade differences in Canada compared with the U.S. The calculator assumed Canadian quality grades of Prime, Program (branded beef programs such as Certified Angus Beef and Sterling Silver, but not official quality grades in either the U.S. or Canada), AAA, AA, A, and B1 or lower; and yield grades 1, 2, and 3. The base or par carcass quality for grids in Canada is believed to be quality grade AA and yield grade 2 based on industry information; whereas in the U.S., the base is Choice, yield grade 3. Canada AAA is approximately equivalent to USDA Choice and AA is approximately equivalent to USDA Select. Canada yield grade 1 is approximately equivalent to USDA YG 1-2 and Canada yield grade 2 is approximately equivalent to USDA YG 3. It should be noted that Unterschultz used a base of quality grade AA and yield grade 1; thus not all grids in Canada may have the same base or par carcass characteristics.

In using the two grid calculators for the U.S. and Canada, a distinct difference was noted. Premiums and discounts in grids are always relative to the base or par carcass characteristics; in essence, which cell of the quality grade-yield grade matrix is the base. If the base is one extreme cell of the grid, there would be no premiums and all discounts; and similarly, if the other extreme cell is chosen for the base, there would be all premiums and no discounts.

In most U.S. grids, the net grid price (base price plus premiums and minus discounts) is usually lower than the base price. The driving forces are discounts for Select carcasses and for yield grades 4 and 5 carcasses (Feuz 1999; Johnson and Ward 2005, 2006). For grids in Canada, the net grid price is usually higher than the base price. A higher percentage of carcasses receive premiums relative to the base and fewer are discounted. Too, discounts are not as severe in Canada as they are in the U.S. for quality grades and yield grades just below the base or par carcass characteristics. One might characterize the U.S. beef industry as a discount market or discount driven market. Cattle feeders need always strive to reduce discounts received. The Canadian beef industry might be characterized as a premium market or premium driven market. Cattle feeders strive to market fed cattle receiving premiums and are less concerned about discounts.

Whether a discount driven market or premium driven market, what matters most is revenue per animal or sale lot vs. the cost of the cattle, feed, and related expenses. Whether or not grid pricing mechanics affect the behavior of cattle producers and feeders in terms of managing genetics and managing cattle on feed is not known.

Cattle feeders using grid pricing more frequently might be expected to sort cattle one or more times to maximize the effectiveness of grid pricing. Canadian feeders reported sorting cattle more than did U.S. feeders at some time between placement and marketing. For all respondents in the two surveys, more Canadian respondents sorted cattle one or more times (63.0%) compared with 57.7% for respondents in the U.S. Canadian feedlot managers sort cattle more frequently; yet, recall that grid pricing usage was significantly less in Canada than in the U.S. Cattle feeders in the U.S. who used grid pricing for great than 50% of their fed cattle marketings in 2004 sorted their cattle at some time cattle were on feed (64.4%) (Ward 2005).

Feedlot managers in Canada sorted cattle most frequently prior to marketing, followed by at placement or re-implanting. For more frequent users of grid pricing in the U.S., sorting was more likely to occur at placement or prior to marketing compared with the group of feeders not using grid pricing as frequently.

Feeders were asked to rank the purpose of sorting cattle on feed. Canadian feeders reported sorting for a finished or target weight or to minimize discounted carcasses. Recall, however, Canadian feeders also reported much lower discounts for carcass attributes than in the U.S. For U.S. feeders, the goal of sorting was to minimize "out" or severely discounted carcasses, which is consistent with much advice given by economists familiar with grid pricing. For cattle feeders using grid pricing most frequently, the next two highest-ranking targets were quality grade and finished weight.

Pricing and Marketing Motives

Recall again that grid pricing was less prevalent in Canada than the U.S. Feedlot managers in Canada were asked to rate on a 1-7, Likert scale the extent to which selected factors would motivate them to use grid pricing. Most important motivations identified were the ability to

- sell cattle at a higher price
- obtain quality or yield grade premiums for carcass traits
- increase competition among packers
- reduce price risk and/or futures market basis risk, and
- access detailed carcass data.

Responses were quite consistent between feedlots in Alberta and other provinces and between the larger and smaller size categories of feedlots.

The first two and last of the above five motivations were similar to feedlot managers' reasons for using grid pricing in the U.S. The other two reflected particular concerns of Canadian cattle feeders. First, concentration of power among packers is a specific concern in Canada as will be noted later. Earlier it was stated that buyer concentration for fed cattle appeared higher in Canada than in the U.S. Second, Canadian cattle feeders have a level of risk not present in the U.S. industry, that being exchange rate risk. Thus, Canadians have the same seasonal and cyclical price risk and futures market basis risk, but then also have to account for exchange rate risk between U.S. and Canadian currency.

The shift in pricing methods in recent years was more distinct in the U.S. than in Canada. In the 2002 U.S. survey, feedlot managers identified three reasons as most important for the move toward grid pricing. They were to

- obtain carcass premiums associated with higher quality grade and higher yielding animals
- access carcass data from packers on fed cattle marketed, and
- obtain a higher base price.

More detailed reasons were sought in the 2004 survey of feeders in the U.S. (Ward 2005). For the cattle feeder group using grid pricing most frequently, factors of most importance in determining when to price fed cattle with a grid were when

- cattle were expected to fit a specific grid
- cattle were expected to quality grade well
- cattle were expected to dress well
- recent experiences with grid pricing were favorable
- cattle were expected to yield grade well, and
- when the Choice-Select price difference was wide.

Use of marketing agreements and supply contracts between feeders and packers was expected to be less common in Canada than in the U.S. Feedlot managers in Canada were asked to rate on a 1-7, Likert scale the extent to which selected factors would motivate them to use marketing agreements or supply contracts. The leading motivators identified were the ability to

- sell at a higher price
- obtain quality or yield grade premiums for carcass traits
- reduce price risk and/or futures market basis risk
- reduce marketing time and costs, and
- access detailed carcass data.

Again, responses were quite consistent between Alberta and other provinces and between feedlot sizes.

Feedlot managers in the U.S. were asked to identify how fed cattle were marketed from their feedlot in 1996, 2001, and what they anticipated in 2006. This, too, was intended to provide a profile of recent, current, and future pricing practices so as to identify changes or trends over time. Just as with pricing methods, there has been a sharp change in how fed cattle are marketed. Using marketing agreements and contracts, participating in an alliance, or being part of a cooperative has increased while marketing fed cattle without some type of agreement or contract has declined. Just 13.0% of fed cattle marketed in 1996 were under some type of marketing agreement either outside an alliance or cooperative or in conjunction with an alliance or cooperative. By 2001, that percentage increased to 34.0% and was expected to increase to 46.4% by 2006.

Two of the three most important reasons for the shift in marketing methods in the U.S. were the same as for the switch to grid pricing. The three most important reasons were to

- obtain carcass premiums associated with higher quality grading and higher yielding carcasses
- access carcass data from packers on fed cattle marketed, and
- guarantee a buyer for the fed cattle when they are ready for market.

These responses were consistent with feedlot behavior and concerns. Most marketing agreements, alliances, and cooperatives use grid pricing, thus a correlation was expected between using a specific pricing method (especially grid pricing) and using a specific marketing method. And the motives for using each would be expected to be similar as well. The third motive no doubt relates to some U.S. feedlot managers' concerns regarding concentration in meatpacking and captive supply use by packers.

Perceptions about Pricing and Marketing Issues

Feedlot managers were asked to rate their degree of agreement or disagreement on several statements related to pricing and marketing issues relative to fed cattle. The agreement-to-disagreement scale was a 1-7, Likert scale. Results focus on those indicating any degree of disagreement (slight to strong) and those indicating any degree of agreement (slight to strong) (Table 3).

Table 3. Perceptions of U.S. and Canadian feedlot managers of pricing and marketing issues and potential market policies.

	U.S. 2002 % Agreement	Canada 2005 % Agreement
Pricing and marketing issues		
Reduced trading in the cash market would be harmful to the beef industry	69.1	87.4
Negotiated base prices in grids are preferred to formula prices	56.8	35.4
Formula base prices in grids should be tied to boxed beef or retail prices	77.3	69.6
Cash market bids by packers are lower when packers have cattle contracted or have a marketing agreement with feeders	85.5	93.7
Potential market policies		
The largest packers should be broken into several smaller companies	33.6	31.0
More producer-owned packers would benefit the industry	58.7	58.8
Packers should not be permitted to contract or form marketing agreements with feeders and cattle owners	36.8	32.8
Packers should not be permitted to own and feed cattle	64.5	58.3

Canadian feedlot managers expressed strong concern about moving away from the cash market. Of feedlot respondents, 87.4% agreed that reduced trading in the cash market would be harmful to the industry. Reduced reliance on the cash market could mean Canadian feeders have a concern about moving toward grid pricing or they are concerned about increased contracting and packer ownership of cattle. Given other survey responses, the latter seems most likely.

Feedlots in Alberta were more concerned about reduced trading in the cash market (86.8%) compared with feedlots in other provinces (70.0%). Managers of larger feedlots also expressed greater concern for reduced cash market trading than did managers of smaller feedlots (84.8% and 80.6%, respectively).

Feedlot managers in the U.S. also expressed concern that reduced trading in the cash market would be harmful to the industry, but less so than their Canadian counterparts (Figure 6). Of respondents to the 2002 survey, 69.1% agreed that reduced trading in the cash market would be harmful to the industry. Thus, U.S. feeders appear less concerned than Canadian feeders but still quite concerned. Some differences in the perceptions by U.S. and Canadian feeders may result from the different years in which each respective survey was conducted.

A possible reason for the view expressed by feeders in both countries involves how the base price in grids is determined. Formula pricing tied to the cash market was the most common method of determining the base price for grid pricing, both in Canada and the U.S. Declining cash market trades results in a thinning of the reference market for the base price formula. Economic theory does not provide a clear indication of how thin a reference market can be for it to remain representative. Therefore, we do not know precisely "how thin is thin". Neither do we know how accurately reported prices need to be to adequately represent true market conditions for price discovery. Nevertheless, there is an expressed belief among economists and others that a method of determining the base price other than a formula tied to the cash market would be preferable.

A majority of Canadian cattle feeder respondents were uncertain about negotiating base prices in grids. Just 35.4% agreed that negotiated base prices were preferable to formula prices. This, too, may relate to the relatively few packers and higher degree of concentration of buyers in Canada.

Respondents outside Alberta agreed more with the statement that negotiated base price were preferred to formula prices (48.3%) than did feeders in Alberta (31.0%). There was virtually no difference between smaller and larger feedlot managers.

A higher percentage of U.S. feeders agreed a negotiated base price was preferred to a base price determined by a formula compared with Canadian feedlot managers (Figure 7). Of respondents in 2002, 56.8% agreed that negotiated prices should be how the base price is determined, compared with 35.4% of Canadian respondents in 2005.

Figure 6. Percentage response, U.S. (2002) and Canada (2005), to: reduced trading in the cash market would be harmful to the beef industry

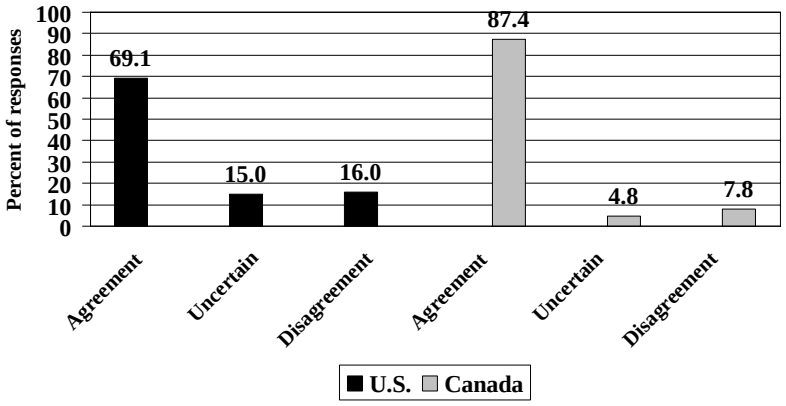
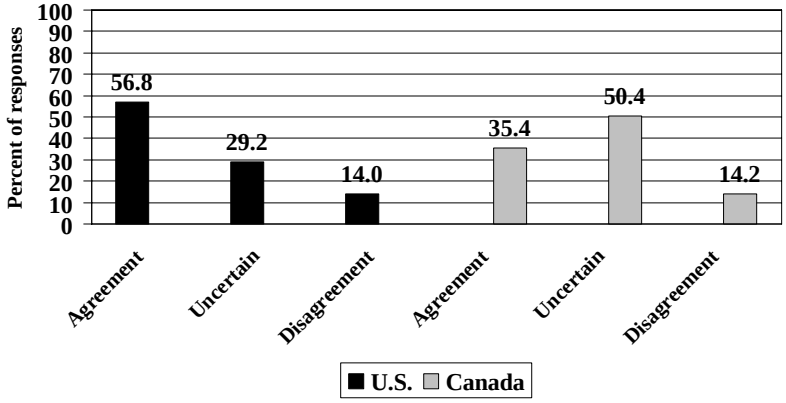


Figure 7. Percentage response, U.S. (2002) and Canada (2005), to: negotiated base prices in grids are preferred to formula prices

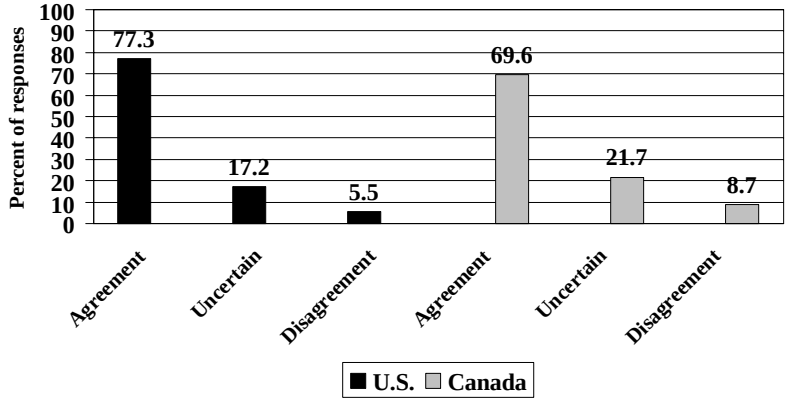


Feeders in Canada and the U.S. were in more agreement that the preferred reference market for formulas determining base prices was the wholesale or retail market rather than the cash market. For Canadian respondents, 69.6% agreed formula prices in grids should be tied to the boxed beef or retail markets.

Agreement regarding the reference market was much stronger among feedlots outside Alberta (86.7%) vs. those located in Alberta (63.5%). Similarly, smaller feeders agreed more strongly (73.5%) than did larger feeders (63.8%).

Among U.S. respondents in 2002, 77.3% agreed formula base prices should be tied to the wholesale boxed beef or retail market, just above the level of agreement among feeders in Canada (Figure 8). This alternative is preferred by many economists if the base price is going to be determined by formula, rather than tying the base price to the cash market. Packers have a natural incentive to push wholesale prices as high as possible, since that is a key factor in their sales revenue. Whereas, packers have a natural incentive to push cash market, fed cattle prices as low as possible, since fed cattle represent the primary cost to them in procuring and processing fed cattle.

Figure 8. Percentage response, U.S. (2002) and Canada (2005), to: formula base prices in grids should be tied to boxed beef or retail markets



One potential method of reducing the procurement cost of fed cattle is with pre-committed or captive supply cattle. Packer concentration and captive supply have been highly debated, contentious issues in the U.S. cattle industry for two decades or more. Simply stated, the issue of packer concentration stems from a trend toward fewer, larger packers due in large part of economies of size (Ward 1993; MacDonald et al. 2000; Morrison-Paul 2001) and thus fewer buyers and less bidding on fed cattle. Regarding captive supply, the use of captive supplies reduces the proportion of cash market trading, contributing to the thin market problem just discussed. A bigger concern, however, is with packers using captive supplies to leverage their cash market bids lower. Research on impacts from increased concentration among buyers is mixed (Azzam and Anderson 1996; Ward 2002a). Some studies have found evidence of market power by packers and others have not. Research on captive supply impacts have been more consistent, finding in nearly all cases a negative but small effect on cash market prices as the extent of captive supplies increases (Ward 2002a).

Canadian feedlot respondents overwhelmingly agreed (93.7%) that cash market bids are lower when packers have cattle contracted or have a marketing agreement with feeders. This perception is based on observation, philosophy, or theory since no studies have been conducted to date to confirm or refute feeders' perception.

Alberta respondents were in greater agreement (91.9%) compared with feeders in other provinces (83.3%) that pre-committed supplies to packers adversely affect cash market prices. Similarly, larger feedlots were in stronger agreement (91.5%) compared with smaller feedlots (88.4%).

On the effects from captive supplies, Canadian feeders were in strong agreement with respondents in the U.S. in 2002 (Figure 9). U.S. feedlot managers also overwhelmingly agreed (85.5%) that packers bid lower for cash market cattle when they have cattle contracted, one form of captive supply. Figures 10 and 11 show the extent of captive supplies in Alberta and the U.S., respectively. The Canadian estimates are from CanFax data for Alberta. There are no "official" captive supply statistics for Canada. Figure 11 shows "official" statistics on annual captive supplies reported by Grain Inspection, Packers and Stockyards Administration (GIPSA) for the four largest U.S. packers. Data from mandatory price reports provide considerably more insight into the extent of captive supplies on a week-to-week basis. The weekly data from AMS reports show the dynamics of packer procurement methods, including captive supplies, over time; something which cannot be observed from viewing annual averages.

Figure 9. Percentage response, U.S. (2002) and Canada (2005), to: cash market bids by packers are lower when packers have cattle contracted with feeders

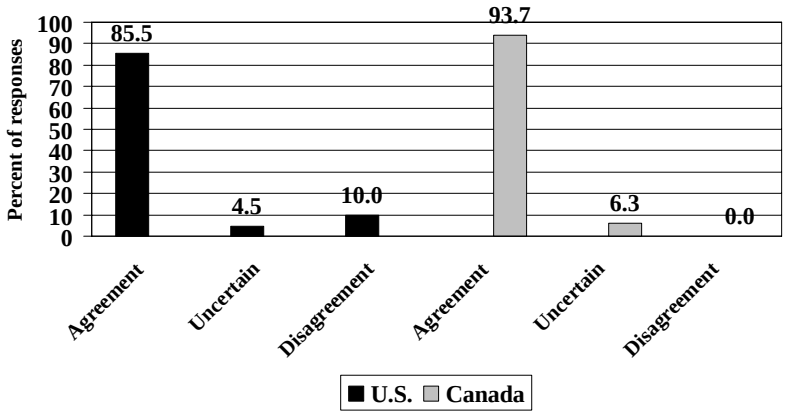


Figure 10. Estimated annual percentage of steer and heifer slaughter by captive supply procurement methods for Alberta packers

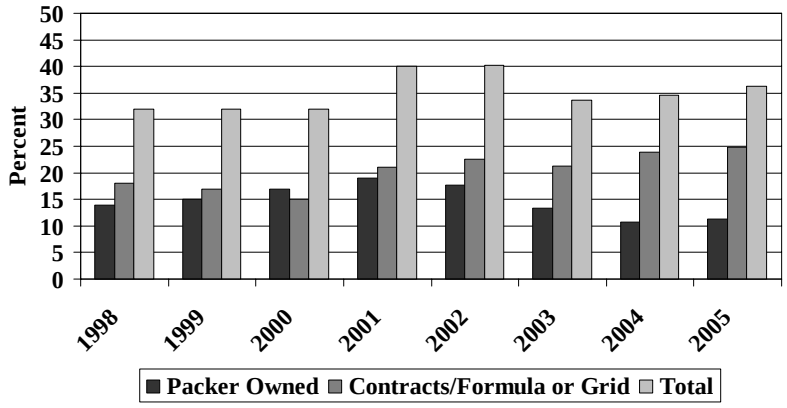
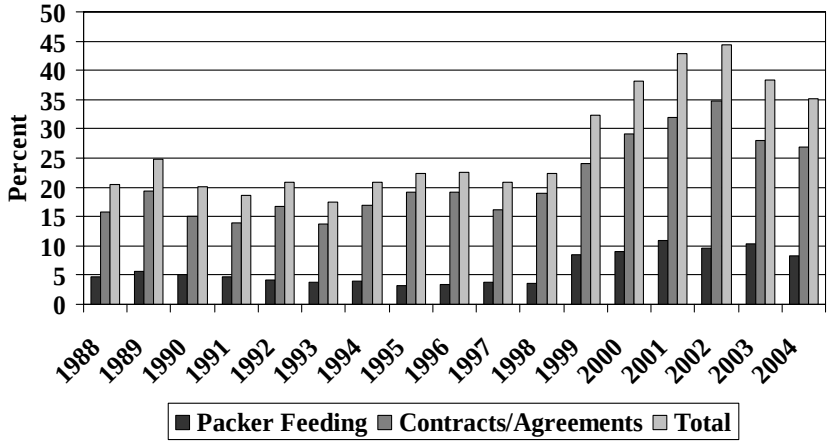


Figure 11. Percentage of annual steer and heifer slaughter by captive supply methods for the four largest U.S. beef packers, 1988-2004



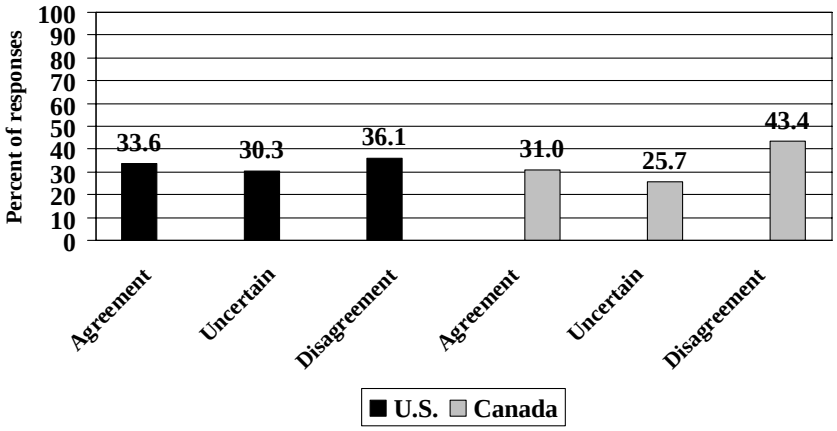
Perceptions of Potential Policies

Canadian feedlot managers also were asked to rate their degree of agreement or disagreement on potential policies related to concentration and captive supply, similar to those in the 2002 survey of U.S. cattle feeders (Table 3). Feedlot managers were asked about two alternatives related to

the high level of concentration in the packing industry. One alternative is to break up larger packers into several smaller ones. Breaking up larger packers did not receive strong support from either Canadian or U.S. feedlot managers. Just under a third of Canadian respondents (31.0%) agreed with this policy. There was little difference in agreement between respondents from Alberta (30.1%) and other provinces (33.3%). However, smaller feedlots favored the policy (38.2%) more than larger feedlots (20.0%).

Almost exactly one-third of U.S. respondents (33.6%) favored breaking up the larger packers into smaller ones, nearly identical to Canadian cattle feeders (Figure 12). This alternative, even if favored, would be a long-term alternative fraught with numerous legal challenges and delays, whether coming from court decisions or legislative initiatives. After many years, the proposed breakups may or may not eventually occur.

Figure 12. Percentage response, U.S. (2002) and Canada (2005), to: the largest packers should be broken into smaller companies



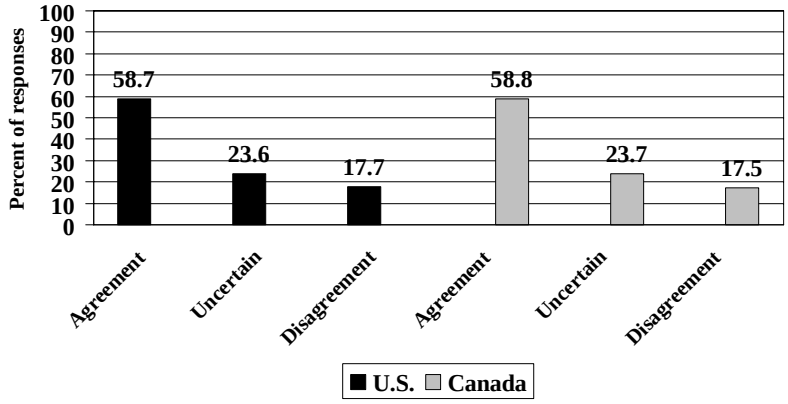
Another alternative is to create additional competition for existing packers. This might involve forming new, producer-owned packers and potentially providing tax and loan incentives to form new, competitive rivals. Organizing more producer-owned packers received much stronger support than did breaking up the largest packers. In Canada, 58.8% of respondents favored this approach. Relatively little difference was found between respondents from Alberta (59.5%) and other provinces (56.7%) but considerably more support came from smaller feeders (64.7%) compared with larger ones (50.0%).

Among all Canadian respondents, 23.3% indicated being involved with, a member of, or participating in an alliance or producer-owned packing plant. Of the 27 who responded positively to an involvement with such an effort, 24 (88.9%) were in Alberta, and were equally

split between smaller and larger feedlots (48.1 and 51.8%, respectively). While support exists for producer-owned packing plants, market structure conditions of the packing and retailing industries will likely limit how many successful alliances and producer-owned firms can be formed (Brocklebank and Hobbs 2004). Then, too, success depends on many factors, most importantly perhaps on planning, including having a local champion for the cooperative venture, and controlling costs (Carlberg, Ward, and Holcomb 2006).

Of U.S. feedlot respondents in 2002, 58.7% agreed that more producer-owned packers would benefit the industry, nearly identical again with the response from Canadian cattle feeders (Figure 13). One such cooperative, US Premium Beef, has experienced notable success and is considered by many a model for larger, producer-owned packing cooperatives (Holz-Clause 2000). Keys to its success include purchasing a portion of an existing and successful packer, developing fresh beef brands, and using the meat and byproducts distribution system already in place for a companion pork packing cooperative.

Figure 13. Percentage response, U.S. (2002) and Canada (2005), to: more producer-owned packers would benefit the beef industry



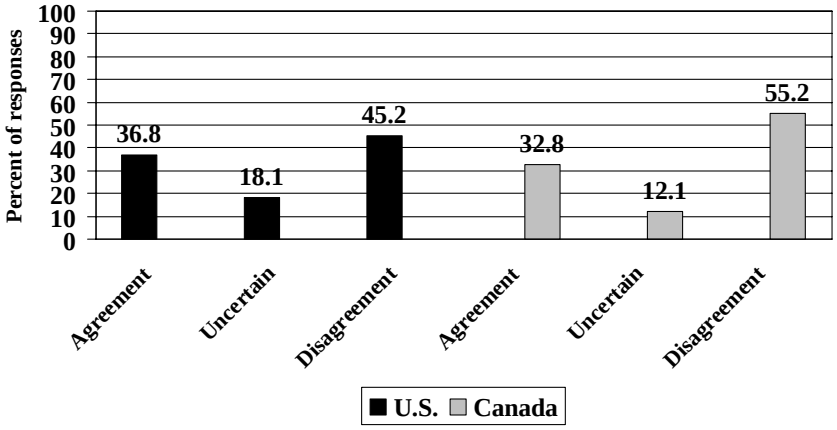
Proposals to deal with the captive supply issue in the U.S. include limiting packer ownership of livestock and limiting contracting between packers and feeders. The same policies are potential solutions in Canada as well. These policy alternatives were posed to feedlot managers. Canadian feedlots were somewhat split in how they reacted to a proposal prohibiting contracting between packers and feeders. Of all respondents, 32.8% agreed to prohibit packer and feedlot contracting, though 55.2% disagreed.

Among Alberta respondents, 36.0% agreed with the proposal but 51.2% disagreed. Respondents in other provinces opposed the policy more strongly (66.7%) compared with those supporting it

(23.3%). The response by feedlot size was very similar. For managers of smaller feedlots, 36.2% supported the proposed policy to prohibit contracting between packers and feeders but 50.8% opposed it. A smaller percentage of larger feedlots supported the proposal (27.7%) while a larger percentage opposed it (61.7%).

U.S. feedlot managers in 2002 responded similarly to limiting contracting between packers and feeders (Figure 14). Among feedlot managers, 36.8% agreed that packers should not be permitted to contract or form marketing agreement with cattle feeders, but another 45.2% disagreed.

Figure 14. Percentage response, U.S. (2002) and Canada (2005), to: packers should not be permitted to contract or form marketing agreements with feeders and cattle owners



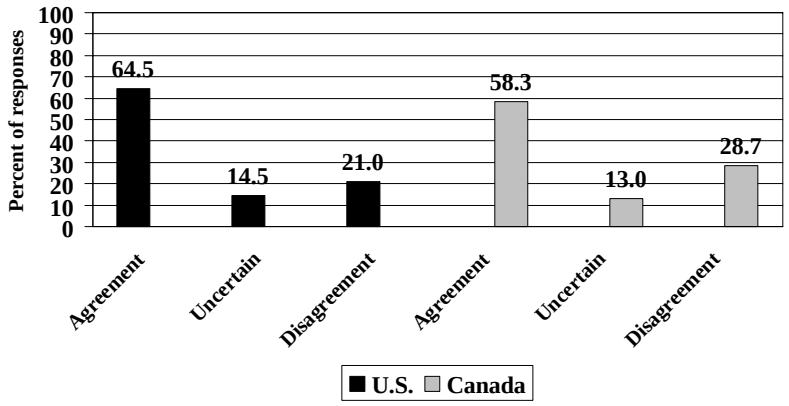
Restricting packers from owning and feeding livestock was more strongly supported both by Canadian and U.S. cattle feeders. In Canada, 58.3% of respondent feedlots agreed packers should not be permitted to own and feed cattle; though 38.7% disagreed. Alberta feedlot managers supporting the proposal outweighed those opposing it (58.8% vs. 30.6%, respectively).

Outside Alberta, respondents were exactly split on the issue, with 33.3% agreeing and 33.3% disagreeing. A higher proportion of smaller feedlots in Canada (64.7%) supported the proposed policy to prohibit packers from owning and feeding livestock, compared with those who opposed it (22.1%). Larger feedlots were more split regarding the proposal; 48.9% favored limiting packer ownership of cattle while 38.3% did not.

Of U.S. feedlot respondents in 2002, 64.5% agreed with the policy alternative to restrict packer ownership of fed cattle, higher than feedlot managers in Canada (Figure 15). However, responses to this question varied more by state where the feedlot was located than for other questions in the U.S. survey. Feedlot managers in Iowa agreed more strongly with this

alternative than did respondents from Texas and Kansas. Further analysis indicated that feedlot size was the determining factor. Smaller feedlots favored a ban on ownership and feeding of livestock by packers more than did larger feedlots.

Figure 15. Percentage response, U.S. (2002) and Canada (2005), to: packers should not be permitted to own and feed cattle



Implications and Conclusions

Much less was known about marketing and pricing practices of feedlot managers in Canada than in the U.S. A 2005 survey of Canadian feedlots and previous survey of U.S. feedlots enabled comparing several practices and the opinions of feedlot managers in both countries. Findings suggest a type of market integration between the cattle feeding industries of both countries. Many more similarities were found than differences between Canadian and U.S. cattle feedlot managers.

Similarities and differences include the following.

- Feedlots in both countries market a relatively high percentage of their fed cattle to a single buyer (75.6% in Canada for 2004; 69.0% in the U.S. for 2001). Thus, both have relatively concentrated packing industries.

- Feedlots in both countries have reduced their reliance on cash market, live weight pricing, though U.S. feeders rely less on the cash market than do Canadian feeders (42.3% in Canada for 2004; 28.7% in the U.S. for 2001).

- Grid pricing has increased in both countries but more in the U.S. than in Canada (8.0% in Canada for 2004; 43.5% in the U.S. for 2001). One reason for this may be that more public information is available in the U.S. on premiums and discounts in grids than is

available in Canada. Another may be the higher percentage of fed cattle marketed under marketing agreements and contracts in the U.S. than in Canada.

- Formula pricing tied to the cash market is the predominant form of determining the base price in grids in both countries (67.4% in Canada for 2004; 61.0% in the U.S. for 2001).

- The motivation for moving toward grid pricing and using more marketing agreements/supply contracts is similar in both countries with minor differences. The ability to receive higher prices, access carcass premiums, and access carcass data were common for feedlot managers in both countries. Canadian feeders would use more grid pricing and marketing agreements if they reduced price and basis risk and increased buyer competition.

- A significant difference was found in grid pricing between the two countries. In the U.S., net grid prices are nearly always lower than the base price in the grid, whereas the reverse was found for Canada. Canadian grids have fewer and smaller discounts than U.S. grids. Thus, Canada may be characterized as a premium market and the U.S. as a discount market, given their grid structures. However, recognize that the extent of premiums and discounts is directly dependent on what is considered the par quality grade and yield grade cell in the grid. More important than premiums and discounts or the net grid price is net returns (revenue minus costs) for each lot of fed cattle.

- Feedlot managers in Canada and the U.S. share similar views regarding pricing and competition issues. Respondents in both countries agreed that reduced cash market trading was harmful to the industry but Canadians were more in agreement than in the U.S. (82.3% in Canada for 2004; 69.1% in the U.S. for 2001).

- Less agreement was found on whether or not base prices in grids should be negotiated or based on a formula. U.S. feeders favored negotiated prices more strongly than did Canadian feeders (35.4% in Canada for 2004; 56.8% in the U.S. for 2001).

- Feedlot managers in both countries favored tying the base price in grids to the wholesale or retail market rather than the cash market for fed cattle (69.6% in Canada for 2004; 77.3% in the U.S. for 2001).

- Strong agreement was found on the negative effect captive supplies had on fed cattle prices in both countries. Feedlot respondents believed that packers could leverage captive supplies to pay lower prices for fed cattle (89.7% in Canada for 2004; 86.4% in the U.S. for 2001).

- Feedlot managers in both countries also agreed relatively closely regarding policy alternatives related to packer concentration and captive supplies. Neither respondents in either country agreed the solution was to break up larger packers (31.0% in Canada for 2004; 33.6% in the U.S. for 2001).

- Feedlot managers in both countries were more positive toward forming producer-owned cooperatives as an alternative solution (58.8% in Canada for 2004; 55.7% in the U.S. for 2001).

- Relatively little support was voiced in either country to prohibit packers from contracting with feeders as a solution to the captive supplies issue (32.8% in Canada for 2004; 36.8% in the U.S. for 2001).

- More support was given to prohibiting packer ownership of cattle in both countries (58.3% in Canada for 2004; 64.5% in the U.S. for 2001) than limiting contracting.

The beef industries in Canada and the U.S. have many similarities, some differences, and a substantial degree of dependence on each other in terms of international trade. This report confirms many similarities and identifies only a few differences between Canadian cattle feedlots and U.S. feedlots. Results clearly show that market policies and economic pressures on the feeding industry of one country typically will affect the feeding industry of the other.

Cattle feedlots and packers in both countries are moving more toward value based pricing of fed cattle. How that occurs differs somewhat in the two countries. Whether the effect is increased returns for cattle feeders and improved beef quality and consistency needs further study.

References

Anderson, John D. and Kimberly A. Zeuli. "The Revenue Risk of Value-Based Pricing for Fed Cattle: a Simulation of Grid vs. Average Pricing." *International Food and Agribusiness Management Review* 4(2001):275-86.

Azzam, Azzeddine M. and Dale G. Anderson. *Assessing Competition in Meatpacking: Economic History, Theory, and Evidence.* U.S. Department of Agriculture, Grain Inspection, Packers and Stockyards Administration, GIPSA-RR 96-6. 1996.

Brocklebank, Andrea and Jill E. Hobbs. "Building Brands: Supply Chain Alliances in the Canadian Beef Industry." University of Saskatchewan, Department of Agricultural Economics, Report prepared for Canfax Research Services, October 2004.

Carlberg, Jared G., Clement E. Ward, and Rodney B. Holcomb. "Success Factors for New Generation Cooperatives." International Food and Agribusiness Management Review 9,1(2006):62-81.

Fausti, Scott W. and Dillon M. Feuz. "Production Uncertainty and Factor Price Disparity in the Slaughter Cattle Market: Theory and Evidence." *American Journal of Agricultural Economics* 77(August 1995):533-40.

Feuz, Dillon M. "Market Signals in Value-Based Pricing Premiums and Discounts." *Journal of Agricultural and Resource Economics* 24,2(1999):327-41.

Feuz, Dillon M., Scott W. Fausti, and John J. Wagner. "Analysis of the Efficiency of Four Marketing Methods for Slaughter Cattle." *Agribusiness* 9,5(1993):453-63.

Feuz, Dillon M., Scott W. Fausti, and John J. Wagner. "Risk and Market Participant Behavior in the U.S. Slaughter-Cattle Market." *Journal of Agricultural and Resource Economics* 20,1(1995):22-31.

Grunewald, Sarah, Ted C. Schroeder, and Clement E. Ward. "Cattle Feeder Perceptions of Livestock Mandatory Price Reporting." Review of Agricultural Economics 26,4(2004):521-38.

Holz-Clause, Mary. "New Generation Cooperatives: Case Study – U.S. Premium Beef." Illinois Institute for Rural Affairs, Western Illinois University, May 2000. www.iira.org

Johnson, Heather C. and Clement E. Ward. "Market Signals Transmitted by Grid Pricing." *Journal of Agricultural and Resource Economics* 30,3(2005):561-79.

Johnson, Heather C. and Clement E. Ward. "Impact of Beef Quality on Market Signals Transmitted by Grid Pricing." *Journal of Agricultural and Applied Economics* 38,1(2006):77-90.

Lusk, Jayson L. Randall Little, Allen Williams, John Anderson, and Blair McKinley. "Utilizing Ultrasound Technology to Improve Livestock Marketing Decisions." *Review of Agricultural Economics* 25,1(2003):203-17.

MacDonald, James M., Michael E. Ollinger, Kenneth E. Nelson, and Charles R. Handy. *Consolidation in U.S. Meatpacking*. U.S. Department of Agriculture, Economic Research Service, AER 785, February 2000.

McDonald, R. Allen and Ted C. Schroeder. "Fed Cattle Profit Determinants Under Grid Pricing." *Journal of Agricultural and Applied Economics* 35,1(2003):97-106.

Morrison-Paul, Catherine J. "Market and Cost Structure in the U.S. Beef Packing Industry: a Plant-Level Analysis. *American Journal of Agricultural Economics* 83,1(2001):64-76.

Schroeder, Ted C. and Jennifer L. Graff. "Estimated Value of Increased Pricing Accuracy for Fed Cattle." *Review of Agricultural Economics* 22,1(2000):89-101.

Schroeder, Ted C., Clement E. Ward, John Lawrence, and Dillon M. Feuz. *Fed Cattle Marketing Trends and Concerns: Cattle Feeder Survey Results.* Kansas State University, Report MF-2561, June 2002.

Tronstad, Russell and James Unterschultz. "Looking Beyond Value-Based Pricing of Beef in North America." *Supply Chain Management: An International Journal* 10,3(2005):214-22.

Unterschultz, James. "New Instruments for Co-ordination and Risk Sharing Within the Canadian Beef Industry." Department of Rural Economy, University of Alberta, Project Report 00-04, 2004.

Ward, Clement E. "A Review of Causes for and Consequences of Economic Concentration in the U.S. Meatpacking Industry." *Current Agriculture, Food, & Resource Issues* 3(2002a):1-28. www.CAFRI.org

Ward, Clement E. *Grid Pricing Calculator*. Oklahoma State University, Extension Facts 577, July 2002b. http://pods.dasnr.okstate.edu/docushare/dsweb/HomePage

Ward, Clement E. "Factors Influencing the Extent of Grid Pricing of Fed Cattle." Selected Paper, NCR-134, Commodity Price Analysis and Forecasting Conference, St. Louis, Missouri, April 2005.

Ward, Clement E. and Jong-In Lee. "Short-Term Variability in Grid Prices for Fed Cattle." In Ward, Clement E., Dillon M. Feuz, and Ted C. Schroeder. *Formula and Grid Pricing Fed Cattle: Implications for Price Discovery and Variability* Virginia Tech University, Research Report 1-99, January 1999.

Whitley, John E. "The Political Economy of Quality Measurement: a Case Study of the USA Slaughter Cattle Market." *The Australian Journal of Agricultural and Resource Economics* 46,4(2002):515-38.