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Technology, Organization, and Financial Performance in U.S. Broiler Production

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What Is the Issue?

Between 1960 and 1995, U.S. broiler production grew by 5.6 percent per year, driven in part by rapid productivity growth, which led to falling real retail prices, and in part by the introduction of a wide range of new chicken products. However, annual growth was cut nearly in half during 1995-2008; production declined in 2009 and has grown very slowly since. The industry's distinctive organization—with a high degree of vertical integration, nearly complete reliance on contracts with independent growers who provide labor and housing capital, and grower compensation based on relative performance—helped fuel growth early on, and that growth provided good returns and low risks for growers. The cessation of broiler industry growth, due to slowing growth in population, per capita consumption of chicken, and exports, places new financial pressures on contract growers and new stresses on industry organization.

The broiler industry also faces a range of public policy issues, covering competition, international trade, environmental regulation, and human/animal health. Concerns about the exercise of market power by poultry integrators have prompted merger litigation, USDA regulatory initiatives, congressional proposals, and investigations by Federal agencies. Poultry has featured in disputes over tariffs and trade restrictions between the United States and several other countries. The industry's environmental performance has been a focus of regulation and litigation under the Clean Water Act. The industry also plays a role in some health policy issues, such as the use of antibiotic drugs to prevent animal disease and promote more efficient conversion of feed to meat. The public policy issues are all complex and would benefit from a proper understanding of the broiler industry's organization, structure, production practices, and finances.

What Did the Study Find?

- The broiler industry relies almost exclusively on production contracts, with 97 percent of broilers raised on contract operations in 2011. Compensation for most producers is based on their production performance relative to other producers delivering broilers to the same processor in a given week. Such contracts greatly reduce some types of risks (like price) for growers, but they can introduce other risks, like timely placement of flocks.
- Production of broilers, measured in live-weight pounds, grew by 5.2 percent per year between 1960 and 2003, but growth since 2003 slowed to just 1.3 percent per year, and production declined in 2009 and 2012. Slower growth creates new risks for growers who get fewer flock placements, and for their lenders. Greater risk can deter growers from investing in new technologies.

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- Contract broiler growers report higher annual household incomes, on average, than other U.S. households and other U.S. farm households. However, the range of household incomes across contract growers is wider, reflecting the risks that growers bear, the range of technologies and management skills in the business, and variations in off-farm income.
- Larger contract operations generate better financial returns than smaller farms, in part because they are able to realize greater output per hour of labor. Production continues to shift to larger growers, with more than half of production in 2011 occurring on farms with at least five broiler houses; however, most contract growers are still relatively small and specialized, compared with other U.S. farms.
- Average 2011 rates of return on equity for contract growers were below those estimated for large commercial farm operations and for nonfarm industries like manufacturing. Continued productivity improvements and capacity expansions will require competitive returns on their invested capital.
- Production continues to shift to larger birds to meet growing consumer demand for more processed chicken products and chicken parts. In 2011, 42 percent of broilers weighed at least 6.26 pounds, compared with 26 percent in 2006. Because farms operate most efficiently by specializing in broilers of a given size, and because processing plants operate most efficiently by processing uniformly sized birds during any given week, integrators must closely coordinate the weekly flow of chicks from hatcheries to farms, and of uniformly sized birds from farms to processing plants.
- Measures of industry productivity continue to improve. For example, average feed conversion—the amount of feed consumed per pound of weight gain—shows persistent modest gains, as broilers consumed 1.91 pounds of feed for every pound of live-weight gain in 2011, a 2-percent improvement over 2006.
- Improvements in productivity reflect developments in poultry genetics and feed formulations, but also the development and adoption of new housing technologies and production practices on farms. Most new broiler houses today are fully enclosed and incorporate tunnel ventilation, evaporative cooling technologies, improved lighting, and automated controls to manage temperatures, airflows, and lighting within houses.
- Most growers operate in highly concentrated markets for their services, with few integrators in any given region. High local concentration and slow industry growth can deter new growers from entering the industry. Contracts offered to new growers now often feature stronger integrator commitments in order to reduce the risks perceived by new growers and their lenders.
- Most poultry litter is removed from the contract grower's operation, usually for use as fertilizer on other farms. With rising prices for commercial fertilizer, 33 percent of all litter was sold by growers for a fee in 2011, compared with 22 percent in 2006.

How Was the Study Conducted?

This report uses industry-level data from four USDA agencies: the National Agricultural Statistics Service (NASS), the Agricultural Marketing Service (AMS), the Animal and Plant Health Inspection Service (APHIS), and the Economic Research Service (ERS). However, the primary focus is on farm-level data on individual broiler grow-out operations derived from the annual Agricultural Resource Management Survey (ARMS), conducted jointly by ERS and NASS.

The ARMS, USDA's primary source of farm financial information, links farm- and field-level production practices to farm financial outcomes and to farm household attributes and finances. The 2011 ARMS included a version aimed at broiler producers, which allowed for comparisons to data drawn from an earlier (2006) ARMS broiler version. Each survey gathered data from over 1,400 broiler grow-out operations in the 17 largest broiler production States. The surveys gathered detailed data on production outcomes, resource use, technologies and production practices, attributes of production contracts between growers and poultry companies, and farm finances.