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# Structural Change in the Meat, Poultry, Dairy, and Grain Processing Industries

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Consolidation and structural changes in the food industry have had profound impacts on firms, employees, and communities in many parts of the U.S. Large economies of scale have caused consolidation into larger plants and firms. When market demand is growing slowly, increased consolidation (larger plants and firms) can lead to increased concentration (fewer competitors). Such structural change can harm small-scale producers and cause worker dislocations, but may benefit consumers and society if lower costs lead to lower prices.

## *What Is the Issue?*

Food processing industries have undergone a major transformation in recent years. Over 1972-92, the most recent period of rapid consolidation for which data were available at the time this study began, the number of plants in eight important food industries—meat packing, meat processing, cheese products, fluid milk, flour milling, corn milling, feed, and soybean processing—declined by about one-third and the number of workers declined by more than 100,000 (20 percent). Of the nine industries studied, only one—poultry slaughtering and processing—added workers and that was due mainly to a shift from producing primarily whole birds to a variety of processed products like deboned poultry parts, poultry hot dogs, and turkey hams.

## *What Did the Project Find?*

Economists generally believe that changes in technology and demand contribute to structural change. A new report by ERS, *Structural Change in the Meat, Poultry, Dairy, and Grain Processing Industries*, suggests that technology played the dominant role in the food processing industries. The nine food industries examined lost about 30 percent of their plants while the average total value of shipments per plant rose by one-third to about $43 million in inflation-adjusted prices.

The drop in the number of plants, sharp rise in plant size, and a leveling or decline in the per-capita consumption of red meat, fluid milk, and flour products led to a 50-percent increase in average four-firm concentration levels—to about 46 percent for all nine industries. Two industries—corn milling and soybean processing—had four-firm concentration ratios exceeding 70 percent, and two other industries—meat packing and poultry slaughter and processing—had 50-percent increases in four-firm concentration ratios by 1992.

New plants have continued to enter food industries, but their survival rates are not encouraging. Half of all new plant entrants from 1972 to 1987 failed within 5 years, and two-thirds exited

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within 10 years. New plant entrants were typically about one-half the average industry plant size and about two-thirds the industry average size after 10 years, suggesting that entrants underestimate the size needed to compete in food manufacturing and must grow rapidly to attain a sufficient scale.

Labor productivity advanced substantially. Real output (measured by weight) per employee rose by an average of 78 percent over 1972-92 without accounting for quality changes (meat and poultry plants, for example, produced a greater mix of higher value products by 1992). Data for all nine industries also show that employment leveled off. But these data mask industry-level changes: the number of workers declined by about one-fourth in meatpacking and by about one-half in fluid milk, but rose more than 150 percent in poultry slaughter and processing.

This contraction in plants and workers decreased wages, especially for meatpacking and meat processing employees where wages dropped by about one-third. Workers in other industries realized little change in real wages. Overall, average worker compensation, deflated by the consumer price index, fell 25 percent. This drop in wages, combined with the gain in output per worker, means that labor costs per unit of output dropped dramatically. Although the associated cost reductions were likely passed along to consumers in the form of lower prices, the price impact was probably small because labor costs are only a small part of the cost of food processing.

The type of plant that exits and the composition of the plants that remain in an industry are of vital interest to entrepreneurs assessing the viability of starting a plant and regulators seeking to understand industry dynamics. About 50 percent of all plants that existed in 1972 and exited within 10 years had only about a 25-percent share of the market in 1972. In other words, they were small in 1972 and subsequently failed. By contrast, the 18 percent of the 1972 plants that exited over the subsequent 10-year period (1982-92) were more than twice as large in 1972 than the plants that exited earlier. A similar picture emerges for plants operating in 1992. Plant entrants over 1987-92 accounted for about one-fourth of all plants, but only about 10 percent of all market share. By contrast, plants oeprating since 1972 numbered about 40 percent of all plants and controlled about 60 percent of the market in 1992.

### *How Was the Project Conducted?*

This report investigates structural changes among meat and poultry, dairy, and grain milling/oilseed processors. Within these three major food groups, we consider nine industries—meat packing, meat processing, poultry slaughter and processing, cheese, fluid milk, flour, feeds, wet corn milling, and soybean processing—because of their dramatic structural changes and their importance to farmers who look to them as an outlet for their products, consumers who view them as providers of final products, and manufacturers who regard them as source of ingredients for food products or animal feed. The industries produce commodity products in cost-driven industries that require little advertising or research expenditures. Since the technology is exogenous, our discussion closely adheres to the traditional paradigm of market structure.