

# Roadmap for a Competitive Pork Industry in USA

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## ■ Introduction

This document is being written in September of 2008, the presentation of this report will occur in January of 2009. This means that the outcome of the events and trends that are described below will be fact by the time the report is presented. The actual presentation in January will therefore be slightly different than that presented below.

## ■ Current Situation

As of September 2008, the likely farm level price for soybean meal for the rest of 2008 and for 2009 appears to be in the range of \$330 per ton. The likely farm level corn price appears to be approximately \$5.30 per bushel. Given these numbers, the likely break even carcass price for farrow to finish producers in Iowa will be approximately \$78 to \$80 per hundredweight. **Table 1** is a sensitivity analysis showing how the production costs responds to changes in feed prices.

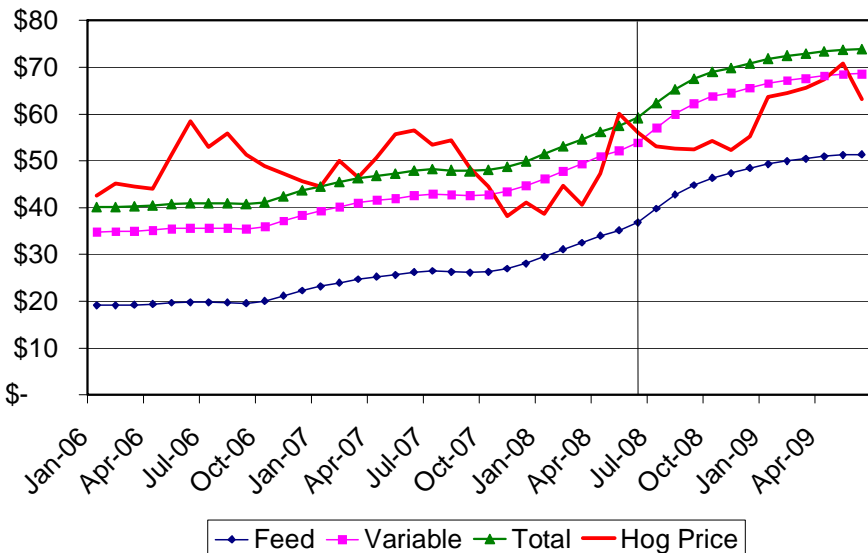
Current negotiated carcass prices are in the range of \$72 to \$73 per hundredweight with many producers receiving a \$2 to \$5 per hundredweight premium based on the particulars of their packer contract. The futures price prediction on the Chicago Mercantile Exchange shows that prices are expected to appreciate into the \$80 to \$86 range by the summer of 2009 before falling off slightly in the fall in the normal seasonal pattern. The bottom line is that hog production in September 2008 is below break even for most producers and is expected to be below break even into the spring of 2009.

**Figure 1** shows the recent historical relationship between prices and production costs. These data show that most hogs sold in 2007 were profitable and that with the exception of the late summer of 2008 most hogs sold in 2008 were sold at a loss.

**Table 1. Estimated Returns Carcass Break-even for Farrow-Finish Production** (Iowa State University)

<b>SBM/Corn</b>	<b>3.00</b>	<b>4.00</b>	<b>5.00</b>	<b>6.00</b>	<b>7.00</b>	<b>8.00</b>
<b>250</b>	62.64	68.53	74.43	80.32	86.21	92.10
<b>300</b>	64.41	70.30	76.20	82.09	87.98	93.87
<b>350</b>	66.18	72.07	77.96	83.86	89.75	95.64
<b>400</b>	67.95	73.84	79.73	85.62	91.52	97.41
<b>450</b>	69.72	75.61	81.50	87.39	93.29	99.18
<b>500</b>	71.49	77.38	83.27	89.16	95.05	100.95

**Figure 1. June 27, 2008 USA Cost & Price Forecast**



The causes of the current situation are well known. An enormous expansion in U.S. ethanol production, coupled with strong export demand for all

commodities (due to a low dollar and growth in India and China), had a dramatic impact on feed costs. According to John Lawrence at Iowa State University, feed costs grew by approximately 250% since 2006 bringing up total production costs by about 75% in the same period. At the same time, U.S. pork production has grown for the past few years, in response to a long period of profitability and the success of an animal health vaccine that increased sow productivity. (**Table 2**)

**Table 2. Pork production (1000 MT CWE) for Canada & USA, 2005 - 2008**

Country	2005	2006	2007	2008
Canada	1,920	1,898	1,850	1,790
United States	9,392	9,559	9,962	10,684

## ■ Forces Driving Profitability

To an economist, the interesting thing about the current situation is not that things are so bad but that they are not a lot worse. In a traditional economic analysis, if one asked how an industry could ever pass along a 75% production cost increase, the answer would have been to expect a dramatic drop in production. Instead production has *increased* by about 13% since 2005. How is it that the industry is so close to profitability given this simultaneous increase in production and cost of production?

### Consumer Demand

First, the pork industry did not have to face this production cost increase alone. The costs and prices of almost all agricultural products have increased dramatically in the past few years. Consumers are remarkably stubborn about the total amount of calories that they consume and when the price of calories increases they simply shift between food products rather than reducing caloric consumption. Consumers are spending more to buy pasta, chicken, beef, and even beer, and this means that demand for any product, such as pork, whose prices did not keep up has grown. Our calculations suggest that instead of a 35% production cutback, as would have been the case if pork was the only product to be impacted, the actual production cutback needed was only 5% to 7% (<http://www.card.iastate.edu/publications/synopsis.aspx?id=1050>).

## Exports

Secondly, U.S. pork exports grew from about 14% of production in 2007 to about 25% of production in the summer of 2008. Exports to almost all countries grew, but the largest growth occurred in China and Hong Kong, two markets that now account for almost 6% of U.S. production. China imports “paylean” pork directly from one company in the U.S. and it imports “paylean” pork from all the other companies via Hong Kong. China lost enormous numbers of sows due to disease and to earthquake and this resulted in a potential scarcity just before the Olympics. As a result, the Central Government ordered enormous quantities of pork just prior to the Olympics. At the time of writing, the August export numbers are not available and it is not possible to determine if China continued to import after the Olympics. It seems probably that it did not. Russia and Mexico were also important growth markets in the first half of 2008 and again it seems likely that this demand will cool off into the fall. Mexican customs officials are hampering U.S. pork imports in an apparent retaliation for a mistaken attribution of a U.S. food safety problem to Mexican tomatoes. Russia, although flush with new oil money, is also cutting back on imports because of general tensions with the U.S. and the West. Despite these problems, it appears likely that the U.S. will export approximately 20% of the pork produced in the fall of 2008, a substantial improvement over 2007.

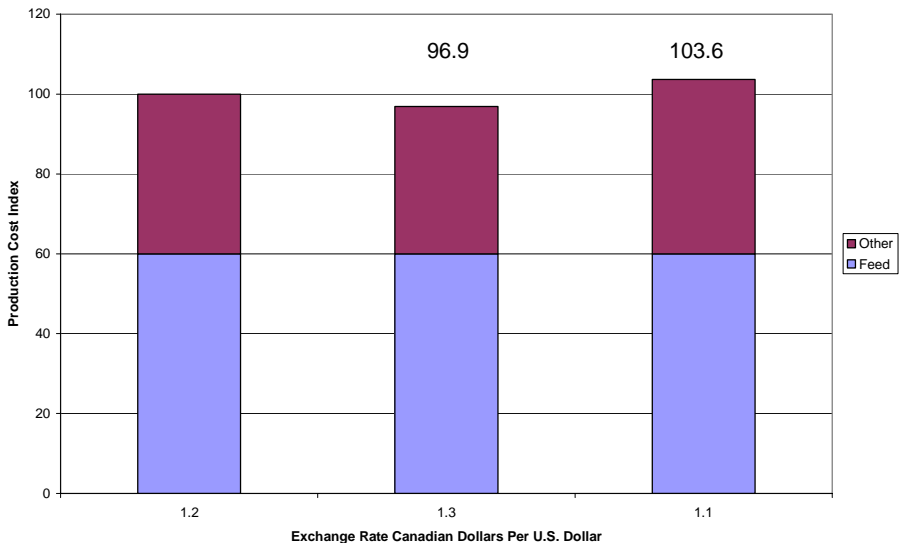
## Currency Depreciation

Thirdly, the U.S. dollar has fallen dramatically over the past five years. This trend was responsible for the increase in crude oil and grain prices within the U.S. and, therefore, contributed to the feed price problem but it also helped support U.S. pork prices and U.S. pork production. To see why this is so important, consider the following simplified example. Suppose there is a country that trades with the rest of the world but that happens to produce about as much pork as it consumes. Suppose also that this country's currency depreciates by 30%. Then from the perspective of international pork markets, it is as if the price of pork in this country has fallen by 30%. In order to avoid arbitrage, the price of pork in this mythical country will have to increase by 30% even if no trade actually occurs. After the adjustment is over, the country might still have zero trade with the rest of the world even though it has higher pork prices.

Another positive factor associated with the weak U.S. dollar is that it boosts the international competitiveness of the US pork industry. The first column of **Figure 2** compares production costs in the U.S. and Canada at a Canadian exchange rate of 1.2 to 1. This column has been drawn to ensure that the production costs are equal at this exchange rate, the rate that existed from January 05 to January 07. Approximately 60% of the total costs are for feed and the rest of the costs are for labor and capital. The second column shows

that same situation for an exchange rate of 1.3 to 1, this is the rate that was in place in 2004. Note that the cost of feed is the same as in the first situation because feed is a tradable commodity and, therefore, subject to the arbitrage argument discussed above. If feed prices in Canada did not change in a manner that exactly offset the exchange rate changes, then there would be an opportunity for arbitrage. Notice, however, that the apparent costs of non-tradables such as labor and capital have now changed because a weaker Canadian dollar effectively reduces the costs of labor and capital in Canada from the perspective of its international competitors. In this case, the Canadian pork industry gains a 3% production cost advantage. The final price comparison shows the current situation with an exchange rate of 1.1 to 1. Now the U.S. has gained a competitive advantage because its labor and capital costs have fallen relative to its international competitors. This simplified example shows that the U.S. has gained a 6% to 7% production cost advantage over Canada since 2004 due simply to the depreciation of the U.S. dollar. This trend is also evident in other important pork producing countries and regions.

**Figure 2. Cost of production comparison at different exchange rates**



As a result of this production cost advantage, other countries have begun to reduce their breeding herd numbers. Since 2005, Canada and Denmark have both lost about 150,000 sows and the EU in total has reduced its sow numbers by 350,000. China has reduced its sow numbers by almost one million in the same period. These production cost cutbacks in the rest of the world effectively helped reduce the need for cutbacks in the U.S.

## ■ Summary and Conclusion

The situation described above is extremely precarious. U.S. pork production increased by 11% at a time when higher feed costs should have caused a 6% reduction in output. The industry has not yet felt the full economic costs associated with this output expansion due to a perfect storm of other events that worked to mitigate the impact of these economic forces. Key among these events was a weakening of the U.S. dollar and a dramatic expansion of U.S. exports to China. When and if the dollar strengthens, this will cause hardship for U.S. pork producers even as it reduces feed costs. China imported more pork because it made political and economic sense to do so. Now that the Olympics are over, much of the political reason for these imports has been eliminated. This means that exports will be maintained only if the Chinese government allows market forces to operate. As labor shortages emerge in China, fewer farm families will be willing to produce backyard pigs, a sector that currently produces about half of all the pork produced in China. If China responds to this problem by allowing a continuation of imports, then U.S. pork producers might dodge the bullet and export their way out of the problem of increased production. However, if China decides to restrict pork imports despite these economic forces, then the U.S. pork industry will need to cut its sow numbers by about 3%. This is less than one might otherwise have expected in part because other countries have already adjusted and because the price of almost all other foods has also increased.