US agriculture is a 50-50 sector. Over half of the $400 billion of annual sales of farm commodities represent the value of crops, including corn and soybeans as well as fruits and vegetables. The other half represent sales of animal products, including meat, dairy products, and eggs. This roughly 50-50 split between crops ($207 billion in 2021) and livestock ($172 billion in 2021) is projected to continue during the 2020s.

The US produces about 45 billion pounds of chicken, 28 billion pounds of beef, and 28 billion pounds of pork each year, for a total of 101 billion pounds. US meat production is projected to rise during the 2020s to 50 billion pounds of chicken and 30 billion pounds each of beef and pork by 2030, that is, chicken production is projected to increase faster than beef and pork combined.

Some US-produced meat is exported, but most is consumed in the US. Per capita consumption of chicken is almost 100 pounds per person per year, and is projected to increase, while per capita consumption of beef, almost 60 pounds per person per year, and pork, 50 pounds per person per year, is projected to be stable during the 2020s.

The farm price of beef is projected to decline over the 2020s while broiler chicken and pork prices remain stable. The price of live steers was about $1.20 a pound in 2021, the price of broiler chickens was about $0.82 a pound, and the price of hogs $0.52 a pound.

Concentration

The cattle, hogs, and chickens sold by farmers are turned into retail meat products by meat processors. Calves are usually raised by farmers who sell them to stockers until they add enough weight to be sold to feedlots and fattened to their processing weight. Hogs are often raised by farmers until they are ready for slaughter, or sold to feedlots to finish them. Poultry processors often provide chicks and feed to farmers who have contracts to feed the birds until they are processed.

Some 2.4 pounds of a live steer are converted into one pound of retail beef, and 1.9 pounds of live hog become one pound of retail pork. Beef farmers traditionally receive half of the retail price of beef for their cattle, and hog farmers a quarter of the retail price of pork for their hogs. The farm to retail price spread widened during covid, as retail prices rose while farm prices fell.

Why is the farm to retail price spread for meat widening, and does the widening spread justify government anti-trust action? Four firms process...
85 percent of US beef, four firms process 70 percent of US pork, and four firms process 55 percent of US poultry. The profits of four publicly traded meatpackers, Tyson, JBS, Marfrig, and Seaboard, more than doubled during the pandemic in 2020 and 2021, and their net income rose fivefold.

President Biden in January 2022 made $100 million in grants and loans from the American Rescue Plan available to small meat processors to increase competition for animals and narrow the retail-to-farm price spreads in meat. Biden said that this federal contribution would leverage $1 billion in private investment to increase competition between meatpackers for farmers’ cattle, hogs, and chickens.

Analysts say that processing animals into meat is a low-margin business with economies of scale, suggesting that many small meat processors may struggle to be profitable. Until 2016, many beef-packing plants were losing money on each cow that was turned into beef. Since 2016, packing profits rose as many plants closed. New plants are being built, but constructing a new plant to process cattle costs $120 million for each 1,000 head that are processed every day.

**Labor**

The North American Meat Institute argues that “lack of labor at meat and poultry plants” rather than concentration in meat processing is the
major reason for rising retail meat prices.

Animal slaughtering and processing (NAICS 3116) employed an average 529,000 workers in 2020. Employment declined from 514,000 in 2001 to a low of 481,000 in 2013-14 before rising 10 percent by 2020. Average weekly wages rose from $500 in 2001 to $911 in 2020, and were up over 10 percent between 2019 and 2020. By contrast, average weekly wages rose only 11 percent over the five-year period between 2006 and 2011.

Poultry processing (NAICS 311615) employment averaged 240,000 workers in 2020, 45 percent of employment in meatpacking. Like overall meat sector employment, poultry employment fell from 242,000 in 2001 to a low of 220,000 in 2013, and rose nine percent by 2020. Poultry weekly wages rose from $425 in 2001 to $761 in 2020, and were up eight percent between 2019 and 2020. Between 2006 and 2011, poultry wages rose nine percent.

Meatpacking workers were more severely affected by covid than other food-system workers, perhaps because they work in close proximity in cold and wet settings. The House Select Subcommittee on the Coronavirus Crisis in October 2021 reported that 59,000 meatpacking workers at five firms, JBS USA, Tyson Foods, Smithfield Foods, Cargill, and National Beef, contracted covid in 11 months of 2020-21. The meatpackers countered that they spent heavily to prevent the outbreak and spread of covid among their employees, including placing plastic shields between workers on dis-assembly lines.

Rising labor costs and covid are likely to speed automation in meatpacking. Engineers want crops to ripen uniformly to facilitate once-over harvesting, and meatpackers want the animals they process to be of uniform size to facilitate the use of machines in processing. The budget of the Tyson Manufacturing Automation Center was doubled to over $400 million a year to increase automation in meat plants, beginning with machines to debone chicken.

The Farm Price of Beef, $1.20 a Pound in 2021, was Higher than Chickens, $0.82 and Pork, $0.52

Chicken Production is More Integrated than Beef and Pork

Source: https://www.ers.usda.gov/webdocs/outlooks/100526/oce-2021-1.pdf?v=4713.6
Automation in meatpacking is being accelerated by rising labor costs, more uniform animals, and improvements in vision systems and machine learning. Robotics promise to increase productivity, improve quality control, and lower food safety risks as they eliminate jobs on dis-assembly lines that are necessary but rarely desired.


Meatpacker Profits Rose During the Covid Pandemic of 2020-21


Covid was More Common in Meatpacking than in Other Manufacturing Plants

Beef Packers Lost Money on Each Cow Processed Until 2016, but have Made a Profit Since Then

*Figure 1. Estimated annual beef packer operating income per head and estimated annual average monthly excess fed slaughter capacity, 2002-2020*

Source: https://www.agriculture.senate.gov/imo/media/doc/Testimony_Aherin%2006.23.21.pdf

Foodmate's OPTiX Deboner can Debone over 14,000 Chicken Thighs an Hour

Source: https://www.meatpoultry.com/articles/21165-a-push-toward-automated-deboning

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