

## Conclusions

While there may be other factors driving rapid increases in the use of pork marketing contracts, we conclude that their use is an efficient response to changing emphasis on pork quality. Renewed emphasis on leanness moved to the forefront in the 1990s as improved measures of lean and carcass pricing programs provided strong incentives for leaner hogs. At the same time, pork attributes related to the pale, soft, exudative condition (PSE), such as color, tenderness, and juiciness, became of increasing concern. Greater quality concerns expanded to include meat safety following a series of meat recalls over the decade and regulatory programs designed to limit food borne hazards. Proliferation of branding programs and exports, particularly competition for Japanese consumers, also raised awareness of pork quality issues.

From the 1990s on, as packers placed greater emphasis on further increases in leanness, grading programs based on measures of the carcass rather than the live animal became more common. At the same time, the growing prevalence of marketing contracts could reduce measuring costs associated with the revised grading programs. The long-term nature of these contracts reduces the costs of pricing by limiting the number of times that producers must evaluate alternative grading programs, which vary across packers. Minimum volume requirements allow packers to obtain a large number of more uniform hogs produced under similar conditions, so that measuring a few provides more reliable information about quality of the rest.

Evidence from contract terms suggest that contracts placed increased emphasis on quality issues as they evolved over the 1990s. Effective design of marketing contracts allows packers to maintain strong incentives for lean hogs, while reducing transaction costs and controlling for other quality attributes that are more difficult to measure. This can be accomplished by production input requirements and monitoring provisions. In addition, specifying contract terms in less detail can reduce transaction costs associated with adapting to changing demand and input requirements. Contract terms may communicate packer expectations and plans for collaboration, rather than detailing specific input requirements and expected outputs, which facilitate timely responses to changing quality standards.

To the extent that carcass pricing programs fail to meet the quality needs of the packer, packers may attempt to expand their branding programs by investing in hogs from a specific genetic source. Investments in specific genetics and brand-name capital leave the packer and producer more dependent on each other and more vulnerable to opportunism. Consequently, we would expect these investments to be accompanied by complex marketing contracts, as safeguards are added, or vertical integration, which essentially removes the second party. In addition, a host of other organizational arrangements may have advantages over spot markets and vertical integration by blending elements of both. As investments in genetics and brand name become more specialized, however, organizational arrangements are expected to approach vertical integration in degree of control offered.