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MAKE INFORMED DECISIONS

Cattle Pricing Impact of Ontario Corn Fed Beef Program

Final Report

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Executive Summary

The Ontario Corn-Fed Beef (OCFB) program was launched in June of 2001 to expand the market for and profile of Ontario-produced beef. Ontario Corn-fed beef seeks to provide consumers with a recognizable brand and logo that assures them of receiving a product consistently produced in accordance with established quality standards. The program is now being viewed as an example of a successful branding and differentiation program. The OCFB production and marketing methods are being held as examples for other regions or commodities to follow across Canada.

The Ontario Corn Fed Beef Program commissioned this project to assess whether there has been a pricing and market impact in Ontario as a result of the program.

Ontario Corn Fed Beef is now an effective branded product. As such it is not readily interchangeable with imported competing beef. This is particularly the case given the significant stake in the program by Loblaw beginning in 2011 and Sysco. Corn Fed Program beef and cattle supply are not a direct part of much of the competitive mix on a weekly basis. This effectively means there is a reduction of available supply to the bid and ask process, represented by the Corn Fed volume. In periods of tight supplies, committing to or removing a large quantity, such as the OCFB supply, will make the demand for the remaining supplies much more inelastic. That puts greater upward pressure on the price of the non-program beef and cattle.

Local supply and demand have an impact on local prices for cattle and beef. The OCFB program has a positive impact on demand and it effectively commits or removes a significant component of supply. As a result the cattle producers in Ontario have attained pricing gains that can be attributed to the Corn Fed Beef program. Based on simple analysis of price flexibility it can be logically asserted that the Ontario Corn Fed Beef program is generating up to \$2/cwt or about \$26/head in added revenue to Ontario cattle producers. Successful brands make a difference in the market.

The increase is also in addition to the \$3/head premium for program participation. It is also in addition to whatever individual premiums that Corn Fed producers may have been able to negotiate with their packer customers on their own behalf separately.

Table of Contents

Executive Summary	iii
1 Introduction.....	1
1.1 Project Purpose and Objectives.....	1
2 Program Description and Performance	2
2.1 Program Description	2
2.1.1 Production	2
2.1.2 Production Evolution.....	3
2.1.3 Cattle Marketing.....	4
2.1.4 Rationale for Packer and Feeder Participation	4
2.1.5 Rationale for Retail and Foodservice Participation	5
3 Ontario Cattle and Beef Pricing	6
3.1 Cattle and Beef Pricing in Canada	6
3.1.1 Basis and Spread Description and Definition.....	6
3.1.2 Supply and Demand in Ontario.....	8
3.2 Ontario Corn Fed Beef Impact.....	9
3.2.1 Ontario Beef Consumption Mix.....	9
3.2.2 Program Pricing Impact.....	11
3.2.3 Quantification of Program Pricing Impact	13
4 Summary and Conclusions	15
Appendix A.....	16
Micro Economic Explanation of How OCFB Can Influence the Demand for Cattle	16

1 Introduction

The Ontario Corn-Fed Beef (OCFB) program was launched in June of 2001 to expand the market for and profile of Ontario-produced beef. Ontario Corn-fed beef seeks to provide consumers with a recognizable brand and logo that assures them of receiving a product consistently produced in accordance with established quality standards. To be eligible to participate in the program, beef farmers must follow specified quality assurance protocols.

The OCFB program began very slowly in terms of producer participation and market penetration. During 2006 the program marketed less than 28,000 fed cattle or just around 2,300 per month. That represented less than 5% of the total slaughter of fed steer and heifers in Ontario that year. At the same time, the cattle were being marketed through three packing plant participants in the program and several small retail and foodservice outlets.

By 2012, however, the program grew by nearly nine times its size in 2006 with well over 240,000 head of fed cattle processed under the program. OCFB represented 45% of fed Ontario federally and provincially inspected steer and heifer slaughter in 2012. Volumes in 2013 were over 280,000 head and amounted to 52% of total steer and heifer slaughter. Furthermore the product is now being marketed in Ontario by Loblaw, the largest grocer in Canada. It is also being merchandised by some of the province's leading restaurants and foodservice distributors, such as Sysco Canada.

The program is now being viewed as an example of a successful branding and differentiation program. The OCFB production and marketing methods are being held as examples for other regions or commodities to follow across Canada.

1.1 Project Purpose and Objectives

Based on the extraordinary growth of the program, it is of interest to determine what market and pricing impacts the program has had in Ontario. The purpose of the project is to test whether there has been a pricing impact in Ontario and to qualitatively assess the market benefits of the program. From the perspective of the OCFB program, the project may also serve as an inducement for producers to increase their participation in the program or to entice new producers to join. In order to complete the project the following objectives were undertaken:

1. Determine why packers and retailers participate in the program.
2. Determine the reasons for the program's growth.
3. Evaluate the local and national cattle supply and demand impacts on pricing.
4. Assess the performance of the Ontario cattle price basis.
5. Determine whether or how the program has impacted the price basis.

This project involved data collection and analysis as well as discussions and interviews with participants throughout the cattle and beef industry in Ontario.

The table of contents outlines the work areas and topics addressed in order to achieve the purpose and objectives of the project.

2 Program Description and Performance

This section of the report provides a description of the Ontario Corn Fed Beef program from the production through marketing phases. It also provides a statistical and qualitative overview of the OCFB program development and progress.

2.1 Program Description

2.1.1 Production

The Ontario Corn Fed Beef Quality Assurance program is designed to produce a consistent quality beef animal that has been raised by a specific set of guidelines in order to provide a premium beef product to the marketplace. A producer becomes certified by adhering to the following procedures:

1. Certification Procedures include the following factors.
 - a. Ontario Corn Fed Beef Quality Assurance Training
 - b. Adhered to feed regimen as per program guidelines
 - c. Submitted feed samples for testing
 - d. Feed tags/labels for each ration ingredient
 - e. All animal health products have Drug Identification Number (DIN)
2. OCFB Producer has completed the following records and reviewed corresponding Standard Operating Procedures.
 - a. Cattle Receiving Record
 - b. Ration Composition Record
 - c. Animal Treatment Record
 - d. Animal Health Product Inventory Record
3. Review of additional Standard Operating Procedures (SOP)
4. Review of on-farm management Good Production Practices (GPP).
 - a. Bio Security
 - b. Sanitation
 - c. Water Quality

An OCFB producer must also allow a third party auditor to visit the farm for initial certification and approval. The producer must also allow a third party auditor to visit the farm for subsequent on-farm audits.

The Program production processes and procedures are comprehensive, transparent and rigorous. With that noted, the processes are not more costly or burdensome than the basic sound production practices employed by any innovative cattle feeder in the province. The particular item that might be considered more costly would be the documentation and record keeping. Even that record keeping, however, is a practice that all contemporary cattle feeders would employ.

Within that context, OCFB program participants are compensated \$3/head by the packer program participants for the added documentation costs.

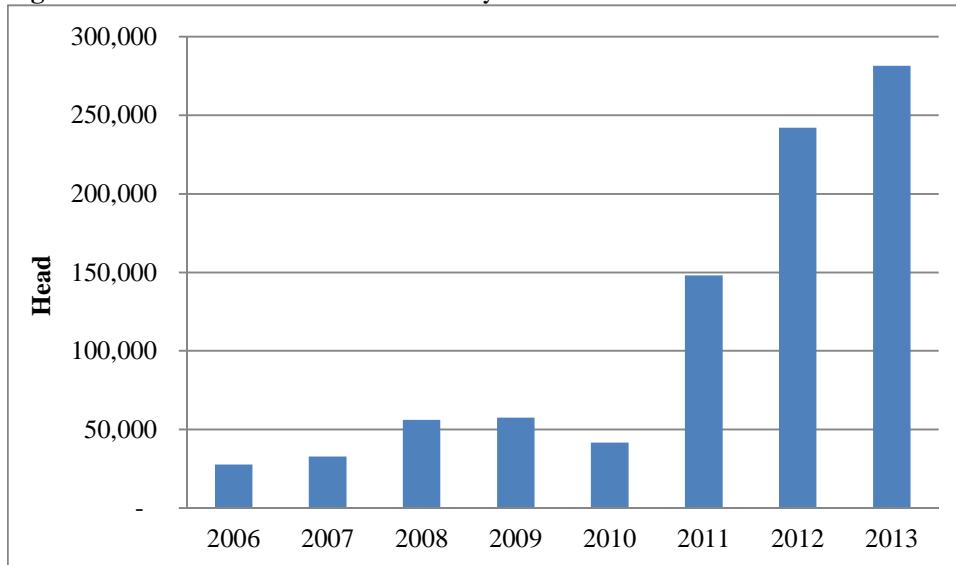
2.1.2 Production Evolution

As noted above, the Ontario Corn Fed Beef program began in 2001 with a goal to differentiate and promote Ontario grown corn fed beef. In addition to the production protocols noted above, the program began with modest merchandising and marketing support. That marketing and program support consisted of labels, posters, fact sheets and other merchandising aids.

The OCFB began with 29 producers participating. Norwich Packers, a provincially inspected packer, was the first and only packer participating in the program in 2001. Total cattle marketed under the program amounted to less than 1,400 head. In 2002 Norwich was joined by federally inspected St. Helens and Ryding Regency and about 5,200 head were marketed. By 2005 Corsetti Meat Packers was also a program participant and producer participation stood at 127 with less than 13,000 head marketed. As a point of reference in 2005 there were 580,000 fed cattle slaughtered in federally inspected plants in Ontario. Cargill Foods, the largest packer in Ontario became an OCFB participant in 2007 at which time there were 218 producers and about 33,000 head of cattle marketed.

As seen in Figure 1, program cattle fluctuated between 30-60,000 head annually between the years 2007-2010. Volumes jumped dramatically in 2011 to just under 150,000 head and again in 2012 to just under 250,000 head. By 2013 volumes amounted to over 280,000 head.

Figure 1 OCFB Marketed Annually



Source: OCFB Program/Ontario Cattle Feeders Association (OCFA)

The volumes in 2012 represented about 45% of Ontario's federally and provincially inspected fed cattle slaughter. By 2013 OCFB cattle comprised over 50% of the fed cattle slaughtered in inspected plants in the province. In 2013 producers participating in the program represent close to 80% of the cattle fed in Ontario.

The large increase beginning in 2011 was due to a combination of factors. A big boost to participation and program growth was Loblaw's decision to market and merchandise Ontario Corn Fed Beef in its Ontario stores. In 2011 there were 157 Loblaw YIGS, Zehrs and Valu-Marts on the

program. As of 2012 Loblaw had 241 stores in total with the addition of Loblaw banner stores and Real Canadian Super Stores. Another large lift to program was the increased involvement of one of the largest foodservice distributors in North America, Sysco International and Sysco Canada. This newly developed relationship with Sysco gives the program a strong presence in both retail and food service. The new relationship also builds on the idea that large scale sophisticated food operators both in retail and food service must see value in the brand, or else they wouldn't go through the process.

The program gained its largest numbers when Cargill sent out a letter to producers asking them to get certified for the program. The other packers were also positively encouraging producers to participate.

2.1.3 Cattle Marketing

Participating packers represent all of the federally inspected capacity in the province and around half the provincially inspected capacity. As such, OCFB program cattle feeder participants have a variety of packer marketing options. In addition, as with all other cattle, OCFB participants have the choice of marketing direct to packer or through sales auctions. OCFB participants can also market the cattle on contract or formula pricing arrangements. In other words, OCFB marketing, as with the non-program cattle, is entirely up to the individual.

With regard to pricing the OCFB cattle, generally price is negotiated between the cattle feeder and the packer. Again, this is exactly the same as with non-program cattle. Once at the plant, the program cattle are weighed and graded and settlement with the producer is processed as with all other cattle. From that point the OCF beef is marketed through the packer's particular beef marketing program.

The only difference in marketing OCFB program cattle compared to other fed cattle is that program cattle must be accompanied by a CFB shipping receipt. Without the proper documentation, the cattle are not treated any differently and the producer forgoes the \$3/head compensation from the packer.

2.1.4 Rationale for Packer and Feeder Participation

Initially packer participation was prompted by the fact that there was literally no cost and no risk involved. The new program provided the promotional materials and it offered an opportunity for the packer to differentiate its offering. Today from the packer's perspective little has changed in that there remains little risk and it offers that important differentiation opportunity.

With that noted, however, from a packer's perspective given how the program has grown, there is increased obligation and commitment associated with the program. That is, as the program has grown in acceptance and status in the market, particularly with Loblaw, there are the added logistical and marketing risks associated with participation. Packers in particular must fulfill their program volume obligations to the grocers and foodservice outlets that market the product. With commitment comes accountability and liability if those volume commitments are not made.

From a cattle feeder's perspective, there is also little or no downside to participation. The program protocols and documentation are regarded by progressive cattle feeders as not only good production practices but simply the cost of doing business. Competing meats such as chicken and pork are

operating with similar production practices and the OCFB protocols are practices that are common regardless of program participation. Furthermore, any added costs of documentation that might exist due to the program are largely covered by the \$3/head payment from packers.

Within that broad context both packers and cattle feeders assert that there are sound reasons for participation in the program. The following are some of the arguments for participating in the OCFB program.

- The need and desire to move away from commodity beef.
- The increasing competition of US Select product in Canada and in particular Ontario shows the need to differentiate Ontario beef.
- Competitive strategy based on niche and differentiation is preferable for a higher cost production region.
- There is a need for improved consistency in beef products which is provided by OCFB. Providing a consistent product can help to grow demand.
- Increasing demand for local foods is ideally suited for Ontario branded beef.
- Branded programs have the ability to generate loyalty and to increase demand for Ontario beef.
- OCFB creates a packer demand for the program cattle which provides confidence to cattle feeders.

Each of the bullet points represents an exceptional amount of time and effort in order to make them possible and workable for the industry. That is, the ten years of ground work prior to the program's recent growth laid a sound groundwork for each of those points to be applicable. Each of the bullet points above are sound individual reasons for participation in the program. The fact that each of the bullets are applicable and easy to see make the program attractive for Ontario cattle feeders.

Business and marketing research such as that conducted by Porter going back to 1980 and earlier has demonstrated and argued that differentiation and focus are compelling competitive strategies. That is, differentiation can be an example of a competitive strategy if a firm or geographic region is capable of conducting and actually delivering on the tactics. It appears, based on the progress thus far that the Corn Fed program has been delivering on the differentiation tactics.

2.1.5 Rationale for Retail and Foodservice Participation

Each of the bullet points above regarding differentiation, product consistency and local foods are key rationales for retail and foodservice participation. These factors are highly valued by merchandisers in a market that is seen as being a commodity.

Favorable product quality and consistency in particular is a driving factor cited by marketers. Product quality testing and analysis by distributors backs up favorable market-based customer purchase and re-purchase practice. The product delivers consistent value and favorable eating experience according to marketers and test results. The consistency and positive quality aspects have been proven in laboratory tests and in the market. In other words the market has shown that the product has delivered on the brand promise.

This is an important factor in motivating grocer and foodservice participation given that a lack of consistency is often cited in imported U.S. product. These attributes of consistency and product quality are highly valued by merchandisers, particularly since the product has been marketed at

competitive price points. That is, while the product has acquired brand cache, it is priced competitively in the Ontario grocery and restaurant outlets. The “local” aspect of the Ontario label within the Ontario market also appeals to perceived consumer trends and demands.

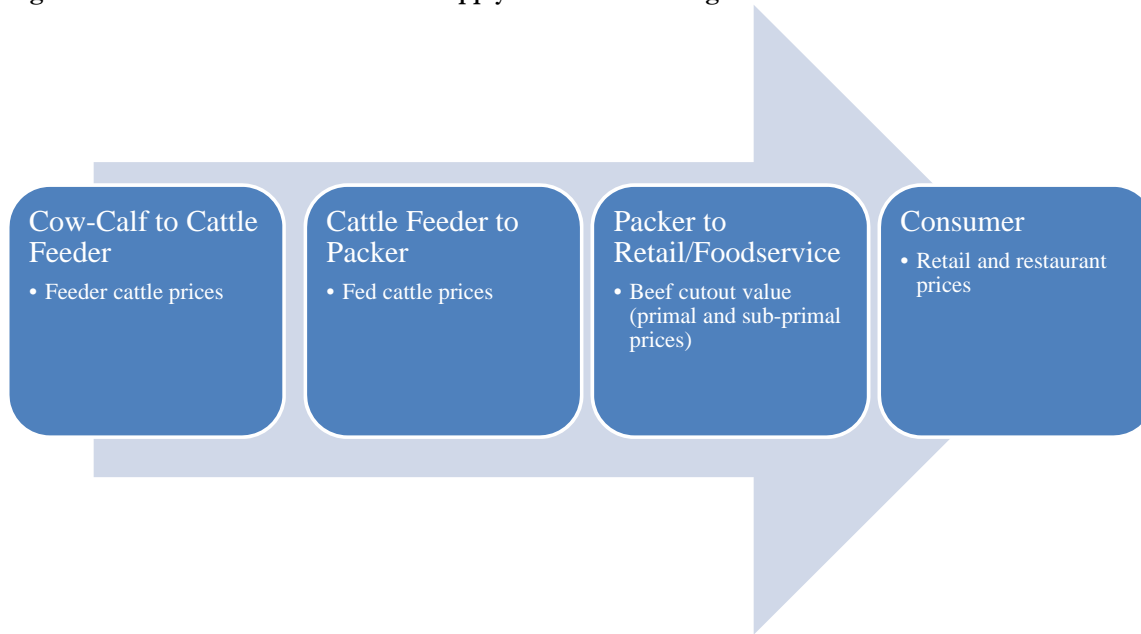
3 Ontario Cattle and Beef Pricing

This section of the report examines whether the Ontario Corn Fed Beef Program has had an impact on cattle pricing in the province. The section starts with a discussion of cattle and beef pricing. The next part of the section reviews the argument behind whether there should or could be an impact and then turns to actual pricing.

3.1 Cattle and Beef Pricing in Canada

There are four basic parts to the cattle and beef supply chain and there are market and pricing transactions between each. Each segment is interconnected as supply and demand, and pricing in each segment has an impact throughout the chain.

Figure 2 The Cattle and Beef Supply Chain and Pricing Flow



3.1.1 Basis and Spread Description and Definition

Price discovery in Canada typically takes the form of the following basic equation for the buyer-seller transaction and interplay:

$$\text{U.S. Price} \div \text{U.S.}\$/\text{Canada Exchange Rate} - \text{Spread or basis} = \text{Canadian price}$$

Basis is typically defined as the difference between the nearby futures market and the local cattle price. The spread is defined as the difference between cattle prices in two different regions. Often the terms are used interchangeably.

US cattle prices are the base reference for determining the local or regional price at any point in time in Canada. Given that cattle and beef are traded relatively freely between Canada and the United States, the Canadian price of cattle and beef is very closely correlated to US prices. The US market sets the overall tone and direction for cattle and beef pricing in Canada given the similarity of markets and products.

The second part of the local price discovery process is to adjust the US price to Canadian dollars. That provides a Canadian dollar value of the prevailing North American-based reference price. From that point, local supply and demand conditions take hold as the final component of the pricing process.

The most important consideration with regard to local supply and demand in the Canadian cattle and livestock industry is that supply is greater than demand. There are more cattle and more beef produced in Canada than are slaughtered or consumed in Canada. Canada is therefore on an “export basis” with regard to pricing. Export basis means that the local price will be the US price in Canadian dollars less the cost of transport to an alternative market. The logic is that no buyer is going to pay more than the seller’s competitive alternative. The competitive alternative is the US price in Canadian dollars less the cost of transport. This differential between the US price in Canadian dollars and the actual local price is typically called a spread or basis.

The difference between the local price and the Canadian dollar value of the Chicago Mercantile Exchange Live Cattle futures shows the basis. The difference between the local price and the Canadian dollar value of regions like Texas or Nebraska is the price spread. Texas or Nebraska are typically used to demonstrate a price spread as they are large production regions in the US.

When the spread or basis is narrower or “stronger” than the cost of transport, it indicates that local supplies are short. Buyers need to pay more to ensure that supplies do not leave the region. When the spread is wider or “weaker” than the cost of transport, it indicates that local supplies are greater than normal. In that case buyers might pay less than the cost of transport as they are not concerned about losing animals from the region. Local supply and demand conditions cause the spread to fluctuate more or less around the cost of transport, depending on those conditions.

Any event or factor that causes the local supply and demand to change will have an impact on the spread or basis. A loss of packing capacity will result in a wider basis while an increase in capacity will narrow the basis. Strong demand for beef will cause packers to increase local prices in order to keep cattle from moving south which results in a narrower basis. An increase in local supply due to problems in another region will force the local basis wider.

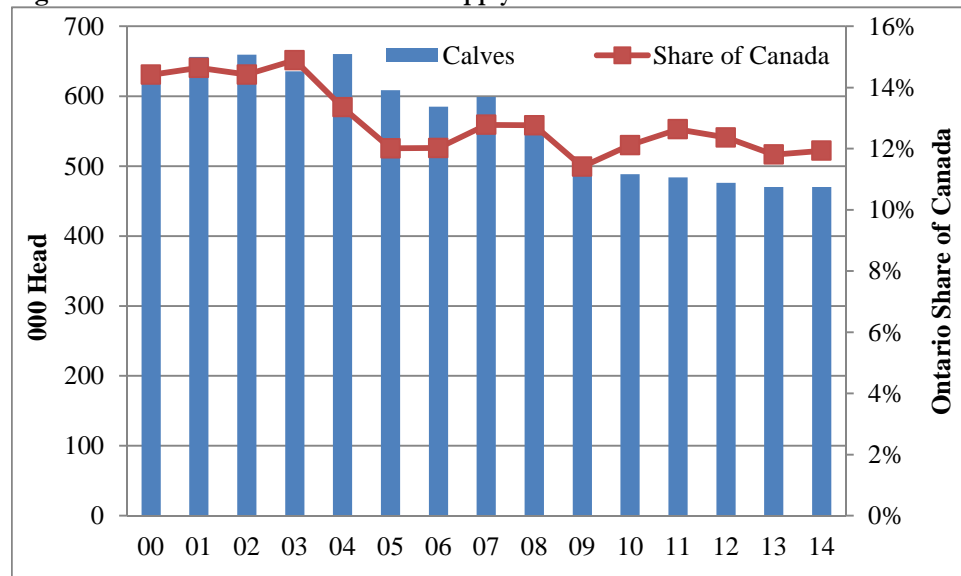
The key point of focus for the next section is the fact that with regard to the spread or basis, strong local demand for beef will cause packers to increase local prices in order to satisfy that demand which results in a narrower basis. The obvious question is what impact the demand for OCFB has had on the spread or basis in Ontario.

3.1.2 Supply and Demand in Ontario

The primary component of local demand for live cattle is packer slaughter capacity and packer slaughter rates. Anything that influences the capacity and the slaughter rates is going to influence the local demand for live cattle. In Ontario, the federally inspected slaughter is represented by Cargill Foods in Guelph and St. Helens and Ryding Regency in Toronto. There are also several provincially inspected plants that slaughter a total of about 1,000 or more head per week. The combined slaughter capacity amounts to about 14,000 head per week in Ontario.

The primary supply component of course is the inventory of cattle. While Ontario packers can and do bring cattle in from the West and Quebec, the base of the provincial supply is the provincial herd. In that regard the supply base has been declining in recent years. Figure 3 shows that Ontario's beef calf supply has declined from over 470,000 head in 2004 to about 330,000 head in 2014. Ontario's share of the Canadian beef calf herd has trended around 12% over the past five years.

Figure 3 Ontario Beef Calves Supply and Share of Canadian Herd

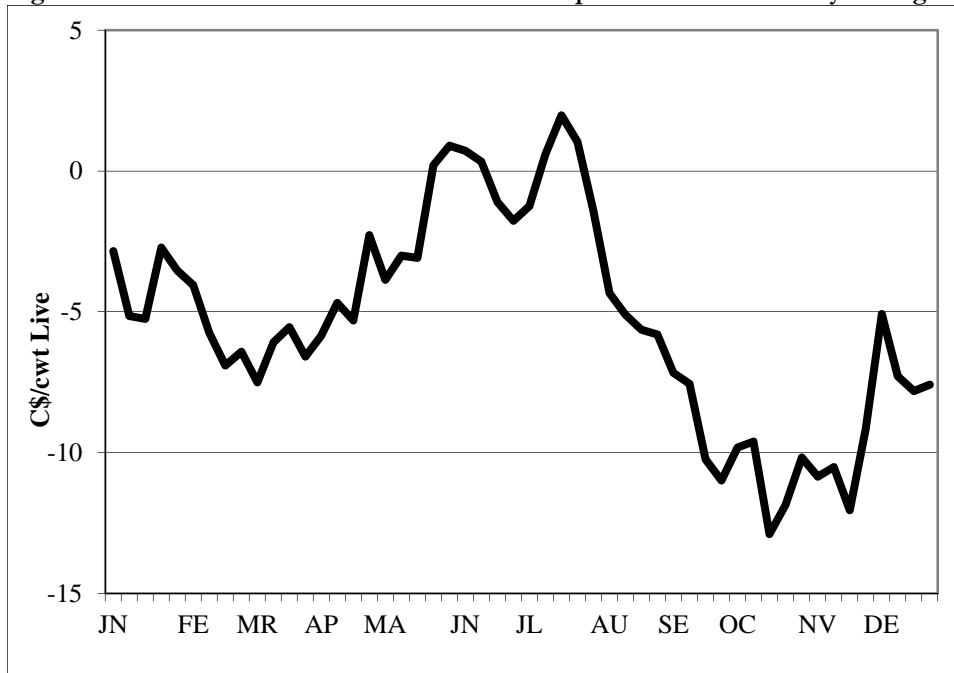


Source: Statistics Canada. Table 003-0032 - Number of cattle, by class and farm type, annual (head)

Within those broad parameters of the capacity demand and the supply of cattle, there are other factors that will influence both the demand and the supply. For example Ontario cattle feeders have demonstrated a tendency to cluster marketings in the fall on a seasonal basis. That in turn results in a wider seasonal basis at that time of year. Spring demand for barbeque cuts tends to result in strong packer demand which results in a narrower basis at that time of year.

The four year 2009-2012 average and seasonal performance of the basis or spread is illustrated on Figure 4. Over the four years from 2009-2012 the basis has averaged about \$5/cwt on a live basis. The basis or spread however varies greatly through the year from around zero in the late spring and early summer to wider than -\$10 in the fall.

Figure 4 Ontario-Texas Panhandle Price Spread 2009-2012 Weekly Average.



Source: Ontario Cattlemen's Association and Texas Cattle Feeders Association

3.2 Ontario Corn Fed Beef Impact

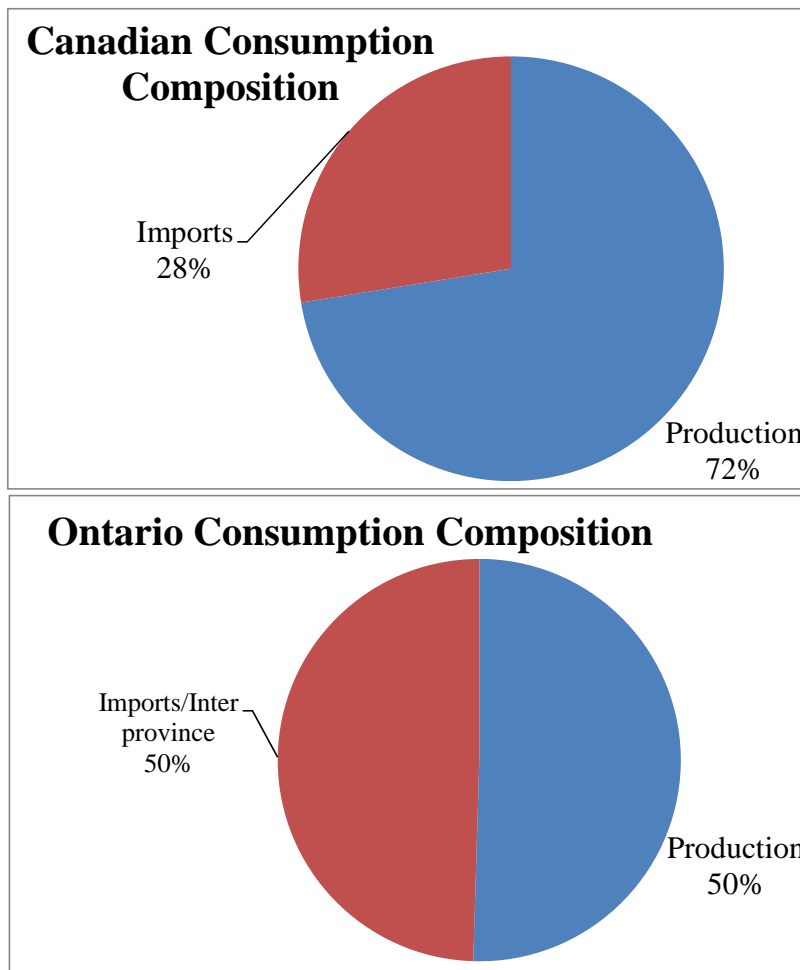
The purpose of this section of the report is to try to measure the impact of the OCFB program on Ontario beef and cattle prices. In order to do so, a mixture of theory, market and statistical analysis are utilized. The section begins with a discussion of the competitive product mix in Ontario.

3.2.1 Ontario Beef Consumption Mix

Canada produces more beef than it consumes. While Canada does import beef, it remains a net exporter of beef. Canada imports large volumes of manufacturing beef from overseas for grinding meat and it imports fresh steak and roast-based primals and sub-primals on a regular basis from the United States.

Imports likely comprise about 25-30% of Canadian consumption based on tabulations of exports, imports and production (Figure 5). In Ontario, however, given that the province represents about 40% of Canada's population and just 24% of its beef production, imports and shipments from other provinces are much more significant. It is likely that Ontario's provincial production of beef represents about half of its consumption. International imports and interprovincial shipments comprise the other 50% of the Ontario beef consumption.

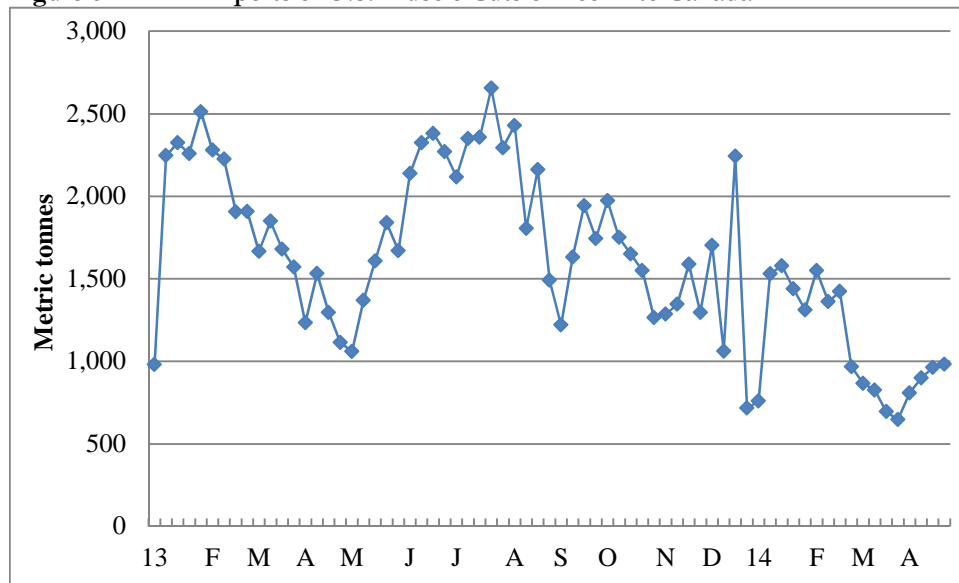
Figure 5 Canadian and Ontario Beef Consumption and Import Share



USDA Select grade beef is the most important competitive factor impacting beef and cattle pricing in Ontario. USDA Select product is readily available and widely merchandised by retailers across the province. USDA Choice is also an important component of the restaurant trade in Ontario. The greater the flow of Select product moving into Ontario, the less there is demand for Ontario beef and cattle. The USDA Select is the competitive benchmark by which Canadian packers are measured in their pricing offers to retailers and foodservice purveyors, and vice versa for retailers. If Canadian and Ontario price points are not in line with USDA product, then it will be substituted. Alternatively if Canadian and Ontario price points are not in line with USDA Select, it will be quickly driven lower in order to avoid loss of sales.

Perspective can be helpful in seeing the significance of the US exports of beef entering the Ontario market. According to USDA FAS/Export Sales Reporting data, there are about 1,600 metric tonnes of muscle cuts of beef entering Canada on average each week from 2013 to the end of April 2014. The weekly tally has been declining for the past 12 months from a peak of about 2,500 June 2013 to about 1,000 in early spring 2014 (Figure 6). While the data refers to Canada, the reality is that almost all of the imports would go to eastern Canada. The west does not import material volumes of U.S. product given its surplus production versus consumption.

Figure 6 Imports of U.S. Muscle Cuts of Beef into Canada



The 1,600 tonnes of muscle cuts of beef from the U.S. represent about 5-6,000 head of cattle equivalent per week that are being imported into Eastern Canada. Recall that Ontario slaughters about 14,000 head per week. This is a significant volume of either beef or cattle, depending on perspective. Volumes such as that are going to have a material impact on the market for beef or cattle in Ontario.

3.2.2 Program Pricing Impact

As a starting point, the premise is that a successful branded beef program, such as Corn Fed, is going to have a positive impact on prices through the supply chain in Ontario. Furthermore it has a positive impact on all pricing, not just the Corn Fed offerings. The dedicated demand for the Corn Fed branded product generates a volume of beef that is not being interchanged and substituted with imported product. This is particularly the case given that Loblaw and Sysco have made a market stake with the program. As such, while the branded product is priced competitively, it is not as subject to discounting based on imported product volumes and prices. In addition given the robust involvement of Loblaw and Sysco, the product is not going to be substituted by imported product in a material share of the market.

Specifically for the purposes of this discussion, the Ontario Corn Fed product is part of the market but it is not part of the weekly or monthly bid and ask commodity beef pricing process. It is not a direct part of the weekly competitive negotiation with the U.S. Select. It is this negotiated bid and ask on commodity product that drives the Ontario market, and Corn Fed is a distinct component of the process.

The discussion above is supported by economic theory of competition for inputs as outlined in Appendix A. The theory demonstrates that the introduction of a branded marketing initiative that is positively received by retailers has the following anticipated effects.

1. Given that the product has a name and brand recognition that follows through to retail, the retailer provides more of a dedicated demand to the processor supplying the branded

product versus a commodity beef product in which competing processors' products are fungible and must compete for retail space.

2. The branded product may sell at a higher retail and wholesale price compared with commodity beef products.

Appendix A illustrates the theory that the effect of a successful branded marketing program like Ontario Corn Fed is to increase the demand for cattle, and make this demand more robust to price. This in turn increases the cattle price, which can then allow for profitable growth in the cattle supply.

It is difficult to quantify the program impact on cattle prices given that Ontario is one part of the overall North American and global beef market. For perspective, consider that the annual OCFB program cattle amounted to less than 300,000 head in 2013. By comparison, there are about 400,000 or more fed cattle slaughtered in the United States each week. With that noted, in section 3.1, it was demonstrated that there are local elements to cattle pricing. Local supply and demand are very important elements which make up the final price received in any given region. The local factors which drive the spread or basis are in addition to the global and exchange rate factors. This local factor is where the OCFB program comes into play in Ontario.

The key point is that the Corn Fed cattle and beef are not part of the normal weekly supply in the price discovery mix. The cattle and the beef are treated as distinct and not immediately interchangeable or fungible based on the theory described above and outlined in Appendix A.

Fungible as defined by Investopedia.com measures a good or asset's interchangeability with other individual goods/assets of the same type. Assets that are fungible simplify the exchange/trade process, as interchangeability assumes that everyone values all goods of that class as the same. Many diverse types of assets are considered to be fungible. For example, specific grades of commodities, such as No.2 yellow corn, are fungible because it satisfies simple specifications like bushel weight. It does not matter where the corn was grown as all corn designated as No.2 yellow corn is worth the same amount in the consumer market.

Ontario Corn Fed Beef is now an effective branded product. As such it is not readily fungible and therefore is not readily interchangeable with imported competing beef, particularly USDA Select. The assertion therefore, again, is that the Corn Fed beef and cattle are not a direct part of the competitive mix on a weekly basis. This is central to the following analysis. If it is agreed that the Corn Fed beef is not part of the weekly bid and ask pricing process, and that it is not substituted by USDA Select, then it effectively means there is a reduction of available supply to the bid and ask process, represented by the Corn Fed volume.

While the Corn Fed supply is not a direct part of much of the negotiated bid/ask pricing process in Ontario, the Ontario packers and retailers are still involved in the demand and bidding process for all their other cattle and beef requirements. Furthermore as noted in the Appendix, the demand for the Corn Fed product increases over all demand for all Ontario production, not just OCFB. This is particularly relevant in periods of tight supply, such as the past two years and as expected for the next several years. That is in periods of tight supplies, committing to or removing a large quantity, such as the OCFB supply, will make the demand for the remaining supplies much more inelastic. That puts greater upward pressure on the price of the non-program beef and cattle.

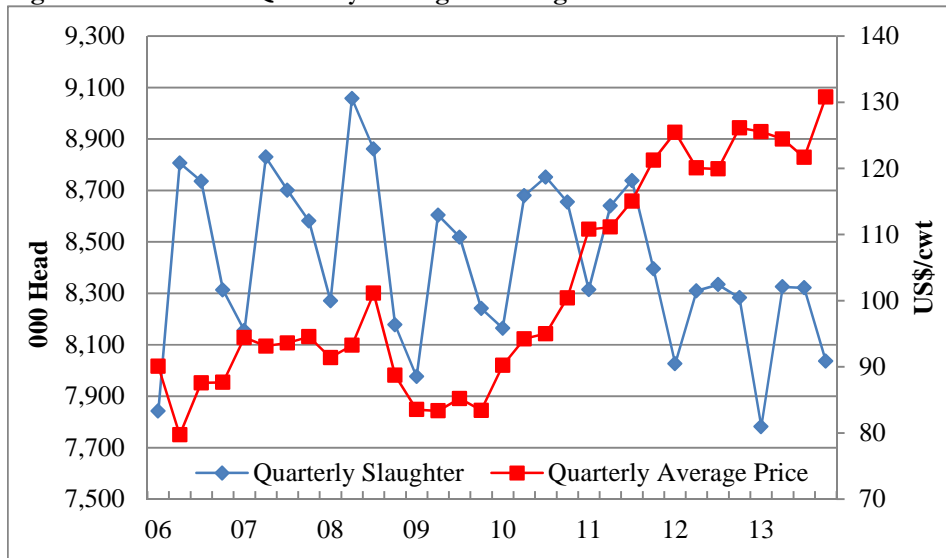
3.2.3 Quantification of Program Pricing Impact

The previous section argued how and why the program is likely to have a positive pricing impact on cattle and beef in the Ontario market. This section of the report seeks to quantify or provide a measure of the magnitude of the OCFB program impact on pricing in Ontario. Given the nature of supply and demand, and Ontario's place in the market, it is not possible to state a definitive or absolute price impact. Instead the purpose here is to provide an indication of the degree of the impact the program has on cattle pricing in Ontario.

One way to look at the price impact of removing supply from the market is by using simple price flexibility as a tool. The basic premise is that prices rise or fall as supplies fall or rise. The best way to look at this is by looking at U.S. cattle slaughter relative to U.S. live cattle prices. Cattle prices are nearly 100% correlated to U.S. and Canadian beef prices and slaughter is of course nearly 100% correlated to beef production.

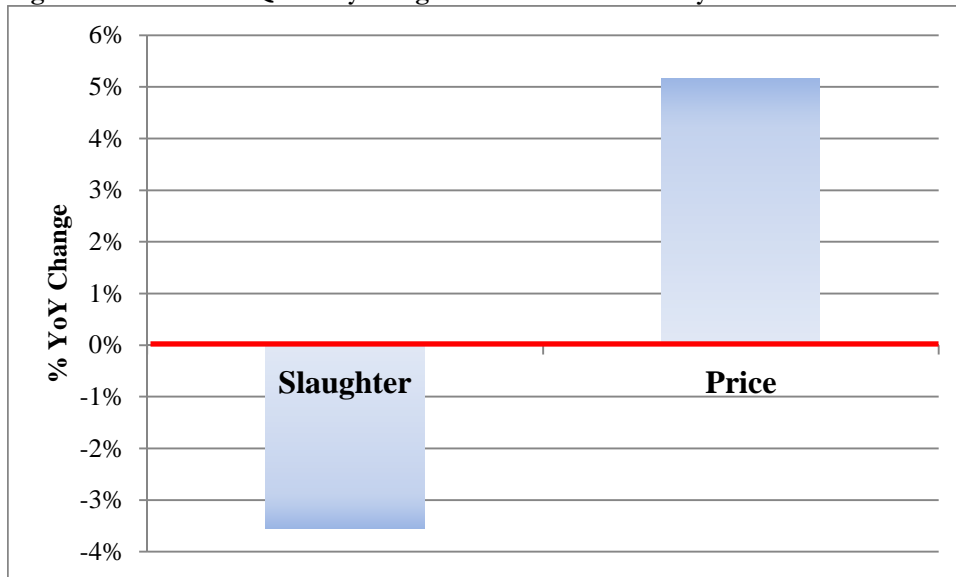
The inverse or negative relationship of pricing to slaughter is not perfect but it can be seen graphically. For example from 2006 to 2010, when U.S. quarterly slaughter was relatively large, U.S. pricing was comparatively lower. After 2010 through 2013 when slaughter began to decline, pricing began to increase (Figure 7).

Figure 7 U.S. Quarterly Pricing and Slaughter



More specifically when supply is reduced in the U.S. on a year over year basis during that time, there is a corresponding increase in pricing. Over the fourteen year period from 2000 to 2013, on average when U.S. quarterly slaughter decreased, it decreased by 4%. That decrease in turn was accompanied over that time by an average 5% increase in price (Figure 8).

Figure 8 U.S. Quarterly Slaughter and Price Flexibility 2000-2013



That kind of relationship can be applied to the impact of the Corn Fed beef. That is, by assuming that the Corn Fed beef and cattle are removed from the pricing discovery process, there can be assertions made regarding the pricing impact. Applying the same flexibilities means that for every 4% of cattle in Ontario removed from the supply mix, there is going to be an impact on the local price in the positive 5% range. This pricing impact is going to be only on the local spread or basis. The Corn Fed impact is not going to have any impact on North American pricing. The Corn Fed impact will be strictly local.

In order to make an illustration of a pricing impact, note that over the past three years from 2011 to 2013, the Corn Fed program represented about 40% of fed cattle marketed in Ontario. Of that 40%, about three quarters or a total of 30% of total fed cattle kill and beef were probably not part of the overall competitive mix. In other words about 30% of the cattle and beef were not part of the supply in the bid and ask. Based on the price flexibility analysis above, that 30% should have about a 35-40% positive impact on price local in Ontario. That is, the local spread or basis should be about 35-40% stronger than it would be without the program.

It can be argued however, that the 40% pricing impact is conservative. That is, the price flexibility noted above is on commodity product. The Corn Fed cattle and beef are not commodity and are not, as noted, fungible. The OCF cattle and beef are not be readily substituted because they are specifically demanded and in larger demand than the overall cattle and beef in the mix. As noted above, the demand for the remaining non program cattle is more price inelastic.

Given that the average Ontario basis as shown in section 3.1.2 over the 2009-2012 period was C\$-5/cwt, that 35-40% guideline could be used to claim that the program strengthened local prices by up to \$2/cwt. In other words, due to the Corn Fed program, Ontario prices are up to \$2/cwt stronger or prices would have been \$2/cwt worse without the program. Again, this maybe conservative but the purpose is not so much to provide an authoritative value but to estimate the influence and direction caused by the program.

For perspective, note that over the previous three years, live prices in Ontario have averaged about \$115/cwt. That means that, based on the analysis and logic, Ontario prices would have averaged about \$113/cwt in absence of the program. The difference with the program amounts to about a 2% increase in prices or over \$26/head.

This more robust market is applicable to all fed cattle sold in the province. The increase is also in addition to the \$3/head premium for program participation. It is also in addition to whatever individual premiums that Corn Fed producers may have been able to negotiate with their packer customers on their own behalf separately.

4 Summary and Conclusions

After many years of difficult and challenging work, the Ontario Corn Fed Beef program is now widely hailed across Canada as an example of a successful agricultural marketing program. It is a preferred and demanded product by consumers and leading retailers and foodservice businesses. As a result of consistent and widespread marketing efforts the product is now widely known, accepted and merchandised across the province and even in the U.S. Ontario Corn Fed Beef has created its own demand and its own niche market within North America. It is not easily or willingly substitutable with other beef as it has acquired unique and differentiated attributes such as local and consistent high quality eating experience.

As a result of this long term effort and the accomplished results, the cattle producers in Ontario have attained pricing gains that can be attributed to the Corn Fed Beef program. Based on simple analysis of price flexibility it can be logically asserted that the Ontario Corn Fed Beef program is generating up to \$2/cwt or about \$26/head in added revenue to Ontario cattle producers.

Producer and packer participation in the program comes with the benefits of creating a product in robust high demand. The costs of participation are not any higher than those costs borne by any contemporary and innovative cattle feeder and packer. In addition producers are compensated by \$3/head for the record-keeping associated with the program. As such there is little or no realistic reason for not participating in the program. Furthermore, and perhaps ironically, by extension of the pricing impact argument noted above, the greater the participation in the program, the greater the likely positive pricing impact on Ontario cattle.

Appendix A

Micro Economic Explanation of How OCFB Can Influence the Demand for Cattle

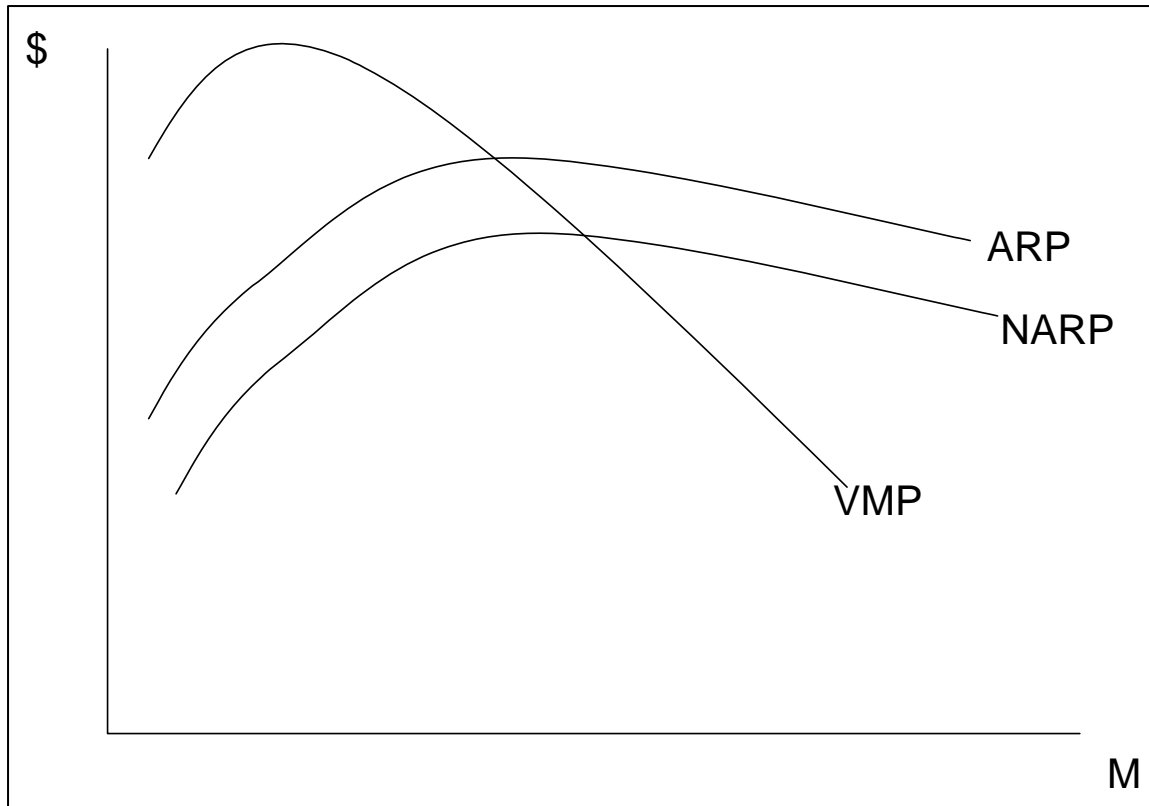
By Al Mussell, George Morris Centre

This section provides an illustration of how a new and successful branded beef program like Corn-fed Beef can be expected to influence the demand for cattle.

A beef processor purchases live cattle which it combines with other inputs given the technology of its plant to produce beef products. In its processing operations, the processor realizes an average margin per unit of cattle processed which is the product revenue, less the cost of non-farm product inputs. In economic terms this margin is referred to as the *average revenue product* (ARP) that results from processing. The average revenue product varies relative to the volume of cattle processed (represented by M in Figure 1 below) based on the efficiency in utilization of plant capacity. At low levels of cattle processed the ARP is low, because plant capacity utilization is poor and technology is not utilized to full potential. The ARP increases with the cattle volume processed up to the point that plant scale efficiencies are attained; from this level the ARP decreases with farm product volume as plant capacity is constraining.

The processor must also account for fixed costs that are not included in the ARP. Fixed costs, by their very nature are a constant, so the ARP is adjusted by subtracting the (constant) fixed costs to obtain *net average revenue product* (NARP). Finally, the incremental margin obtained from an extra unit of cattle processed is given by the *value of marginal product* (VMP). At low levels of slaughter, the VMP is low. The VMP increases with the volume slaughtered, up to the point that ARP levels off, beyond which VMP declines. Figure 1 illustrates the nature of these relationships. As discussed above, the ARP increases with respect to the slaughter volume (M), peaks, and then decreases. The NARP line is parallel to the ARP but at a lower level because the fixed costs are subtracted. The VMP line passes through the peaks of the ARP and NARP lines.

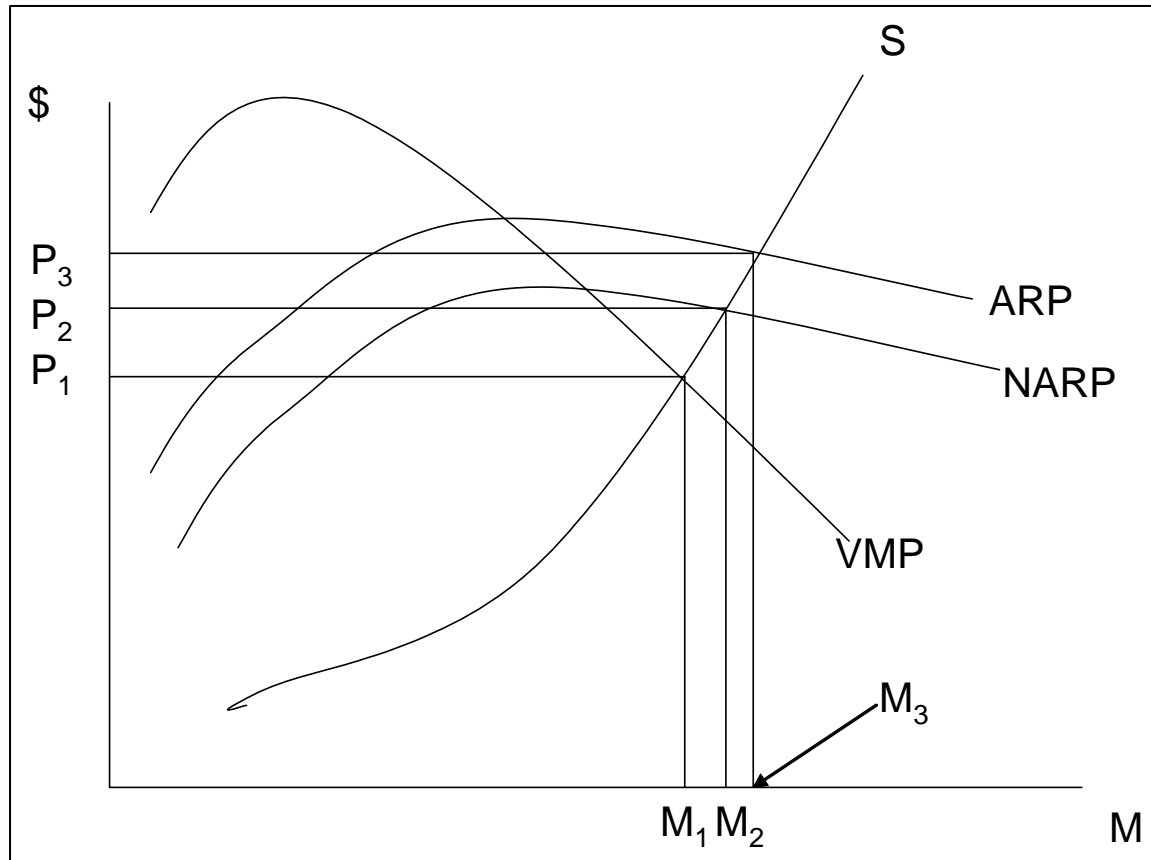
Figure 1 Processor Procurement Framework



The above sets out the bounds on what a processor can pay for live cattle. The most a processor can sustainably pay is the NARP, since the NARP is revenue less non-cattle input costs less fixed costs. However, noting that fixed costs are commonly non-cash in nature, for short periods it may be possible for the processor pays up to ARP, in which it is only covering cash variable costs- this accounts for the negative margins periodically observed in beef processing. The processor would optimally choose to process a volume of cattle and the price paid such that the supply is equal to its VMP. Thus, the equilibrium price paid and volume processed are at the point where $VMP=NARP$, with some short run tolerance to reduce volume and increase price up to $VMP=ARP$.

Processors face a supply of cattle illustrated in Figure 2 below. As identified above, the processor maximizes profit by pricing the cattle at a level such that the VMP intersects the supply function. This results in a volume processed of M_1 and a price paid at a level of P_1 , and maximizes the profit for the processor. However, noting that the processor can pay up to NARP for the product, the processor could offer up to P_2 for cattle, and process a volume of M_2 . Also, in a short run situation, a processor could pay up to the ARP for cattle and offer price P_3 and process a volume M_3 . This latter situation is not sustainable in the long run, because fixed costs are not covered. If the processor paid P_3 for the farm product indefinitely, it would eventually run itself out of business.

Figure 2 Pricing and Processing Volume Scenarios,
Based on Procurement Framework

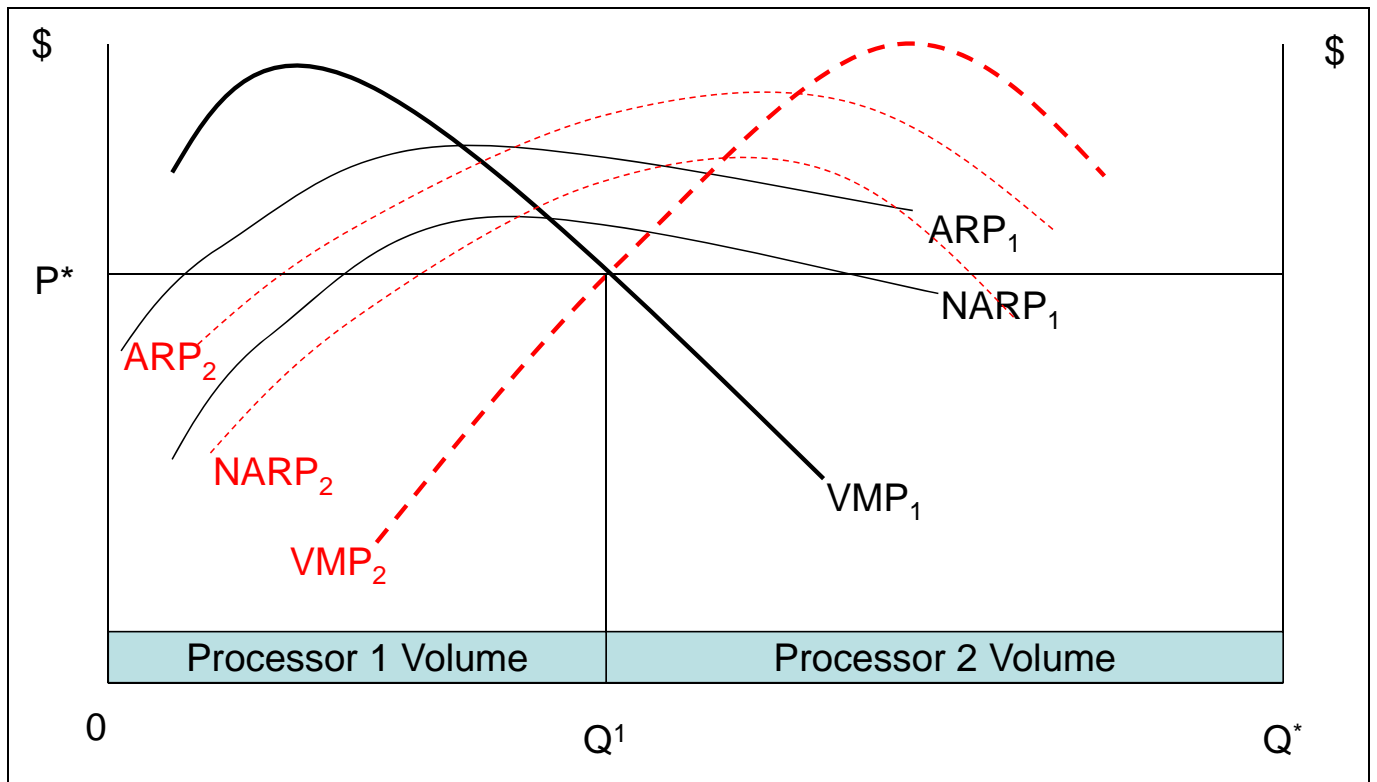


Competition in the Cattle Market

The above provides a discussion of a single beef processing firm's behaviour with regard to cattle procurement. To understand the impacts of interaction between two processors competing for a cattle supply, the framework above is extended. First, it is assumed that competition is occurring in the short run, so the aggregate cattle supply is essentially fixed. Secondly, it is assumed that processors do not collude or anticipate competing offers in developing their bids for cattle.

Figure 3 provides the basic setup for competition between beef processors. The figure is composed of two sets of curves like that depicted in Figure 2, with one of the curves flipped to its mirror image to read from right to left. The horizontal axis in the figure measures the aggregate supply of cattle available at a point in time. In the figure, the two processors (Processor 1 and Processor 2) compete with one another for the cattle supply. In this context, the allocation of cattle between processors is determined by the intersection of the two processors' VMP curves. As shown in the figure, the two firms' VMP curves intersect at a price P^* . At this price level, Processor 1's kill is Q^1 and Processor 2's kill volume is $Q^* - Q^1$.

Figure 3 Basic Model of Processor Competition



Anticipated Impact of a Successful Branded Marketing Initiative

The introduction of branded marketing initiative that is positively received by retailers has the following anticipated effects. First, because the product has a name and brand recognition that follows through to retail, the retailer provides more of a dedicated demand to the processor supplying the branded product versus a commodity beef product in which competing processors' products are fungible and must compete for retail space. Secondly, the branded product may sell at a higher retail and wholesale price compared with commodity beef products.

The anticipated effect of this is illustrated below in Figure 4. For the clarity of illustration the ARP curves are suppressed. Suppose that Processor 1 launches a new branded beef product that proves successful at retail and that Processor 2 continues as a commodity beef supplier. This shifts its NARP and VMP curves to the right, because its increased demand increases its revenue base that can be used for cattle procurement. It also causes Processor 1's VMP curve to steepen- which practically means its quantity demanded is more robust to rising cattle prices. The reason for this is that with a set volume of its branded product demanded by processors, its kill for the branded program is less sensitive to cattle prices.

The impact at the slaughter cattle market level is the following. As a result of its increased demand, Processor 1 increases its kill from Q^1 to $Q^{1\#}$, which correspondingly reduces Processor 2's kill to $Q^* - Q^{1\#}$. The cattle price increases from P^* to $P^\#$. In the longer term, this higher cattle price level is likely to induce an increased supply of cattle, which may allow Processor 2 to recapture its former volume, and will dampen the price.

Thus, the effect of a successful branded marketing program like Ontario Corn-Fed is to increase the demand for cattle, and make this demand more robust to price. This in turn increases the cattle price, which can then allow for profitable growth in the cattle supply.

Figure 4 Impact of a Successful Branded Marketing Initiative

