UNIVERSITY OF MINNESOTA
EXTENSION

COVID-19 RESPONSE

The Role of Hog Farmers in Minnesota's Rural Economy

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KEY SUMMARY POINTS

- Minnesota's annual hog sales total $2.7 billion, with an estimated $1.5 million of economic activity per hog farm.
- Total revenue needed to breakeven in 2019 was $145.87 per hog, with an average loss of $0.32 per hog.
- An estimated 45 percent of hogs had no market due to widespread closures and partial closures of hog slaughter facilities in late April.
- The loss of only 15 percent of Minnesota hog production would result in $660 million in lost output and 2,100 jobs.

Introduction

In Minnesota, hog farmers generate:

- $2.7 billion in 2019 sales[i]
- $1.5 million in economic activity per farm[ii]
- $33,100 in state and local taxes per operation[iii]

Figure 1. Minnesota swine farm

The pork industry is an important part of Minnesota's agricultural economy. According to the United States Department of Agriculture (USDA), in 2019, Minnesota farmers sold 22.3 million hogs.[iv] USDA Census of Agriculture data ranks Minnesota second in the nation for total hog sales.[v] Statewide, our 3,562 hog farms generate nearly a fifth of Minnesota's total agricultural sales.[vi] In the southern half of the state—which has a particularly high number of hog farms—Martin, Blue Earth, and Renville Counties lead production.[vii]

A decrease in the number of hogs raised will have a significant economic impact on the state of Minnesota. Applying the current unemployment rate of 15 percent[viii] to Minnesota hog producers, Extension estimates Minnesota would lose $660 million in output and 2,100 jobs.

This could occur if production of Minnesota hogs decreased by 15 percent, either through hog farms ceasing operations or decreased production by farms. Currently, the industry faces uncertainty, so Extension used the unemployment rate to illustrate what could happen if statewide trends carried into the hog industry. Extension's analysis shows a reduction in the economic activity of hog farms would affect other rural agricultural firms the most.

COVID-19 has caused unprecedented economic repercussions for many of Minnesota's industries,[ix] including the state's livestock industry. Pork producers face especially difficult economic challenges. From the start of the coronavirus in March 2020 to May 2020, farm gate cash prices for Minnesota hogs plunged 26 percent, from $0.50 per pound pre-COVID-19 to $0.37 per pound in early May.[x] In this report, Extension looked at how hog farmers and their dire financial situation is a concern not only for agriculture but also for Minnesota's broader economy. Hog farmers that independently own and raise their livestock are particularly at risk.

Pork Producers Breakeven[xi]

Minnesota hog producers

- lost $0.32 per hog in 2019,
- needed $145.87 per hog in revenue to break-even ($91.28 total expenses + cost of purchasing feeder pig at $54.59).

In 2019, the average Minnesota independent finish-feeder hog producer incurred $79.83 of operating expenses per hog, which included feed ($64.28 per hog), veterinary services ($1.24 per hog), hauling and trucking ($1.83 per hog), contract production expenses ($5.98 per hog), and other miscellaneous expenses ($6.50 per hog). If hog producers do not have any hogs on their farm, these operating costs should go to zero.

Hog producers pay a number of ownership costs, regardless of whether or not hogs are on the farm. These include building leases, hired labor, building depreciation, insurance, and miscellaneous costs. For the average Minnesota hog producer, total ownership expenses were $11.45 per hog.

After hog producers paid all of their operating and ownership expenses ($91.28 per hog), they had $2.48 of profit per hog. This profit estimate does not include the value of unpaid labor and management, which is estimated at $2.79 per hog. When the labor and management cost is included along with the cost of purchasing the feeder pig, hog farmers are making a negative profit.

Hog production is not the only agricultural industry facing changing market conditions due to COVID-19. In general, corn, soybean, and crude oil prices are also falling and may reduce feed and hauling costs in the coming months. However, the hogs being marketed now were

raised before the start of the coronavirus, so farmers face losses on these hogs. In addition, community impacts tend to lag, as farmers may currently have operating loans and therefore continue to pay their bills in the short term. In the longer term, if farmers cannot access credit, they may need to cease operations or decrease production. While interruptions in the supply chain may not be immediately obvious, they are, in fact, beginning to occur in the community.

Minnesota Pork Producers Generate Economic Activity

While producers themselves see little profit—or even losses—their spending to raise hogs generates significant activity in Minnesota's economy. On average, a Minnesota hog farm markets slightly more than 6,000 head per year.[xii]

An average hog farm spent $891,840 to raise hogs in 2019.[xiii] This generated an estimated $1.5 million of economic activity per farm in the state (Table 1).[xiv] An average farm also contributed $376,410 in labor income to the state. In addition, an average farm supported employment for eight workers. In the database used for this analysis, one job is one job, regardless if it is full-time, part-time, or seasonal.

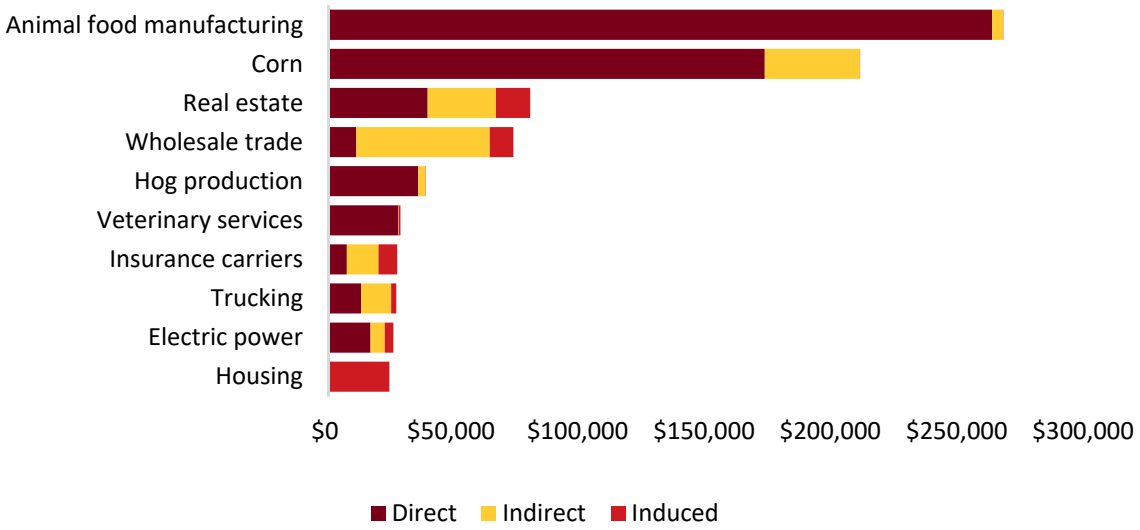
TABLE 1: Economic[a] Contribution of a 6,000 Head a Year Pork Producer

	OUTPUT	EMPLOYMENT	LABOR INCOME	STATE & LOCAL TAXES[b]
DIRECT	$891,840	3	$203,020	
INDIRECT	$343,180	3	$97,450	
INDUCED	$219,650	2	$75,940	
TOTAL	$1,454,670	8[C]	$376,410	$33,100

Note. [a]Economic impact data from IMPLAN, Version 3.1 with Type SAM multipliers; [b]state and local tax impacts are available at the total level. [c]In IMPLAN, one job is one job, regardless if it is full-time, part-time, or seasonal.

The top industries that benefit from Minnesota's pork industry include animal food manufacturing, grain farming, real estate, and wholesale trade (Chart 1). The majority of a pork producer's expenditures (68 percent) are for feed; therefore, it is not surprising major industries supported by hogs include animal food manufacturing (feed mills) and corn.

CHART 1: Top Industries Impacted by a 6,000 Head a Year Pork Producer



Hog Industry and Its Role in Rural Communities

COVID-19 and its effects on the food supply chain impact rural communities with strong agricultural economies. Each hog farm currently generates $1,454,670 in economic activity for the state. Many Minnesota hog farmers, however, cannot sell their pigs right now. The USDA Agricultural Marketing Service (AMS) estimated that during the week of April 27- May 1, 45 percent of hogs had no market due to widespread closures and partial closures of hog slaughter facilities in the Upper Midwest.[xv]

Farmers have already generated economic activity through their spending to raise their current hogs. However, farm level financial repercussions of a supply chain disruption may lead pork producers to decrease production or even exit the industry.

Where Do We Go From Here?

As hog packer plants slowly begin to increase operations again, the immediate crisis of a lack of market for grown pigs may slightly subside. The reverberations of COVID-19 on the hog industry, however, may have long-term economic consequences for Minnesota's rural landscape. Ideas to assist the hog farming industry in the coming months include:

- For farmers, exploring diverse marketing options is important, especially those that allow farms to get as close to breaking even as possible. This is particularly critical for independent producers so they can stay viable during an unexpected crisis.
- For rural communities, it is valuable to have discussions about how to best support agriculture in the community. Understanding the agricultural economy, how it functions, and the challenges facing producers can lead to local strategies for enhancing the industry.
- For consumers, it is important to help stabilize the meat supply chain not only by making a reasonable amount of meat purchases (lasting one to two weeks) but also by

considering alternative packaging and cuts. One option is to consider alternative meat purchasing options through local meat markets.

For more information on Extension's work with community economics, visit extension.umn.edu/community-development. For questions on this report, please contact Joleen Hadrich at jhadrich@umn.edu.

Notes on Data Sources

FINBIN: FINBIN is a farm financial database. The site provides benchmark financial information for farm producers, educators, lenders, and other agricultural professionals. The database summarizes actual farm data from agricultural producers who use FINPACK for farm business analysis. Data on revenues, expenditures, and other metrics is available. Learn more at finbin.umn.edu.

IMPLAN: IMPLAN is an input-output modeling system. Input-output models trace the flow of goods and services throughout an economy. The model can then quantify how a change in one sector of the economy will affect other sectors. Indirect effects are business-to-business effects, or effects generated when the industry affected makes purchases from its suppliers. Induced effects are consumer-to-business effects, or effects generated when the workers of an industry use their income to make purchases. Learn more at implan.com.

NASS and AMS: NASS is the National Agricultural Statistics Service of the United States Department of Agriculture (USDA). NASS collects hundreds of phone and written surveys each year, covering a wide range of U.S. agricultural topics with a strong emphasis on farm-related statistics. Once every five years, NASS conducts a comprehensive survey of U.S. agricultural producers, providing detailed information on size and composition of U.S. farms at the county, state, and national level. AMS is the Agricultural Marketing Service of the USDA. In addition to helping facilitate domestic and international marketing opportunities for U.S. agricultural producers, AMS compiles detailed daily, weekly, monthly, and annual statistical reports on market sales, including hog slaughter. Learn more at nass.usda.gov and ams.usda.gov.

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i. https://quickstats.nass.usda.gov/ “Hogs, Minnesota, 2019”
ii. IMPLAN analysis
iii. Ibid.
iv. https://quickstats.nass.usda.gov/ “Hogs, Minnesota, 2019”
v. https://www.nass.usda.gov/Publications/AgCensus/2017/ “Minnesota Market Value”
vi. Ibid.
vii. https://www.nass.usda.gov/Publications/AgCensus/2017/ “Minnesota County Profiles”
viii. https://www.bls.gov/news.release/empsit.nr0.htm
ix. https://extension.umn.edu/community-research/minnesotas-economy-and-covid-19
x. https://usda.library.cornell.edu/concern/publications/jw827b71p *Note*: comparison of February 28 to May 7 Iowa/MN cash price.
xi. All data in entire breakeven section from http://finbin.umn.edu
xii. Average MN hog sales divided by average number of MN hog farms.
xiii. http://finbin.umn.edu
xiv. All data in rest of this section from IMPLAN analysis of data from http://finbin.umn.edu
xv. https://usda.library.cornell.edu/concern/publications/qr46r0849 *Note*: comparison of week of Feb 22 actual slaughter to week of April 27 estimated slaughter.