

Financial Considerations in Evaluating the Competitiveness of the Canadian Swine-Pork Segment

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■ Introduction

Competitiveness is the basic challenge facing any industry that must contest its domestic market and export markets. Thus, since the emergence of the Canadian pork industry in the 1990's as a large net exporter, the competitiveness of the hog/pork industry in Canada has been a focus. It has also been a focus of agricultural economic research in support of the industry; this has been especially the case at the George Morris Centre. Our extensive past work has considered the feasibility of hog production and processing in both western and eastern Canada, along with the development of economic models to support swine management and evaluate the cost of swine diseases.

Economic studies of hog production competitiveness have generally focused on comparative costs of feed grains, followed by labour and pig productivity as the critical inputs to hog production, and considered how pork processing in Canada is positioned relative to competing regions. The result of this work has observed scale and unit cost challenges in the pork processing segment, but has been broadly positive regarding the existing or prospective cost competitiveness of hog production in Canada, based on comparative costs of feed and pig productivity.

Yet, the five years preceding 2012 were hardly lucrative, or even positive for Canadian hogs and pork. What are the implications for past analyses regarding competitiveness in hog and pork production- was something missed? For example, in 2009, farm writer Wendy Holm observed the following on the crisis in the hog industry at that time:

The George Morris Centre, a right-of-centre think tank, produced two reports (1997, 1999) on the hog industry.

The first, in 1997, urged expansion and modernization of Canada's hog processing sector based on the "extraordinary opportunity" afforded by freer trade and growing Asian markets.

The second, commissioned by AAFC and Manitoba Agriculture, pronounced the Canadian Prairies, specifically the Eastern Prairies, as ".on the brink of being one of, if not the most cost competitive pork producers in the world." based on lower cost feed, favourable currency exchange rates (a low Canadian dollar relative to the U.S.), higher production efficiency (more pigs per liter and pigs per sow per year than the U.S.) and lower disease risks (more dispersed production units)... the plight of Canada's hog farmers SURELY underscore the benefits of Canada's supply management system, which shares and serves the domestic market, requires no government subsidies, and protects the sustainable interests of farmers, communities and consumers..

Excerpt from <http://www.countymarket.ca/2009/09/01/hogwash-straight-talk-on-a-nations-hog-industry>

As of the fall of 2012, the immediate term economic prospects for hog production in Canada once again appear bleak. However, the basic analysis that Canada should be well positioned to compete in livestock production, at least in the long run,- has not changed. To illustrate, a recent paper by Stiefelmeyer and Martin (2011) argues that, "Canada should be poised to capitalize on [this] opportunity to feed the world. We are uniquely positioned due to our vast tracts of arable land, abundant water, infrastructure, and long experience in the sector"; these are precisely the factors supporting relatively low feed grain costs and pig productivity that underpinned the results of past studies of hog production competitiveness.

More tangible evidence of this is illustrated below in **Figures 1 and 2**. As shown in Figure 1, recent years have seen a widening in the Lethbridge barley-Omaha corn spread which is an indicator of positive regional cost competitiveness for western Canada. In particular, in late summer 2012 as the US is experiencing severe drought and local markets in the US must ration available corn, while feed grains in western Canada are broadly available- as evidenced in a Lethbridge-Omaha spread of mostly \$Can 40-60/tonne under. Figure 2 shows the Chatham Ontario "board" basis for corn- the cash price paid to farmers less nearby futures. The figure shows that, through most of the year, corn in southwestern Ontario is at a discount to futures and thus lower in cost compared with the futures delivery points in the eastern Cornbelt.

So, what has been missed in past analyses that leads us to where we are today? While each of the difficulties of the recent past in hog production costs and returns in 2007/08, 2009, and 2012 can be readily attributed to specific factors that occurred at the time (structural changes in exchange rates, H1N1

“swine flu” scare, US drought, etc.) the severity of the fallout suffered by the Canadian swine industry following these events is not readily explained by the costs and returns factors focused on in past economic studies.

Figure 1. Lethbridge Barley-Omaha Corn Price Spread, January 2000-August 2012

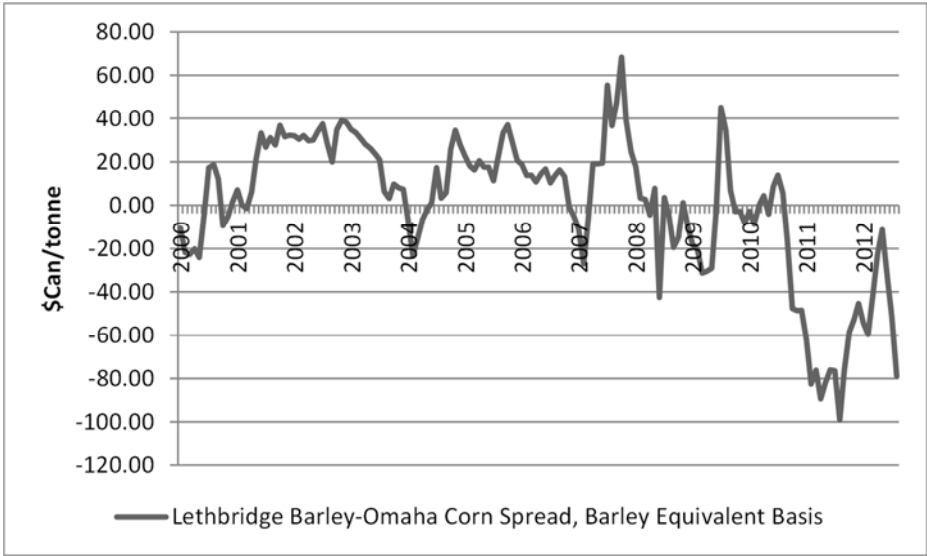
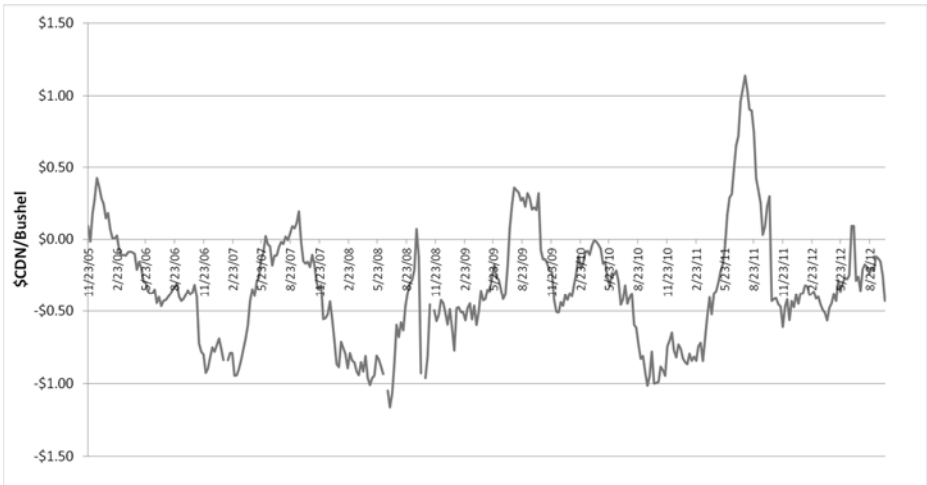


Figure 2. Chatham-Kent “Board” Corn Basis



■ Purpose

This paper introduces financial measures into past economic analyses of hog production to interpret the recent malaise that has affected the segment.

The sections below present observations that are analyzed discussed with available data to interpret the nature of recent economic conditions in Canadian hog production; this forms the basis for conclusions.

Cumulative Effects of Past Losses Have Left Hog Enterprises Vulnerable

Through its free-trade relationship with the US, the Canadian hog industry is subject to a four-year pricing cycle. The bottom of the cycle corresponded with 2002, and again in 2006. Given this, hog producers would rationally have expected low or losing returns into early 2007, followed by more profitable returns later in 2007 and in 2008. However, these expected profitable periods did not occur in 2007 or 2008, nor did they occur in 2009. Rather, the accumulated effects of these operating losses dating back to 2006 created financial vulnerabilities for producers moving into 2009 and further into 2012. The financial effects of operating losses are invariably lagged and can be long lasting.

One means of measuring this effect is to review patterns on Canadian hog farm equity. This is presented in **Table 1** below. The table shows that starting from 2001, both farm sizes listed in the table are increasing in terms of equity through 2006. Following from 2006, the market value of equity went into decline. Between 2006 and 2010, the extent of this decline was around 20%.

Put differently, between 2006 and 2010 average Canadian hog farms in those sales classes essentially gave back the equity they had built up since 2001. This would have the effect of weakening hog farm balance sheets in terms of borrowing capacity entering the adverse situation in 2012.

Table 1 Net Worth, Hog Farms Sales \$500,000- \$1,000,000 and >\$1,000,000

	\$500,000-\$1,000,000	>\$1,000,000
2001	1,059,953	4,107,448
2002	1,210,043	4,102,806
2003	1,098,374	4,436,250
2004	1,063,671	4,233,259
2005	1,262,271	4,961,653
2006	1,319,751	5,066,040
2007	1,155,522	4,445,860
2008	819,938	3,355,610
2009	1,089,407	3,005,925
2010	1,066,863	3,979,660
Change 2006-10	-19.20%	-21.40%

Source Statistics Canada, Farm Financial Survey. Values reported at market value, unaudited

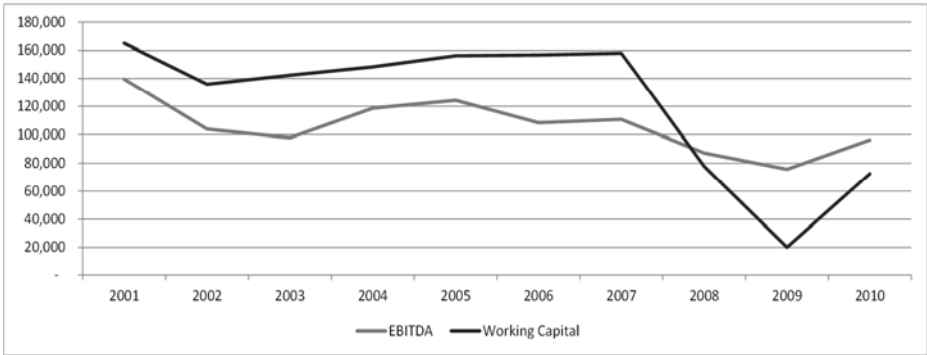
In Retrospect, Cash Flow Positions Were Inconsistent with Operating Returns Volatility

The above shows that equity positions slid quite seriously from 2006 to 2010 and left hog farms vulnerable into 2012. As indicated above, the equity data are evaluated at market value, so if the major effect was to depress hog farm asset values, its true contribution in weakening farm finances coming into 2012 lies in borrowing capacity. Conversely, if the depletion in equity related to refinancing to carry operations incurring a loss, it suggests a tightening of cash flow positions. Tight cash positions can make input procurement and hedging functions (which are especially critical in a downturn) exceptionally difficult.

Figures 3 and 4 below consider working capital (current assets less current liabilities) and earnings before interest taxes, depreciation and amortization (EBITDA) for Canadian hog farms in the size categories above. The figures show that, in 2007, working capital available on hog farms began to move into decline. This lagged the trend in EBITDA that had begun to decline in 2006. This decline in both EBITDA and working capital continued through 2009, and then improved in 2010. Between 2006 and 2010, not only did EBITDA decline materially, but hog farms' ability to supply cash also sharply declined. Data for

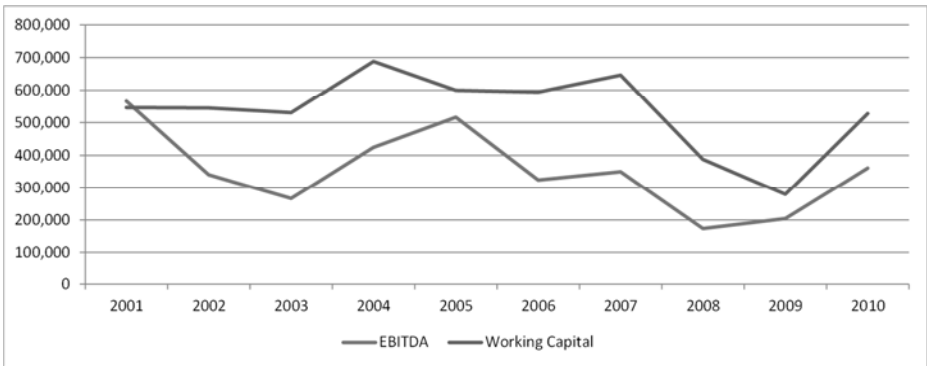
2011 or 2012 are not yet available for confirmation, but this trend must have left hog farms in a weak liquidity state moving into 2012.

Figure 3. EBITDA and Working Capital (\$/farm), Hog Farms \$500,000 to \$1,000,000 Sales



Source: Statistics Canada- Farm Financial Survey and Tax Data Program

Figure 4. EBITDA and Working Capital (\$/farm), Hog Farms > \$1,000,000 Sales



Source Statistics Canada- Farm Financial Survey and Tax Data Program

It is Unlikely that all Hog Farms Were Affected Equally

The data in Figures 3 and 4 do not differentiate between hog operations that purchase feed and/or feeder pigs vs. farms that are more land-based, producing feeds and/or weanling pigs directly on the farm. This data is not forthcoming; however, logic should indicate the following. First, in periods where pronounced risk exists of high priced feed, farms that have crop enterprises integrated on the farm should be at an operating profit advantage, given that they can transfer these inputs at cost. The literature on

management of multi-enterprise organizations is fairly consistent in pointing out the managerial and performance disadvantages of transfers across enterprises within an organization at cost; the point here is only that in periods of economic and financial difficulty transfers at cost can be used as a means of survival. Secondly, farms that have these enterprises integrated on the farm can protect themselves from some cash flow difficulty, just simply because feed is not a direct cash expense to them. Third, since feed crops are produced in rotation with other non-feed crops, in periods of very high crop (and feed) prices, the returns from crops sold off the farm can be important contributors to integrated hog farm returns. Thus, the land-based model of hog production has some economic and financial risk advantages as a natural hedge to input cost volatility. It is thus plausible to expect that integrated hog-crop farms have faced less financial strain compared with other that purchase more of their inputs.

However, by nature, the hog production enterprise on integrated operations tends to be smaller in scale than on a specialized hog operation in which inputs are purchased. This is significant because past research has found that economies of scale exist in hog production. For example, see Nigel Key and William McBride, *The Changing Economics of U.S. Hog Production* / ERR-52 Economic Research Service/USDA, December 2007. Significant economies of scale suggest that investment would be targeted to expand the swine enterprise in lieu of other farm enterprises. The implication is that large farms are more specialized and are therefore more apt to purchase feed and/or feeder pigs. As such, they are more exposed to risk in terms of input costs and cash flow to extremes in input prices. The financial stress from input cost volatility is likely to have been focused on these farms.

■ Conclusions and Observations

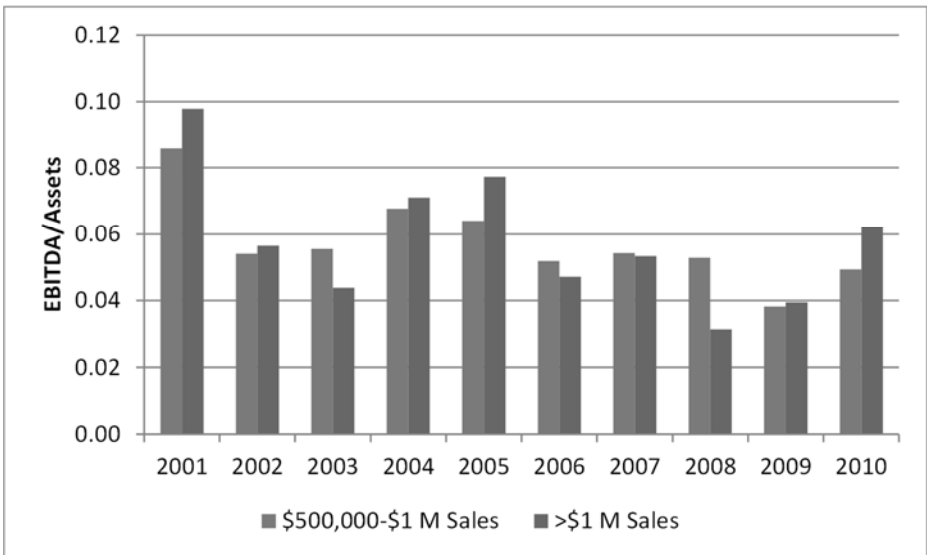
The above suggests the following. The adverse situation facing the Canadian hog production segment in the fall of 2012 is primarily financial, not economic. In other words, there is no sweeping rationale from which to argue that hog production in Canada is not viable or feasible; the economic fundamentals based around feed costs competitiveness remain broadly positive. Rather, the current strain on the industry is a function of past economic events and of the financial capitalization model under which the industry has operated. The period since 2006 has revealed increased volatility in feed grain and hog markets that could not have been anticipated, but for which the existing financial model may be proving inadequate.

This would seem to argue for a more highly capitalized hog production sector equipped with the war chest to see itself through prolonged loss periods so it can take advantage of highly profitable periods. However, this is a complex matter:

- A more highly capitalized sector will presumably see lower returns to assets, negatively influencing investment. Some context is provided in **Figure 5** below. It shows that EBITDA/Assets has ranged mostly below 6% since 2006. This by itself would seem a low rate of return to attract investment; the acknowledgement of significant increases in earnings volatility requiring higher capitalization (i.e. assets) would only drive this rate of return down further.
- Hog farms that are integrated into feed production have a natural hedge against a working capital crunch. Increased volatility argues for an advantage of integrated, land-based hog farms which tend to be smaller by nature
- But there are economies of scale in hog production; increased capitalization leverages this, but a move back toward land-based production would presumably retard economies of scale.

These apparent contradictions need to be rationalized, apparently through increased productive efficiencies in the hog enterprises of integrated farms (to overcome their scale disadvantage), or we need to find easier ways of integrating grain/feed enterprises with hog production/feeding in order to leverage the benefit of large scale operations. Work on these elements appears necessary to address structural financial issues facing the hog production segment.

Figure 5. EBITDA/Assets, Hog Farms Sales \$500,00- \$1,000,000 and >\$1,000,000



Source: Statistics Canada- Farm Financial Survey and Tax Data Program. Values reported at market value, unaudited