

# Executive Summary

Rapid change in the size and ownership structure of U.S. hog production has created new and varied challenges for the industry. Once dominated by many small operations as part of traditional crop-hog farms, hog production has become highly concentrated on large operations with production on several different sites. As of 2002, nearly half of the U.S. hog inventory was owned by operations with more than 50,000 head.

This report assesses key economic and structural issues affecting U.S. hog production. Much of the report uses information from previous research on economic and structural issues in hog production to establish a context within which to present information obtained from a national survey of U.S. hog producers. This report presents detail about indicators, contributing factors, and implications of structural change in hog production, and addresses some of the economic and policy issues important to agriculture.

The main findings of this report are:

- *The rapid and widespread growth of contract hog production has substantially raised productivity in the industry.* On average, contracting raises total productivity by 20-23 percent and by as much as 50 percent for some inputs. The increase in productivity may result because contracts facilitate the exchange of information between contractors and growers. This information exchange may involve knowledge about feed mixtures or feed timing that results in higher feed productivity and lower labor costs. It is also possible that the goods and services provided by contractors, such as veterinary care, feed, and, especially, the genetic quality of the animals, may be superior to those typically used by independent producers, resulting in healthier animals and more efficient weight gain.
- *The higher level of productivity associated with contracting implies that responding to concerns about contracting with policies that regulate or restrict contracting would likely impose economic costs on the hog industry and could cause pork prices to rise.* However, negative producer welfare effects (e.g., loss of autonomy) or costs to contracting (e.g., increased transaction costs) could offset the potential on-farm efficiency gains from contracting. Off-farm or non-market costs, such as the environmental impact of an increased concentration of animal waste, may also result because of contracting. Available information is not adequate to quantify the overall benefits and costs to society of policies that restrict contracting.
- *The returns to contracting for contractors and contract growers have been largely determined by factors that affect the efficiency of the hog operation, but the size of contracts has not significantly impacted the returns of either party.* Production capacity utilization and feed efficiency have had a significant impact on the returns of both contractors and growers. The organization of the contractor's business and the education of the grower have also been important determinants of the returns to contracting. However, the evidence does not suggest that contractors have offered more favorable terms to larger versus smaller grower operations.
- *The potential for excess nutrients resulting from the concentration of hogs on the land is much higher in Southern States than in traditional hog-producing States of the Corn Belt, and among larger versus smaller operations.* It is likely that nutrient loading rates from manure match or exceed the utilization capability of the crops grown on many large farms and on many farms in the South.
- *Many hog producers could comply with more stringent regulations on manure management by spreading manure on more of their crop acreage.* On average, manure was spread on less than 30 percent of the crop acreage on hog farms. However, the technology used to handle manure on most operations in the South limits the ability to spread manure over more acreage at the same cost. Also, more than half of large operations in the South would still be loading nitrogen at the upper limit of crop utilization if manure were spread over all available acreage.
- *If alternative or innovative manure management technologies are required to comply with more stringent regulation, large and independent operations are in a much better position than small and contract grower operations to make the necessary capital investments.* Economies of size in hog production allow large operations to spread the fixed investment for manure management facilities over more units of output. Contract growers, with lower net farm income and less equity than

independent producers of the same size, are less able to afford additional capital investments for manure management. Thus, contractors may need to become more involved with manure management or growers may need to locate other sources of capital.

- *The trend toward fewer, larger, and more productive hog operations will likely continue into the foreseeable future.* Many of the highest cost hog operations are small, independent operations, operated by older producers who plan to soon exit the hog industry. The lowest cost operations are mostly large, produce under contract, and are operated by younger producers with newer facilities.
- *The managerial ability of individual hog producers is probably as important as size economies in lowering the costs of hog production.* There is substantial variation in production costs that cannot be attributed to size of operation. The distribution of costs by size of operation indicates that, despite higher average costs among small- and medium-sized operations, many of these operations can produce hogs at a cost that is competitive with larger operations.
- *The comparative disadvantages that an area may have in producing hogs can be overcome with innovative technologies and business arrangements, making the*

*hog industry highly mobile and able to locate where market and/or regulatory conditions are more favorable.* Despite higher feed prices in the South and West, cost advantages associated with improved productivity and size economies offset this disadvantage and have spurred growth of the industry in these areas. This mobility also means that hog production could locate to other areas of the Nation or out of the country should market and/or regulatory conditions warrant.

These findings paint a picture of an industry increasingly concentrated among fewer and larger farms, and becoming more economically efficient. However, these changes have not come without problems. Concerns about the increasing market control and power concentrated among packers and large hog operations, and from the manure management problem posed by the increasing concentration of hog manure on fewer operations, are paramount. Addressing these concerns through regulation would likely impose economic costs that could be passed on to consumers. In addition, the relative mobility of the hog industry means that regulations could result in changes in the location of hog production facilities, with ripple effects in local economies. Balancing environmental and economic interests appears to be a major challenge for policymakers dealing with the implications of structural change in U.S. hog production.