

# Where in the World to Grow Pigs? – Trends in U.S. Pork Production

Steve R. Meyer

Paragon Economics, Inc., 25314 288<sup>th</sup> Trail, Adel, Iowa USA 50003

*Email:* [steve@paragoneconomics.com](mailto:steve@paragoneconomics.com)

## ■ Introduction

The United States and Canada have occupied premier positions as pork production locales for the past decade. Virtually nowhere else in the world has the combination of natural resources and know-how for pork production that exists in our two countries. Policy decisions and the changing world energy situation, however, are putting significant pressures on pork producers and processors in both countries; changing the future direction of both industries and causing us to re-think the two countries' positions in the future world pork industry.

I would like to address several trends in the U.S. industry that are shaping it at present and that will continue to shape it in the future. I expect the U.S. to remain a major player in the world pork market but these forces could affect that position in coming years.

## ■ Energy and the Influence of Ethanol

Nothing is having a greater impact on current profitability and future plans than the growth of corn-based ethanol production in the U.S. Driven by higher oil prices, changes in oxygenating ingredients and widespread public support, the number of ethanol plants has expanded rapidly and continues to do so. As of May 2007, 120 plants with a capacity of 6.1 billion gallons were operating in the U.S and another 92 new plants and 7 expansions were under construction. These additions will add another 7.0 billion gallons to annual U.S. ethanol capacity by early 2009.

These plants, not surprisingly, are generally located near major corn producing areas of the Midwest – the same place that the bulk of U.S. hog production is located. The demand for corn by ethanol plants is changing corn

basis patterns drastically, driving up Iowa and Minnesota corn prices, and thus removing a major source of competitive advantage.

But all is not well in ethanol land. Higher corn prices and larger ethanol supplies are squeezing profit margins; enough that several small plants have ceased operations as of mid-October and plans for two plants upon which groundwork had already commenced have been scrapped. Over 100 additional ethanol plants were in some phase of planning or financing in May 2007, and I think it is unlikely that any of these will be built.

The net effect, of course, of these changes is significantly higher corn demand and prices. Furthermore, this price increase appears to be at least persistent for several years if not permanent since this is a demand-driven situation. Earlier spikes in corn prices had been caused solely by short crops and tight supplies. This one is a different story entirely.

As corn prices have risen, so have feed costs for U.S. pork producers. Those feed cost increases have been driven by more than corn prices. Soybean and soybean meal prices have risen as the soybean industry bids up prices in order to compete for crop acres. U.S. hog feed prices are currently \$40 - \$60US higher per short ton than they were in mid-2006. Corn and soybean futures prices suggest that they could go up another \$20US per short ton by 2009, depending, of course, on the size of 2008 crops.

Higher feed prices mean higher hog production costs. Dr. John Lawrence of Iowa State University (ISU) estimates that average production costs for Iowa farrow-to-finish operations have risen from the high \$38/cwt live weight in early 2006 to near \$48/cwt live weight as of August. Those estimates agree closely with anecdotal evidence from Midwestern producers.

## ■ **Pork Production Profits**

Higher feed prices and, now, lower hog prices have put an end to one of the most profitable periods in the history of the U.S. pork industry. The ISU estimates indicate that Iowa farrow-to-finish operations were profitable each month from February 2004 through December 2006, a string of 35 months that ranks as the longest such string since ISU began computing estimates in 1973.

After one month of small losses, profits returned in February 2007 and, although smaller than in past years, have been relatively good for much of 2007 in spite of higher costs. While not yet released, September's estimates are expected to be very near break-even and October's will almost surely show a loss.

This string of profitable months has left the U.S. industry in perhaps the best financial condition in its history. Most producers have little or no debt and some have sizeable cash reserves. Bankers report that they believe U.S. producers have considerable staying power should cyclical losses be longer than usual.

## ■ **Steady U.S. Consumer-level Pork Demand and Excellent Export and Live Hog Demand**

Consumer-level demand for pork in the U.S. has been more-or-less steady since the mid-1980s. 2006 marked the lowest level ever for the University of Missouri's demand index but it rebounded some in 2007 and was 1.9% larger than in 2006 through August 2007.

Export demand for U.S. pork remains strong even though performance thus far in 2007 has been less than stellar. Through August, exports of U.S. pork on a carcass weight basis were 1.9% smaller than one year ago but that number has improved from -3.5% in the past two months and it appears likely that the U.S. will set its 16<sup>th</sup> straight record year for pork exports.

More important, though, is the fact that the value of U.S. pork exports – a more critical factor in derived hog demand – has been higher than in 2006 during all of 2007 to date and improved from +4.7% to +5.9% in August.

Higher export value, recovering consumer-level demand and record high values for pork by-products have all contributed to an increase in live hog demand of over 3% this year. This strong demand is the continuation of another long-term trend that has kept U.S. pork prices high even though the industry has seen record-high slaughter for the past 4 years and record-high production for the past 6 years.

Steadily expanding packing capacity has also been a factor in higher demand for slaughter hogs. U.S. packers increased their potential throughput in 2007 in spite of the loss of one plant in Mississippi and scaling back slaughter by part of one shift at a key Iowa plant. U.S. capacity of 428,035 head per day is 12% larger than it was at its low-point in the autumn of 2002.

## ■ **Growing Productivity – But will it Last?**

The long-term decline of the U.S. swine breeding herd has been halted and the herd has grown slowly for the past ten quarters. The reduction of the breeding herd was necessary due to significant advancements in sow

productivity and consistently increasing slaughter weights. The U.S industry averaged over 3% annual productivity growth for the 1990s through 2003 with that growth being comprised of gains in litter size, litters per sow and weight per pig.

This record of productivity growth (which was, quite honestly, necessary due to the U.S. industry's rather dismal productivity level at the end of the 1980s!) slowed dramatically in 2004 for two reasons.

First, U.S. producers began what has become a near-industry wide shift from 18-day weaning to 21-day or more weaning. The change had a dramatic impact on the quality of pigs being produced but required an additional sow group that drove litters per sow per year downward, at least for the period of the changeover which is still in progress.

Second, porcine circovirus associated disease complex came to the U.S. about this time and had a dramatic impact on pig survivability and performance. That is not news to Canadian producers, but the impact cannot be ignored in the U.S. either.

It is quite likely that U.S. productivity growth will resume over the next year or two. Much of the herd has now switched to later weaning and once that is accomplished, any true gains in sow productivity will be compared to the same production system one year earlier thus allowing the gain to show up in the data. In addition, circovirus vaccines are having the same "miraculous" impacts in the U.S. that they had in Canada and will thus begin to contribute greatly to productivity growth in terms of pigs reaching market weight and higher market weights as the number of light pigs is reduced.

## ■ **The end of the production cycle?**

It is not often that one gets an opportunity to see an old, old economic relationship change or disappear but such is the case, it seems, for today's observers of the hog cycle. The U.S. hog cycle, which can be traced back over 200 years, is all but gone with production changes being steadily and slightly positive over the past 3 years. There is little on the horizon in this high-investment, climate-controlled, high fixed-cost industry that makes the revival of the cycle probable.

Along with the demise of the hog cycle, is the presence of a highly-inelastic hog demand that penalizes any large increases in output. The trend toward a more inelastic demand is long-standing as well and it will be interesting to see if it holds over the next few years.

## ■ Summary

The impacts of these trends on the U.S. climate for hog production is mixed. Environmental and social, small-farm pressure is still intense in many regions and serves to prohibit or at least significantly slow pork production expansion.

Corn availability could well become an issue for industry expansion but many grain farmers are starting to question the wisdom of using corn for ethanol versus pigs simply due to the fact that ethanol doesn't produce valuable crop nutrients in the form of manure. The pressure for more corn-on-corn production will enhance manure's value and make pig feeding more attractive to many Midwestern grain operations. Whether the social climate will allow this production to happen remains to be seen.

Things are changing but with change comes opportunity. It will be no different for the U.S. pork industry.