



AgEcon SEARCH
RESEARCH IN AGRICULTURAL & APPLIED ECONOMICS

The World's Largest Open Access Agricultural & Applied Economics Digital Library

This document is discoverable and free to researchers across the globe due to the work of AgEcon Search.

Help ensure our sustainability.

Give to AgEcon Search

AgEcon Search
<http://ageconsearch.umn.edu>
aesearch@umn.edu

*Papers downloaded from **AgEcon Search** may be used for non-commercial purposes and personal study only. No other use, including posting to another Internet site, is permitted without permission from the copyright owner (not AgEcon Search), or as allowed under the provisions of Fair Use, U.S. Copyright Act, Title 17 U.S.C.*



Commentary on Exchange Rate Impacts on Hog/Pork Competitiveness

Kevin Grier, Senior Market Analyst

November 20, 2003

Executive Summary

The purpose of this paper, prepared for the Canadian Pork Council, is to explain the economic reasons behind the increase in hog and pork exports from Canada to the United States during the third quarter of 2003. This comparatively large increase in hog exports has caused concern among US producers regarding the impact on US markets and prices. For their part, Canadian producers are also concerned about the reasons behind the increase and the repercussions for the Canadian market.

The paper breaks down the export issue into both a long term and short-term perspective. This is necessary in order to differentiate between the “normal” export factors and those that might be unique to the current situation. It is also instructive or helpful to look at the long term or big picture factors in order to understand the underlying drivers of trade between the two regions of North America.

The following are the key summary points and conclusions:

Long Term Factors

- The Canadian and US hog production and pork-packing sectors are two parts of one North American hog and pork industry.
- Canadian slaughter hog exports have been gradually decreasing
- Canadian feeder/weaner hog exports have been rapidly increasing
- Canada has a competitive advantage in the production of weaner pigs
- The US corn belt has a competitive advantage in finishing hogs
- US hog finishers in Iowa and the Corn Belt have demonstrated strong demand for Canadian weaners.
- Canadian herd growth has been driven by sows, not by market/slaughter hogs
- The US hog price differential in favor of US producers has been declining over time.
- Canadian slaughter and slaughter capacity has been rapidly accelerating and has more than kept pace with market hog production
- Canadian slaughter has not kept pace with the growth of the weaner production sector in Canada and that is where the growth in exports has occurred.
- Long term C\$ depreciation favors weaner production and weaner exports.

Short Term, Summer 2003 Factors

- Rapid appreciation of the Canadian dollar during 2003 has resulted in material revenue loss amounting to approximately C\$20/head.
- BSE has had a negative impact on Canadian consumer demand for pork.
- BSE has likely cost Canadian packers about C\$7/hog in lost revenue.
- The Canadian packer margin differential relative to the US packer margin has declined significantly this summer. This summer Canadian margins were about C\$4/head lower than normal compared to their US counterparts. Canadian packer buying power suffered by \$4/hog relative to their US counterparts, which allowed US packers to outbid for the hogs.
- Packer plant closures resulting from weaker margins and returns have contributed to the entire difference in slaughter market hog (barrow and gilts) exports this summer compared to last summer.
- Larger than average slaughter sow and boar exports have occurred during the summer. This is signal of sow herd reduction in Canada.

The conclusion to be reached regarding long-term issues is that comparative advantage in weaner production in Canada and finishing in the US, coupled with exchange rate factors can explain a large measure of the growth in the Canadian herd. Those factors can also be held to explain the growth in weaner/feeder exports. The slaughter hog or finishing hog sector has not seen the same growth and is more in balance with slaughtering capacities in Canada.

With regard to the short term, the appreciation of the Canadian dollar in combination with the impact of the BSE crisis has had a negative impact on the Canadian hog production and packing sectors. These unusual circumstances have resulted in weaker returns for both packers and producers. This in turn has resulted in increased market hog exports as a result of reduced Canadian packer buying power and plant closures. The weaker returns for Canadian producers also means that they are undertaking a material culling of breeding stock. This has also resulted in increased breeding stock exports.

The impact of the BSE crisis is slowly abating as beef exports resume. This has eased pressure on Canadian pork markets. Furthermore, one of the two plants that closed this summer has reopened and is killing at a reduced rate. Packer margins have begun to seasonally improve this fall, which will result in increased kill rates, and less slaughter exports. Finally, the rapid culling of the Canadian herd will likely result in a reduction in exports later in 2004.

1. Introduction

The purpose of this paper, prepared for the Canadian Pork Council, is to explain the economic reasons behind the increase in hog and pork exports from Canada to the United States during the third quarter of 2003. This comparatively large increase in hog exports has caused concern among US producers regarding the impact on US markets and prices. For their part, Canadian producers are also concerned about the reasons behind the increase and the repercussions for the Canadian market.

In order to evaluate the reasons behind the increase in exports the following economic and market factors will be examined:

1. Canadian Price Discovery
2. Longer Term Trade Trends
3. Exchange Rates
4. Producer and packer profitability
5. Impact of BSE
6. Canadian packer capacity
7. Export composition

These factors have been identified by industry participants and by analysts as possible key drivers of both long term and short term trade in the hog and pork industries. By examining these factors, it is expected that the causes and potential future direction of export trends can be understood and perhaps acted upon by industry participants.

2. Canadian Price Discovery

The purpose of this section of the report is to explain how the price of hogs and pork are derived or discovered in Canada. Understanding the pricing mechanism is the starting point in evaluating the drivers of trade between the two countries.

Canadian pork and hog prices are determined through three basic components:

1. US Price Levels
2. Exchange Rate Values
3. Price Spread (Transport Cost and Local Supply Demand)

The Canadian and US hog and pork industries are essentially one North American industry. The determinants of trade flows are relative supply and demand levels in the various regions of Canada and the United States. US hog slaughter is approximately 5 times greater than Canadian slaughter. Given that fact, the overall price determination begins in the key production and slaughter regions of the US Corn Belt and mid-west. These markets are the alternative market points for Canadian producers, after their own local/provincial markets.

Price setting in Canada therefore begins with the possible prices that can be derived by a producer accepting bids from US packers. Alternatively, Canadian packers, aware of US hog price levels in the alternative destinations, must also keep local bids competitive with those alternatives.

From that basic starting point, the price that a packer will offer or that a producer will accept, will be at least the US alternative, adjusted for the exchange rate and the cost of transport to the alternative market. The transport cost and local supply-demand conditions in the province determine the differential between the US price in C\$ and the local provincial price.

This overall price discovery mechanism in Canada has now been almost completely prescribed into Canadian hog prices through formula pricing and contracts. The George Morris Centre has estimated that about 80% of Canadian hogs in Ontario and the prairies are formula priced. Quebec hogs are also overwhelmingly formula priced.¹ The formula price is basically the US price (National Cost, Iowa-S. Minn, etc), converted to C\$, less a spread factor. The spread factor is incorporated by dividing the price by an index divisor or by multiplying by a certain negotiated fraction.

The main point to note from this section of the report is that prices in the US determine prices in Canada.

3. Long Term Trade Trends

The purpose of this paper is to evaluate relatively short-term trade flow developments. Nevertheless, these shorter-term developments have not occurred in isolation of the longer-term trade drivers. As such, the purpose of this section of the report is to summarize the “big picture” drivers or determinants of trade flows in this industry. This discussion will provide context for the situation being experienced in the summer and fall of 2003. This section relies on and summarizes the findings from previous George Morris Centre research in this area.²

Like all products, hogs and pork will flow to the region that provides the greatest return or profits. Profitability is determined from both revenue maximization and cost reduction. The following section outlines the longer-term drivers that explain hog trade flows in North America.

3.1 Canadian Exports

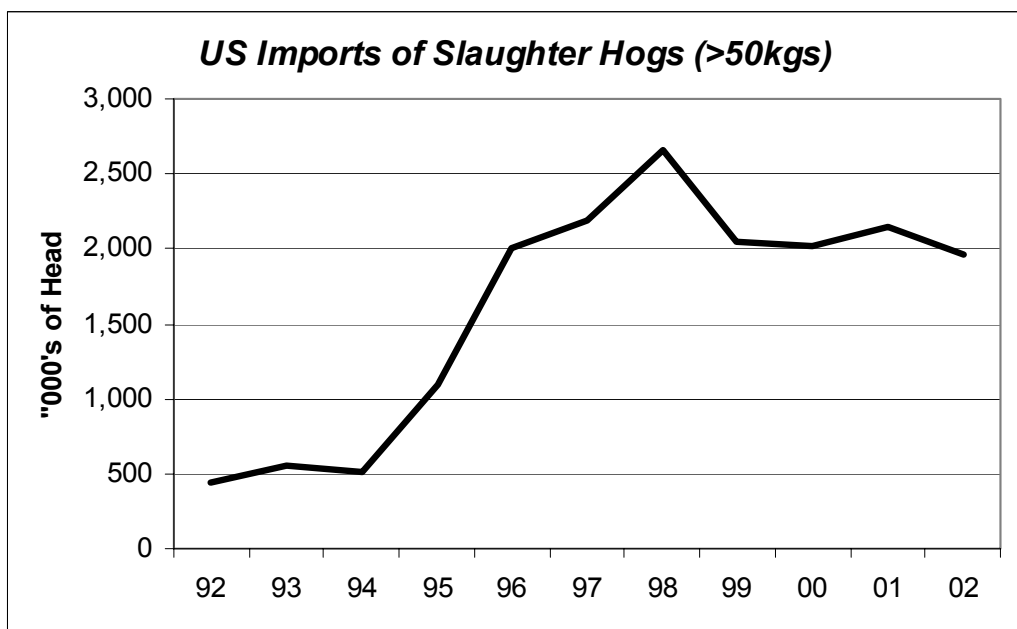
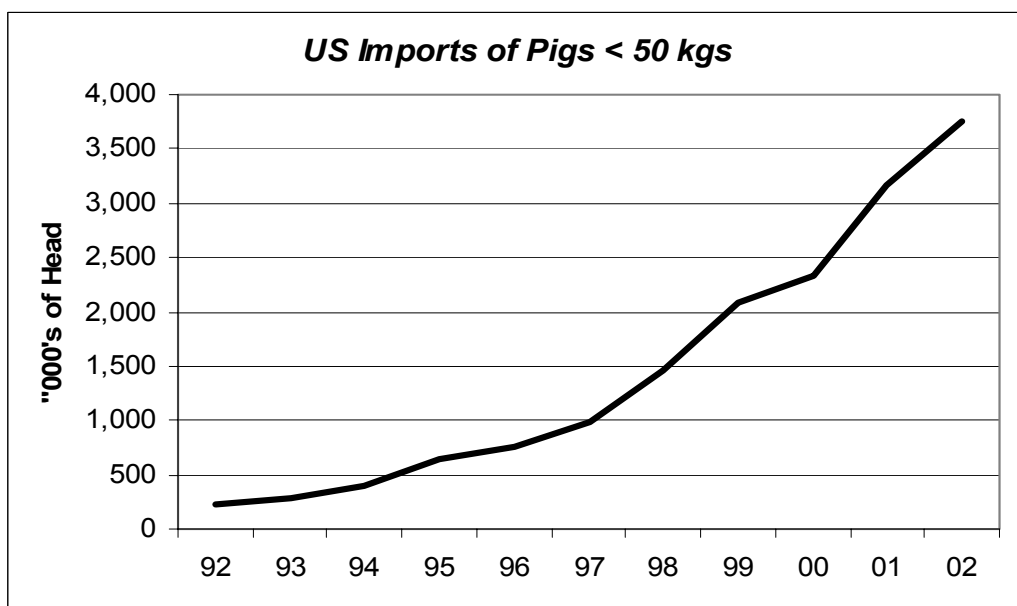
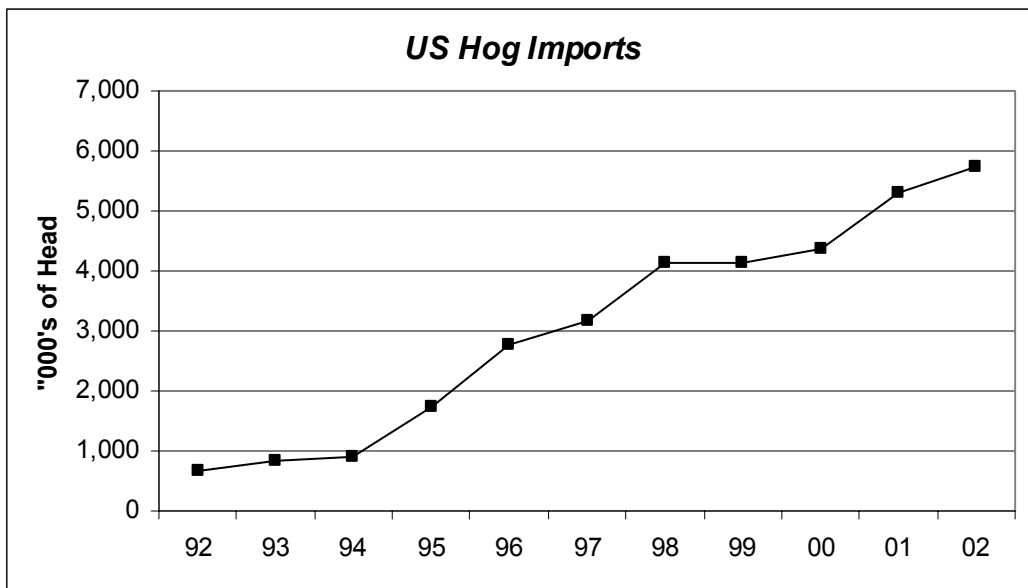
The graphs on the following pages illustrate the live hog trade for the past ten years. The following are the key statistical summary points from the trade data.

- Total hog exports in 2002 were 5.7 million head
- Feeder/weaner hog (<50kg) exports in 2002 were 3.7 million head
- Slaughter hog exports in 2002 were 2 million head
- Total exports have increased by 39% in the five years since 1998
- Feeder/weaner exports have increased 156% since 1998
- Slaughter exports have *decreased* 26% since 1998.

The important point to note is that over the last five years, the feeder/weaners have been the cause of the increase in exports to the US. Slaughter hogs have actually declined.

¹ Hog Marketing Trends in Ontario, Manitoba, Alberta and the United States, By Kevin Grier, George Morris Centre, October 2002

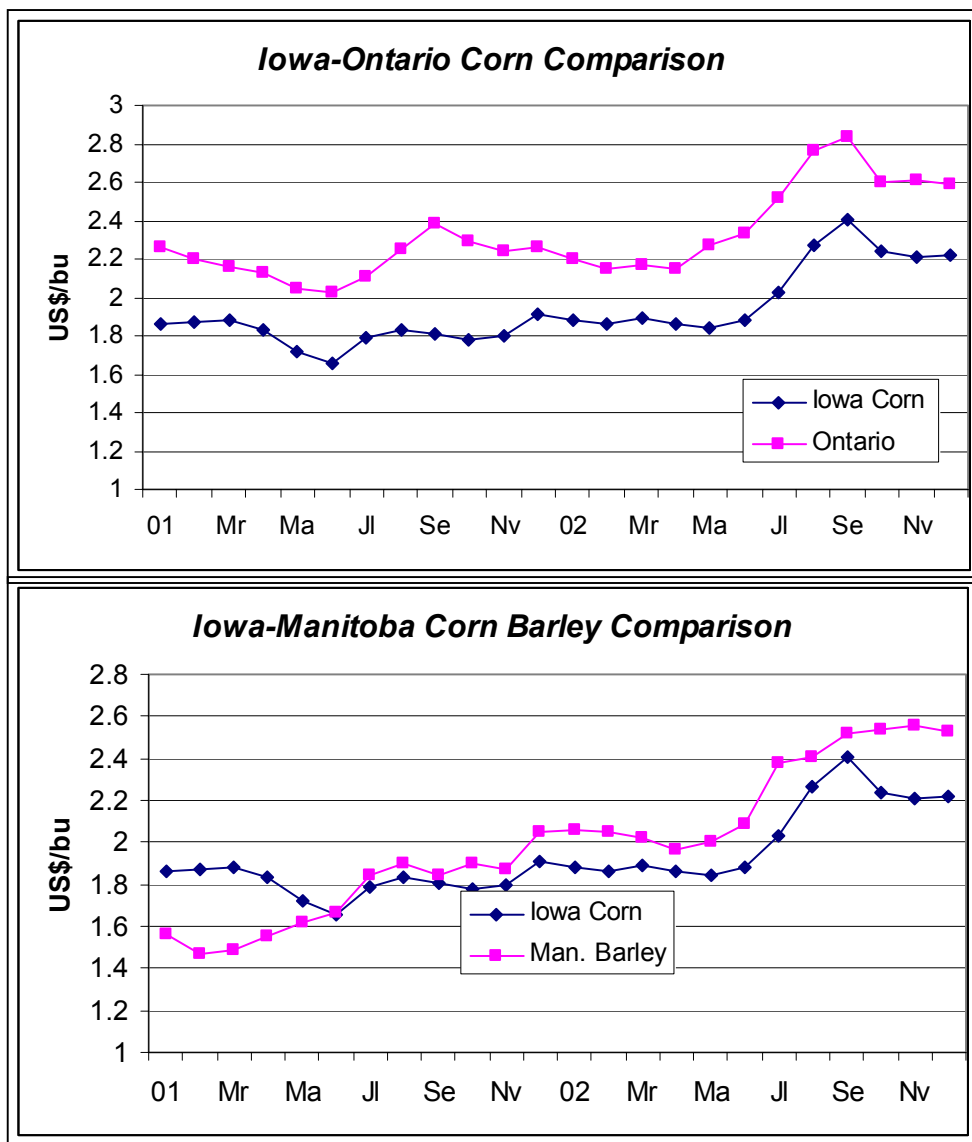
² Cost Competitiveness of the Canadian Pork Processing Industry, 1997
Relative Profitability of Hog Production in Western Canada and the US Midwest, 2001
Impacts of US Country of Origin Labeling on US Hog Producers, April 2003.



3.2 Long Term Export Drivers

3.2.1 Grain Prices/Cost of Production

The following graphs show the trends in grain prices between Canada and the US.



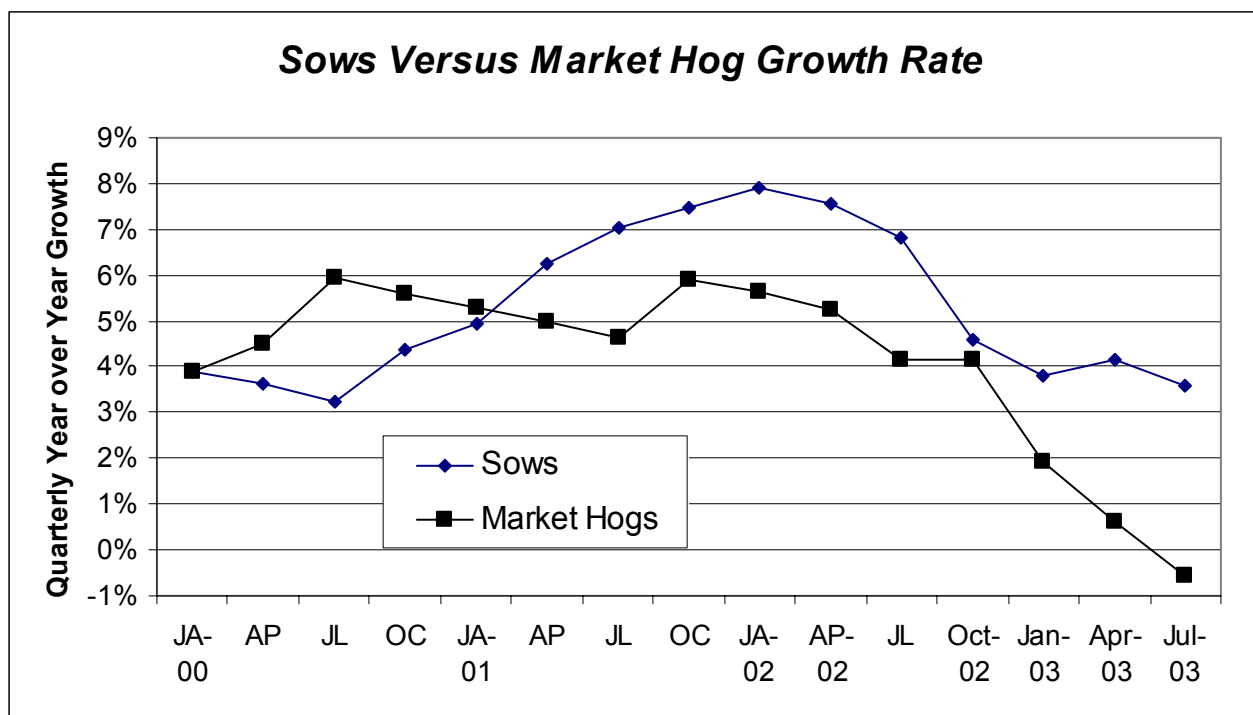
The important message from the graph is that grain prices have been higher in Canada than in the US. The implication is that the cost of grain is higher in Canada than in the US. Feed costs represent approximately two-thirds of the variable cost of production in a farrow to finish unit. Feed costs represent over 80% of the variable costs on a finishing unit (not including the cost of the feeder pig).

Research by the George Morris Centre has shown that hog finishing units in Iowa have overall modestly lower costs of production than a similar unit in Manitoba. Alternatively the same research showed that a farrowing unit in Manitoba has lower costs than a similar unit in Iowa. The main point of differentiation of course is the relative unimportance of grain cost in a farrowing unit compared to a finishing unit.

Further research by the George Morris Centre has asserted that the key reason for the weaner pig flows from Canada to the US is that Iowa and the Corn Belt have a strong and growing demand for Canadian weaners.³ The demand is driven not only by low grain costs but also by structural change in production systems in the Iowa and Corn Belt hog industries. Canadian weanling quality and disease status is also a factor in the growth in demand. Moreover, Iowa not only draws hogs in from Canada, but from all surrounding regions such as the US southeast, and US Northwest.

This is not to say that Canadian market hog production or finishing units do not also offer opportunities to Canadian producers. It only indicates that relative to the main production areas in the US, Canadian producers are at a comparative disadvantage with regard to grain costs. Canadian market hog or finished hog producers would have enjoyed profits during periods of profits for their US counterparts, but the order of magnitude would have been smaller. Furthermore, there are other factors when considering whether to finish hogs in Canada. These considerations would include the poor returns available from cash crop production, particularly in the west.

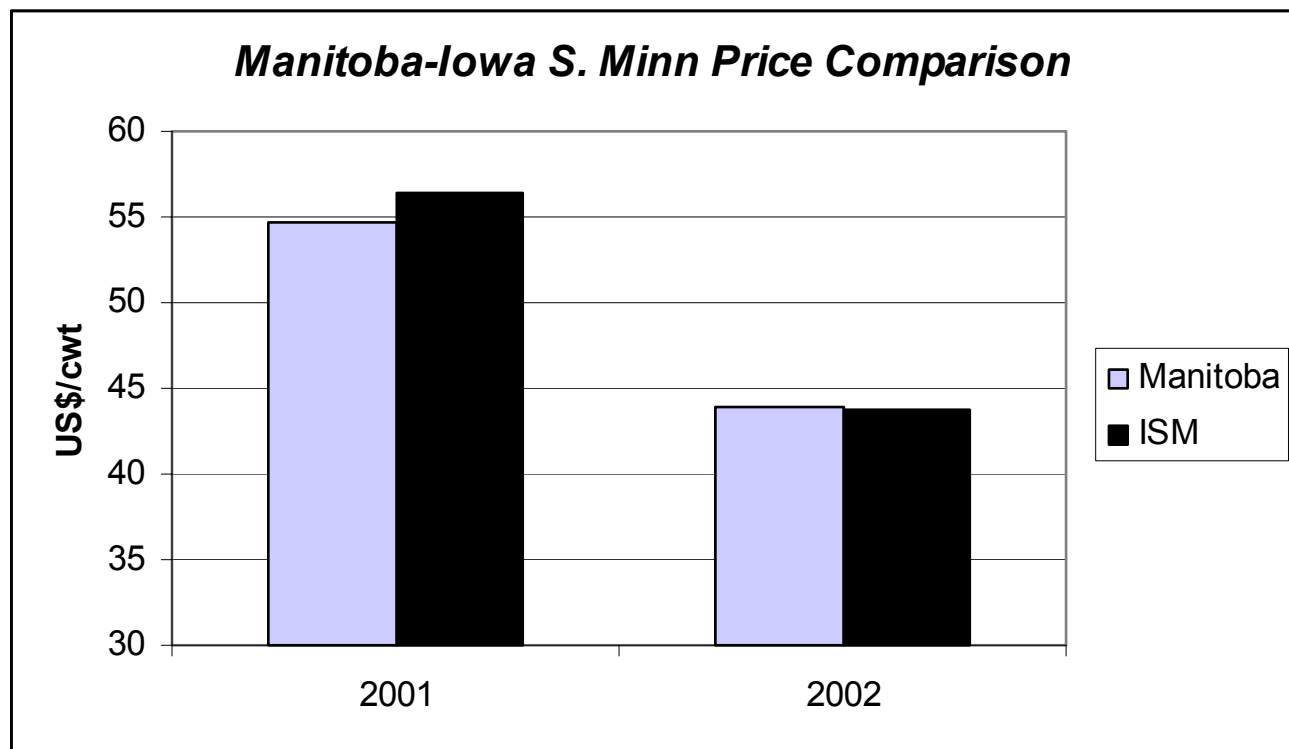
The key point to note is that the growth in the Canadian herd is being driven by sow volumes, not by the growth in market or slaughter hogs. This is re-enforced by noting inventory trends in Canada. While the sow herd has grown rapidly in Canada, the market hog inventory growth has been far less strong and recently it has declined (see graph below).



³ Impacts of US Country of Origin Labeling on US Hog Producers, Grier, Kohl, 2003

3.2.2 Hog Price Differentials

Another driver of hog trade is price differential. Higher prices in one region or another will cause hogs to flow to the higher priced region. The graph below shows the relationship between Manitoba and Iowa Southern Minnesota hog prices in US dollars/cwt, FOB the particular region. The graph shows that in 2001, hog prices were somewhat higher in Iowa than in Manitoba. In 2002, however, the data indicates that the price differential was essentially erased. Those two years are the end points on a trend of gradually narrower price differentials between Canada and the United States.⁴

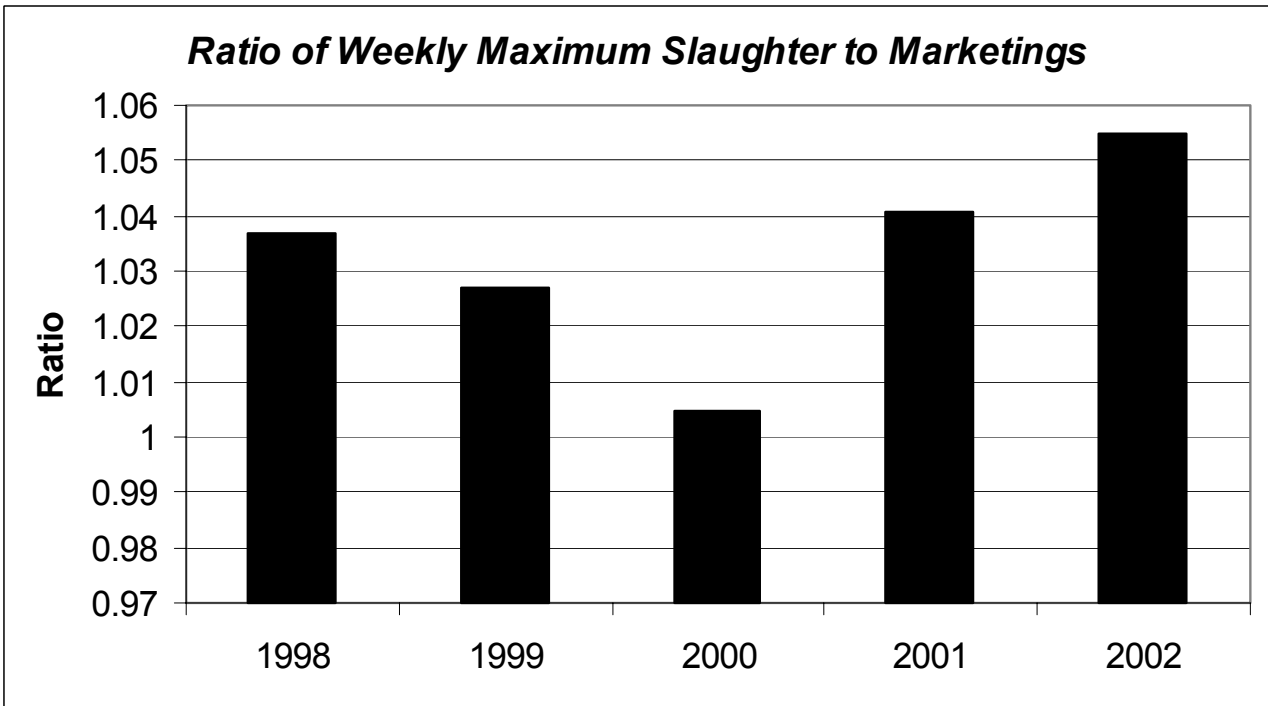
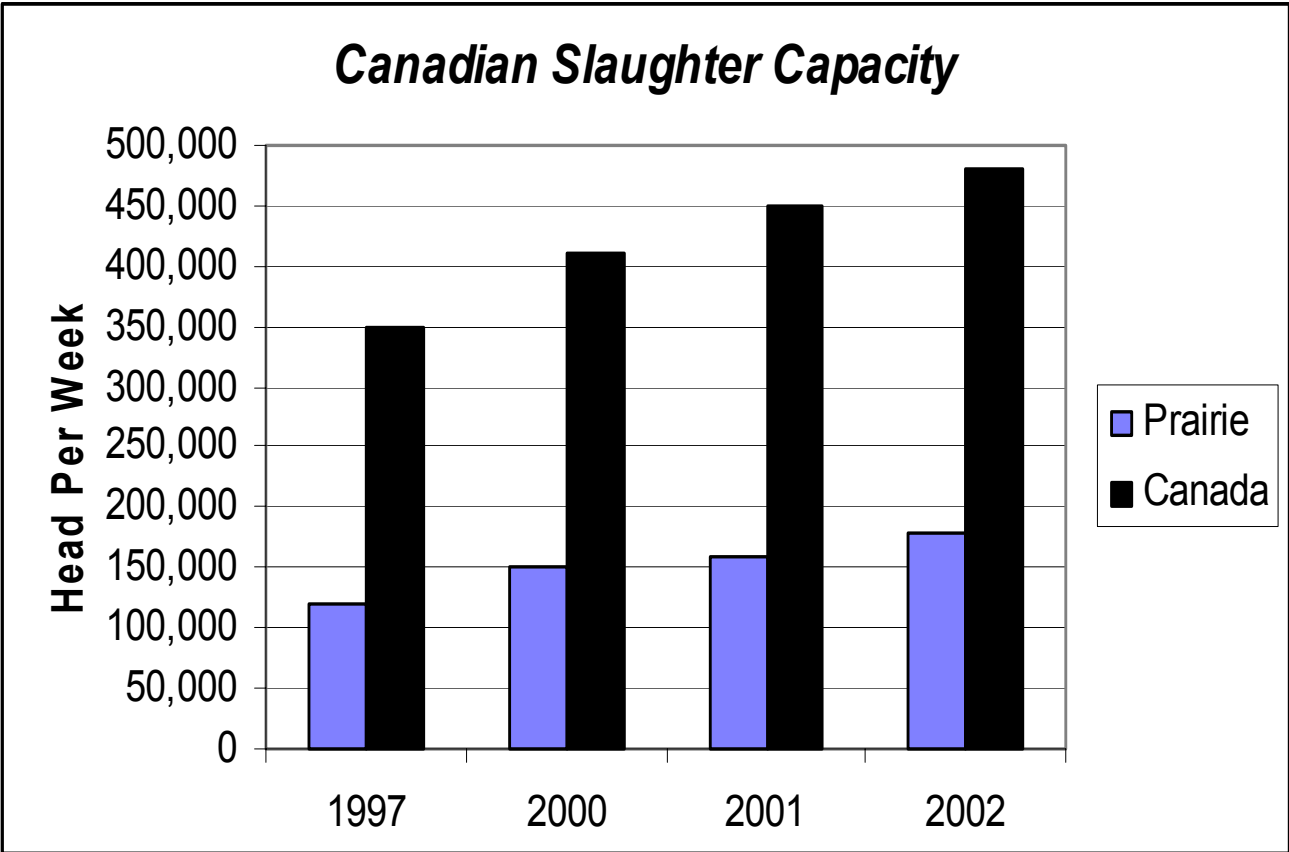


3.2.3 Canadian Slaughter Capacity

The following two graphs show the trends in Canadian hog slaughter capacity and the relationship between capacity and hog marketings. The first graph on the next page shows that Canadian hog slaughter capacity has been increasing rapidly, at an average of about 10% per year between 2000 and 2002 and an increase of 37% between 1997 and 2002. That compares to a relatively negligible growth in capacity in the United States. The second graph on the following page shows the ratio of weekly maximum slaughter capacity in Canada to weekly average marketings.* Essentially the second graph shows that over the past five years, Canadian slaughter capacity has grown faster than slaughter hog marketings.

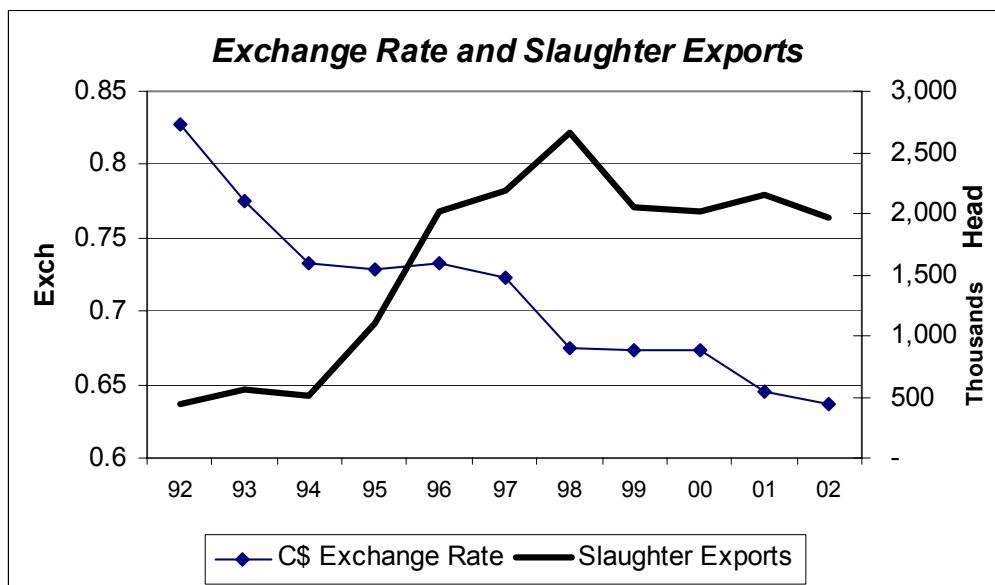
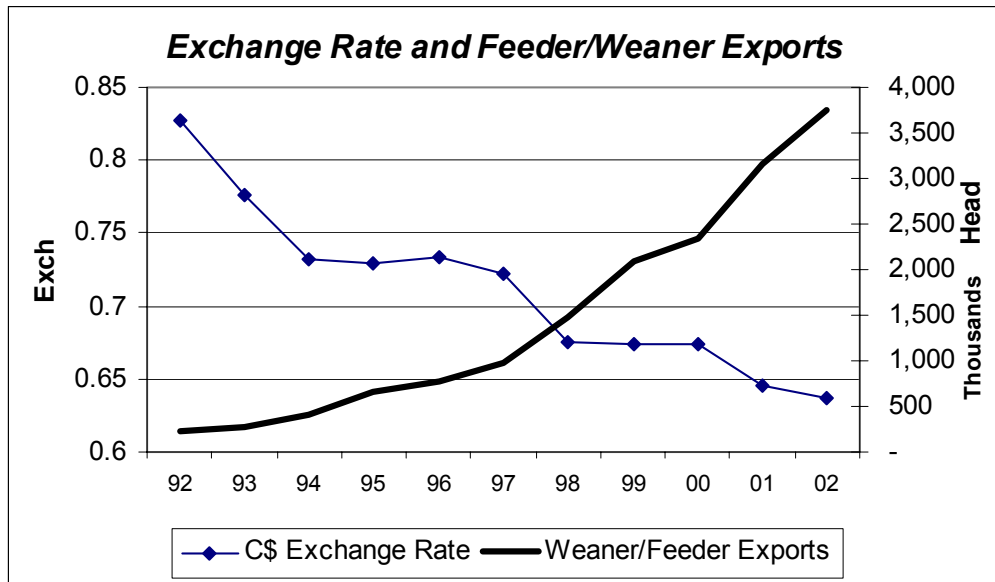
⁴ Relative Profitability of Hog Production in Western Canada and the US Midwest, 2001

* Marketings are defined here as Canadian slaughter plus slaughter hog exports to the US. Marketings do not include weaner/feeder exports.



3.2.4 Long Term Exchange Rate Trends

The following two graphs show the relationship between the annual exchange rate and the annual rate of exports for feeder/weaner and slaughter exports to the US.



There is a danger in just looking at one factor, in this case the exchange rate, and deriving conclusions. This is especially the case given the other factors that have been noted above such as grain prices and relative hog prices. Nevertheless there is still a clear message from the graphs. The message is that there is a negative relationship between the exchange rate and weaner/feeder exports. That is, the lower the exchange rate, the greater the exports. The second graph above shows that there is very little relationship between the exchange rate and slaughter exports.

The explanation is as follows:

- A depreciating C\$ results in higher prices for finished hogs, grain costs and weaner pigs. Therefore while the revenue for market hog producers increased as a result of a depreciating Cdn dollar, so did their costs.
- A depreciating C\$ results in higher C\$ prices for US packer bids. Canadian prices simply move higher according to the formula price or packers in turn must match those bids or risk losing the hogs to the south. The assertion therefore is that there is a direct exchange rate link to price, not to export volumes.
- A depreciating C\$ results in higher prices for weaners. The fact that grain costs also increased is less material to the farrow-to-wean business's operating costs than for finishers. A depreciating dollar results in greater profits and hence the incentive to produce weaners.
- Iowa finishers have greater bargaining power than their counterparts in Canada due to the fact that their grain costs are not influenced by the exchange rate depreciation.

3.3 Summary Points Regarding Long Term Trade

The following are the key summary points from the discussion above:

- Canadian slaughter hog exports have been gradually decreasing
- Canadian feeder/weaner hog exports have been rapidly increasing
- Canada has a competitive advantage in the production of weaner pigs
- The US corn belt has a competitive advantage in finishing hogs
- US hog finishers in Iowa and the Corn Belt have demonstrated strong demand for Canadian weaners.
- Canadian herd growth has been driven by sows, not by market/slaughter hogs
- The US hog price differential in favor of US producers has been declining over time.
- Canadian slaughter has been rapidly accelerating and has more than kept pace with market hog production
- Canadian slaughter has not kept pace with the growth of the weaner production sector in Canada and that is where the growth in exports has occurred.
- Long term C\$ depreciation favors weaner production and weaner exports.

The conclusion is that comparative advantage in weaner production in Canada and finishing in the US, coupled with exchange rate factors can explain a large measure of the growth in the Canadian herd. Those factors can also be held to explain the growth in weaner/feeder exports. The slaughter hog or finishing hog sector has not seen the same growth and is more in balance with slaughtering capacities in Canada.

4. Short Term Factors and Impacts

Section three above noted that over longer periods of time, exchange rate change has been a factor in the growth of weaner exports but not necessarily of market hog exports. The argument was made that changes in exchange rate have a minimal impact on slaughter hog exports due to the combined influence on finished hog prices, weaner hog input costs and grain costs of gain. Another argument towards that point is that the change in the exchange rate simply leads to the change in the price of hogs in Canada through either the formula price or packer bids.

While that is the case over the longer term, there are instances where rapid movement in the exchange rate can have market impacts that do result in changes in trade patterns. The purpose of this section of the report is to examine how the current, rapid appreciation the C\$ relative to the US\$ is resulting in greater hog exports to the US. The section also explores the possible impact of the BSE crisis and the closure of two packing plants.

4.1 Packer Revenue Impact

Changes in the Canadian dollar directly impact the value of pork in the same way that the changes impact the value of hogs. A depreciated dollar means that Canadian packers can sell into the US at a higher C\$ price. For example if boneless muscle hams are trading for US\$1/lb in the US mid-west, and if the exchange rate is .65, the Canadian dollar return on ham sales to the US would be C\$1.53/lb. If however, the exchange rate was .74, the Canadian dollar return on ham sales to US would be just C\$1.35/lb. This in fact is the Canadian pork cut pricing mechanism due to the open border and the ability to arbitrage. Canadian packers can demand at least the US level as a result of their ability to find customers in the US. As such, Canadian prices move close to US levels over time.

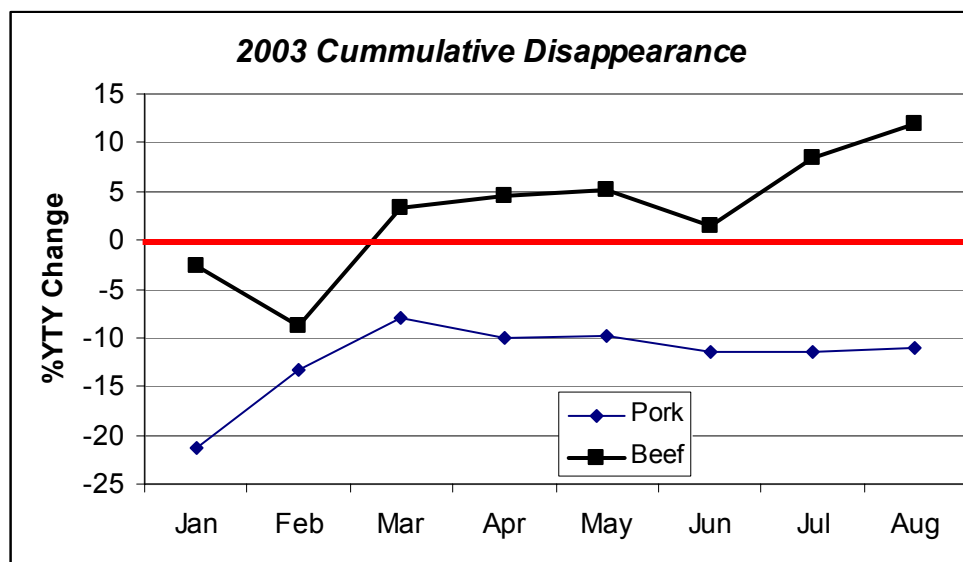
The impact on the entire pork cutout* is the same. This summer during July and August, the USDA pork cutout averaged just over US\$62/cwt. In this case the value of Canadian sales to the US could amount to C\$86/cwt given the summer average exchange rate of .721. If however, the exchange rate were the same as it was in January/February, at .655, then the returns to Canadian packers for sales to the US would have amounted to C\$95/cwt. Therefore the difference in the exchange rate between early in the year and summer has cost Canadian packers C\$9/cwt or over \$20 per head.

4.2 BSE Impact

The single case of BSE has resulted in beef supply offerings or supplies that are heavy or above average for the Canadian market. It is now becoming statistically apparent that due to the supply situation and the resulting lower prices, Canadian consumers have significantly increased their purchases of beef. This has been particularly true or evident during August and September as Canadians responded to significant beef price reductions and retail/foodservice merchandising efforts. It is also becoming statistically apparent that this has resulted in lower consumer purchases of pork, particularly in late summer. The following graph shows 2003 monthly year over year percentage change in the cumulative disappearance of beef and pork.

* The cutout is the composite value of all the pork cut prices at wholesale multiplied by each cut's individual yield and formulated back to a carcass basis.

The graph shows that during the first quarter, Canadians decreased their consumption of both



Source: Agriculture and Agri-Food Canada, Red Meat Section

beef and pork, relative to the same time in 2002. Into the second quarter, however, pork consumption stayed below year ago levels but beef consumption increased. Starting in July, however, as beef production grew and prices declined, Canadian consumption increased and the year over year decline in pork consumption accelerated. Meanwhile, according to Statistics Canada, the Consumer Price Index for Pork declined in July and August. Declining consumption combined with declining consumer prices is the economic definition of declining demand.

Declining demand due to the extraordinary circumstances in the beef market is certain to have detrimental impacts on the Canadian pork packing industry. Furthermore, due to supply and demand conditions in the various markets, as well as transport costs, the ability to arbitrage is not as perfect as outlined above, but the principle remains.

To explore the possible impact of BSE on pork packer revenues, a reference point to the US is useful. Once again, a logical reference point is the US pork cutout compared to the Canadian cutout. At the start of the year in January and February, with the exchange rate around .65-.66, the Canadian cutout in US dollars was equal to approximately US\$51-52*. That compares to a US cutout value of \$US53/cwt.⁵ That means that the Canadian pork cutout was about US\$1-2/cwt less than the US cutout. It is important to note that this US\$1-2/cwt differential in favor of the US was roughly the average for 2002 as well. [Note again that the methodologies are not exactly comparable but the trend and differential is the key point of reference]. During July and August, as the exchange rate was in the .71-.72 range, the price differential was US\$4-5/cwt less than in the US. That is a net cutout difference of about U\$3/cwt. The following table summarizes the situation at the beginning of the year and in the summer.

* J-F Cdn cutout C\$161/ckg/2.20463*.8/.74 * exch rate .66 = C\$51.70

⁵ Cdn cutout is Chisholm cut prices converted to a carcass basis according to yields and then to a US basis from metric to pounds and from .8 Cdn carcass to .74 US carcass. The weekly quotes were averaged for the two months, January and February. The US carcass is the USDA 51-52% lean weekly average quote. The weekly was then averaged for the two months, January and February.

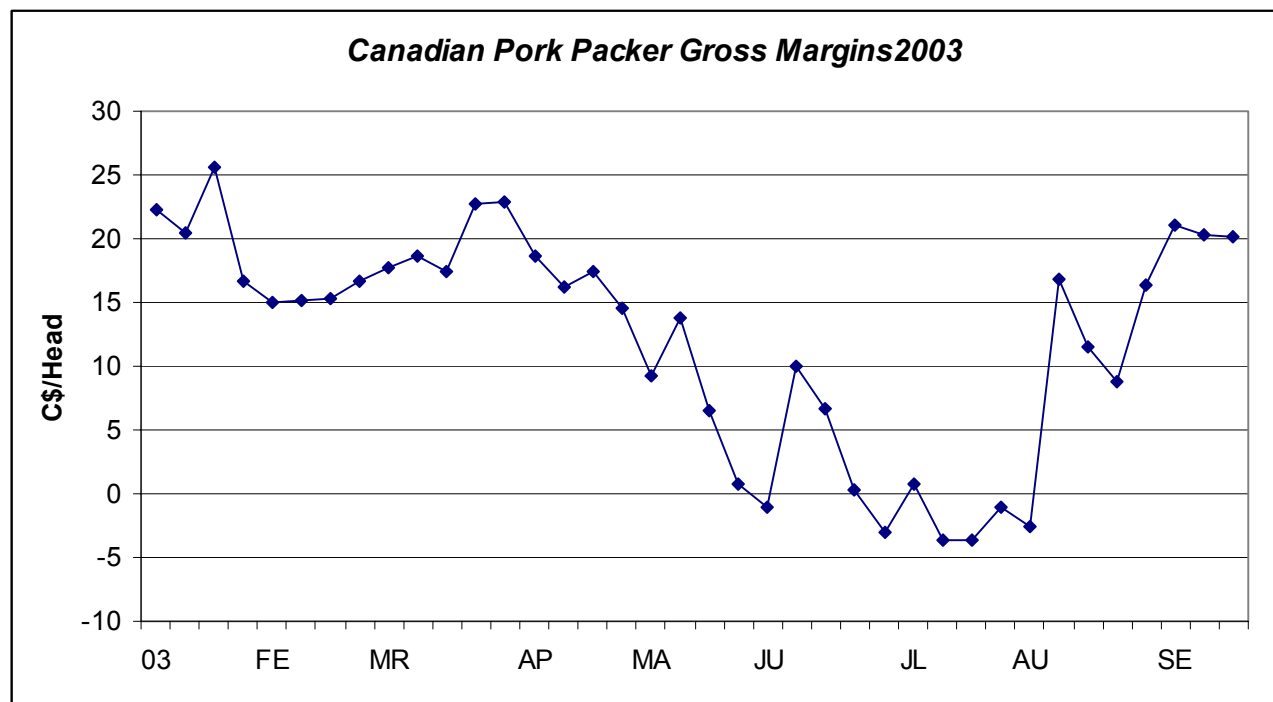
US and Canadian Cutout and Exchange Rate Relationships							
2003	Jan	Feb	J-F Avg		July	August	J-A Avg
Canadian Cutout C\$/ckg	160.57	161.27	160.92		161.75	165.11	163.43
C\$ Exchange Rate	0.65	0.66	0.66		0.72	0.72	0.72
USDA 51-52% Cutout US\$	52.92	53.51	53.215		63.70	61.15	62.42
Canadian Cutout US\$/ckg	51.09	52.32	51.70		57.35	57.95	57.65
Cda-US Differential US\$/cwt	-1.83	-1.19	-1.51		-6.35	-3.20	-4.77

Clearly the rapid appreciation in the exchange rate resulted in a revenue loss to Canadian packers as discussed above in section 4.1. Nevertheless given the ability of the industry to arbitrage across borders, the differential between the Canadian and US cutouts should have returned to more normal levels, especially over a period of two months. Furthermore, as of September, the situation has not reversed. That is an indication that there is more than a rapid movement of the exchange rate that is at work.

The BSE impact on pork demand is the only external shock that the system has endured that can explain why the cutout differential against Canadian packers this summer is so much greater than normal. As such, it is reasonable to assert that BSE related demand shock has cost pork packers about US\$3/cwt or about C\$7/hog.

4.3 Packer Profitability

The following graph shows the trend in packer gross margins in Ontario.* As a guideline, it is expected that for this type of cutout, any gross margin below the \$20-25/head range would likely result in net losses.

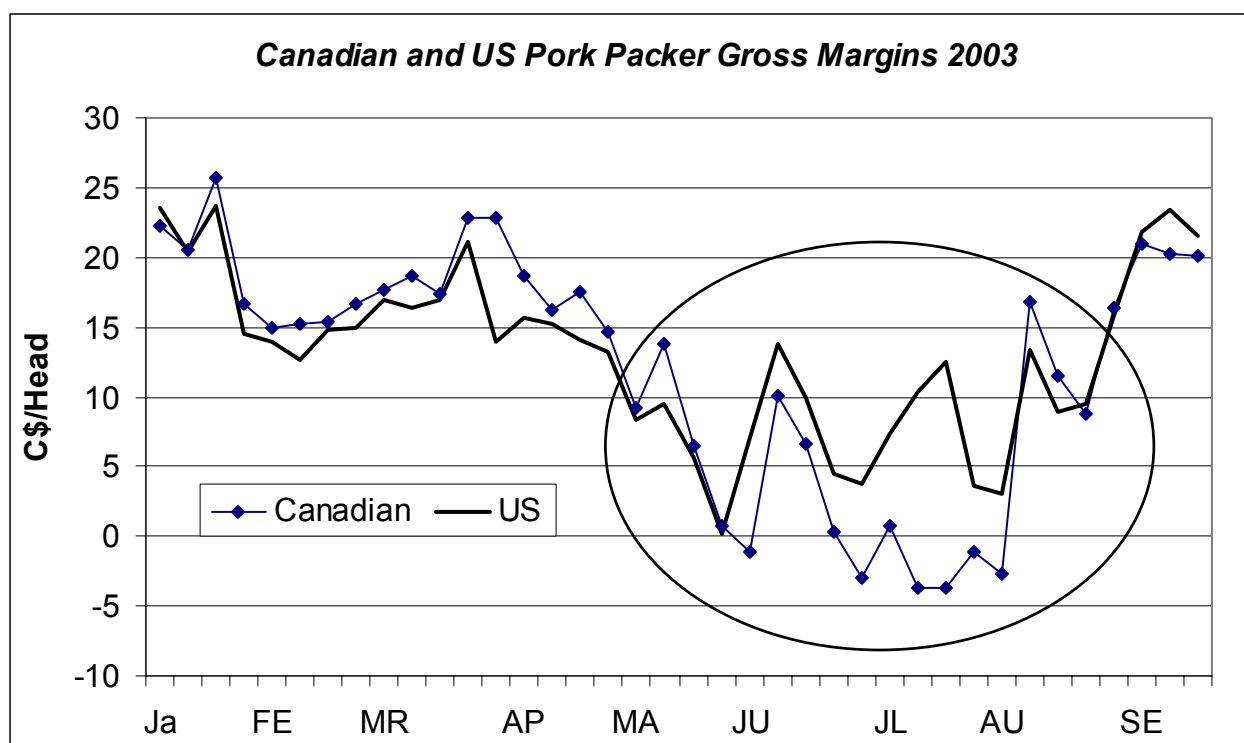


* Gross margins are calculated using the Chisholm sheet published prices for primal cuts FOB Toronto, in combination with their yields which results in a pork cutout. This revenue in combination with edible by-product values published by Chisholm formulates the total revenue per hog. This revenue per hog is the combined with the Ontario hog cost to derive a gross margin. The gross margin does not consider packer operating or fixed costs.

The graph shows the rapid deterioration in gross margins for pork packers from April through August. The indications are that packers in Ontario would have been in a serious loss situation.

In order to understand the impact this could have relative to hog and pork flows, it is necessary to compare Canadian packer margins to US margins. In this regard, the USDA's weekly average pork cutout can be used in combination with the National Base Cost hog report. A rough estimate of US gross margins can be made by subtracting the hog cost from the cutout and converting to a per head basis.

It is important to note that the methodologies of calculating the Canadian and US gross margins are different and therefore they are not nominally comparable. They can, however, be compared in terms of changes and trends. In that regard, but with that important caveat in mind, the following graph shows the Canadian gross margin and the US gross margin in C\$.



The graph clearly shows that US packers also had a difficult spring and summer, but not nearly to the degree of their Canadian counterparts. That is, Canadian packer margins were much worse than in the US this past summer. Based on this comparison method, so far this year, US packer margins were less than a dollar per head better than Canadian margins in C\$. This July and August, the US margins were C\$4-5/head better. Seasonally, Canadian margins tend to be weaker than their US counterparts during the summer. This year, however, the weakness relative to the US was far greater than normal.

The implication is that US packers had C\$4/hog greater buying power this summer than their Canadian counterparts.

4.4 Packer Capacity

Two packers stopped operations in Canada during the summer. Springhill Farms in Neepawa, Manitoba, is planning to re-open this fall while the other, West Perth in Tavistock, Ontario, is in receivership. Springhill could slaughter approximately 18,000 head per week while West Perth's capacity was just up to 5,000. The rationale for the closures is likely a lack of profitability, due to the factors discussed above. That is, the BSE crisis and the loss of revenues associated with the exchange rate have squeezed margins and resulted in the closures.

In addition, the Schneider Mitchell's plant in Saskatoon has also cut back operations during the summer. Normal slaughter at Mitchell was 18,000 head or more per week. Typical slaughter this summer was 15,000 head.

The closures meant that those 23,000 head that were killed by Springhill and West Perth were shipped south. The reason for mentioning the Mitchell's situation is to reinforce the point that other Canadian packers would not have taken up the kill "slack" of those two plants. In fact the increase in weekly slaughter market hog exports over the summer was roughly equal to the lost kill capacity of the two plants.

The plant closures and slaughter slowdowns are part of the overall trend towards reduced slaughter rates this summer. Year to date Canadian slaughter as of the end of September was up less than 4%. That compares to a 7% year to date increase in the spring. In fact, Canadian slaughter this July and August was one percent less than the same months in 2002.

It is important to note that as of late September, Springhill had resumed slaughter at a reduced rate.

4.5 Slaughter Export Composition

It is important to differentiate between slaughter *market hog* exports and total slaughter exports. That is because another part of the reason for the surge in slaughter exports this summer is due to the big increase in slaughter sows and boars. Weekly slaughter sow and boar exports from Canada averaged about 10-12,000 head last summer. This year the slaughter sow and boar tally has been at least 16,000 head per week. This is not because Canada is slaughtering fewer sows and boars. In fact few sows and boars have ever been slaughtered in Canada. As noted recently by Steve Meyer, "the only remaining reason is that Canadian herds must be cutting back. The situation with Canadian beef and a stronger Canadian dollar have put great pressure on Canadian producers. These larger imports of cull breeding stock make me believe even stronger that a reduction of the Canadian breeding herd is imminent (and may be ongoing.)"⁶

As Meyers notes the appreciation in the Canadian dollar has had significant negative impact on Canadian producers. A rule of thumb is that for every percent appreciation in the dollar, Canadian hog prices have declined by a percent. This helps explain the surge in herd culling and the shipments to the US.

⁶ PORK ECONOMICS UPDATE, October 13, 2003, Steve Meyer, Paragon Economics, Inc. 515-993-5742

4.6 Summary Points Regarding Short Term Trade

- Rapid appreciation of the Canadian dollar during 2003 has resulted in material revenue loss for Canadian packers amounting to approximately C\$20/head.
- BSE has had a negative impact on Canadian consumer demand for pork.
- BSE has likely cost Canadian packers about C\$7/hog in lost revenue.
- The Canadian packer margin differential relative to the US packer margin has declined significantly this summer. This summer Canadian margins were about C\$4/head lower than normal compared to their US counterparts. Canadian packer buying power suffered by \$4/hog relative to their US counterparts, which allowed US packers to outbid for the hogs.
- Packer plant closures resulting from weaker margins and returns have contributed to the entire difference in slaughter market hog exports this summer compared to last summer.
- Larger than average slaughter sow and boar exports have occurred during the summer. This is signal of sow herd reduction in Canada.

The appreciation of the Canadian dollar in combination with the impact of the BSE crisis has had a negative impact on the Canadian hog production and packing sectors. These unusual circumstances have resulted in weaker returns for both packers and producers. This in turn has resulted in increased exports as a result of reduced Canadian packer buying power and plant closures. The weaker returns for Canadian producers also means that they are undertaking a material culling of breeding stock, which has also resulted in increased exports.

The impact of the BSE crisis is slowly abating as beef exports resume. Furthermore, the rapid culling of the Canadian herd will result in a reduction in exports later in 2004.