

Prediction of Pork Prices and Production

Ron Plain

Professor of Ag Economics, University of Missouri-Columbia, 202 Mumford Hall, Columbia,
MO 65211 USA; Email: plainr@missouri.edu

■ Introduction – Canada & U.S.A.

Although the Canadian hog industry is the fastest growing in the world (2001 Canadian pork production was 40.8% higher than in 1996), the economics of pork production in Canada is still dominated by what happens in the U.S. swine business. For this reason, plus my reluctance to try and tell Canadian hog producers about the future of their own industry, this paper focuses primarily upon expected developments in the U.S. pork industry and their implications for Canada. I often think the most significant difference between hog production in our two countries is the hassle of comparing U.S. dollars per pound to Canadian dollars per kilogram. (All values in this paper are in U.S. dollars.) The increasing integration of our two industries presents both opportunities and challenges for pork producers, but it is clearly a benefit to consumers.

■ Hog Cycle

Although it is not evident in Canadian hog data, the hog cycle is a dominant feature of pork production in the U.S. After struggling through the two worst years in history, hog producers turned a profit in 2000 and 2001. U.S. farrow-to-finish operations lost an average of \$17 per hog sold in 1999, which was \$10 better than they did in 1998. Producers netted nearly \$10 per hog in 2000 and over \$13 per hog in 2001. In 2002, U.S. producers lost about \$17 per head. If USDA's inventory surveys are close to the mark, then producers are likely to post small losses again in 2003. Two bad years, two good years then two bad ones again.

Historically, changes in U.S. hog slaughter have lagged profitability by an average of 15 months. Periods of sustained profits lead to a significant expansion in production. Back-to-back profits in 1996 and 1997 yielded a 9.9% increase in U.S. hog slaughter in 1998. Back-to-back profits in 1990 and 1991

led to a 7.6% increase in hog slaughter in 1992. Profits in 1986 and 1987 preceded an 8.3% increase in hog slaughter in 1988. However, preliminary data indicates 2002 hog slaughter was up only a little over 2% following profitable years in 2000 and 2001.

Why the smaller than normal growth in hog production? I see three reasons. First, the memory of huge losses in 1998 and 1999 still lingers, especially with lenders. Second, producers are aware of the limited capacity to slaughter hogs. No new big packing plants are on the horizon and until some are built, any major increase in hog numbers will result in disastrously low hog prices. Third, it is tough to get the needed permits and, even if you get them, there is no assurance they will be good for long. EPA has been working on a new set of regulations for confined animal feeding operations.

The 15-month lag between changes in profitability and slaughter also holds for years following losses. Red ink in both 1994 and 1995 resulted in a 4.1% decline in 1996 hog slaughter compared to the year before. The huge losses of 1998 and 1999 led to a 3.5% reduction in 2000 hog slaughter. USDA said the October 1, 2002 U.S. sow and gilt inventory was 2% smaller than 12 months earlier. All indications are that the current run of losses will lead to a significant reduction in U.S. hog slaughter.

Corn prices under \$2/bushel kept the breakeven price for slaughter hogs below 40 cents per pound for nearly four years, from late 1998 until the fall of 2002. A small corn crop in 2002 has pushed-up feed prices and raised the breakeven price for the typical U.S. farrow-to-finish herd into the low 40s on a live weight basis. High priced feed will add to the rate of decline in the U.S. sow herd.

■ **Breeding Herd Productivity**

A smaller breeding herd doesn't necessarily mean less pork. Pork production per sow increased rapidly in the past decade. The average number of pigs produced per litter increased 12.2% from 7.87 in 1990 to 8.83 in 2000. Recent USDA reports say it has, more or less, held steady at 8.83 pigs for the last two years. Litters per sow per year increased from 1.86 in 1990 to 2.05 in 2000. But, based on USDA numbers, it decreased to 2.03 litters in 2001. Has the industry peaked in pigs per sow per year? If so, zero growth in sow productivity will help constrain hog slaughter and support prices.

Hog weights have trended higher for nearly 50 years. The average dressed weight of barrows and gilts slaughtered under U.S. federal inspection in 2001 was 193 pounds, 2 pounds heavier than in 2000 and 12 pounds heavier than in 1996. Every fall, slaughter weights head higher. However, in recent months high feed prices have held down slaughter weights. The average dressed

weight for barrows and gilts slaughtered the first full week of November was 195 pounds, up 7 pounds compared to the first week of August, but below year earlier weights for the tenth consecutive week. Producers did a great job in the fall of 2002 of marketing early and avoiding the normal November slaughter crunch. Based on preliminary data, 2002 slaughter weights were one-half pound heavier than in 2001.

■ Pork Demand

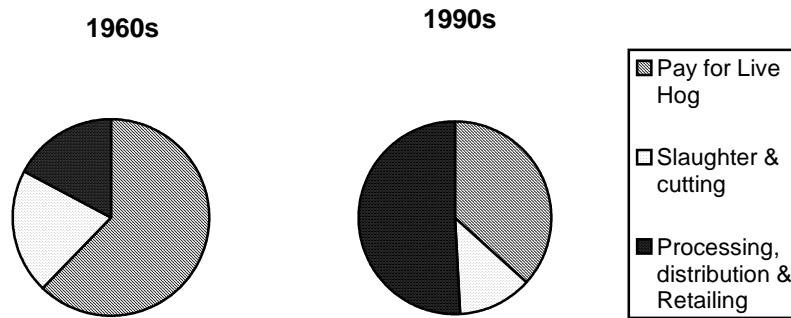
After declining steadily in the 1980s and early 90s, domestic pork demand bottomed in 1995 and has been stronger since. The average retail price of pork in the U.S. has done very well in the 21st Century. It reached a record high of \$2.555 per pound in April of 2000 and has set new record highs 8 times since, reaching a peak of \$2.781 in September 2001.

USDA is forecasting total U.S. red meat and poultry production in 2003 to be 1% lower than in 2002. Because of population growth, U.S. per capita meat supply will be down even more. Less competing meat means the chances are good for retail pork prices to continue to be high.

Demand for pork at the consumer level for January-August was up 2% based on preliminary data. However, based on USDA data, live hog demand was down sharply due to higher marketing margins. The data available indicate that processor-retailer margins as well as packer margins have increased during the first 9 months of 2002. But, the reports we have from two major packers indicate their margins in these 9 months were below a year earlier.

Over the last 40 years there has been a dramatic shift in how the consumer dollar is divided among the industry segments. In the 1960s, an average of 62.3% of the retail price of pork went to pay for the live hog. In the 1990s, 36.7% went to pay for the hog. In the 1960s, an average of 20.6% of the retail price of pork went to pay packers for slaughter and cutting into wholesale primals. In the 1990s, 12.5% went to pay for slaughter and cutting. In the 1960s, an average of 17.1% of the retail price of pork went to pay for processing, distribution and retailing. In the 1990s, 50.8% went to pay for processing, distribution and retailing. (see **Figure 1**)

Figure 1. Distribution of the consumer dollar – 1960s vs. 1990s



The rapid growth in the share of the consumer pork dollar going to processing, distribution and retailing has caused packers to shift much of their focus to further processing. With a declining share of the pork dollar going to raising and slaughtering hogs, the logical pork investment is in branded products.

USDA's November cold storage report had both good news and bad news. The good news was that stocks of frozen pork were only 14.3% higher on the last day of October than on October 31, 2001. Stocks were 30.9% higher than a year ago on September 30. The bad news was that at 492 million pounds, October 31 pork stocks were the largest for that date in over 40 years.

■ International Trade

U.S. pork exports in 2001 were record high for the tenth consecutive year. Over 8% of U.S. pork production was exported in 2001. Despite increased shipments from Canada, total U.S. pork imports were down 1.7% in 2001. Foot and Mouth Disease problems in Europe made 2001 an exceptionally good year for U.S. pork trade.

The odds look good that 2002 was the eleventh consecutive record year for U.S. pork exports. September's exports were 27% above September 2001 bringing the total for the first three quarters of 2002 to 103.6% of the same period in 2001. Shipments to Japan, Canada and South Korea were up while pork exports to Russia and Mexico were down. Because of more Canadian pork, imports were 12% above year-ago levels. Through September, the U.S. had exported 55% more pork than it had imported. It looks like 8% to 8.5% of U.S. pork production was exported in 2002.

In 2001 the U.S. imported a record 5.3 million Canadian hogs. Over 5.5 million hogs were imported in 2002. Since all indications are that the Canadian hog herd is growing faster than the U.S. herd, I expect even more Canadian hogs will come south in 2003.

■ Country of Origin Labelling

The new U.S. farm bill includes a provision mandating country of origin labelling (COOL) for red meats, fish, peanuts, and fresh and frozen fruits and vegetables. Because of the huge amount of Canadian pork and hogs shipped to the U.S., this is an important issue to Canadian producers. USDA announced procedures for a voluntary COOL program in early October. Beginning on September 30, 2004, grocery stores that annually market over \$230,000 of fruits and vegetables must label their fresh and frozen red meat by country of origin.

The law applies to non-restaurant retail sales of non-mixed, raw products. COOL applies to the packaged pork sold in a grocery store. Pork that is served in a restaurant or is an ingredient in a food product such as frozen pizza is not covered by COOL, nor are processed products such as bacon. Merely adding water or flavouring, e.g. lemon flavoured pork loin, does not exempt the product from the requirements of COOL.

The law specifies that to have a U.S. country of origin label, meat must be exclusively from animals that are born, raised and slaughtered in the U.S. About 5% of the pork consumed in the U.S. is imported as pork. Another 6% of the pork consumed in the U.S. comes from imported hogs that are slaughtered in the U.S. Thus, about 89% of the pork Americans eat qualifies for a U.S. origin label.

USDA's guidelines for the voluntary COOL program call for a label that specifies where the animal was raised and where processing has occurred. For example, a pork chop from a hog that was born, raised, slaughtered and processed in the U.S. would be labelled simply a product of the U.S. However, ground beef that is a mixture of trimmings imported from Australia, trimmings from feeder cattle imported from Mexico, and trimmings from U.S. born cattle would be labelled - "Product of Australia, From Mexican Cattle Raised and Slaughtered in the U.S., and Product of U.S." COOL is popular among livestock producers who believe that U.S. consumers are willing to pay a premium for U.S. meat. Some argue that providing consumers with more information on the origin of their food will increase food demand. Others hope that the hassle of labelling will cause grocery stores to boycott meat that does not qualify for a U.S. origin label.

COOL is not as popular with those farmers who fear that the premiums consumers may be willing to pay for U.S. origin meat are less than the estimated \$1 billion annual implementation cost that comes with COOL. Congress appropriated no money to implement and monitor COOL. Consequently, the cost of labelling meat is likely to be borne by farmers and ranchers through wider marketing margins and a smaller share of the consumer's food dollar.

Mandating country of origin labels may also create a niche market for certain meats available in limited quantity. Once labelled, some consumers may find they prefer the taste of Argentine beef or Canadian pork, allowing it to sell at a premium to the U.S. product, much a Danish pork and New Zealand lamb do today.

Nor is COOL popular with the management of grocery stores. It is the retailer who faces the threat of \$10,000 per day fines for not labelling and verifying the country of origin of the meat they sell. USDA guidelines allow this \$10,000 per day fine can be levied back down the food chain when mislabelling is not the fault of the retailer. Processors, packers and farmers can be fined if they do not adequately verify the country of origin of the meat/animals they are handling.

The farm bill prohibits USDA from implementing a mandatory animal tracking system to certify the country of origin. Grocers will have to rely on industry tracking systems to verify the country of origin of the meat they sell. This should put pressure on the marketing system to move to a much more tightly integrated structure. Potential fines of \$10,000 per day are likely to cause grocery stores to require the industry put some sort of system in place to track meat from the farm to the store.

■ Forecast for 2003

Low hog prices and increased feed costs have caused producers to send a lot of sows to town. U.S. sow slaughter has been consistently above year ago levels since mid May. Gilt slaughter data collected by my colleague, Glenn Grimes, indicates a higher percent of gilts in the May-November barrow and gilt mix than for the same period in 2001.

USDA's Hogs and Pigs reports indicate that the swine breeding herd is below year-earlier levels and dropping. There are some things about USDA's September report that are questionable. The farrowing intentions indicate producers reduced breeding plans quickly last winter and may not continue the breeding herd reduction into this winter. Both the third and fourth quarter farrowing intentions are down from last year -- third quarter down 1.5% and fourth down 2.5%. But, the first quarter 2003 farrowing intentions are only a

1.1% decline from a year earlier. Given the higher feed costs, the industry needs to reduce the breeding herd by about 10% by mid-2003 to cut production enough to make up for all the red ink of 2002.

My forecast for hog slaughter and prices for 2003 is below. I expect 2004 hog slaughter to be still lower and prices higher.

| Year | Qtr | U.S. Hog Slaughter | | Iowa Barrow & Gilt Prices | | |
|------|------|--------------------|---------|---------------------------|-----------------------------|--------------------------------|
| | | 1000s | %Yr Ago | \$/cwt-live ¹ | \$/cwt-carcass ¹ | \$/CAD/kg carcass ² |
| 2003 | 1 | 23,900 | 99.0 | 34 – 37 | 46 - 50 | 1.61 – 1.75 |
| 2003 | 2 | 24,000 | 98.8 | 39 – 42 | 53 - 57 | 1.85 – 1.99 |
| 2003 | 3 | 24,850 | 98.9 | 38 – 41 | 51 - 55 | 1.78 – 1.92 |
| 2003 | 4 | 26,250 | 98.7 | 34 – 37 | 46 - 50 | 1.61 – 1.75 |
| 2003 | Year | 99,000 | 98.9 | 36 – 39 | 48 - 53 | 1.68 – 1.85 |
| 2004 | Year | 98,000 | 99.0 | 40 – 43 | 54 - 58 | 1.88 – 2.02 |

¹ Values in US dollars & pounds

² Canadian equivalent, \$ CAD per kg carcass, \$1 CAD = \$0.63 USD