Record Low Pork Prices in 1998: Transient or Permanent?

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The fourth quarter of 1998 was one that Iowa pork producers would prefer to forget. From favorable farm prices in the $50 per hundredweight range just in the past year, prices fell below $30 per hundredweight in the beginning of September, slid below $20 per hundredweight by the middle of October, and declined even further, to below $15 per hundredweight in December. This left many asking why and wondering whether low hog prices are here to stay. Let's look at how demand and supply factors affected the industry throughout 1998. Are the resulting impacts transient or permanent?

Retail Demand

Retail demand remained strong in 1998. James Mintert, a Kansas State University agricultural economist, suggests that retail demand in 1998 was actually 3 percent higher than the 1990 base year. This is actually the first increase in demand relative to the base year in a decade. FAPRI (Food and Agricultural Policy Research Institute) researchers showed that this higher overall demand was mostly due to retail activity in the fourth quarter (see Figure 1). There is reason to believe that, in the long run, the pork sector can continue to increase total demand at least at the rate of population growth, which is 0.85 percent annually.

Foreign demand played a small role in the 1998 story; nonetheless, the live animal and meat trade contributed to depressing prices slightly (.31 percent) because meat net exports were offset by live hog net imports flowing to U.S. packers from Canada. Even with the Asian and Russian macroeconomic crises, U.S. pork exports in 1998 rose 17.1 percent over the previous year. Exports to Japan increased by 7 percent, while exports to the Russian Federation increased by 52.9 percent.

If retail demand was increasing, and the United States' net position in foreign trade was not a major factor, what drove farm prices to record lows? It is the supply side, or the live hog demand, that provides the answer.

Pork Supply and Live Animal Demand

When measured by the sow level, the size of the pork industry in 1998 was not significantly larger than in 1990. There were 47,000 more sows in the 6.89 million inventory, a 0.68 percent increase. But the improvement in productivity through normal technological change has been very significant over the last decade, pushing an ever-larger supply into the market.

In 1998, a sow produced 2.1 more piglets compared to 1990, and slaughter-ready barrows and gilts weighed 15 pounds more in liveweight. The increase in pork supply attributable to normal technological change exerts a downward pressure on price of approximately 15 percent every year, even if the industry is not expanding its sow level. Although this technological advancement gives U.S. pork its competitive advantage to expand traditional markets and penetrate new emerging markets, technology also compounds the impacts of adverse shocks in the world market and, thereby, can be an unwitting contributor to depressing farm prices.

The U.S. pork industry has experienced a structural transformation, with pork production becoming more commercialized. On the one hand, this has led to significant technological improvements and, on the other, may have brought about a degree of inflexibility in adjusting supply to unfavorable price movements.

In the 1950s, there were 20 pigs per pork operation compared to the current number of 534 pigs. Today, pork operations with 2,000 or more hogs represent only 6 percent of the operations, but account for 64 percent of the inventory (with operations that market 5,000 head or more accounting for 42 percent). Despite prices falling below $30 per hundredweight as early as September 1998,

Figure 1. Retail Pork & Live Hog Demand Indices, Average 1998=100

sow levels in the fourth quarter of 1998 declined by only 1.19 percent compared to the third quarter, and were .248 percent higher than for the same period in 1997.

In commercial production, producers spread their more substantial fixed costs over a larger scale of production. They only need to cover variable costs to stay in production, and are not likely to exit the industry because they would face proportionately big losses in "sunk" (unrecoverable fixed) costs.

The longer planning horizon common among larger operations allows them to absorb adverse short-term price shocks. They can lock in better prices in the futures market and obtain the best, quality-based prices for their more standardized animals (avoiding weight and carcass variability penalties). A recent Iowa State University study by John Lawrence, Glen Grimes, and Marvin Hayenga reports that slightly less than half of the hogs sold in 1998 were marketed through some form of contract that provided producers with a degree of protection from unfavorable price movements.

Packing Plant Capacity

Record low hog prices in the last quarter of 1998 are attributable to a decrease in the demand for live hogs due to a significant decrease in packer capacity. The 10.4 percent increase in the hog supply in 1998 should have brought just a 15.08 percent decline in the farm price from the 1997 average of $53 per hundredweight. Instead, prices fell by an alarming 35.5 percent. The culprit, as it turned out, was a rather sudden 8.29 percent drop in processing capacity—and the corresponding increases in cost of production at the packing plants. Accelerated plant operating and labor costs tended to depress farm prices.

Larger than normal numbers of live hogs were pushed onto the market at a time when several U.S. packing plants were closing or reducing capacity because of environmental and food safety regulations (e.g., Apple Valley plant in Michigan and Dakota Pork plant in South Dakota closed; and Smithfield in North Carolina reduced capacity). Another compounding factor was an unexpected influx of Canadian hogs into U.S. packing plants.* Beginning the week of September 18, 1998, weekly slaughter exceeded the 2 million head capacity for all but three remaining weeks of the year, and weekend slaughter exceeded 160,000 head for all but two weekends.

What Lies Ahead for the Hog Industry

The high quantity of stocks in cold storage suggests that consequences of the 1998 phenomenon may carry over into 1999. Prior to November 1998, cold storage stocks were being depleted. However, in recent months stocks have been increasing at an alarming pace. In the U.S. Department of Agriculture June 1999 Cold Storage report, frozen pork stocks were up 23 percent from last year, and stocks of frozen pork bellies were 82 percent above last year's levels.

Although decent prices were reported in April and May this year, they have since declined into the low $30 per hundredweight range. However, prices are not expected to fall any lower than that of the last quarter of 1998. This is because of the 6 percent decline in breeding herd numbers (reported in the March and June 1999 Hogs and Pigs reports), returning growth in pork exports, and a decline in live hog imports.

The answer to the question posed at the beginning of this article is that both transient and permanent demand and supply factors shaped the pork price outcome of 1998. With technological improvements and structural transformation continuing in the pork industry over the long term, appropriate processing capacity strategies might help in the short term.

In the long run, the pork industry needs to make adjustments to balance domestic supply and demand. Moreover, an aggressive export promotion effort offers the best option in permanently relieving the downward pressure on domestic prices. As the economies of the United States' traditional markets recover (e.g., Japan), and as emerging markets open (e.g., Taiwan's membership in World Trade Organization [WTO] and Russia), U.S. pork products should gain shares in traditional markets and access to emerging markets.

The United States should remain vigilant during the upcoming WTO negotiations in not allowing protectionist policies to emerge under the guise of phytosanitary considerations, while taking a proactive position regarding legitimate phytosanitary issues raised by its trading partners. ♦

*Labor problems in Canada caused the shutdown of one of their packing facilities, sending asudden flow of live hogs to the United States.