

# Packer Concentration and Its Impacts



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Concentration in meatpacking is high, especially for fed cattle slaughtering and fabricating. Concentration in meatpacking has been a major concern to many in the cattle industry in recent years. This fact sheet defines concentration, provides information on the level and trends in concentration, and reports on research attempting to determine its impacts.

## Concentration

Concentration is defined as a measure of the market dominance of a few large firms. Cumulative market shares by the four, eight, or twenty largest firms are frequently reported measures of market concentration.

High levels of concentration are believed by some to be associated with lower prices paid for inputs (such as fed cattle) or higher prices charged for outputs (such as beef and byproducts). However, high concentration does not necessarily imply firms will behave in noncompetitive ways (such as the exercise of market power, which may include paying low prices for inputs or charging high prices for outputs). Other factors must be considered.

There is little argument that concentration in fed cattle slaughter and boxed beef production is high. In 1996, the four largest beefpacking firms combined had an estimated 80 percent of U.S. steer and heifer slaughter (Kay 1997). The same four firm firms accounted for 85.7 percent of boxed beef production in 1994 (data are not available for 1996 at this time). Figure 1 shows how concentration has increased since 1972 (Grain Inspection, Packers and Stockyards Administration). Note, however, that the four largest firms in 1972 were not the same as the four largest firms in 1996. The combined market share of the four largest firms (equivalent to the four-firm concentration ratio) was relatively flat throughout most of the 1970s. Concentration began increasing in the late 1970s and increased sharply through the 1980s and into the early 1990s.

Consolidation among meatpacking firms has contributed to increased concentration. In 1987 alone, a series of mergers and acquisitions involving some of the largest beefpacking firms increased the combined market share of the four largest firms by 12 percentage points, from 55.1 to 67.1 percent of total fed cattle slaughter (Figure 1).

The three largest firms, sometimes called the "Big 3"

because of their combined market share (an estimated 72.8 percent in 1996), have remained the same since 1987. Another contributing factor to increased concentration has been internal growth by these largest firms.

Why have meatpacking firms increased in size? Why has concentration increased? To answer these questions we need to understand the nature of the meatpacking business. Meatpacking is a margin business. It has often been called a high-volume, low-margin business. In a margin business, if all meatpackers pay *about* the same price for cattle, labor, and other inputs, and if they all receive *about* the same price for the sale of meat and byproducts, then their *gross* margins will be about the same. So the difference between being more or less profitable (i.e., having higher or lower *net* margins) is their operating costs. Higher cost firms will be less profitable and lower cost firms will be more profitable. To a limited extent, meatpackers do not care whether cattle and beef prices are high or low, only whether or not their gross margin remains about the same over time. If gross margins remain about the same, they can control net margins by managing their costs.

As a result, one of the driving forces in meatpacking is the need to be a low-cost firm. One way to achieve lower costs is to operate larger, lower-cost plants at capacity. Several research studies dating back to 1962 have shown there are economies of size in cattle slaughtering and fabricating (Ward

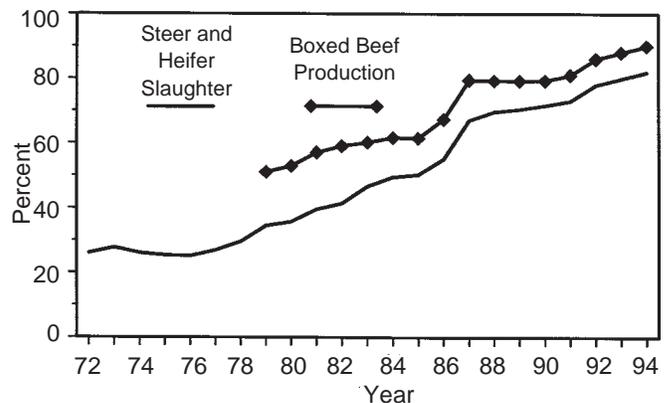
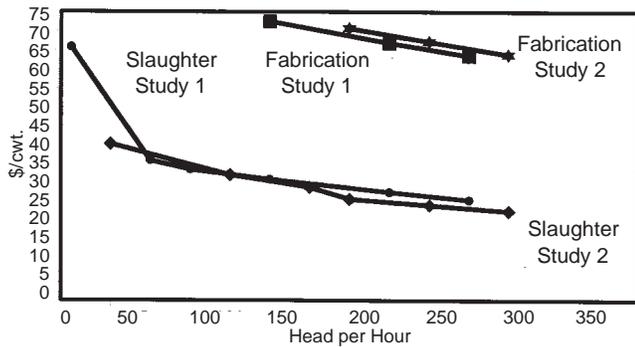


Figure 1. Combined U.S. Market Share of the Four Largest Firms.



**Figure 2. Average Cost Comparisons from Two Studies, by Plant Size.**

1993). Figure 2 shows results from the two most recent studies reported by Ward (1993). The two lines for slaughtering are downward sloping, as are the two lines for fabricating. That means, both for slaughtering and fabricating, that as plant size increases average cost per head for slaughtering and fabricating decreases, respectively. Therefore, to be cost-competitive, meatpacking firms operate larger plants.

Another factor affecting operating costs is plant utilization. Having a larger plant pays dividends in terms of achieving lower costs per head when there is a high volume of cattle through the plant (or high plant utilization). Research has shown that larger plants have higher plant utilization (Ward 1990; Barkley and Schroeder 1996). To maintain cost advantages over smaller plants, larger plants must operate at high levels of utilization.

As a firm expands a plant, say from 0.5 million cattle per year to 1 million cattle per year, the plant experiences lower operating costs. It also means that 0.5 million cattle previously slaughtered by other plants will now be slaughtered in a single plant. The plants losing slaughter volume to the larger plant experience higher costs because their plant utilization decreases. The result over time is that smaller plants go out of business and concentration in meatpacking increases.

Concentration in meatpacking, then, resulted in part from a need for plants to become more cost competitive. Research has clearly shown significant cost efficiencies associated with larger plants. Lower costs mean meatpackers *could* pay higher prices for fed cattle. Even a \$5 reduction in average slaughtering-fabricating cost per head *potentially* could translate into \$0.35-0.50/cwt. higher prices paid for fed cattle.

Profits in meatpacking in the mid-1990s were double the profit rates for the preceding several years. A presumed long-run profit rate in meatpacking has been 1 percent return on sales. Sales can be *estimated* by taking the boxed beef cutout value times the average dressed weight for fed cattle plus the average hide and offal value times the average live weight for fed cattle. Then 1 percent times that figure gives an *estimate* of average profit per head in fed cattle slaughtering and fabricating. Returning *all* the higher profits (above 1 percent return on sales) from meatpackers to cattle feeders in the form of higher prices would have meant about \$0.75-1.00/cwt. higher fed cattle prices.

## Concentration Impacts

Impacts of high or rising concentration are difficult to measure. Cattlemen express concerns about: (1) market

access or having a market for cattle when cattle reach market weight and finish; (2) adequacy of competition among buyers; and (3) receiving lower prices paid for livestock.

Certainly, fewer meatpackers mean fewer potential buyers. As long as meatpacking capacity exceeds the supply of fed cattle, having a market for cattle may not seem to be a big concern in the industry as a whole. However, for some short time periods and in some local areas, market access may be a real issue.

A major question relates to the adequacy of competition among buyers and the effect on fed cattle prices. There is evidence from several research studies of small negative impacts on slaughter livestock prices from increased consolidation and concentration. Research has addressed several questions, some focusing on transaction price impacts and some on impacts for prices aggregated over time and over the entire U.S. meatpacking industry.

One line of research has attempted to determine the effects number of buyers has on livestock prices. Generally, fewer buyers mean less demand for slaughter livestock and less buyer competition, both of which lead to lower livestock prices. Conversely, more buyers generally mean more demand for slaughter livestock and more buyer competition, both of which lead to higher prices. The adoption of electronic markets, giving more buyers better access to livestock offered for sale, has typically resulted in higher livestock prices in several studies. Increased numbers of buyers bidding on fed cattle have had a positive effect on fed cattle transaction prices in several studies.

Researchers have examined the relationship between regional fed cattle prices and meatpacking concentration (Marion and Geithman 1995; Azzam and Schroeter 1991; Slaughter Cattle Procurement and Pricing Team 1996). Higher levels of concentration were associated with lower prices paid for fed cattle in those studies.

Studies examining fed cattle transaction prices found that meatpackers often paid significantly higher or lower prices for fed cattle than competitors or groups of competitors (Ward 1992; Schroeder et al. 1993; Ward, Koontz, and Schroeder 1996). A study conducted after the series of mergers and acquisitions in 1987 found that the Big 3 meatpackers paid significantly lower prices for fed cattle in the Southern Plains and in subregions of the Southern Plains than did their competitors as a group. However, in the same study, and in a more recent study, differences were found *among* the Big 3 firms in how much they paid for fed cattle. Each of the Big 3 firms did not pay lower prices than the other competing firms.

Several studies have estimated aggregate effects from structural changes (Schroeter 1988; Schroeter and Azzam 1990; Azzam and Pagoulatos 1990). One study found monopoly price distortions for wholesale beef. Monopoly price distortions refer to observing higher-than-competitive prices for wholesale meat sold by meatpackers. The same and similar studies also found monopsony price distortions for livestock prices. Monopsony price distortions refer to observing lower-than-competitive prices for livestock purchased for slaughter by meatpackers. Another study used a different statistical technique and found cooperative price behavior among meatpackers in fed cattle procurement (Koontz, Garcia, and Hudson 1993). Such behavior is indicative of oligopsonistic market power or noncompetitive pricing. However, another study suggested

that reducing industry concentration would not increase fed cattle prices (Stiegert, Azzam, and Brorsen 1993).

In summary, fewer and larger meatpackers have resulted in increased plant and industry efficiency. Several studies have also suggested that larger meatpackers have exercised a small degree of market power in livestock procurement. One study indicates the "most plausible" estimate of noncompetitive pricing is less than 1 percent of prices paid for livestock (Azzam and Schroeter 1991).

The drive to operate larger, more efficient *plants* does not explain by itself the increase in both *firm* size and increase in concentration. Internal growth, as well as mergers and acquisitions, has played a significant role. No research has estimated how large a firm must be (i.e., how many plants are needed) to achieve most cost economies and yet not have excessive potential market power. Questions are raised about past or current abuses of market power versus firms positioning themselves in the marketplace so as to apply market power in the future. While research to date generally shows small negative impacts from increased concentration, one recent study showed that the gains from cost efficiencies in meatpacking more than offset any likely market power impacts from concentration (Azzam and Schroeter 1995).

Two points should be noted. First, all economists do not agree on the best approach to estimate impacts from concentration. Some believe impacts should be estimated at the micro or firm level with transaction price data, while others believe impacts should be estimated at the macro or industry level with more aggregated data (such as annual data). Second, some producers do not believe the research results by economists, saying that it conflicts with what they observe in the marketplace. The research is not always correct or conclusive but it is the best available information we have. Individual observations may be correct also, especially for some circumstances and time periods, but may not describe the entire market. Thus, more work is likely needed.

In the most recent research, no concrete conclusions about the effects of concentration on fed cattle prices were found (Kambhampaty et al. 1996). Data limitations hampered the analysis but it was the first attempt to estimate packer concentration impacts with detailed weekly and monthly cost and revenue data from packers for individual plants. The opportunity to test for market power with weekly data was welcomed. However, imprecise and inaccurate cost and revenue data hampered the ability to draw definitive conclusions.

In the model developed to test whether packers attempted to maximize profits, results suggested packers are not strict short-term profit maximizing firms. Packers are apparently constrained by contractual and labor commitments to such an extent that they do not choose weekly periods over which to maximize profits. Therefore, one conclusion from this study was that more information is needed regarding packer behavior to better understand and analyze the impacts of concentration.

## Conclusions

Concentration in meatpacking is high, especially for fed cattle slaughtering and fabricating. We must not lose sight of the fact that concentration has increased in part as meatpacking firms increased industry efficiency. Research to date suggests price impacts from packer concentration have been negative in general, but small. Also, research shows that efficiency gains from moving to fewer and larger meatpackers have more than offset any market power impacts.

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