



Find the full report at
[www.ers.usda.gov/
publications/aer835](http://www.ers.usda.gov/publications/aer835)

Pork Quality and the Role of Market Organization

Steve W. Martinez and Kelly Zering

In the U.S. pork industry, contracting between pork packers and producers ballooned in the 1990s. These arrangements accounted for approximately 69 percent of hogs sold in 2004, compared with less than 2 percent in 1980 and 11 percent in 1993. Marketing contracts offered by pork processing companies typically specify the quantity of slaughter hogs to be purchased on specified dates and places. These contracts give hog producers a secure outlet for their hogs and specific pricing terms.

What Is the Issue?

The rapid increase in marketing contracts in the pork industry has concerned policymakers because as marketing contracts replace hog sales on the spot market, spot prices are based on fewer sales. Consequently, these "thin" markets—ones with fewer sales—may become highly volatile, subject to manipulation, and less representative of a competitive market equilibrium. Smaller independent producers complain that packers prefer to contract only with larger producers and information about premiums paid are not made publicly available.

On the other hand, survey evidence suggests that long-term marketing agreements play an important role in solving pork quality problems. Policies that restrict changes in the organization of pork markets could leave producers and consumers worse off if such changes are actually efficient responses to market conditions. *Pork Quality and the Role of Market Organization* examines the relationship between changing organizational arrangements and pork quality.

What Did the Project Find?

Several events in the 1990s combined to induce packers to emphasize pork quality:

- Spurred by advances in measurement technology, renewed emphasis on leanness moved to the forefront as packers adopted pricing programs based on measures of the carcass. These carcass pricing programs created strong incentives for producers to provide leaner hogs in response to consumer health concerns.
- As renewed emphasis was placed on producing lean, well-muscled hogs, a relatively high incidence of "pale, soft, exudative" (PSE) pork became apparent. When breeding hogs for leanness, producers found negative attributes increased in some of the new, leaner hogs. The PSE pork from those hogs was of light color, soft texture, and had a high degree of drip loss (fluid lost from fresh, uncooked pork). Economic losses associated with PSE pork include reduced yield

ERS is the main source of research and analysis from the U.S. Department of Agriculture, providing timely information on economic and policy issues related to agriculture, food, the environment, and rural America.

during processing and cooking, drip loss in retail display trays, reduced shelf life, increased quality variation, and reduced consumer appeal. Because of the potential link between leanness and PSE, packers had an increased incentive to persuade pork producers to reduce the incidence of PSE pork.

- A spate of meat safety recalls by food companies and new regulatory initiatives that shifted responsibility for safety from the government to meat packers increased incentives for ensuring the safety of the pork supply.
- Trade agreements, among other factors, that expanded U.S. export opportunities also increased the importance of addressing pork quality issues, depending on the preferences of the importing country.

Carcass pricing programs can raise transaction costs incurred by producers and packers associated with pricing hogs. As more hogs are purchased by packers based on carcass evaluation instead of as live hogs, producers must spend more time and money to evaluate alternative packer bids. These increased costs are the result of more varied carcass pricing programs and measuring instruments and different methods of calculating price. Price premiums and discounts based on more narrowly defined carcass weight and leanness ranges also would likely increase packer costs.

Marketing contracts can reduce costs of pricing hogs. As pricing carcasses became more common than pricing live hogs, marketing contracts between packers and producers quickly supplanted much of the spot market trade. The long-term nature of marketing contracts can limit the number of times that producers must evaluate alternative packer pricing programs. Minimum volume requirements allow packers to obtain a larger number of uniform hogs from a single source, so that measuring a few provides more reliable information about the quality of the rest.

Marketing contracts reduce measuring costs and provide quality control. By specifying production input requirements in contracts, packers maintain strong incentives for the easily measured leanness attribute, while controlling other quality attributes that are more difficult to measure. These other quality attributes include pork safety and PSE pork. Given the strong links among hog production inputs, PSE pork, and safety attributes, specifying input requirements in contracts and monitoring production activities combine to reduce output-measuring costs and improve pork quality.

Marketing contracts reduce costs of adapting to uncertainty. In an uncertain environment where packer demand and input requirements are subject to change, production input clauses that define packer expectations and plans for collaboration with producers facilitate adaptation to these changes. Coupled with production monitoring provisions, this can support effective coordination and timely responses to changing input requirements.

For specialized investments in genetics and brand name capital, organizational arrangements will be designed to protect such investments. To the extent that carcass pricing programs fail to meet the quality needs of the packer, packers may choose to expand their branding programs by investing in hogs from a specific genetic source. Vertical integration offers one means of protecting investments in brand name capital and specific genetics from opportunistic behavior by the other party. Other organizational arrangements, such as marketing contracts with added safeguard provisions, production contracts, and joint ventures may provide advantages over spot markets and vertical integration by blending elements of both.

How Was the Project Conducted?

Primary sources of information included pork quality and safety summits sponsored by the National Pork Producers Council in cooperation with the National Pork Board, and published surveys of large packers related to contract use. To provide more recent insights into hog marketing contracts, 15 contracts submitted by producers to the Iowa Attorney General's Office were examined. These contracts were offered from 1996 to 2001 by six leading packers (Farmland, Hormel, IBP, John Morrell, Swift, Excel), which accounted for 61 percent of hog slaughter in 2002. The theoretical framework used combines different aspects of the industrial organization literature.