



A report summary from the Economic Research Service

# The U.S. Hog Industry: Structural Change, Production Systems and Costs, and Manure Management

Jeffrey Gillespie, Zach Raff, Monte Vandevener, Jennifer Kee, Mildred Haley, and Danielle Ufer



## Key Points

- Over the past 40 years, the U.S. hog inventory increased, the number of U.S. hog farms has decreased, the average inventory of hogs and pigs per farm increased, and the use of production contracts increased.
- Over the past 27 years, the gross value of hog production, including the value of hogs produced and the value of byproducts (manure), has covered total costs in about half of the years; larger-scale hog operations have experienced lower per-unit production costs than smaller-scale hog operations; and production efficiency on U.S. hog farms has increased.
- In 2020, most U.S. hog farms used deep pit manure handling systems for manure management, but manure storage systems varied by production region. Methods of removing manure from storage systems have impacts on air and water quality.

## Why Does This Matter?

Over the past four decades, the structure of the U.S. hog industry has evolved substantially, with fewer farms producing more hogs. This raises questions about how hog farms have changed in size (hog inventory, acres operated), diversification, use of contracts, location, and production efficiency. Questions also arise about the extent of economies of size in hog production and the use

of various production practices by farm size. Recent animal welfare legislation in some U.S. States has implications for the types of housing and equipment that are used in hog production. Manure management systems used in U.S. hog production have environmental implications. This report addresses how hog farm structure has changed over the past four decades, how cost of production varies by farm size and production type, and the types of production practices currently used on U.S. hog farms.

## Highlights

*Structural change in the U.S. hog industry:*

- From 1982 to 2022, the U.S. hogs and pigs inventory increased by 37 percent while the number of U.S. farms with at least 1 hog or pig in inventory decreased by 82 percent.
- From 1982 to 2022, the number of hog farms with between 25 and 999 hogs and pigs sold decreased. The number of hog farms with between 1,000 and 4,999 hogs and pigs sold increased from 1982 to 1992 but declined thereafter. The number of hog farms with 5,000 or more hogs and pigs sold increased from 1982 to 2002 but leveled out thereafter.
- From 2002 to 2022, the hog farm production types with the largest increases in numbers of hogs and pigs sold were farrow-to-wean and finisher operations.

- From 2002 to 2022, the share of the U.S. hog and pig inventory under production contract increased.
- From 1998 to 2020, the average age of hog producers increased, the percentage of hog producers with a 4-year college degree increased, and hog farms became more specialized in hog production.
- Of the top five U.S. States by hog and pig inventory in 2022, the State with the highest percentage of inventory under production contract was North Carolina, and the State with the lowest percentage was Illinois.
- For each of the years 1998, 2009, 2015, and 2020, the total cost of hog production per 100 pounds of gain decreased as farm size increased.
- During the 27 years from 1998 to 2024, the gross value of production associated with 100 pounds of hog weight gain exceeded operating costs in all years, operating and ownership costs in 19 years, and total costs in 13 years.
- Inflation-adjusted hog production costs per 100 pounds of gain decreased from 1998 to 2020, indicating increased production efficiency in U.S. hog production.

*Manure management practices, hog production facilities, and Coronavirus (COVID-19) pandemic impacts on hog farms in 2020:*

- In 2020, the majority of U.S. building capacity for all hog and pig production phases was enclosed confinement with no outside access.
- In 2020, roughly half of U.S. hog farms used deep pit manure handling systems, which collect slurry manure in a deep pit underneath the barn.
- Manure storage systems varied considerably by region. In the Heartland Farm Resource Region, 94 percent of hog operations used a pit or tank to store manure while 86 percent of operations stored liquid manure in lagoons or ponds in the Southern Seaboard.
- With much manure produced in small geographic areas, the removal of manure from storage structures on U.S. hog farms and its application to cropland are important for both air and water quality.
  - Sixty-eight percent of U.S. hog farms applied manure to nearby cropland in 2020. The average hog farm in the Heartland applied manure to 214 cropland acres, while the average farm in the Southern Seaboard applied manure—primarily lagoon effluent—to 56 cropland acres.
  - The incorporation of liquid manure directly into the soil, rather than spreading manure on top of cropland, was practiced on 21 percent of U.S. hog farms in 2020.
- About 6 percent of U.S. farms euthanized animals in 2020 in response to the closing of hog slaughter facilities due to COVID-19.

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