

The Impact of Livestock Production on Local Economies: Summary of Literature

This guide reviews the literature on the economic impact of animal feeding operations on national, state and local economies. The studies reviewed focused on the economic impacts of swine, beef and dairy production. In addition to economic impact, this review discusses related issues, including farm efficiency, tax burdens of residents and labor requirements.

U.S. livestock production

Livestock production is an important part of the national economy and an integral component of state and local economies. The production of livestock, as well as other commodities, causes ripple effects throughout the economy in the form of employment; production in allied industries; taxes paid to local, state and federal governments; indirect impacts from purchases of input supplies; and induced impacts from household spending throughout the state.

The 2007 Census of Agriculture reported that U.S. livestock sales accounted for 52 percent (\$153.6 billion) of the nation's total market value of products. In 2009, U.S. livestock receipts accounted for 42 percent (\$119.8 billion) of total farm receipts. Figure 1 shows that the majority of livestock receipts were from cattle and calves, followed by poultry and eggs, dairy, and hogs (Figure 1).

To help illustrate the impact that livestock production contracts could have on a county's economy, a two-county comparison was conducted in Ohio. The two counties were similar in the amount and quality of land in agricultural production and in crop receipts. One of the counties, however, also had a large number of contract producers of swine, turkeys, broilers and laying hens. This county had a much higher total value of agricultural products, a result of animal production in the county.¹ A similar study was conducted in Missouri. This study measured the effects of livestock production in three Missouri counties. The study indicated that the two counties with increased livestock production had a larger value of agricultural products sold and a larger tax base.⁵

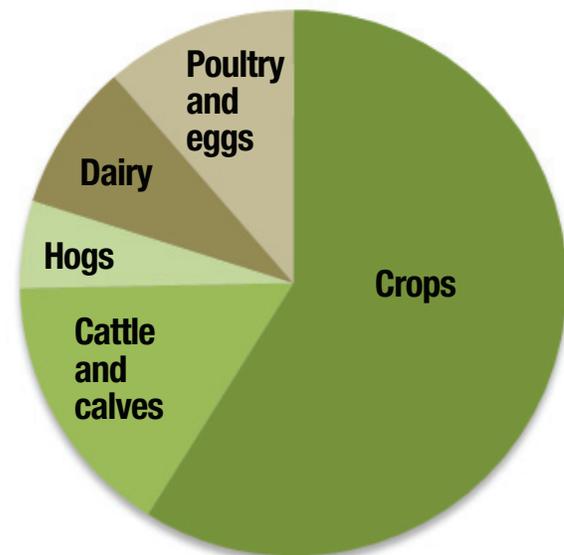


Figure 1. 2009 U.S. farm receipts. (Source: Economic Research Service, U.S. Department of Agriculture)

Overall impacts of livestock production

The following studies provide economic impact information pertaining to all livestock production as opposed to single-species impact results.

A Virginia study quantified the economic impact of animal agriculture from 1999 to 2009. Although the study estimated economic impact models for each state, this review considers only the national results. The results indicated that the 2009 total economic output impact of animal agriculture across all states was \$252 billion. Labor income exceeded \$40 billion, with the creation of over 1.8 million jobs. About \$6.2 billion was paid in property taxes, and over \$10 billion was paid in federal, state and employment taxes. This study also evaluated the change in economic impact from 1999 to 2009. Overall animal agriculture increased in value by \$18.5 billion, creating over 112,000 jobs, increasing household incomes by \$3 billion dollars and increasing tax dollars by \$817 million.¹⁴

A similar study conducted in Illinois quantified the total impact of livestock production on the state in 2004. The results showed a \$3.2 billion total economic impact, 29,400 jobs and \$256.8 million of total tax contributions. Hogs were the leading species group, with their production resulting in \$1.7 billion of total output impact and 7,833

Written by
Seanicca Edwards, Extension Associate, Commercial Agriculture Program
Ray Massey, Extension Professor, Commercial Agriculture Program

jobs created. This study also quantified the economic impact of meat and dairy processing in the state. Illinois had about 326 meat and dairy processing firms, with 40 percent located in one county. Meat and dairy processing created a \$19.7 billion total economic impact and over 90,000 jobs. Combined, livestock production and meat and dairy processing are a \$21.1 billion industry in Illinois and provide 2.1 percent of the state's total personal income and 1.4 percent of the state's jobs.⁷

The results of a Dixon County, Nebraska, study indicated that the total economic impact in 2002 from livestock production and related sectors was about \$66.8 million, of which \$59.9 million was attributed to the production of cattle, poultry, swine and other animal products. About 348 jobs were created as a result of livestock production and products. This study also estimated value-added impacts, which are also an important indicator of the economic significance of livestock production. Value-added impacts represent the contribution to gross domestic product made by an individual, producer, industry or sector. Value-added impacts include employee compensation, owners' income, property taxes and indirect business taxes. Total value-added impacts exceeded \$15.8 million, 75 percent (\$11.8 million) of which was a direct result of livestock production.¹⁰

Lastly, a Missouri study evaluated the effects of concentrated animal feeding operations (dairy, poultry and swine) on Vernon County in 2007. This study is unique because it also evaluated the economic impacts from livestock taxes paid to the county government. The results indicated that the total annual impact of livestock receipts exceeded \$132 million and the total annual impact from livestock tax receipts was about \$200,000. The study also provided insight on local cost of production impacts. Cost of production data indicates that about $\frac{2}{3}$, or \$58 million, is spent on expenses that will directly impact the local economy, such as feed, labor income, utilities/fuels/repair and veterinarian expenses. As result of livestock production in the county, 392 jobs were created.⁴

Species-specific impacts

This section provides information on the economic impact of production of specific species.

Swine operations

- An Indiana study found that the total economic impact of pork production exceeded \$2.9 billion in 2004. The pork industry employed over 13,200 workers. Labor income (salaries) was about \$446 million. The average salary for all jobs related to pork production was about \$33,700.¹¹
- An Iowa study found that a 150-sow operation would create 1.4 direct and 2.7 total jobs with \$62,348 in employee income. A 3,400-sow operation would create 21 direct and 40 total jobs with more than \$1 million in employee income. The 300-sow operation would pay \$1,327 in local property taxes,

and the 3,400-sow operation would pay \$27,972 annually.¹³

- Based on 1997 data, an Illinois study found that adding a 2,400-sow farrow-to-finish operation to the state would generate over \$5 million in direct sales and over \$9.6 million in total output annually.⁶
- In 1995, Colorado farrowing operations added 3 to 4 jobs per 1,000 sows. Employee salaries began at \$14,000 to \$18,000, and the mean reported salary for farrowing operations was \$20,000 to \$22,000.¹⁵
- A 1994 Missouri study estimated that an 80,000-sow farrow-to-finish complex would create 2,739 permanent jobs during the operation phase and provide \$199 million in personal income annually. The increase in annual output for Missouri was almost \$655 million in 1994.²
- A 1993 Virginia study estimated that a 72,000-sow complex would create 450 direct and 1,035 total jobs during the operation phase and that the complex would add \$18 million in retail trade to the region annually.¹⁶
- Another 1993 Virginia study estimated that a 5,000-sow contract arrangement would create an additional 73 permanent jobs and raise annual county income by \$1.5 million during the operation phase. It also estimated that a 5,000-sow independent arrangement (owned by several local producers) would create 83 permanent jobs and increase annual county income by \$2.4 million during the operation phase.¹⁷
- Using 1991 data, a Minnesota study estimated the impact of a 1,200-head sow operation finishing 24,000 hogs per year in Redwood County. The total value added would be \$1.5 million dollars in the county and \$1.9 million in the state annually. The operation would create 18 jobs in the county and 26 in the state.⁹

Dairy operations

- In Indiana in 2004, the dairy industry had a total economic impact of \$986 million. The industry provided over 7,300 jobs and paid \$229 million in salaries, the average salary being about \$31,000.¹¹
- Adding a 400-cow dairy operation in Illinois in 1997 would add \$1.4 million in total output to the economy.⁶
- Another Illinois study compared dairies with intensive grazing, traditional production with and without purchased feed, and a concentrated operation with purchased feed between 1992 and 2000. Results indicate that, based on enterprise budgets, intensive grazing had the minimum cost per cow input and the highest net return per cow, followed by the concentrated feeding system and finally the traditional system. Based on a percentage of receipts, the intensive-grazing system had the highest returns, followed by the traditional dairy system that grew the majority of its feed.³

Beef operations

- In Indiana in 2004, the beef industry had a total economic impact of \$317 million. The industry provided 2,100 jobs and paid \$65 million in salaries, the average salary being about \$30,000.¹¹
- A 1997 Illinois study estimated the annual economic impact of the addition of a 2,400-head beef feeding operation to be \$1.5 million in direct sales and a total \$2.5 million in total output to the state's economy.⁶

Poultry operations

- In Indiana in 2004, the poultry industry had a total economic impact of \$1.7 billion. The industry provided about 12,000 jobs and paid more than \$368 million in salaries, the average salary being \$30,000.¹¹

Tax impacts

Because modern livestock production concentrates more animals on less land and increases capital investment in buildings and equipment, the tax base increases relative to other forms of agricultural production. For example, property taxes for livestock production increase because the livestock, buildings and equipment associated with confinement production are subject to property taxes.⁴

Sales tax can also be used as an indicator of increased or decreased economic activity in an area. A Virginia study showed that the tax burden to citizens decreased after the construction of a 72,000-sow operation.¹⁶ Another Virginia study estimated the difference in tax burden between independent and contract hog production of a 5,000-sow business. The study found that tax burden on the original tax base (before construction of the facilities) would decrease more with contract facilities than with independent operations, although both systems would result in a decreased burden on the taxpayers.¹⁷

Labor requirements

One difference between contract and independently owned operations is the requirement and employment of labor. In a contract operation, more jobs will be within the operation, whereas independent operators will tend to purchase some services, such as feed handling and transportation, from the local community.¹⁷

One Missouri study compared figures from a contract operation to information from independent Missouri farmers. It found that in independent operations, 12.6 employees were needed to produce slightly less value in hogs than 4.5 employees in contract operations. Part of this difference in employment relates to how feed products are obtained: Independent producers often produce their own feed products, requiring more labor, whereas contract production operations purchase feed.⁸

Efficiency

The efficiency of animal production continues to increase. One study found that farms with above average overall efficiency were relatively larger farms and they received a higher percent of their income from dairy and swine production. These larger farms have significantly higher profit margins and lower expense ratios.¹²

Risk and access to capital

An Ohio study stated that lenders are more willing to lend money to low-income contract producers with a set year production contract who are constructing facilities than to larger independent producers who are subject to annual market instability.¹

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