Ethanol and Corn in Ontario: An Update and Prognosis

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1.0 Introduction

The use of ethanol made from corn and feed grains continues to be current public policy issue, subject to a rather polarized debate. It is especially of interest to a meat exporting country such as Canada. It is with this understanding that the George Morris Centre has focused on Canada's interest in ethanol policy (Mussell *et al* 2008, Mussell *et al* 2009). The observation has been that Canada's ethanol policy is framed by its role as a livestock and meat exporter. As a result, competition for feeder livestock (and thus competitiveness in livestock and meat production) stands to be seriously impeded by ethanol development in Canada. The situation in Ontario has been the focus since it allows clear reference to corn, ethanol, and livestock feeding, but the insight applies to western Canada where the feed grain situation is more complex but export competitiveness even more critical.

Debate on the impact of ethanol development in Canada has often occurred without the benefit of a unifying analytical framework that helps understand the impacts and implied adjustments. Moreover, the last few years have seen significant fluctuations in grain and livestock markets in Canada, and the economic landscape has shifted. With that in mind, how should we understand the mechanism of causation, and the empirical evidence related to ethanol, livestock, and meat?

1.1 Purpose and Approach

The purpose of this paper is to provide an update of the situation on Ontario corn, ethanol, and livestock production, and to interpret observations in terms of a conceptual model and prognosis going forward. The objectives are:

- To develop a conceptual model that interprets the effects of ethanol development in corn and livestock markets
- To present data that allows testing of the conceptual model
- To consider the apparent implications

1.2 Organization of the Paper

Section 2 below develops the basic conceptual model for the analysis of corn, feeder livestock, and meat markets with ethanol production. Section 3 considers the relevant data on these items in recent years. Section 4 draws implications and concludes the paper.

2.0 Conceptual Framework

Canada exists in a free-trade relationship with the US in corn, livestock, and meat[1]. As such, competition and price arbitrage characterizes the North American market in these products. A basic model of trade flows characterizes pricing and volume effects in these markets.

2.1 Corn Market

Historically, throughout most of the year, Ontario has been a latent corn exporter. In practice, the trade in corn occurs in both directions with the US throughout the year, but the structural price incentives for corn imports typically do not occur until early summer, and then last until the onset of the new crop harvest in the fall- the bulk of imports come in during this period. For practical purposes, Ontario is a small producer of corn and does not affect the world (or US) price. Rather, it is supply and demand conditions in Ontario that influence the Ontario price relative to the US, and the directional flow of trade.

Figure 2.1 below attempts to summarize these factors. The figure has two panels- on the left is a representation of the Ontario market, and on the right is a representation of the world and US market. Because we have free trade in corn, Ontario market conditions do not influence the world price level, and Ontario prices are based on world price. Rather, Ontario conditions determine the adjustment to the world price that prevails in Ontario.

The figure shows Ontario as a corn exporter. The Ontario price is determined by the interaction between Ontario's excess supply (ES^O) and the world excess demand (ED^W); the world demand faced by Ontario is price insensitive to the volume supplied by Ontario. The effective Ontario price reflects the transportation cost (t) of corn movement. This dynamic generates an Ontario corn price of P^O and small exports; note that the Ontario price is below the world price P^W- this is known as an export pricing basis. Also note that by exporting corn, the Ontario price is higher than it would have been based on the intersection of Ontario supply and demand conditions alone.

Figure 2.2 presents the changes to the above due to the development of ethanol production in Ontario. Ethanol mandates and subsidies have the effect of shifting Ontario corn demand from D out to D^E. This in turn structurally changes the excess supply of corn Ontario has leftover to offer the world market; the Ontario excess supply curve shifts from ES^O to ES^{OE}. At this level of excess supply, Ontario is in a corn deficit position, and must import corn from elsewhere. After accounting for transportation cost

[1] Country of Origin Labeling (COOL) in the US impeded some export of livestock from Canada to the US; by 2010 much of COOL's impact had abated

Figure 2.1 Ontario Corn Market, Pre-Ethanol

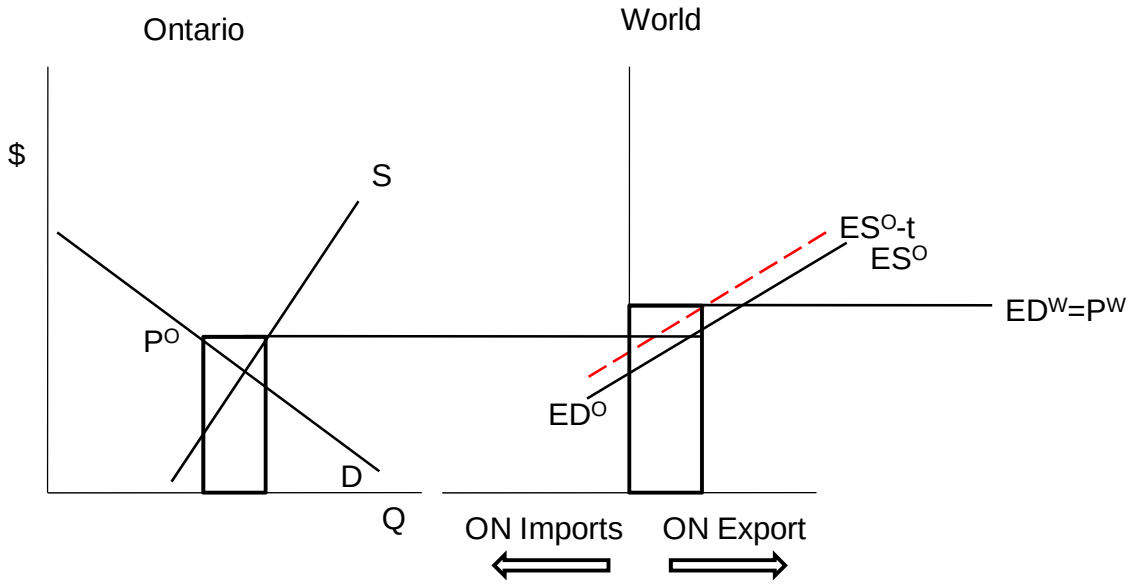
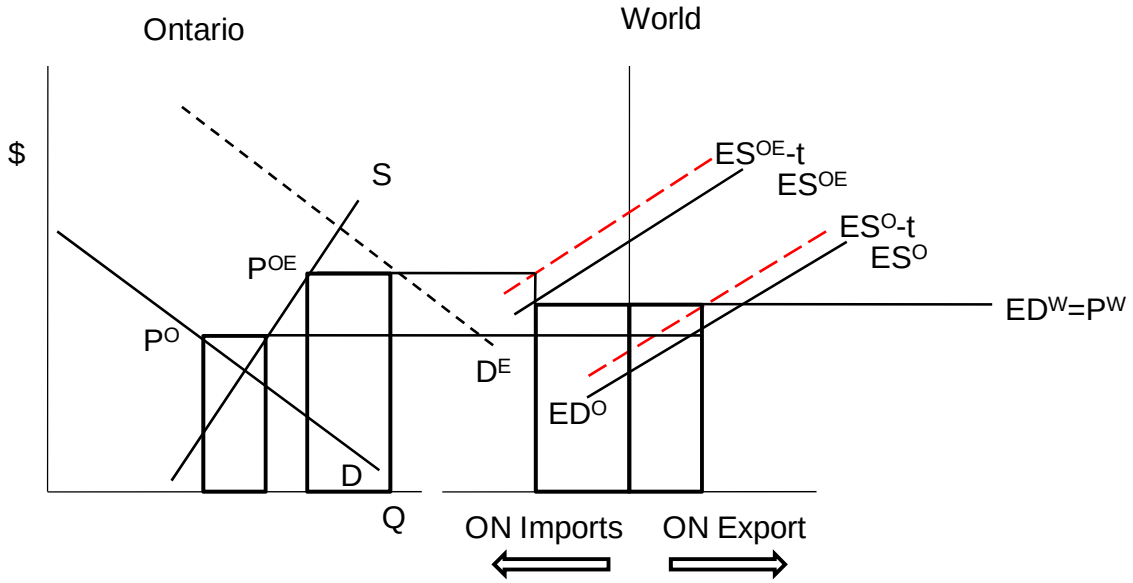


Figure 2.2 Ontario Corn Market, Post-Ethanol



t, this generates a price in the Ontario market of P^{OE} which is higher than the world price. Thus, ethanol development has the anticipated effect of shifting Ontario pricing from an export price basis to an import price basis.

Some observations must be made on this. First, before any ethanol development in Ontario occurred, a seasonal shift in the pricing basis occurred that was similar to the change illustrated in Figure 2.2. That is, seasonally, supplies were short in the summer, leading to an import basis. Moreover, Ontario has been a net importer of corn for some time- the short period of time in which the import basis prevails accounts for the bulk of imports. The period in which the export basis prevails also has not resulted in mass exports of corn- Ontario corn exports are relatively small; rather the export basis period is one in which imports from the US are even smaller. The critical point for the discussion that follows is that, understanding the above nuances, ethanol development tilts the balance strongly toward corn imports and an import basis, and away from the export basis.

Secondly, the conceptual model suggests that the corn supply response effect of ethanol development in Ontario is likely to be sharply limited. As demonstrated above, because there is free trade with the US in corn, the effective range of corn price effect attributable to Ontario ethanol development is the basis, which is typically a small proportion of the overall corn price, typically tied to the cost of transportation. In other words, there isn't an economic rationale to expect a substantial increase in Ontario corn production due to Ontario ethanol development.

Finally, the above does not account for, nor anticipate fluctuations in the currency exchange rate. As grain traders know, exclusive of any other factors, a weak or weakening Canadian dollar increases the Canadian price relative to the US price. Conversely, a strong or strengthening Canadian dollar decreases the Canadian price, all other things being equal.

2.2 Feeder Livestock Markets

Among the more distinct observations on North America livestock segments is that livestock generally move toward regions of surplus grain, rather than vice versa. This is clear from the literature summarized by Mussell *et al* (2009). The logic behind this dynamic is that, given rates of feed conversion in cattle and hog feeding and grain transport costs, it is inherently less expensive to transport feeder animals to feed than it is to transport feed to feeder animals. Given this observation, regions compete for feeder animals based on the strength of relative grain pricing. From the above discussion the driver of competition for feeder animals must thus be the grain basis.

The following example illustrates the concept. Consider a 900 lb animal that will be fed to a weight of 1400 lbs. Suppose that the price of the fed animal is $1/lb and that the cost of feed is $0.80/lb of gain. Then the revenue base from the fed animal is $1400/head, and the cost of feed is $400/head, leaving a maximum bid price for the feeder animal (ignoring overhead costs) of $1000/head. Now, suppose that the local grain basis

strengthens such that the cost of feed increases to $0.90/lb gain. Then the cost of feed increases to $450/head, and the maximum that could be bid for the feeder animal is $950/head. If the feed basis has not strengthened concomitantly elsewhere, the region becomes uncompetitive for feeder livestock.

Thus, the effect of a strengthening grain basis is to shift back the demand for feeder animals. The effect of this is illustrated in Figures 2.3 and 2.4. In this case, the figure has three panels- one for the Ontario market, one for the US market, and one representing the North American market. Unlike the figures above for corn, Ontario is sufficiently large to influence the trade market in feeder livestock. In Figure 2.3, Ontario initially has a supply of feeder livestock of Q^S. On the strength of relatively low corn prices, it has a demand given by Q^D, with the difference in Ontario supply and demand given by its excess supply, ES^O, at transport cost, t. Given US excess demand for feeder livestock ED^{US}, North American pricing on feeder livestock settles at price P^O and Ontario exports feeders given by Q^S-Q^D.

Figure 2.4 illustrates the situation under a strengthening corn basis associated with ethanol production. With the strengthening corn basis, the Ontario demand for feeder livestock shifts back to D^E, which means that more feeder animals are available for export. The resulting price of feeder animals falls to P^{OE}, Ontario livestock feeding falls to $Q^{D\text{-}OE}$ and the supply decreases to $Q^{S\text{-}OE}$, with the net effect increased feeder exports of $Q^{S\text{-}OE}$- $Q^{D\text{-}OE}$. In other words, the strengthening corn basis associated with ethanol dampens the Ontario demand for feeder animals, which dampens the North American price, and results in less livestock feeding in Ontario and more livestock feeding occurring in the US.

As with the corn discussion above, the theoretical implications should be put in context. First, this model would seem to apply better to the specifics of the Canadian/Ontario experience with hogs in which Ontario has been a surplus supplier of feeder animals. Ontario has been deficit feeder cattle by a significant margin for some time- the import of feeder animals occurred on the strength of relatively low-cost corn. However the basic mechanisms and implications of a strengthening corn basis on feeder livestock demand are the same.

Figure 2.3 Regional Competition for Feeder Livestock

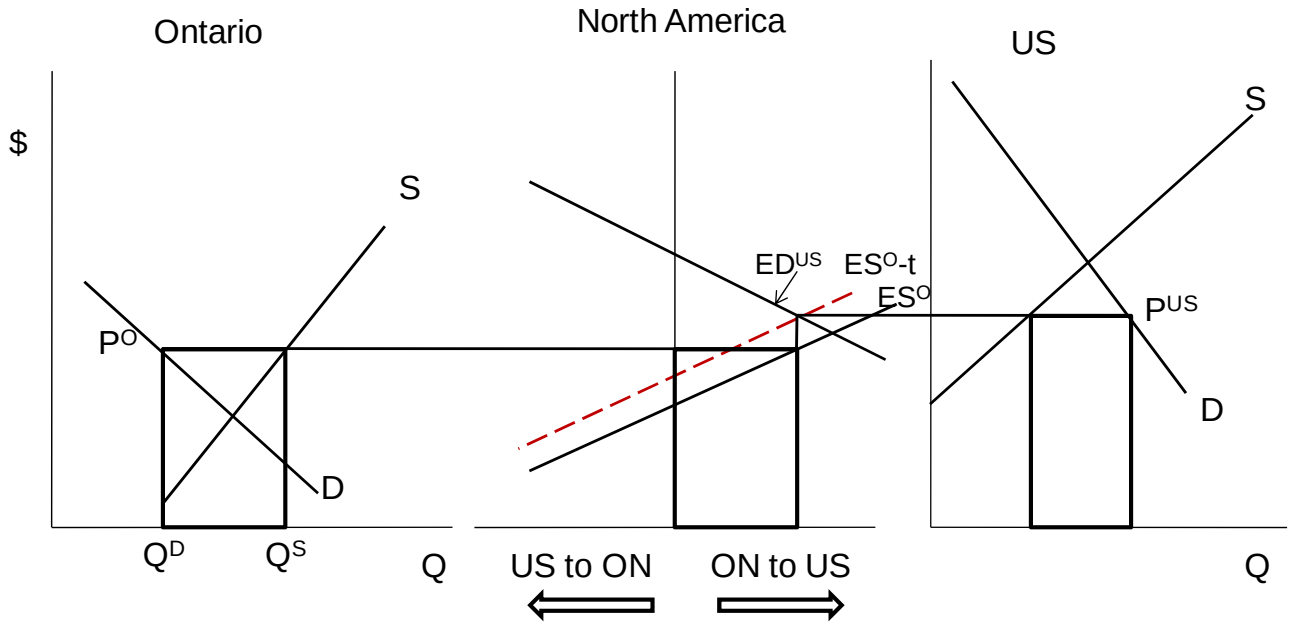
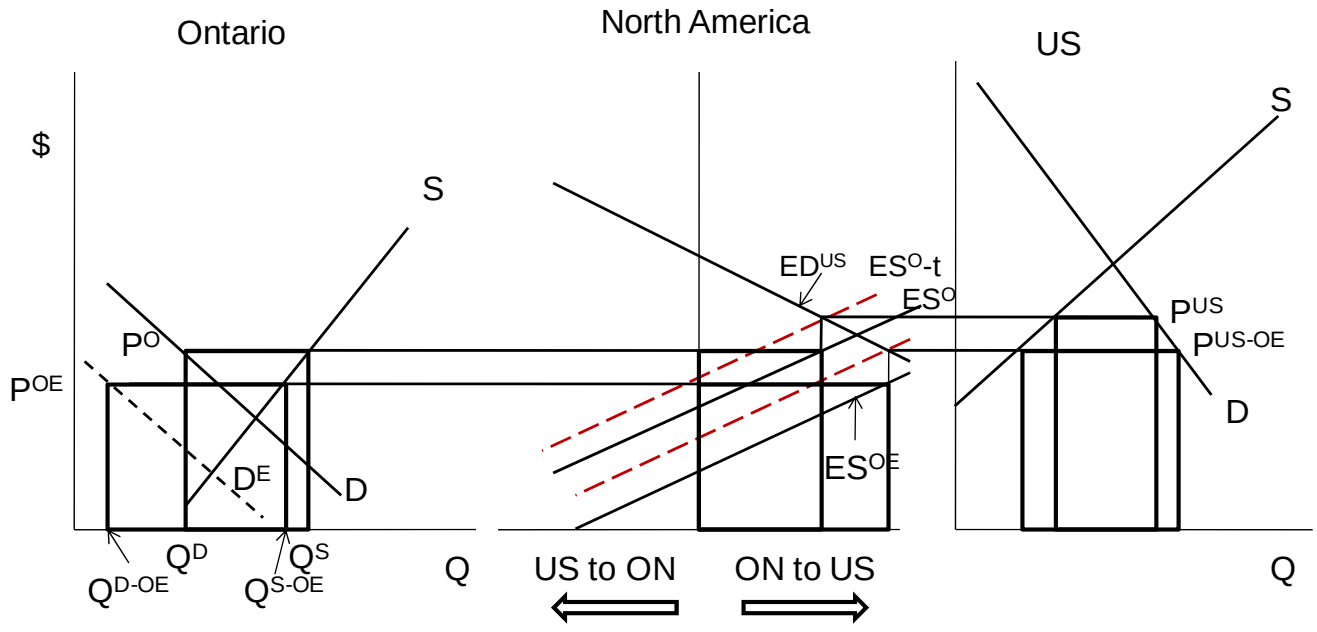


Figure 2.4 Regional Competition for Feeder Livestock, with Ethanol in Ontario



2.3 Meat Markets

Extending the livestock model above further, it is inherently less expensive to transport meat in chilled or frozen form than it is market weight animals; thus primary livestock processing tends to locate itself where market weight animals are produced, rather than in urban areas where consumer markets are located. Indeed, recent investments in primary slaughter plants in pork in Manitoba and beef in Alberta have followed this logic.

The conceptual understanding of meat trade development is really an extension of livestock production. Just as a decrease in the local demand for feeder animals leads logically to a decrease in fed animal production, the decrease in fed animal production decreases the slaughter and supply of meat. Changes in the supply of meat from Canada and Ontario are significant, because Canada is a significant producer, and particularly a large exporter of pork and beef.

This is illustrated in Figures 2.5 and 2.6 below. As with livestock, the figure is divided into three panels- the Ontario market, the market representing countries in the rest of the world (ROW), and the international market in product that is traded. As shown in Figure 2.5, initially Ontario is a meat exporter on the strength of surplus livestock production, with a supply of Q^S and a demand of Q^D, giving rise to excess supply ES^O at transport cost t. This intersects with the excess demand from meat importing countries ED^W to give a prevailing price P^O, with a volume Q^S-Q^D exported.

Figure 2.5 Interregional Meat Trade

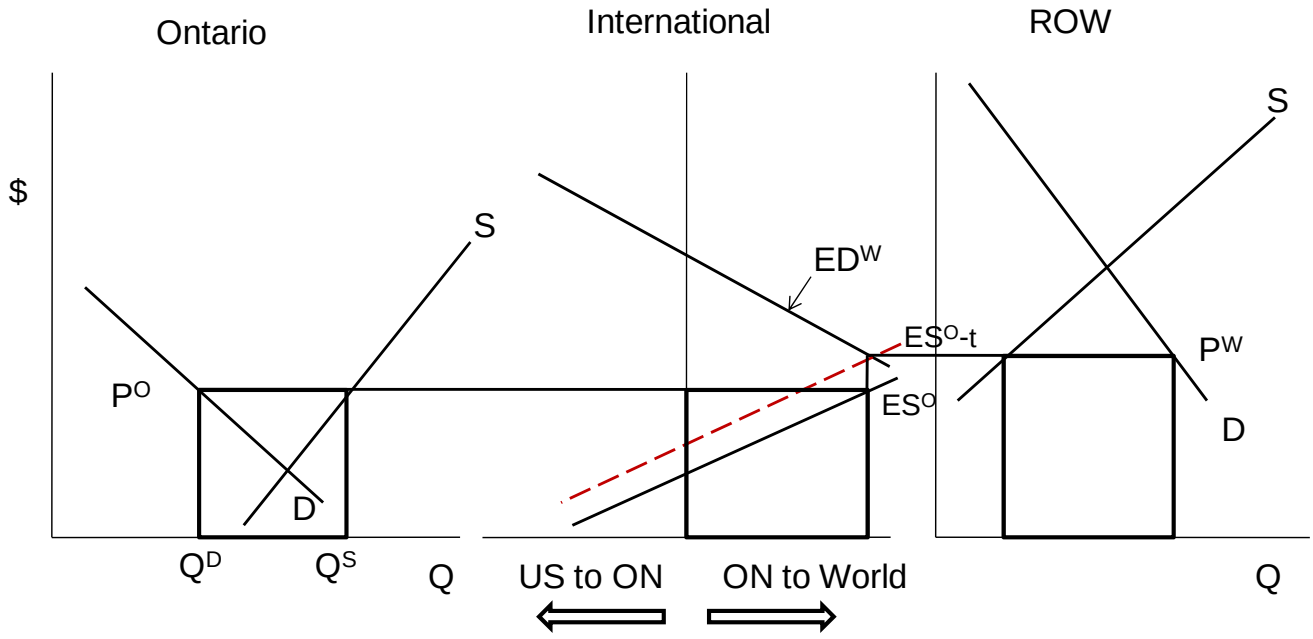
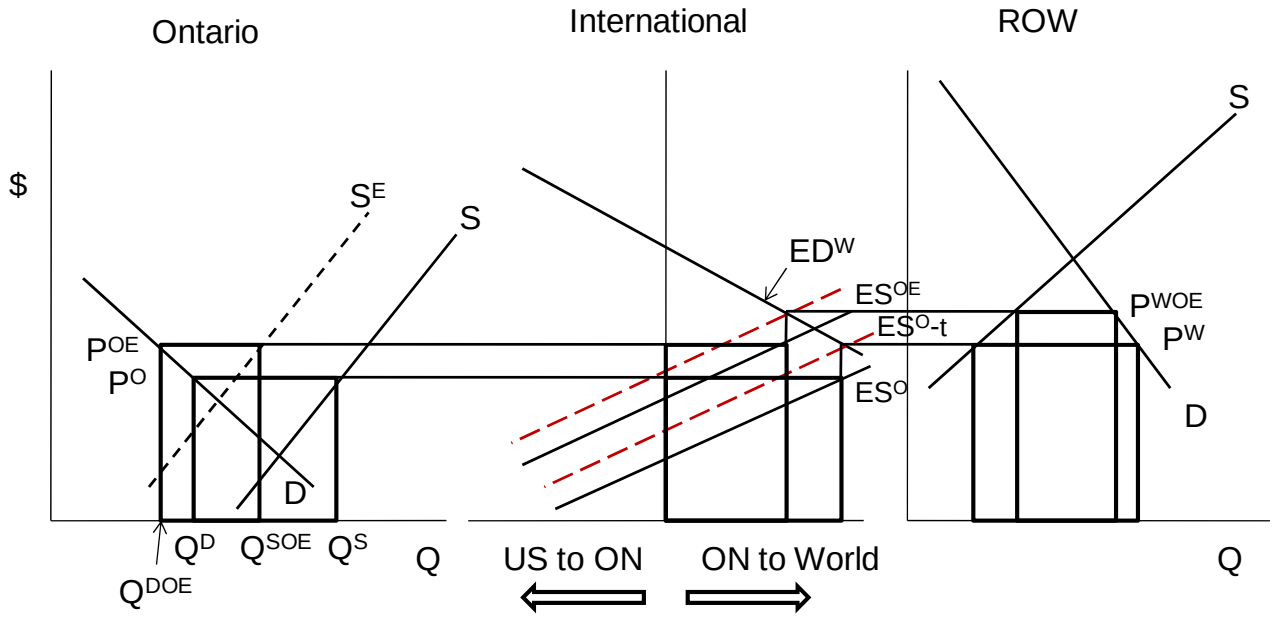


Figure 2.6 illustrates the changes in meat markets that begins with ethanol production and the effect on the corn basis, then traces through the feeder livestock market and into meat markets. With reduced fed livestock production meat production decreases to Q^{SOE}, this decreases Ontario excess supply to a level ES^{OE}, which gives rise to increased world prices P^{OE}, this dampens demand and reduces Ontario demand to Q^{DOE},with meat exports falling to Q^{SOE}- Q^{DOE}.

Figure 2.6 Interregional Meat Trade With Ethanol Development in Ontario



As with the previous conceptual models, some context is relevant here. Ontario has been a significant exporter of pork and beef on the strength of the scale of its livestock industry (which ultimately maps back to competitive corn pricing). However, Ontario is also a significant importer of beef and pork as well, for a variety of reasons. For example, in both pork and beef, exports occur of certain cuts, just as imports occur of others. At any one point in time, aggregated together and measured in volume terms, the balance in beef and pork imports may tilt toward either imports or exports. The fundamental point, however is that Ontario (and Canadian) meat processors export extensively, and without cost competitiveness relating ultimately to feed, this could not occur.

2.4 Observations

The above attempts to capture the mechanism through which ethanol mandates and subsidies are hypothesized to impact livestock and meat markets. The principal observation is not that developing an ethanol industry in Canada through mandates and subsidies broadly increases grain prices, it is that it increases relative grain prices- observed in the Ontario example in the corn basis. This strengthening in the corn basis, rather than the world price of corn, anticipates far-reaching effects in terms of

adjustments in the location of livestock feeding and meat production, and the associated economic development associated with them.

But have these anticipated effects actually been realized? Section 3 below applies actual data to interpret the above observations.

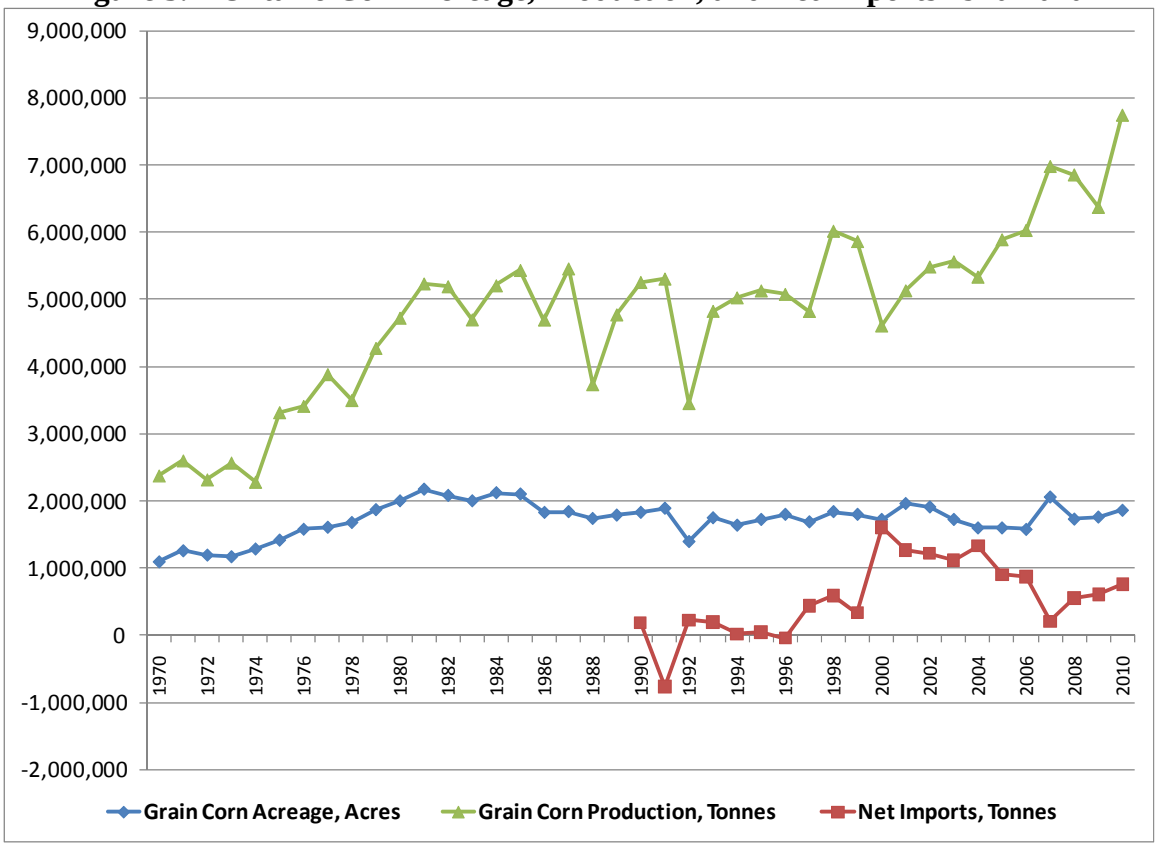
3.0 Empirical Analysis

This section develops an empirical model of feed grain allocation, using Ontario as an illustration. The Ontario situation is used because the feed grain segment is dominated by a single crop (corn) and ethanol development is occurring rapidly and is based exclusively on corn. Section 3.1 presents an overview of recent Ontario corn market conditions. Section 3.2 presents an overview of recent trends in Ontario corn consuming segments. Section 3.3 provides analysis and makes observations on the results.

3.1 Ontario Corn Market

Figure 3.1 below presents Ontario corn production, corn acreage harvested, and net corn imports. The following observations are evident. First, since the mid-2000's, corn production growth has been nothing short of impressive. Recent years have seen an increase in production to well over 6 million tonnes; average production for the period 2006-10 was 24% higher than the 2001-2005 period. Secondly, the acreage base remained steady through most of the last decade at slightly under 2 million acres; 2007 was a notable exception with acreage just over 2 million acres. Finally, net imports appear to have an inverse relationship to production, with the general trend in imports declining with the trend in increased production.

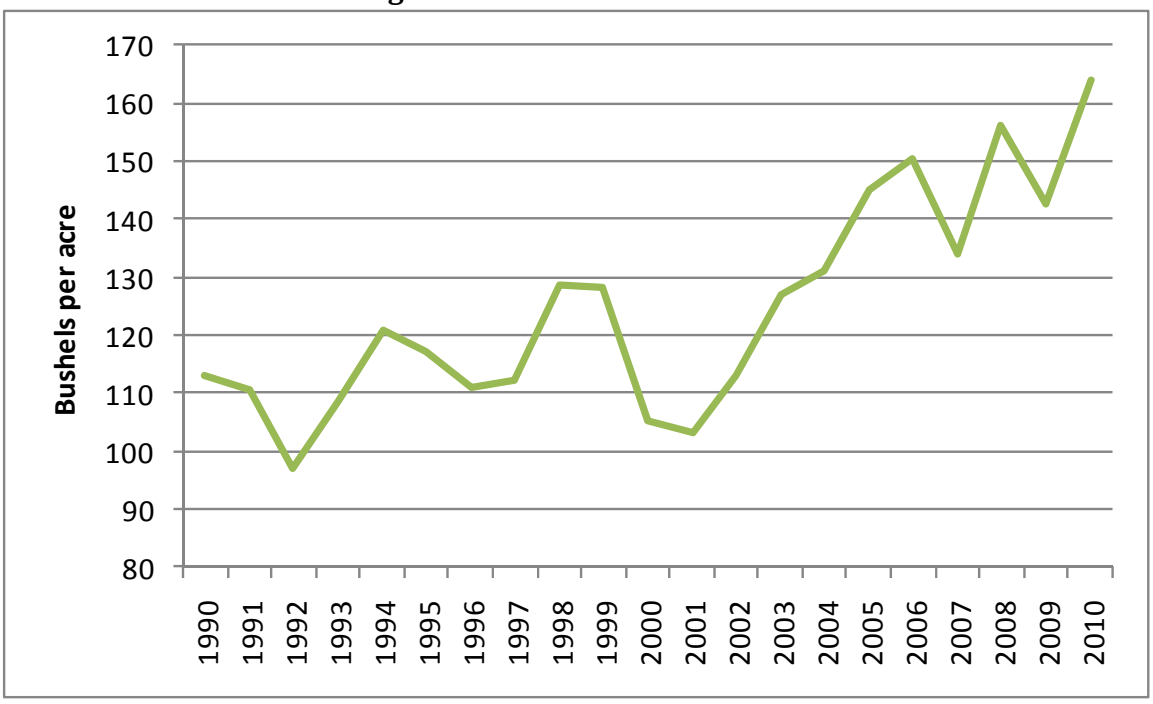
Figure 3.1 Ontario Corn Acreage, Production, and Net Imports 1970-2010



Source: OMAFRA, Grain Farmers of Ontario

The above suggests that corn production growth has occurred largely on the basis of yield growth. Figure 3.2 below presents Ontario corn yield per harvested acre. The data presented in the figure confirm impressive corn yield growth in Ontario. In particular, 2006 and 2008 saw provincial average yields in excess of 150 bushels/acre, compared to mostly 110-120 bushels/acre in 1990-2000. In 2010 the provincial average yield was a record 164 bushels per acre.

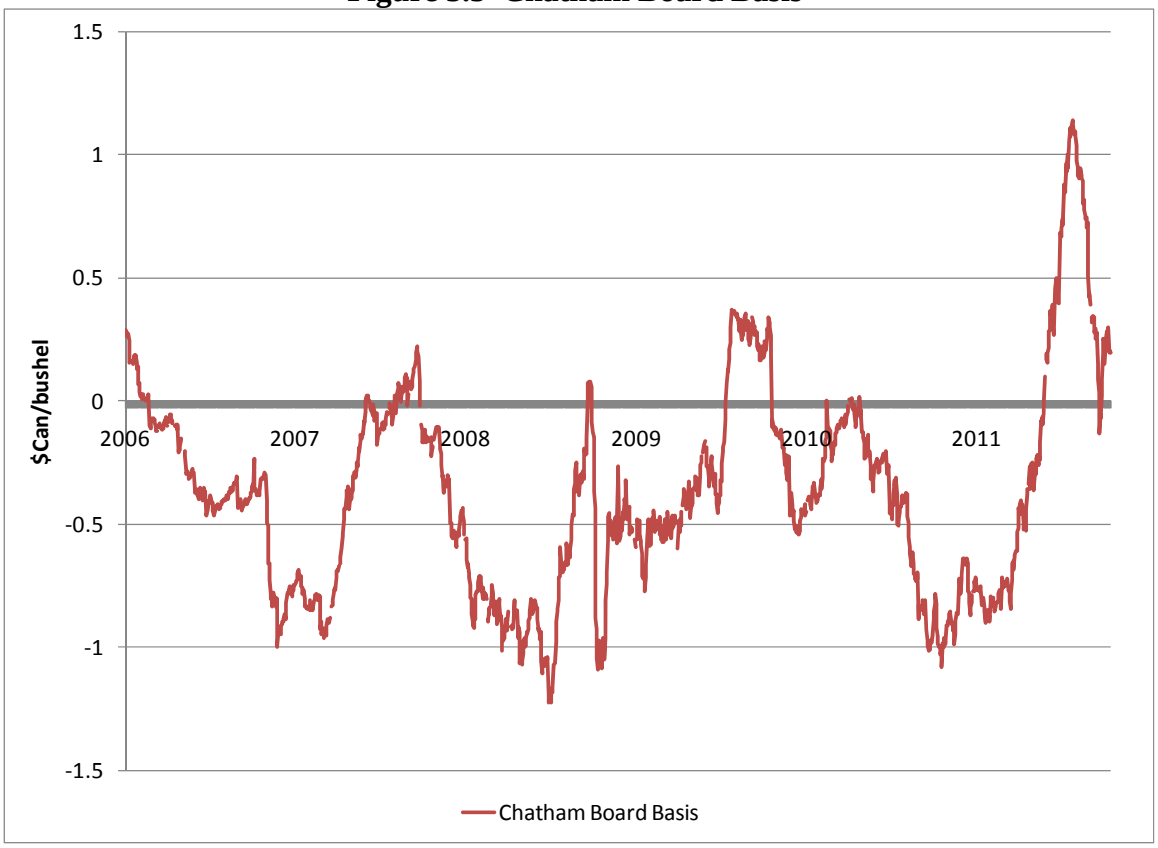
Figure 3.2 Ontario Corn Yields



Source: OMAFRA

Figure 3.3 below presents the Chatham, Ontario "Board" basis for corn, in Canadian dollars (the price paid by elevators to farmers, less the nearby Chicago futures price, in Canadian dollars). The figure contains daily basis data from 2006 to late October, 2011. The data show remarkably wide spreads in the Ontario corn basis in 2007, 2008, and 2010. In those years Ontario corn was priced as much as $1/bushel under futures, within the basic anticipated seasonal dynamic. Recall that seasonal dynamic is an import basis (positive basis) from mid-summer to fall, followed by the export basis (negative basis) through most of the rest of the year. Combining the information in Figures 3.1, 3.2, and 3.3 the widest basis appears coincident with years of very large corn crops (2007, 2008, 2010).

Figure 3.3 Chatham Board Basis



Source: Farm Market News

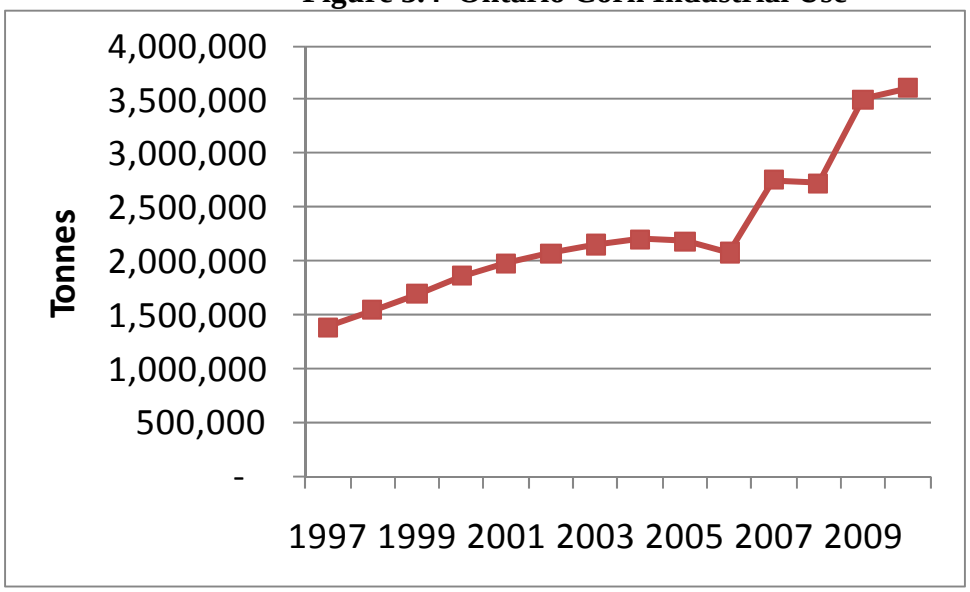
3.2 Ontario Corn Demand

Ontario corn demand is comprised of industrial use and use in livestock feeds.

3.2.1 Ontario Corn Industrial Use

Industrial use of corn in Ontario is presented in Figure 3.4 below. As can be seen from the figure, Ontario corn industrial use has almost doubled since 2006. This can be understood as being largely growth in corn usage in ethanol production. Table 3.1 below gives some context. The table contains basic information on Ontario ethanol plants including the year opened and nameplate capacity. The plant corn consumption estimates assume that plants operate at 80% capacity, and that plants opened prior to 2007 have an ethanol yield of 9.7 litres/bushel of corn, and plants built since have an ethanol yield of 10.4 litres/bushel. In all cases, it is assumed that Distillers' Dried Grain (DDG) yield is 8.16 kg/bushel. The table shows that ethanol demand for corn has indeed increased rapidly. In 2006 estimated corn demand from ethanol was about 660,000 tonnes; in 2010 it is estimated at about 2.1 million tonnes.

Figure 3.4 Ontario Corn Industrial Use



Source: Statistics Canada, Grain Farmers of Ontario

Table 3.1 Estimated Ontario Corn Consumption and Distillers' Dried Grain (DDG) Production from Ethanol Production

Existing plant location	Capacity (Million Litres)	Year Opened	Implied Corn Demand, tonnes	DDG Produced
Collingwood	58	2007	113,363	36,438
Tiverton	27	1989	56,496	18,159
Chatham	195	1997	408,023	131,150
St. Clair-Sarnia	200	2006	390,908	125,649
Collingwood	58	2006	113,363	36,438
St.Clair-Sarnia Phase 2	200	2009	390,908	125,649
Aylmer	162	2008	316,636	101,776
Johnstown	230	2008	449,545	144,496
Havelock	80	2008	156,363	50,260
Total	**1,072**		2,125,879	683,318

Source: Canadian Renewable Fuels Association, George Morris Centre estimates

3.2.2 Ontario Feed Consumption

Ontario livestock can be fragmented into two major sub-categories- the supply managed sector (dairy and poultry) and the red meat sector (cattle and hogs). The supply managed sector is characterized by relative stability and (mostly) slow growth. Figures 3.5, 3.6, 3.7, and 3.8 present trends on livestock inventories/marketings in each of the major supply managed commodities. Figure 3.5 presents Ontario dairy cow inventories since 2000. The figure shows a gently declining Ontario dairy cow herd, with a recent plateau at about 320,000 head. Figure 3.6 presents the Ontario chicken slaughter. Chicken has experienced significant growth in the last decade, with slaughter recently leveling off at around 205 million birds. Turkey slaughter is presented in Figure 3.7, showing modest growth up to about 9.3 million birds. Finally, Figure 3.8 gives the Ontario laying hen inventory, recently ranging around 9.6 million hens.

The red meat sector is more subject to market shocks than the supply managed sector, and is subject to adjustment differently as a result. Figure 3.9 below presents the Ontario slaughter of fed cattle in federally inspected plants, Ontario exports of fed cattle to the US, and estimated Ontario fed cattle marketings[2]. The figure shows that Ontario fed cattle marketings have recently ranged just over 700,000 head with some consistency.

Figure 3.10 presents Ontario hog marketings. The trend evident from the figure is a significant decrease in Ontario hog marketings, from well over 5 million head in 2008 to about 4.3 million head in 2010. This shrink is not surprising, given exceptionally poor marketing and profitability conditions in 2007-2009 related to the H1N1 outbreak and related events, and due to federal programs for the swine industry in which payment was contingent upon reduction in capacity or industry exit.

In order to understand the effect of fluctuations in livestock sector output on corn demand, a model developed in Mussell *et al* (2008) is employed which relates livestock inventories to implied corn demand based on NRC nutritional recommendations for livestock. The model considers livestock feed demands with and without consideration of DDG as a feedstuff. Table 3.2 below presents a summary of the model assumptions. The table suggests that corn consumption to feed Ontario livestock has ranged around 3.25-3.93 million tonnes, depending on the extent to which DDG has been used in livestock rations. For some species, notably dairy and beef cattle, DDG use significantly influences implied corn consumption. The breakdown between corn use in the supply managed sectors is between about 1.2 and 1.5 million tonnes (depending on DDG use) versus about 2.2 to 2.6 million tonnes in red meat livestock.

[2] In estimating fed cattle marketing, the assumption is made that the Ontario slaughter of fed cattle in provincially inspected plants is approximately equivalent to the slaughter of out of province cattle in Ontario federally inspected plants

Figure 3.5 Ontario Dairy Cow Herd

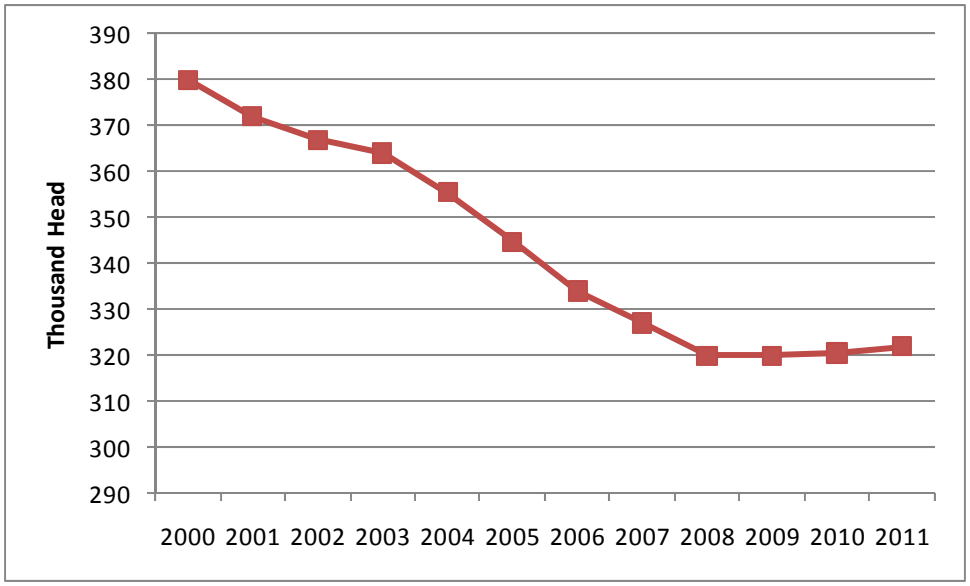


Figure 3.6 Ontario Chicken Slaughter

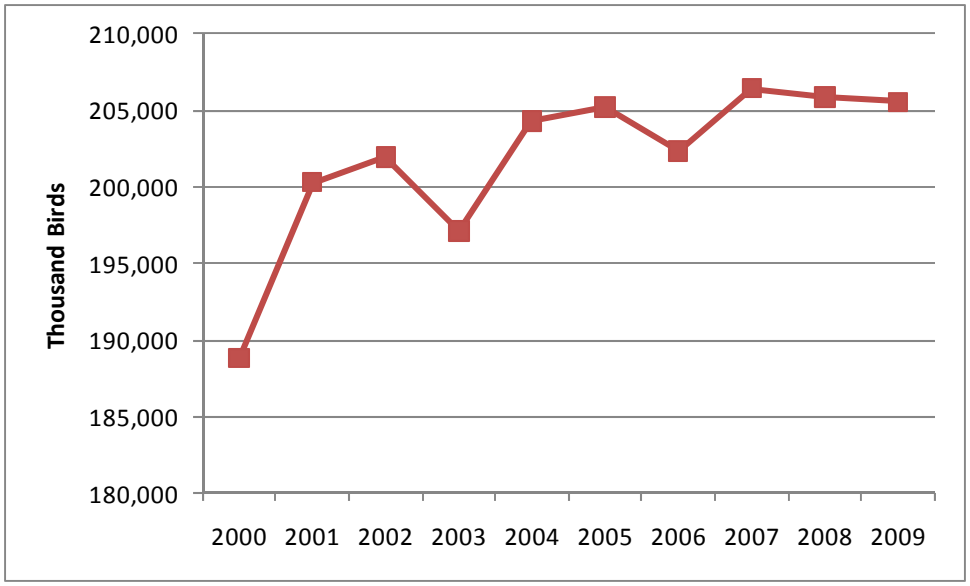


Figure 3.7 Ontario Turkey Slaughter

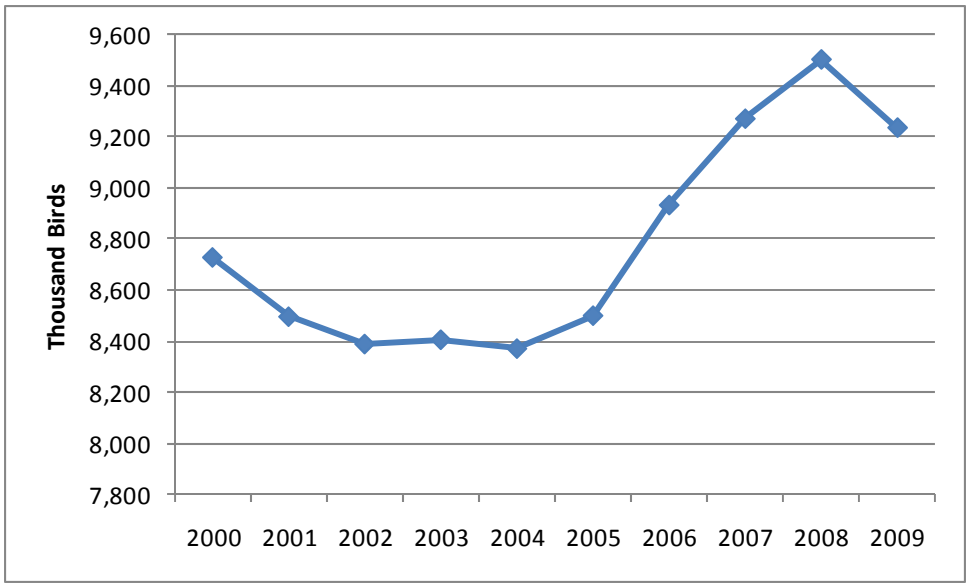


Figure 3.8 Ontario Laying Hen Inventory

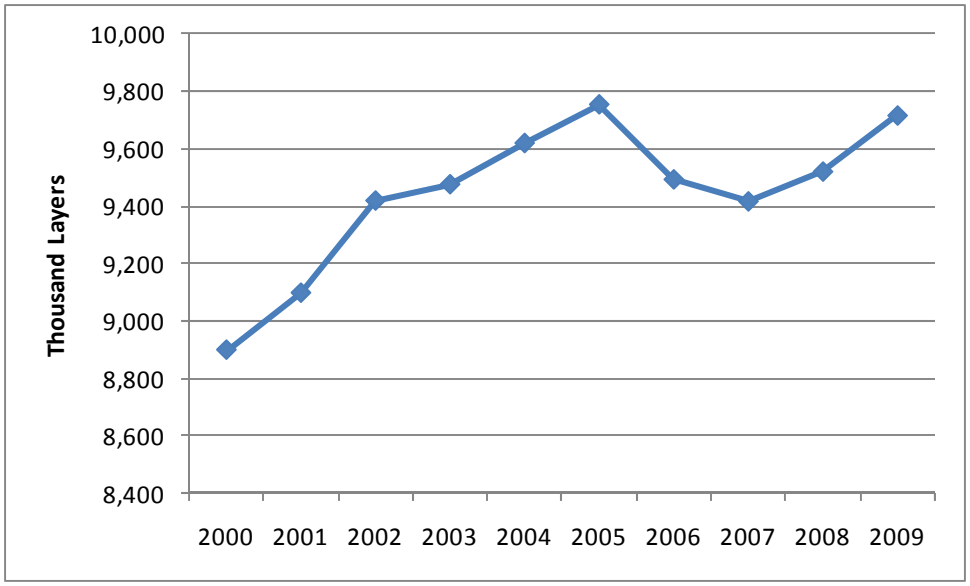


Figure 3.9 Ontario Fed Cattle Marketings

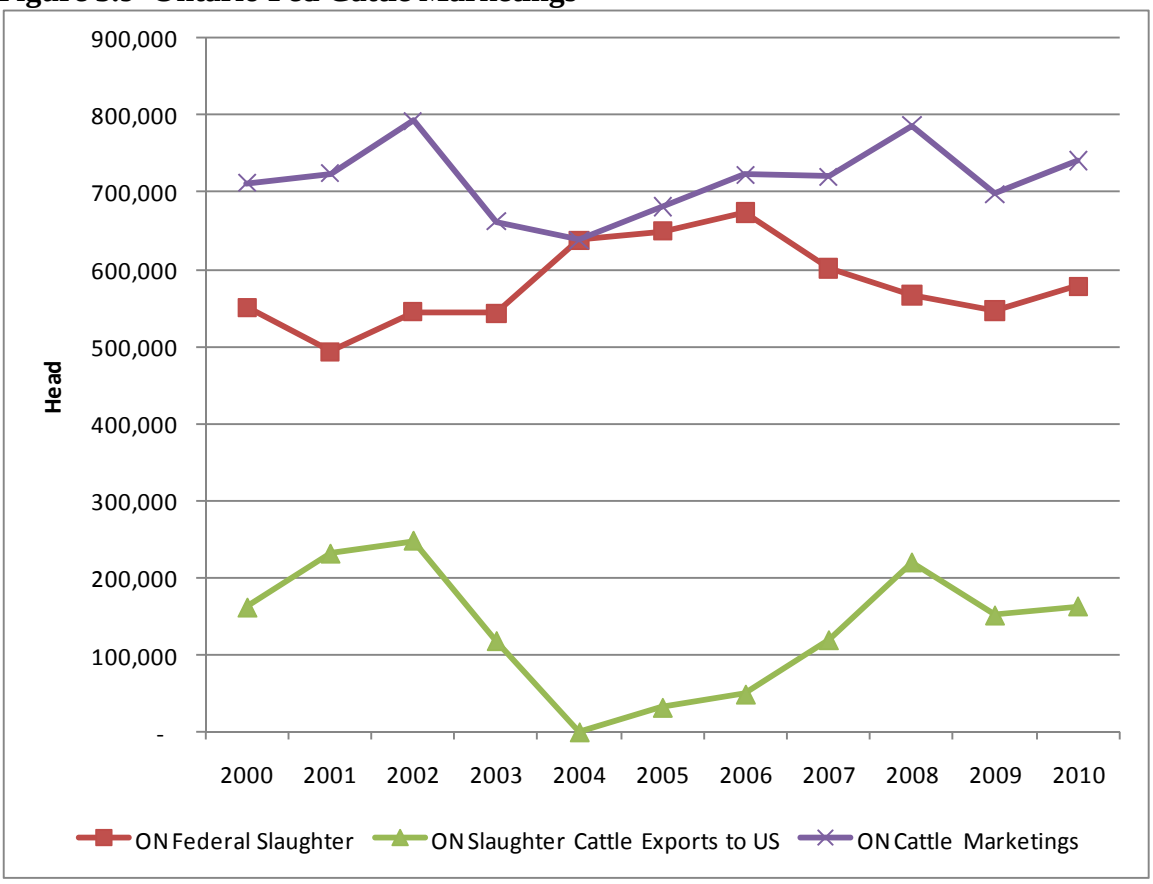


Figure 3.10 Ontario Slaughter Hog Marketings

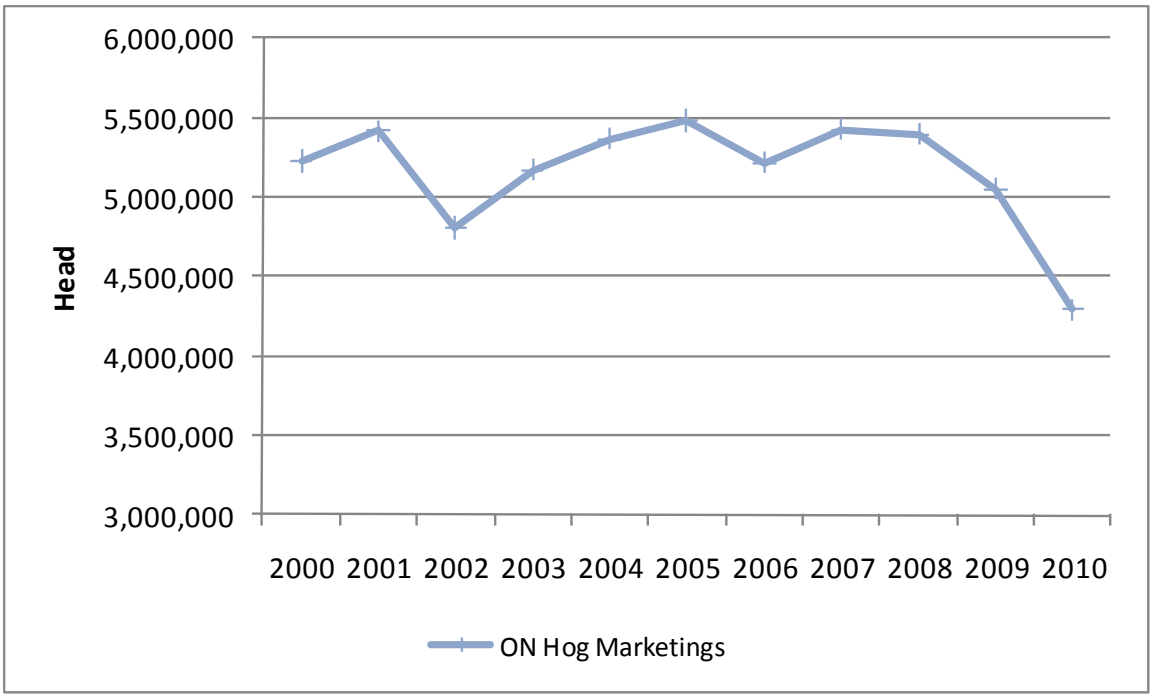


Table 3.2

	Inventory/Slaughter (head)	Corn Consumption Without DDG (metric tonnes)		Max Inclusion Rate (%DM)	Corn Consumption With DDG at Maximum Inclusion (metric tonnes)	
		Per Head	Total		Per Head	Total
Dairy (2006-2010)	324,300	2.04	661,572	20%	1.103	357,703
Chicken (2006-2009)	205,051,250	0.0024	492,123	10%	0.0025	512,628
Turkey (2006-2009)	101,344,667	0.00125628	127,317	10%	0.001309	132,622
Laying hens (2006-2009)	9,535,250	0.0194	184,984	10%	0.02	190,705
Hogs (2006-2010)	5,077,666	0.223	1,132,319	20%	0.181	919,057
Slaughter cattle (2006-2010)	733,588	2.0	1,467,176	20%	1.73	1,269,108
Total Corn Use in Feed			4,065,492			3,381,823

3.3 Ontario Corn Balance

Given the metrics of corn production and implied consumption, what can be observed? On average based on 2006-2010, Ontario corn production has been about 6.8 million tonnes. Of that, based on the same period, industrial use of corn consumes about 2.9 million tonnes. As discussed by Mussell *et al* (2008), industrial users (especially ethanol) tend to be inherently competitive for corn, leaving adjustment to the feed segment. Within the feed segment adjustment occurs within the red meat livestock rather than supply managed livestock.

The nature and extent of adjustment in feed depends upon the use of DDG and nutritional requirements; the implications are summarized in Table 3.3 below. Given a roughly 6.8 million tonne corn crop and approximately 2.9 million tonnes industrial use, approximately 3.9 million tonnes are left for feed. Feed requirements have been just over 4 million tonnes assuming no use of DDG, and about 3.4 million tonnes assuming maximum use of DDG. Using the DDG scenarios to characterize the range in feed demand, given production and industrial use, Ontario has either been corn deficit around 200,000 tonnes, or corn surplus almost 500,000 tonnes, as an average of recent years. Under the assumption that significant use of DDG is occurring in feeds, especially in dairy and beef feeds, it would appear that the corn supply in recent years was sufficient to meet both industrial and feed demands. This observation is validated by the remarkably wide corn basis observed for much of the year in 2007, 2008, and 2010.

Finally, since the use of DDG figures prominently in understanding corn balance, the balance of DDG supply with demand is of interest. This is estimated in Table 3.4 below. The table notes that dairy cows and beef cattle feeding are the large demanders of DDG. If all species used DDG to the maximum specified by NRC feed recommendations, the demand would be about 1.7 million tonnes per year; this compares with estimated Ontario DDG production of about 683,000 tonnes.

Table 3.3 Ontario Corn Use and Supply Balance, Tonnes

	No DDG	**With DDG**
Ontario Corn Production	**6,798,740**	**6,798,740**
Total Industrial Requirement	**2,931,222**	**2,931,222**
Corn Available for Feed	**3,867,518**	**3,867,518**
Total Supply Management Livestock Use	1,465,996	1,193,658
Total Red Meat Livestock Use	2,599,496	2,188,165
Total Feed Requirement	**4,065,492**	**3,381,823**
Corn Balance	**(197,974)**	**485,695**

Table 3.4 Estimated Ontario DDG Balance

Livestock	At Maximum DDG Inclusion Rate		
	Max Inclusion Rate, % DM	Tonnes DM/animal	Implied Maximum DDG Consumption
Dairy	20%	9.800	635,628
Chicken	10%	0.003	61,515
Turkey	10%	0.032	27,184
Layers	10%	0.031	29,583
Hogs	20%	0.275	279,272
Slaughter cattle	20%	4.400	645,558
Total Maximum DDG			**1,678,740**
Ontario Production			**683,318**

4.0 Implications and Conclusions

The economic concepts that anticipate the effect of ethanol development in a small grain producing country that is a significant meat exporter appears not align well with the Ontario experience of the last few years. The theory anticipates a strengthening corn basis driving down livestock and meat production; instead, we had a very wide corn basis for much of the period, with declining hog production but stable cattle feeding.

So is the theory wrong and should it be shelved? The following points are worthy of reflecting on:

- The basic supply response in a grain crop is acreage. Farmers also respond by increasing fertilizer applications, changing technology, etc. but this is secondary to acreage adjustment. As Figure 3.1 shows, there has been little apparent change in Ontario corn acreage indicative of a supply response.
- With little change in acreage, the dramatic increase in corn production has come from the remarkable yields presented in Figure 3.2. This could be viewed as the result of improved production technology, but surely given the magnitude of yield improvement in such a short period, this is largely the result of a string of years with excellent growing conditions.
- The reduction in observed livestock feeding, which consists of hogs, is fairly easily understood due to factors unrelated to ethanol. Adverse circumstances related to the H1N1 scare and sharply strengthening Canadian dollar, just as the hog market should have been entering the upper part of the hog cycle drove some reduction in hog feeding. This was combined with a program to cull sows and idle hog production facilities. So a decline in hog feeding even in the face of a wide export basis for corn can be easily explained.

Taken together, the above suggests that fortunate circumstances of excellent growing conditions and fewer hogs to feed have allowed the corn supply to cover competing uses in the Ontario market. Economic concepts and theories do a poor job of anticipating such fortunate circumstances, but that does not make them wrong. Under more typical or more slowly increasing corn yields, the corn basis would have been much stronger, corn would have been in much shorter supply, and livestock feeding in Ontario would have been pressed to compete for feeder animals.

While recent circumstances may be fortunate, it is no way to run an agricultural policy with such intrinsically connected markets. There remains nothing in ethanol policy that anticipates the impact of a corn basis change on the competitiveness of livestock and meat production. Policy developed in such isolation risks the consequences of its recklessness. As pressure comes to bear to increase Canadian ethanol blend proportions up to 10% (consistent with that in the US) we should not assume that a further 24% increase in corn production will occur within the next five years.

This is a Canadian issue, not just something of regional interest in Ontario. On its website[3], the Canadian Renewable Fuels Association lists a total of 190 million litres of new ethanol processing capacity under development in two sites in Alberta, using wheat as a feedstock. This complements seven other ethanol plants based on grain as a feedstock already operating in western Canada, with a combined capacity of just over 500 million litres. The logical impact of ethanol plants in western Canada based on wheat is not fundamentally different than ethanol made from corn in Ontario; even if western Canada is not in nearly as tight a supply-demand as Ontario. Ethanol will strengthen the basis for feed grains in the west, and livestock feeders in western Canada will be structurally less competitive for feeder animals.

Finally, in early October, Statistics Canada released an Ontario corn crop forecast with an average forecast 2011 yield of 140.6 bushels/acre (versus 164 bushels/acre in 2010) and a corn crop of 6.7 million tonnes (versus 7.74 million tonnes in 2010)[4]. This is occurring just as some optimism is returning to livestock and meat markets, with hog and fed cattle prices at extraordinarily high levels. With a short crop, competition for corn will intensify, and economics will drive the allocation process, with the anticipated result ethanol crowding out livestock feeding.

References

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[3] http://www.greenfuels.org/en/industry-information/plants.aspx
[4] http://www.statcan.gc.ca/daily-quotidien/111004/dq111004a-eng.htm