

---

*The Potential Impact of COVID-19 on Oklahoma's Food Industry*

***A Speculative Discussion***  
***May 1, 2020***



ROBERT M. KERR  
**FOOD AND AGRICULTURAL  
PRODUCTS CENTER**  
Division of Agricultural Sciences and Natural Resources



# **The Potential Impact of COVID-19 on Oklahoma's Food Industry**

Chuck Willoughby – Manager, Business & Marketing Relations,  
Robert M. Kerr Food and Agricultural Products Center,  
Oklahoma State University, Stillwater

Rodney Holcomb – Agribusiness Economist,  
Robert M. Kerr Food and Agricultural Products Center,  
Oklahoma State University, Stillwater

Andrea Graves – Business Planning & Marketing Specialist,  
Robert M. Kerr Food and Agricultural Products Center,  
Oklahoma State University, Stillwater

Erin Johnson – Business Planning & Marketing Client Coordinator,  
Robert M. Kerr Food and Agricultural Products Center,  
Oklahoma State University, Stillwater

**ROBERT M. KERR FOOD AND AGRICULTURAL PRODUCTS CENTER  
OKLAHOMA STATE UNIVERSITY**

May 1, 2020

## **The Potential Impact of COVID-19 on Oklahoma's Food Industry**

The purpose of this report is to discuss the potential economic impact the novel coronavirus-19 (COVID-19) pandemic is having on Oklahoma's food industry during March through mid-April of 2020. Due to the limited amount of data available and the ever-changing landscape during this unprecedented event, situational analysis discussion contained herein is speculative at best. However, given the essential nature of the food industry, it is important to recognize how even short-term shifts in business models for food manufacturers, retailers, and foodservice firms have impacted the economy.

Some Oklahoma food manufacturers are facing personnel shortages due to shelter-in-place orders and concerns regarding COVID-19 positive tests among workers. Retailers are facing both runs on certain items while also limiting in-store shopper numbers and adjusting for rising online/pickup orders. Foodservice outlets in Oklahoma have closed their dining rooms and limited their staff to support a fully take-out or delivery system, or in some cases closed their doors completely. A recent analysis by Rabobank ("Rabobank overviews impact of coronavirus-induced 'dislocation in food demand,'" *Meat+Poultry*, April 13, 2020) illustrated the impacts of these shifts in consumer food shopping. According to their analysis, with each 10% decrease in food purchases from foodservice outlets has come a 3% increase in consumer purchases at retail outlets.

While this report is intended to estimate impacts during the pandemic, some changes in food industry activity – especially as it relates to consumer shopping practice changes – may have long-term impacts. It is recommended a full economic impact study be conducted at a future date once data are available. This report is intended to provide an assessment of current impacts as a starting point for future assessments and recovery planning. Specifically, this report

will focus on direct, indirect and induced, and total impacts the pandemic potentially could have on employment and income in Oklahoma in the present or near future.

The food processing sector plays an important role in Oklahoma's economy. Food and beverage manufacturing contributed \$2.1 billion to Oklahoma's Gross State Product in 2017 (National Association of Manufacturers, 2019 Oklahoma Manufacturing Facts). In 2019, Oklahoma food manufacturers provided 17,800 jobs (Bureau of Labor Statistics, Current Employment Statistics) and estimated total payroll of \$710.6 million (National Association of Manufacturers, 2019 Oklahoma Manufacturing Facts).

### **Oklahoma Food Industry Employment and Payroll**

As noted above, employment in Oklahoma's food manufacturing sector was 17,800 jobs with total payroll of \$710.6 million in 2019. Employment in the foodservice sector for 2019 is reported by the Oklahoma Restaurant Association (ORA) to be 184,700 jobs; total payroll is estimated at \$4.2 billion (BLS). The Oklahoma Employment Security Commission (OESC) reported 2019 data for Oklahoma food retailers to be 21,500 jobs and a total payroll of \$484.3 million (Table 1).

Table 1. Oklahoma Food Industry Employment and Payroll, 2019

<b>Sector</b>	<b>Employment</b>	<b>Payroll</b>
Food Manufacturing	17,870	\$710,611,600
Foodservice Establishment	184,700	\$4,217,504,215
Food & Beverage Stores	21,500	\$484,302,857

## **Situational Discussion**

While Oklahoma and the nation are experiencing record high unemployment rates, there are not specific data available by industry yet. According to OESC, unemployment insurance claims skyrocketed to 87,512 by the week ending April 11, 2020, an increase of 32,483 from the previous week. The current unemployment rate for Oklahoma is estimated to be 13.3% compared to 3.2% in February 2020 (BLS).

It is inaccurate to apply a percentage increase of total claims across the board to make an assumption that all sectors of the food industry have lost a comparable number of jobs. This may be especially true given the agriculture and food industries have been designated essential. However, social distancing practices and shelter-in-place mandates have caused many foodservice establishments to close. Those that offer drive-through, carry-out and or delivery options remain open although their dine-in options are currently unavailable to the public. Some establishments considered dine-in only venues have implemented these alternatives to continue operating, which has provided significant opportunities for companies like Grub-Hub and Door Dash. Unfortunately for many restaurants, adaptation and improvisation has not been an option.

In a recent email communication by the Oklahoma Restaurant Association to its members, it was estimated 8 million restaurant employees have already been laid off or furloughed representing 2 out of every 3 restaurant jobs. Nationally, the U.S. foodservice industry lost \$30 billion in revenue in March and is on track to lose an additional \$50 billion by the end of April; sustained losses of \$240 billion are forecasted for restaurants by the end of the year (National Restaurant Association survey of more than 6,500 operators nationwide).

The ORA also surveyed its members as to how they had been affected by the pandemic. As of April 13, 95 members had responded. Fifty members reported closing one or more of their

restaurants estimating 115 locations temporarily closed and 8 locations permanently closed. Additionally, these members reported they had laid off 19,253 employees; furloughed 21,260; terminated 18,257; and have 3,649 remaining employees.

According to Jim Hopper, President of the ORA, job losses and lost sales in the restaurant industry far exceed the losses in any other industry affected by COVID-19. The ORA will continue to work with health officials and other agencies to reopen the foodservice industry as soon as safely possible.

Food retailers also have had to make adjustments. Many have cut back their store's open hours partly as cost saving measures but also as a means to better manage supply shortages. Increased demand for packaged foods and other consumer goods has left shelves bare in several categories, resulting in shopper purchasing limits when restocked items become available. In an effort to emphasize and comply with social distancing recommendations, retailers also have limited the number of shoppers in the store and provided special hours for senior citizens and those who are immune compromised.

Trade publications have reported some grocers are adding jobs due to record sales; not just a surge experienced as consumers stock up but also higher sales compared to a year ago after sales have leveled following the initial surge. These higher than normal sales can partly be attributed to the decline in availability to foodservice options. Additionally, some retailers are providing a \$2 per hour increase in pay temporarily (Progressive Grocer). According to Jay Roberts, Executive Vice President of the Oklahoma Grocers Association, the OGA is receiving similar reports from its members.

Initially, it seems employment and payroll in Oklahoma's food retail sector may experience a slight increase at least temporarily. This sector may be the least negatively affected,

but there are still a lot of unknowns as COVID-19 cases continue to increase and shelter-in-place restrictions tighten. The OGA communicated to its members via email on April 9 that at least nine Oklahoma communities have implemented a curfew in an effort to reduce exposure to the virus. It is possible grocers in these communities could experience decreased sales as a result of restricted public access.

Regarding impacts on food manufacturing, the news has been mixed. Many processors are working to meet consumers' increased demand for food products in the food retail sector and through online sales/home delivery as well as to maintain orders for the foodservice establishments still in operation. Some are operating at maximum capacity however; data are not available regarding a significant increase in employment versus a rearrangement of the existing labor force for these processors. Additionally, situations of facilities becoming impacted by loss of labor due to workers becoming infected by COVID-19 have recently been reported. These manufacturers now have the challenge of finding available labor to fill the spots of those workers impacted. Others have had to close.

An informal survey of Made In Oklahoma (MIO) Coalition companies was conducted by the Oklahoma Department of Agriculture Food & Forestry (ODAFF). The survey included questions about impacts COVID-19 is having on operations. The MIO Coalition is comprised of 70 member companies. Nearly half these companies have less than 50 employees, while about 20% employee between 500 and 3,500 Oklahomans.

According to Emily Shuping, Market Development Coordinator at ODAFF, by the end of the first week in April, many of the larger, established companies have reported operating at maximum capacity. At the same time, the smaller companies that primarily market to specialty stores and companies that primarily service restaurants and institutions are struggling. A few

have reported up to an 80% drop in sales since mid-March. Additionally, most of the members have e-commerce capabilities and are running special promotions to boost online sales.

### **Measuring Economy-wide Impacts**

The activities associated with food businesses (or any sector for that matter) are defined as the *direct impacts*. Additional impacts are created when these industries purchase goods and services from other sectors to produce their final product and/or maintain the operations of the firm. These input purchases are called *indirect impacts*. During the process of supplying goods and services to food industries, the support industries pay wages to employees. When employees of direct industries and supporting industries purchase goods and services, they create *induced impacts* on the economy. Therefore, the total impacts of food businesses on the economy are the summation of the direct, plus the indirect and induced impacts.

The measurement of direct, indirect, and induced economy-wide impacts of food businesses is accomplished using input-output analysis. This analysis can be used to explain flows from producers to intermediate and final consumers. To analyze the input-output model, a computer-based system, called Impact Analysis for Planning (IMPLAN), was used. The impacts of food businesses during the first several weeks of the COVID-19 pandemic were calculated based on the industrial relationships of IMPLAN and using 2019 data provided by the Oklahoma Employment Security Commission (OESC).

The IMPLAN program then generates Type III multipliers. Using these multipliers, one can differentiate the direct impacts from the indirect and induced impacts. For example, if a Type III multiplier for employment is calculated to be 1.5, then for every 1 job (direct impacts) in the industry being analyzed, an additional 0.5 jobs are created throughout the economy (indirect and

induced impacts). Likewise, if a Type III multiplier for income is calculated to be 1.75, then for every \$1 of income (direct impacts) in the industry being analyzed, an additional \$0.75 of income is created throughout the economy (indirect and induced impacts).

Beyond measuring current economic impacts of a given industry, IMLPAN has been widely utilized by economic development specialists to estimate the number of new jobs generated and increase in total income to a community/region resulting from added business activity. This can include recruitment of industry, establishment of new start-up companies and or retention and expansion of existing businesses. Inversely, it has been utilized to demonstrate the negative impacts a natural disaster can have on a local/regional economy (Eilrich, et. al.). The following discussion will utilize IMPLAN in this way as a means of predicting what would be anticipated as a worst-case scenario resulting from the COVID-19 pandemic.

### **Speculative Negative Impacts to Oklahoma's Food Industry**

As noted earlier, it is inaccurate to apply a percentage increase of total unemployment insurance claims across the board to make an assumption that all sectors of the food industry have lost a comparable number of jobs. But presumptively, using a decrease in number of jobs by 10% could serve to demonstrate a current potential floor or worse-case scenario assume claims have leveled or at least slowed significantly.

Table 2 provides a detailed look at the potential direct impacts, as well as the negative indirect and induced impacts and net total impacts COVID-19 might have on food manufacturing in Oklahoma. The Type III multipliers generated for this paper were 2.03 for employment and 1.61 for income. Thus, for every 1 job lost by an Oklahoma food processor, a potential 1.03 jobs could be lost throughout Oklahoma's economy as a result of a decrease in expenditures for

inputs and services, as well as from lesser employee spending in the Oklahoma economy.

Likewise, for every \$1 decrease in income paid by a food processing company, a potential loss of \$0.61 could be experienced throughout Oklahoma’s economy.

Table 2. Inversed Direct, Indirect and Induced, and Total Impacts by COVID-19 on Food Processing Employment and Payroll

	Direct	Indirect & Induced	Total
Employment	-1,798	-1,852	-3,650
Payroll	-71,779,756	-43,785,651	-115,465,407

Type III Employment Multiplier of 2.03

Type III Income Multiplier of 1.61

Using these multipliers, the indirect and induced impacts COVID-19 could have on employment in the food processing sector are estimated to be a potential loss of 1,852 jobs throughout Oklahoma’s economy. Thus, the total negative impact on Oklahoma’s employment is estimated to be a potential loss of 3,650 jobs.

Likewise, the indirect and induced impacts on payroll are estimated to be a potential loss of \$43.8 million in income throughout Oklahoma’s economy. Therefore, the total negative impact on Oklahoma’s income is estimated to be nearly \$115.5 million.

Table 3 provides a detailed look at the potential direct impacts, as well as the negative indirect and induced impacts and net total impacts COVID-19 might have on the foodservice sector in Oklahoma. The Type III multipliers generated for this paper were 1.17 for employment and 1.40 for income. For every 1 job lost by an Oklahoma foodservice establishment, a potential 0.17 jobs could be lost throughout Oklahoma’s economy as a result of a decrease in expenditures for inputs and services, as well as from lesser employee spending in the Oklahoma economy. Likewise, for every \$1 decrease in income paid by a foodservice company, a potential loss of \$0.40 could be experienced throughout Oklahoma’s economy.

Table 3. Inversed Direct, Indirect and Induced, and Total Impacts by COVID-19 on Foodservice Employment and Payroll

	Direct	Indirect & Induced	Total
Employment	-18,655	-3,171	-21,826
Payroll	-378,395,677	-151,358,271	-529,753,947

Type III Employment Multiplier of 1.17  
 Type III Income Multiplier of 1.40

Again, using these multipliers, the indirect and induced impacts COVID-19 could have on employment in the foodservice sector are estimated to be a potential loss of 3,171 jobs throughout Oklahoma’s economy. Thus, the total negative impact on Oklahoma’s employment is estimated to be a potential loss of 21,826 jobs.

Likewise, the indirect and induced impacts on payroll are estimated to be a potential loss of \$151.4 million in income throughout Oklahoma’s economy. The total negative impact on Oklahoma’s income is estimated to be nearly \$529.8 million.

Table 4 provides a detailed look at the potential direct impacts, as well as the negative indirect and induced impacts and net total impacts COVID-19 might have on the food retail sector in Oklahoma. The Type III multipliers generated for this paper were 1.19 for employment and 1.38 for income. For every 1 job lost by an Oklahoma food retail store, a potential 0.19 jobs could be lost throughout Oklahoma’s economy as a result of a decrease in expenditures for inputs and services, as well as from lesser employee spending in the Oklahoma economy. Likewise, for every \$1 decrease in income paid by a food retail company, a potential loss of \$0.38 could be experienced throughout Oklahoma’s economy.

Table 4. Inversed Direct, Indirect and Induced, and Total Impacts by COVID-19 on Food Retail Employment and Payroll

	Direct	Indirect & Induced	Total
Employment	-2,172	-413	-2,585
Payroll	-48,925,851	-18,591,824	-67,517,675

Type III Employment Multiplier of 1.19  
 Type III Income Multiplier of 1.38

Using these multipliers, the indirect and induced impacts COVID-19 could have on employment in the food retail sector are estimated to be a potential loss of 413 jobs throughout Oklahoma's economy. The total negative impact on Oklahoma's employment is estimated to be a potential loss of 2,585 jobs.

Likewise, the indirect and induced impacts on payroll are estimated to be a potential loss of \$18.6 million in income throughout Oklahoma's economy. The total negative impact on Oklahoma's income is estimated to be about \$67.5 million.

### **Potential Outcome**

While this article has examined the potential negative impacts that COVID-19 might have on Oklahoma's food industry and the state's economy as a whole, the assumptions are speculative at best. It is difficult to estimate how telecommuting in many industry sectors will offset potential employment and income losses. Additionally, stimulus packages that are forthcoming will offset income losses to some degree for many American workers and provide opportunities for small businesses in all sectors of the economy, not just small food industry companies, to re-enter the economy. To better understand the economic impacts COVID-19 will have on Oklahoma's food industry, an impact study will need to be conducted once data are available after the pandemic has ended and some sort of normalcy has returned.

## References

- Allen, C.W., Woods, M.D., and Doeksen, G.A., A Methodology for Assessing the Impacts of Business Activity, Stillwater: Oklahoma State University, Agricultural Experiment Station, B-793, November 1990.
- Alward, G., et.al., Micro IMPLAN Software Manual, Judy Olson, ed (St. Paul: Regents of the University of Minnesota, 1958.)
- Crews, Joel, “Rabobank overviews impact of coronavirus-induced ‘dislocation in food demand’,” Meat+Poultry, <https://www.meatpoultry.com/articles/22929-rabobank-overviews-impact-of-coronavirus-induced-dislocation-in-food-demand>, April 13, 2020.
- Eilrich, Fred, et.al., “The Economic Impact of the May 3, 1999 Tornado on the Economy of Stroud and Lincoln County, Oklahoma,” Rural Development Cooperative Extension Service, Oklahoma State University. AE-9923, May 1999.
- Kleckler, Abby, “Kroger Stockpiles Huge Sales,” Progressive Grocer, <https://progressivegrocer.com/kroger-stockpiles-huge-sales>, April 1, 2020.
- Oklahoma Employment Security Commission. “Initial and Continued Claims for Unemployment Insurance,” [https://www.ok.gov/oesc/Labor\\_Market/Initial\\_and\\_Continued\\_Claims/index.html](https://www.ok.gov/oesc/Labor_Market/Initial_and_Continued_Claims/index.html), April 2020.
- Oklahoma Employment Security Commission. “Oklahoma Short-Term Industry Employment Projections, 2019 – 2021,” <https://www.ok.gov/oesc/documents/lmistip1921.pdf>, April 2020.
- National Association of Manufacturers, “2019 Oklahoma Manufacturing Facts,” <https://www.nam.org/state-manufacturing-data/2019-oklahoma-manufacturing-facts/>, April 2020.
- National Restaurant Association, Oklahoma Restaurant Association, “Oklahoma Restaurant Industry at a Glance,” Brochure, Copyright 2019.
- U.S. Bureau of Labor Statistics, “Current Employment Statistics (State and Metro Area),” <https://www.bls.gov/sae/additional-resources/list-of-published-state-and-metropolitan-area-series/oklahoma.htm>, April 2020.
- U.S. Bureau of Labor Statistics, “Economy at a Glance: Oklahoma,” <https://www.bls.gov/eag/eag.ok.htm>, April 17, 2020.
- U.S. Bureau of Labor Statistics, “May 2019 State Occupational Employment and Wage Estimates: Oklahoma,” [https://www.bls.gov/oes/current/oes\\_ok.htm](https://www.bls.gov/oes/current/oes_ok.htm), March 31, 2020.