COVID-19: Economic Impact Analysis on Jackson County Service Region

September 2021

EXECUTIVE SUMMARY REPORT

Emsi | burningglass

Acknowledgements

Emsi Burning Glass gratefully acknowledges the excellent support from the staff at Mississippi River Regional Planning Commission (MRRPC) for making this study possible. Special thanks goes to Dave Bonifas, Director, who approved the study, Abbey Nicewander, Senior Planner, and Sarah Ofte, Administrative Assistant, who helped us select the industries and collect the information requested.

Emsi Burning Glass provides labor market data that helps to create better outcomes for communities. Our data, which cover more than 99% of the U.S. workforce, are compiled from a wide variety of government sources, job postings, and online profiles and résumés. A variety of our clients use Emsi Burning Glass to align programs with regional needs and demonstrate their institution's economic impact on their region. Visit economicmodeling.com/ci-consulting to learn more or connect with us.

INTRODUCTION

Jackson county is one of nine counties located along the Mississippi River in Western Wisconsin that are members of the Mississippi River Regional Planning Commission (MRRPC)[1]. MRRPC includes Buffalo, Crawford, Jackson, La Crosse, Monroe, Pepin, Pierce, Trempealeau, and Vernon counties. In 2020, the Jackson county population was 21,145[2] , with a total regional employment of 9,650. The average earnings per job in 2020 was $61,969, which is $12,184 below the national average earnings per job.[3]

The Jackson county economy creates value in many ways. The employed labor force in Jackson generates new dollars and creates opportunities in the region.

MRRPC tracks Jackson's industries and studies the changes in taxes, earnings, and job market. An understanding of the regional economy and the economic impact effects of COVID-19 is vital to Jackson's efforts seeking to adapt to the post-pandemic economy.

Labor Force in Jackson creates new opportunities in their region.

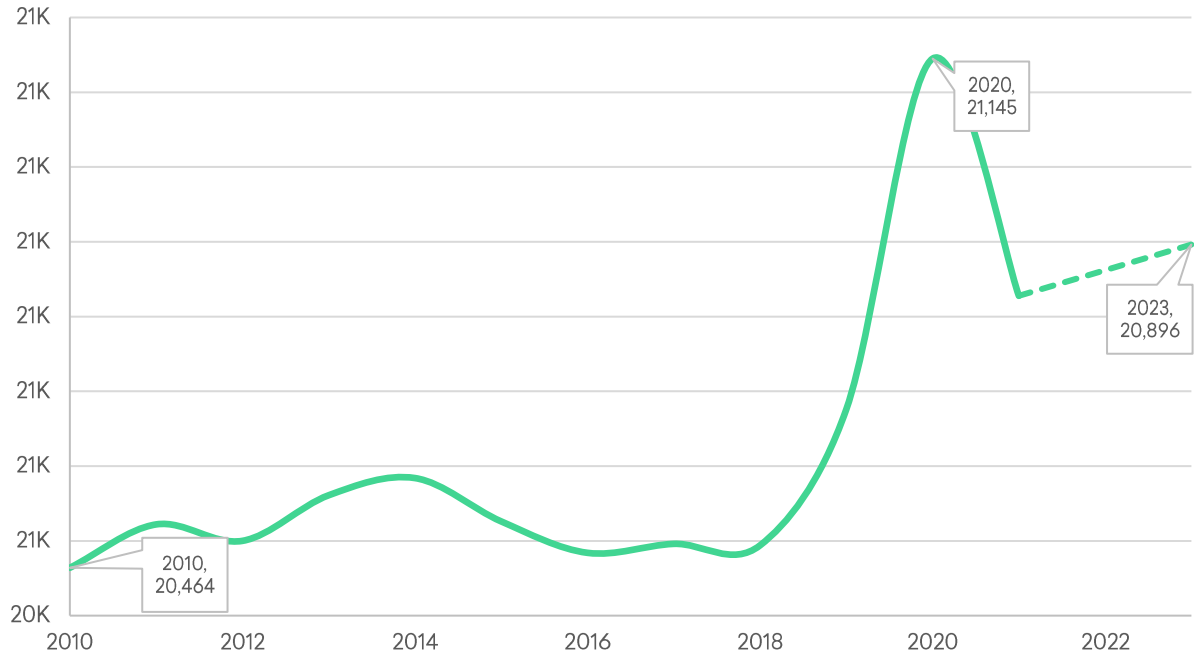
The purpose of this report is to outline the region's economy and provide an economic impact analysis of COVID-19. This report will focus on the effects of job losses during 2020 caused by the pandemic and the impact they have had on the region's diverse industries. The following figures and tables display key findings of the analysis.

[1] https://mrrpc.com/about/
[2] https://www.census.gov/library/stories/state-by-state.html
[3] Emsi Burning Glass proprietary data, collected on August 23, 2021.

ECONOMIC OVERVIEW

In 2010, 20,464 people resided in Jackson. The county's population is projected to increase to 20,896 people by 2023 (Figure 01).

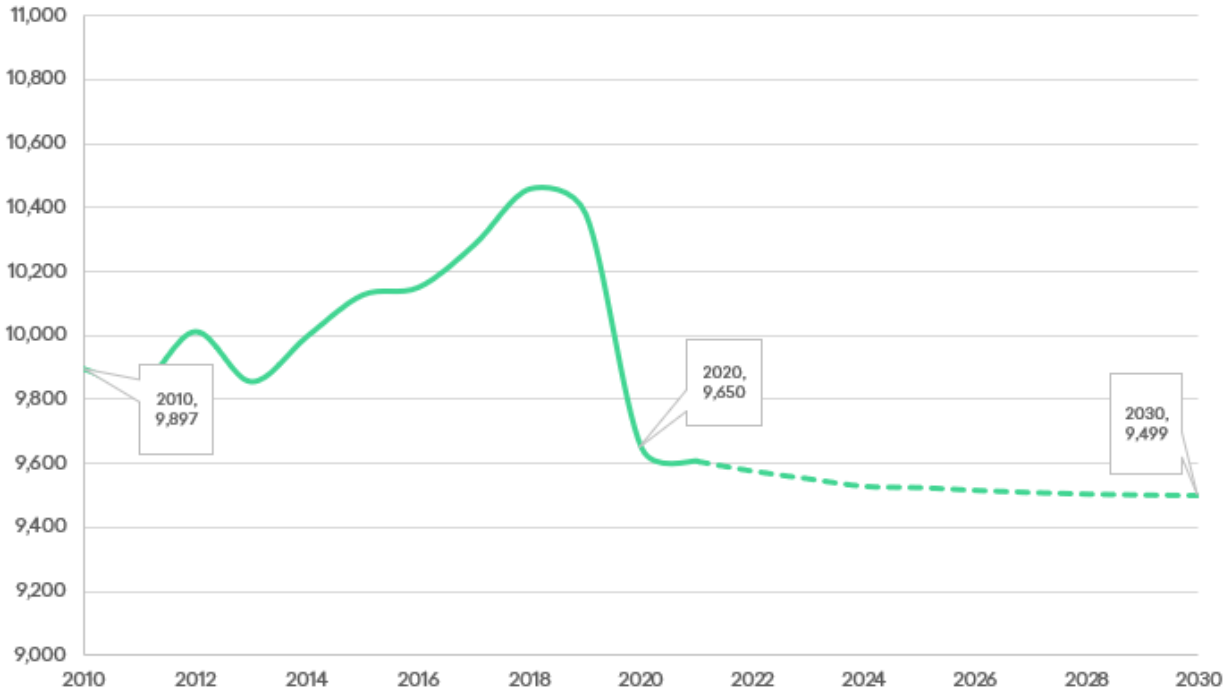
Figure 01: Historical and Projected Population in Jackson, 2010 to 2023



Source: Emsi Burning Glass demographics data, U.S. Census Bureau.

As shown in Figure 02, Jackson supported 9,897 jobs in 2010 and by 2020, the region had just 9,650 jobs. In 2020 alone, the region lost 731 jobs. Due to data limitations, projections may not capture the total impact of COVID-19 on future labor markets.

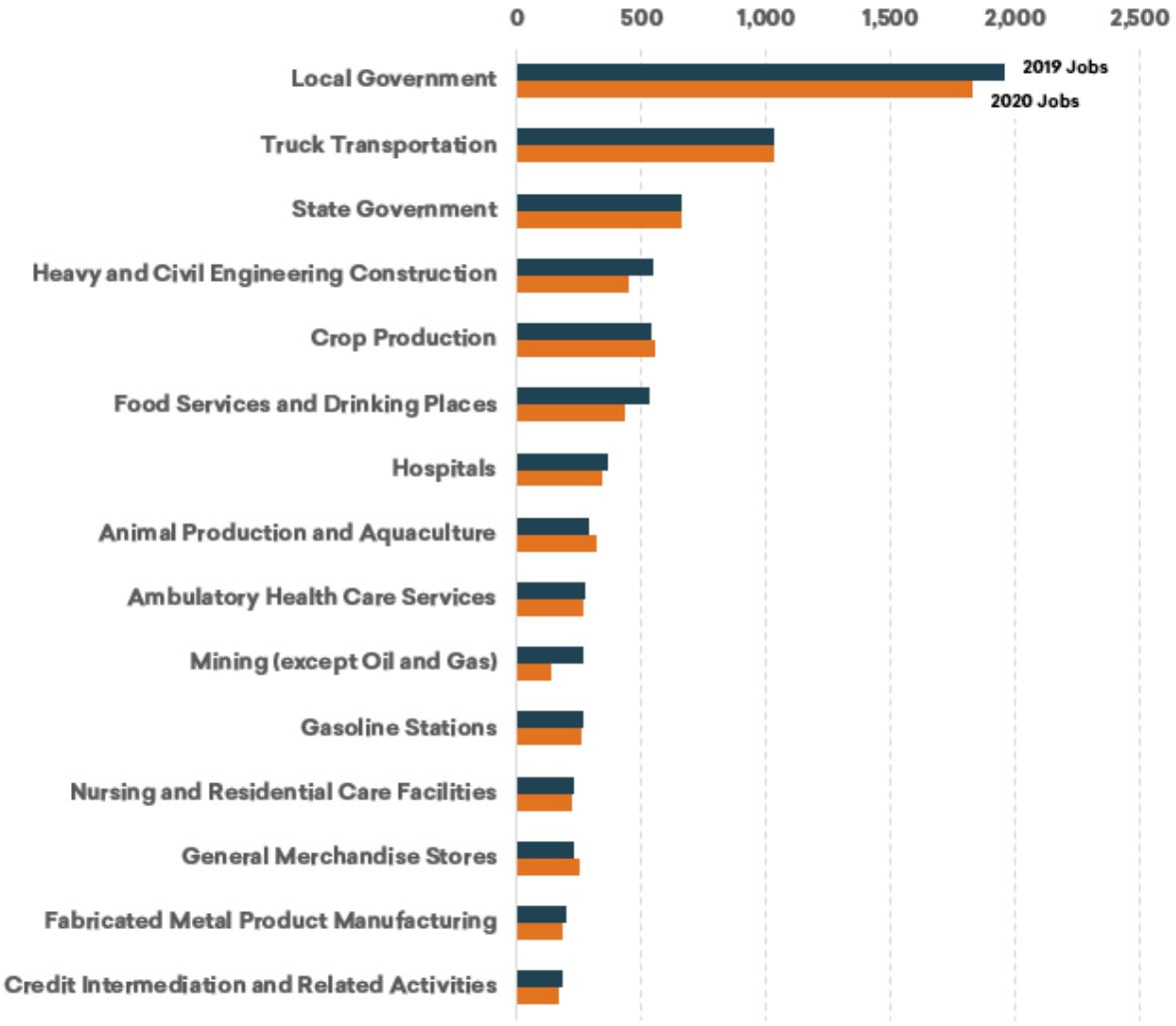
Figure 02: Historical and Projected Jobs in Jackson, 2010 to 2030



Source: Emsi Burning Glass 2021.3.

Figure 03 displays the top industry subsectors in terms of employment in Jackson. Local Government and Truck Transportation industries were the industries with highest number of jobs in 2019 and 2020.

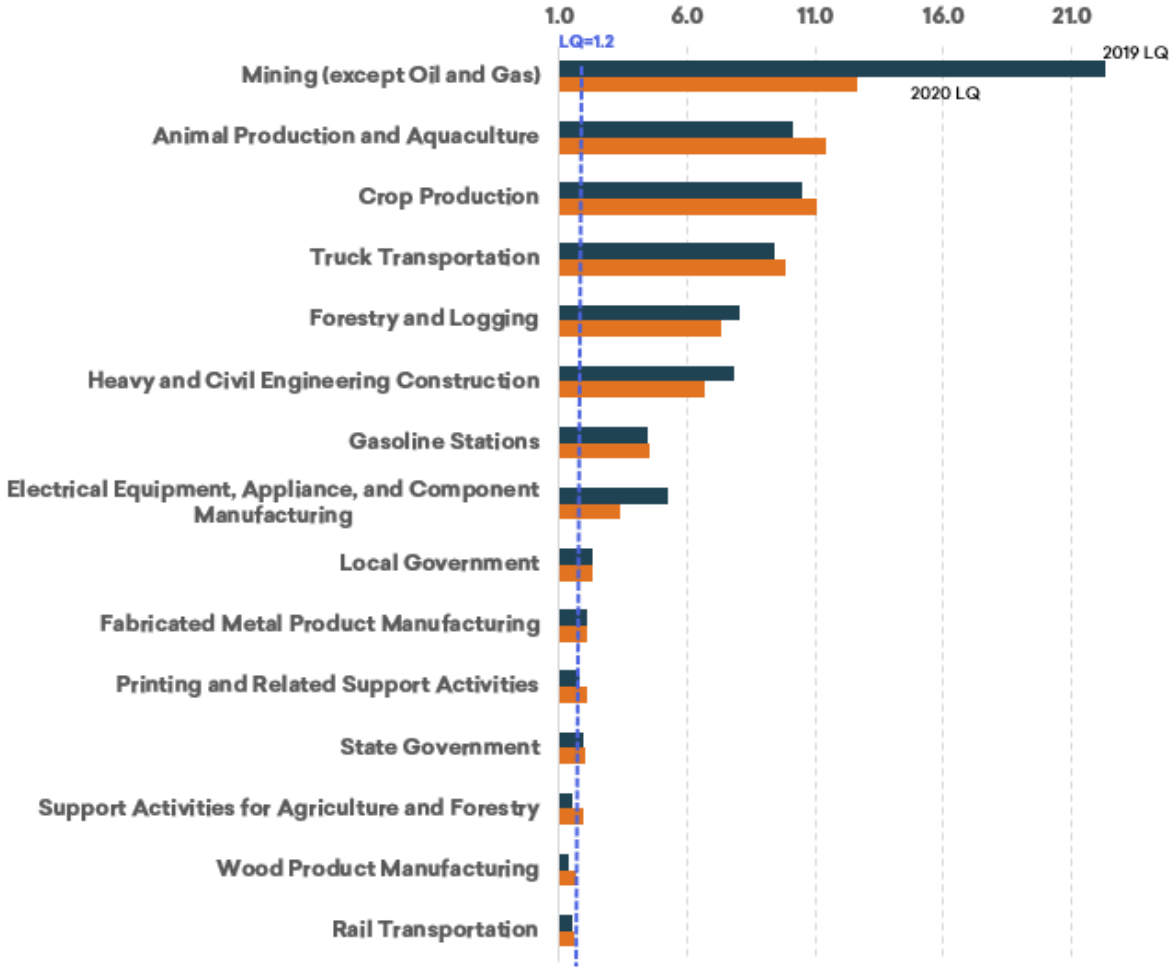
Figure 03: Top Industry Subsectors in Jackson by Jobs



Source: Emsi Burning Glass 2021.3.

Figure 04 shows the top industry subsectors in terms of employment concentrations, referred to as location quotients[4] (LQs). High LQs (usually anything greater than 1.2) are an indication that the region has a comparative advantage or specialization in certain industry subsectors relative to the rest of the nation or to other regions.

Figure 04: Top Industry Subsectors in Jackson by Employment Concentration (LQ)



Source: Emsi Burning Glass 2021.3.

[4] Location quotient (LQ) is a way of quantifying how concentrated a particular industry, cluster, occupation, or demographic group is in a region as compared to the nation. It can reveal what makes a particular region unique. (https://www.economicmodeling.com/2020/02/03/understanding-location-quotient-2/).

Looking at industries in Figure 03, only 9 industries are within both the top 15 in terms of total jobs and in terms of relatively high LQs. The appearance of these industry subsectors provides an indication of their strength in the region's economy and offers insight into potential employment opportunities for people in the region's labor force that are looking for new professional opportunities. These industry subsectors, ranked by 2020 jobs, are:

- Local Government
- Truck Transportation
- State Government
- Heavy and Civil Engineering Construction
- Crop Production
- Animal Production and Aquaculture
- Mining (except Oil and Gas)
- Gasoline Stations
- Fabricated Metal Product Manufacturing

The data in Table 01 shows several of the region's socioeconomic indicators as they compare to Wisconsin and the United States. Household income, reported as a median annual value, includes the income of all individuals in a household, 15 years and over, whether they are related to the householder or not. The median household income of Jackson falls below both Wisconsin and the United States. Per capita income is calculated as the mean income for every person in the area divided by the aggregate income of the total population. In contrast, Jackson shows low unemployment and poverty rates when compared against the nation.

Table 01: Income, Unemployment, and Poverty Characteristics

	AVERAGE MEDIAN HOUSEHOLD INCOME	UNEMPLOYMENT RATE (2020)	AVERAGE PERCAPITA INCOME	AVERAGE POVERTY ALL PEOPLE
Jackson County	$53,650	6.16%	$26,481	8.10%
MRRPC Service Region	$57,495	3.87%	$29,488	6.90%
Wisconsin State	$61,747	4.05%	$33,375	7.20%
United States	$62,843	6.50%	$34,103	9.50%

Source: American Community Survey 2019 five-year estimates from the U.S. Census Bureau Data

Figure 05 displays the highest educational attainments in Jackson, the MRRPC Service Region, Wisconsin, and U.S. adults. Educational attainment[5] data is useful for targeting specific population groups with less than or greater than average education levels. Here, Jackson shows the highest percentage of High School degree and Some College holders when compared against the different regions.

Figure 05: Highest Educational Attainments

	<HS	HS	Some College	Associate's Degre	Bachelor's Degree	>Bachelor's
Jackson County	9.6%	41.4%	23.3%	11.3%	9.4%	5.2%
MRRPC	7.0%	32.7%	20.8%	12.6%	17.6%	9.2%
Wisconsin State	7.6%	30.2%	20.5%	11.1%	20.1%	10.6%
United States	11.8%	26.7%	20.3%	8.6%	20.0%	12.6%

Source: American Community Survey 2019 five-year estimates from the U.S. Census Bureau Data

[5] Educational Attainment of the Population 25 Years and Over

ECONOMIC IMPACT ANALYSIS

Jackson's labor force promotes economic growth inside the region as well as in the state of Wisconsin through its direct contribution to income generated by work and the ripple effects that expenditures create. This is attained through the industries' interconnection in the regional economy (indirect effects) alongside the impact on household spending (induced effects). COVID-19 disrupted the regional economy in many different ways. One is the reduction of the labor force which will take a great deal of effort to return to pre-pandemic levels. The effects of COVID-19 on the region were measured via three scenarios described in the following section. Each of them will be presented via Type I and Type II Economic Effects. The loss of jobs between 2019-2020 were discounted by the typical rate of death, unemployment, and retirement previous to COVID-19 in order to get a more precise measure of economic effect of COVID on this particular region.

INPUT-OUTPUT MODEL: TYPE I & TYPE II ECONOMIC EFFECTS DESCRIPTION

An Input-Output model is a way of representing the flow of money in an economy, primarily among industries, while also accounting for government, households, and regional imports and exports. An industry is a group of business establishments that share similar end-products (or services) and processes for creating those products/services. Once the flow is represented in the model; we can introduce events that change the flow (such as loss or gain of jobs in one industry) and simulate its effects on each industry in the region, as well as the region as a whole. *The Input-Output model therefore indicates how a change in one part of the economy will ultimately affect other parts based on their economic relationships*.

When we talk about the Input-Output model, we sometimes hear the term "multiplier" used in discussions of economic policy and modeling, usually in the context of job creation or loss. Basically, a multiplier represents how much some aspect of a model will change in response to changes coming from "outside" the model. In other words, *the multipliers capture the changes and will describe the effects of those changes in terms of the original change (final effect = original change times the multiplier)*.

In our particular case, we will talk about Type I and Type II multipliers.

Type I multiplier shows the industry-to-industry transactions. It is composed of Initial, Direct and Indirect Effects.

- *Initial Effect*: represents the first shock in the economy; in our case, it's the number of jobs that were lost during the pandemic in 2020, and therefore does not include ripple effects.
- *Direct Effect*: effects caused by the initially changed sectors; also describes the effects on those sectors' immediate supply chain.
- *Indirect Effect*: extends the concept of the direct multipliers to the supply chain's supply chain.

Type II multiplier adds to the Type I by introducing the effects by households (Induced Effect).

- *Induced Effect*: is due to the impact of the new earnings created by the Initial, Direct, and Indirect changes. These earnings enter the economy as employees spend their paychecks within the region on food, clothing, and other goods and services. In other words, this figure represents the income effects on inter-industry trade.

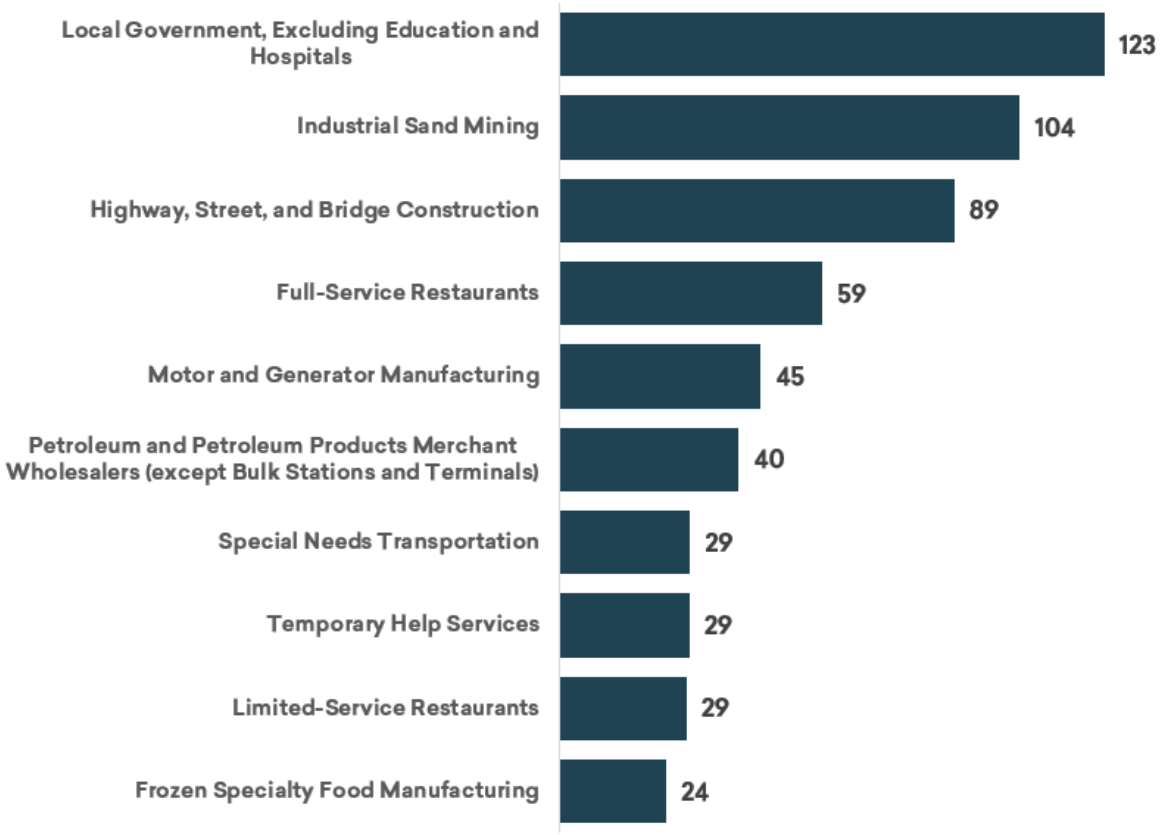
Another description for Type II: business/industry growth or decline that is going to affect the income of individuals and if the individuals spend it or not back in the economy, thus affecting the economy as a whole.

First Scenario:

The first scenario included all industries in which the number of jobs by industries in 2019 were larger than the number of jobs in 2020.

The total number of industries in this scenario were 122. Figure 06 displays the top 10 industries with the highest number of job losses.

Figure 06: Top 10 Industries for All Industries with the Highest Number of Job Losses during 2020



Source: Emsi Burning Glass 2021.3

In this scenario, the total number of lost jobs caused by the pandemic sum up to 938 jobs. Job losses shown by Figure 06 represent close to 61% of all jobs lost during 2020.

The total impact on Jobs, Earnings and Taxes on Production & Imports (TPI) by Type I and Type II effects are presented below.

The number of job losses during the pandemic increased to 1,123 for Type I and 1,222 for Type II economic effect. In other words, because of the initial 938 lost jobs, there are 185 that are full-time, part-time, and seasonal employee jobs in industries that are part of their supply chain (Type I effect) that were lost. Additionally, there are an additional 99 jobs that were lost because they were no longer supported by the 1,123 jobs already lost in the region (Type II effect).

The top 10 industries in Figure 06 showed a total effect of job loss by 37% compared to their initial effect with a total difference of -143 jobs for Type I and -212 Type II. (Table 02).

Total Effects by Job Loss in 2019-20 due to COVID 19

122 Industries
Negatively Affected

938
Initial Job Loss

1,222
Total Loss in Jobs*

$77.8 million
Earning Loss*

$121.6 million
Loss on TPI*

Table 02: Top 10 Industries All Industries Scenario Change in Jobs

Industries Name	Initial Effect	Type I	Type II
Local Government, Excluding Education and Hospitals	123	136	149
Industrial Sand Mining	104	124	137
Highway, Street, and Bridge Construction	89	102	112
Full-Service Restaurants	59	61	63
Motor and Generator Manufacturing	45	48	53
Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	40	118	135
Special Needs Transportation	29	32	33
Temporary Help Services	29	32	35
Limited-Service Restaurants	29	31	32
Frozen Specialty Food Manufacturing	24	32	37
Other Industries	366	408	438
All Industries	938	1,123	1,222

Source: Multi-regional social account matrix model (MR-SAM). 2021.3, years 2019/2020.

* Total Type II Loss

In terms of Earnings loss, the total initial loss of earnings was $50,875,002 where the total effect of Type I is 45% higher and Type II 53% increase over the initial effect. Table 03 shows an initial loss (Initial Effect) of $39,604,222 and an economic impact of $46,009,418 loss on Type I and $48,575,593 on Type II effects, for the top 10 industries, which represents 62.4% of the total effects on Type I and Type II.

Table 03: Top 10 Industries All Industries Scenario Loss Earnings

Industries Name	Initial Effect	Type I	Type II
Highway, Street, and Bridge Construction	$10,068,220	$10,670,732	$11,077,807
Industrial Sand Mining	$8,505,991	$9,485,113	$10,019,442
Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	$7,401,760	$10,761,220	$11,490,246
Motor and Generator Manufacturing	$3,871,833	$4,031,556	$4,243,342
Frozen Specialty Food Manufacturing	$2,268,123	$2,779,463	$2,944,682
Temporary Help Services	$1,799,094	$1,928,103	$2,030,012
Other Motor Vehicle Parts Manufacturing	$1,664,694	$2,006,557	$2,117,273
Corporate, Subsidiary, and Regional Managing Offices	$1,440,203	$1,496,547	$1,580,512
General Medical and Surgical Hospitals	$1,342,751	$1,440,345	$1,520,602
Electric Power Distribution	$1,241,553	$1,409,782	$1,551,676
Other Industries	$11,270,780	$27,786,214	$29,274,107
All Industries	$50,875,002	$73,795,632	$77,849,700

Source: Multi-regional social account matrix model (MR-SAM). 2021.3, years 2019/2020.

The loss on Taxes on Production and Imports (TPI) measures the change in local, state, and federal tax revenue through the increased or decreased industry sales, specifically general sales, and property taxes. It's important to note the change in tax revenue corresponds to the ripple effects and cannot be tied to a particular timeframe. Jackson county lost $121,611,728 on TPI where 11% corresponds to Federal, 40% to State and 49% to Local Government taxes. The top 10 industries represent 98% of the total loss on TPI (Table 04).

Table 04: Top 10 Industries All Industries Scenario Loss on Taxes on Production & Imports

Industries Name	Total Loss on Taxes on Production and Imports	Federal	State	Local
Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	$114,079,214	$12,356,699	$45,802,885	$55,919,630
Industrial Sand Mining	$2,112,601	$393,332	$800,118	$919,151
Electric Power Distribution	$1,246,625	$212,671	$477,822	$556,132
Petroleum Bulk Stations and Terminals	$746,816	$78,297	$300,935	$367,585
Highway, Street, and Bridge Construction	$362,107	$100,637	$127,431	$134,038
Motor and Generator Manufacturing	$232,017	$78,585	$77,528	$75,904
Frozen Specialty Food Manufacturing	$216,371	$70,778	$73,033	$72,560
Construction Sand and Gravel Mining	$198,275	$36,526	$75,208	$86,541
Limited-Service Restaurants	$180,869	$24,809	$71,094	$84,967
Full-Service Restaurants	$180,240	$24,457	$70,924	$84,859
Other Industries	$2,056,592	$407,703	$771,700	$877,189
All Industries	**$121,611,728**	$13,784,494	$48,648,678	$59,178,555

Source: Multi-regional social account matrix model (MR-SAM). 2021.3, years 2019/2020.

Second Scenario:

The second scenario groups industries which performed worse in terms of job loss, unemployment, and job postings, after having been compared at the national level. We selected the industries from two digit NAICS code to six-digit NAICS code.

We called this set of industries the "Most Affected," relative to national levels. There was only seven industries in the second scenario. Figure 07 displays the industries with number of job losses.

Figure 07: Most Affected Industries with the Highest Job Losses during 2020

Source: Emsi Burning Glass 2021.3

The number of total jobs lost for the 7 industries adds up to 126 jobs .

The number of job losses during the pandemic increased to 217 for Type I and to 244 Type II economic effects. In other words, because of the 126 losses in jobs, there were 91 full-time, part-time, and seasonal employee lost jobs in industries that are part of their supply chain (Type I effect). Additionally, there were an additional 27 jobs lost because they were no longer supported by 217 jobs already lost in the region (Type II effect).

Total Effects by Job Loss in 2019-20 due to COVID 19

7 Industries
Negatively Affected

126
Initial Job Loss

244
Total Loss in Jobs*

$18.1 million
Earning Loss*

$114.5 million
Loss on TPI*

Table 05: Most Affected Industries Scenario Change in Jobs

Industries Name	Initial Effect	Type I	Type II
Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	40	118	135
Temporary Help Services	29	32	35
Frozen Specialty Food Manufacturing	24	32	37
Fitness and Recreational Sports Centers	14	15	16
All Other Miscellaneous General Purpose Machinery Manufacturing	10	11	12
Commercial Banking	5	6	6
Credit Unions	3	3	4
All Industries	126	217	244

Source: Multi-regional social account matrix model (MR-SAM). 2021.3, years 2019/2020.

* Total Type II Loss

In terms of earnings loss, Table 06 shows an initial loss of earnings of $12,885,105 where the total effect of Type I is 32% higher and Type II 44% increase over the initial effect.

Table 06: Most Affected Industries Scenario Loss Earnings

Industries Name	Initial Effect	Type I	Type II
Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	$7,401,760	$10,761,220	$11,490,246
Frozen Specialty Food Manufacturing	$2,268,123	$2,779,463	$2,944,682
Temporary Help Services	$1,799,094	$1,928,103	$2,030,012
All Other Miscellaneous General Purpose Machinery Manufacturing	$672,951	$730,310	$772,102
Fitness and Recreational Sports Centers	$298,069	$325,473	$350,060
Commercial Banking	$287,885	$309,003	$333,513
Credit Unions	$157,223	$168,971	$182,479
All Industries	$12,885,105	$17,002,543	$18,103,093

Source: Multi-regional social account matrix model (MR-SAM). 2021.3, years 2019/2020.

As was mentioned before, the loss on taxes on production and imports (TPI) measured the change in local, state, and federal tax revenues through general sales and property taxes. The county lost $114,542,794 on TPI where 11% corresponds to federal government, 40% to state and 49% to local governments (Table 07).

Table 07: Most Affected Industries Scenario Loss on Taxes on Production & Imports

Industries Name	Total Loss on Taxes on Production and Imports	Federal	State	Local
Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	$114,079,214	$12,356,699	$45,802,885	$55,919,630
Frozen Specialty Food Manufacturing	$216,371	$70,778	$73,033	$72,560
Temporary Help Services	$69,413	$23,113	$23,311	$22,990
Fitness and Recreational Sports Centers	$61,977	$7,391	$24,685	$29,900
All Other Miscellaneous General Purpose Machinery Manufacturing	$52,142	$16,728	$17,696	$17,718
Commercial Banking	$40,718	$16,874	$12,704	$11,139
Credit Unions	$22,959	$9,474	$7,175	$6,310
All Industries	**$114,542,794**	$12,501,057	$45,961,489	$56,080,247

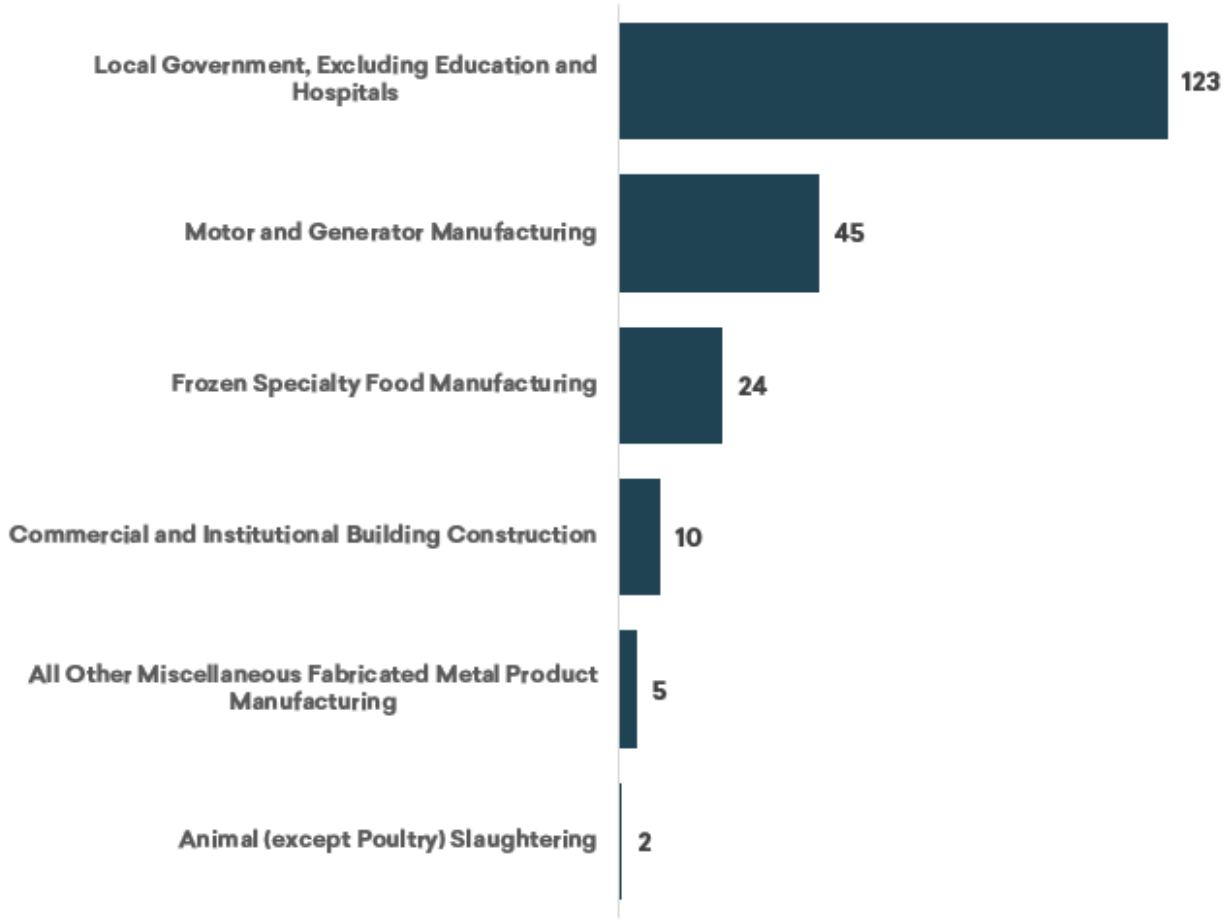
Source: Multi-regional social account matrix model (MR-SAM). 2021.3, years 2019/2020.

Third Scenario:

For our third scenario, we look at industries that are the most relevant to the region. Some of the industries included are Local Government, Motor and General Manufacturing, as well industries where the largest employers in the region are classified.

We called this set of industries the "Most Relevant." The total number of industries on this scenario were 6. Figure 08 displays the industries with their number of jobs lost.

Figure 08: Most Relevant Industries with Number of Job Loss during 2020



Source: Emsi Burning Glass 2021.3

In our third scenario, the total job loss for the 6 industries amount to 209 jobs during 2020.

The job losses increased to 235 for Type I and for 259 for Type II economic effects. In other words, because of the 209 losses on jobs there were 26 that were full-time, part-time, and seasonal employee jobs in industries that were part of their supply chain (Type I effect) that were lost. Additionally, there were 24 jobs lost because they were no longer supported by the 235 jobs already lost in the region (Type II effect).

The industries in Figure 08 showed a total effect on job loss of 23.6% compared to the initial effect with a total difference of -26 jobs for Type I and -50 Type II. (Table 08).

Total Effects by Job Loss in 2019-20 due to COVID 19

6 Industries
Negatively Affected

209
Initial Job Loss

259
Total Loss in Jobs*

$19.6 million
Earning Loss*

$618,767
Loss on TPI*

Table 08: Most Relevant Industries Scenario Change in Jobs

Industries Name	Initial Effect	Type I	Type II
Local Government, Excluding Education and Hospitals	123	136	149
Motor and Generator Manufacturing	45	48	53
Frozen Specialty Food Manufacturing	24	32	37
Commercial and Institutional Building Construction	10	12	13
All Other Miscellaneous Fabricated Metal Product Manufacturing	5	5	6
Animal (except Poultry) Slaughtering	2	2	2
All Industries	209	235	259

Source: Multi-regional social account matrix model (MR-SAM). 2021.3, years 2019/2020.

* Total Type II Loss

In terms of earnings loss, the initial loss was $17,269,847 where the total effect of Type I was 8% higher and Type II increased 13% over the initial effect (Table 09).

Table 09: Most Relevant Industries Scenario Loss Earnings

Industries Name	Initial Effect	Type I	Type II
Local Government, Excluding Education and Hospitals	$9,674,743	$10,263,170	$10,782,272
Motor and Generator Manufacturing	$3,871,833	$4,031,556	$4,243,342
Frozen Specialty Food Manufacturing	$2,268,123	$2,779,463	$2,944,682
Commercial and Institutional Building Construction	$1,168,500	$1,238,180	$1,288,018
All Other Miscellaneous Fabricated Metal Product Manufacturing	$286,647	$304,952	$320,736
All Industries	$17,269,847	$18,617,321	$19,579,050

Source: Multi-regional social account matrix model (MR-SAM). 2021.3, years 2019/2020.

The loss on taxes in production and imports (TPI) measured the change in local, state, and federal tax revenue specifically through general sales, and property taxes, showing Jackson lost $618,767 on TPI. 30% corresponded to federal government, 34% to state and 35% to local governments (Table 10).

Table 10: Most Relevant Industries Scenario Loss on Taxes on Production & Imports

Industries Name	Total Loss on Taxes on Production and Imports	Federal	State	Local
Motor and Generator Manufacturing	$232,017	$78,585	$77,528	$75,904
Frozen Specialty Food Manufacturing	$216,371	$70,778	$73,033	$72,560
Local Government, Excluding Education and Hospitals	$94,212	$19,868	$35,001	$39,343
Commercial and Institutional Building Construction	$41,889	$11,579	$14,760	$15,551
Animal (except Poultry) Slaughtering	$18,107	$2,427	$7,138	$8,542
All Other Miscellaneous Fabricated Metal Product Manufacturing	$16,171	$4,391	$5,721	$6,059
All Industries	**$618,767**	$187,628	$213,180	$217,959

Source: Multi-regional social account matrix model (MR-SAM). 2021.3, years 2019/2020.

CONCLUSION:

The results of this study demonstrate the perversive economic effects COVID-19 had on Jackson county in each of the output scenarios.

One of the most relevant results came from the total effect on TPI by job losses in all industries, where more than 98% is attributed to the 10 industries under the first scenario.

The results of this study demonstrate the profound effect of COVID-19 on Jackson across **multiple scenarios**.

The job projections suggest a slow decline over time. Finally, the 938 initial lost jobs translated to $77.8 million in earnings lost and a $121.6 million loss on TPI. This loss will affect the region deeply.

About the Study

Data and assumptions used in the study are based on several sources, including industry and employment data from the U.S. Bureau of Labor Statistics and U.S. Census Bureau, outputs of Emsi Burning Glass' Multi-Regional Social Accounting Matrix model. The study applies a conservative methodology and follows standard practices using only the most recognized indicators of economic impact. For a better description of the data and approach used in the study, please review the Methodology document.