COVID-19: Economic Impact Analysis on The Mississippi River Regional Planning Commission Service Region

September 2021

EXECUTIVE SUMMARY REPORT

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Acknowledgements

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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

Mississippi River Regional Planning Commission (MRRPC) is a commission of nine counties located along the Mississippi River in Western Wisconsin.[1] The region includes Buffalo, Crawford, Jackson, La Crosse, Monroe, Pepin, Pierce, Trempealeau, and Vernon Counties. In 2020, the regional population was 328,637[2] , with a total regional employment of 156,245. The average earnings per job in 2020 was $57,704, which represented $16,449 below the national average earnings per job.[3]

MRRPC creates value in many ways. The commission plays a key role in helping their local government members with their different federal, state, and local programs. The employed labor force in the region generates new dollars and creates opportunities in the MRRPC region.

MRRPC helps to improve the **regional economy.**

MRRPC influences their members and their regional economy, tracks industries in the region 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 MRRPC efforts seeking to adapt their multi-service entity to the requirements of a changing economic post-pandemic region during 2020.

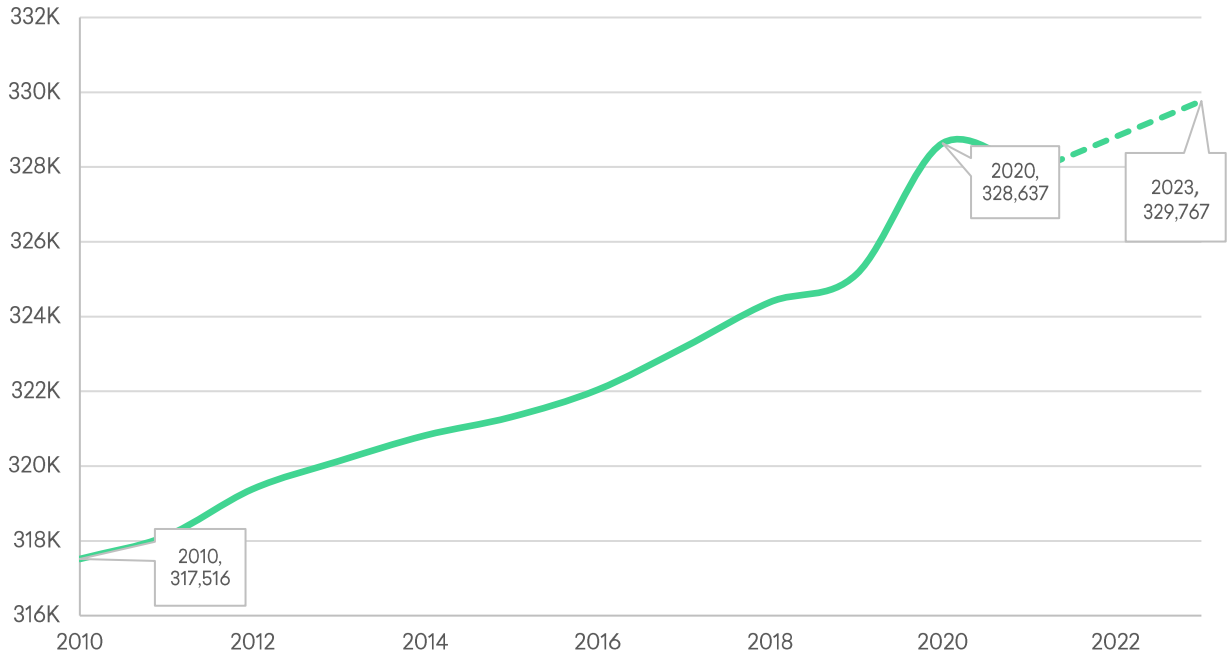
The purpose of this report is to outline the region's economy and provide an economic impact analysis. This report will focus on the effects of jobs loss during 2020 caused by COVID-19 and the impact they have had on the region's diverse industries. The following figures and tables display key findings 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, 317,516 people resided in the MRRPC Service Region, and 329,767 people are projected to reside in the region by 2023 (Figure 01).

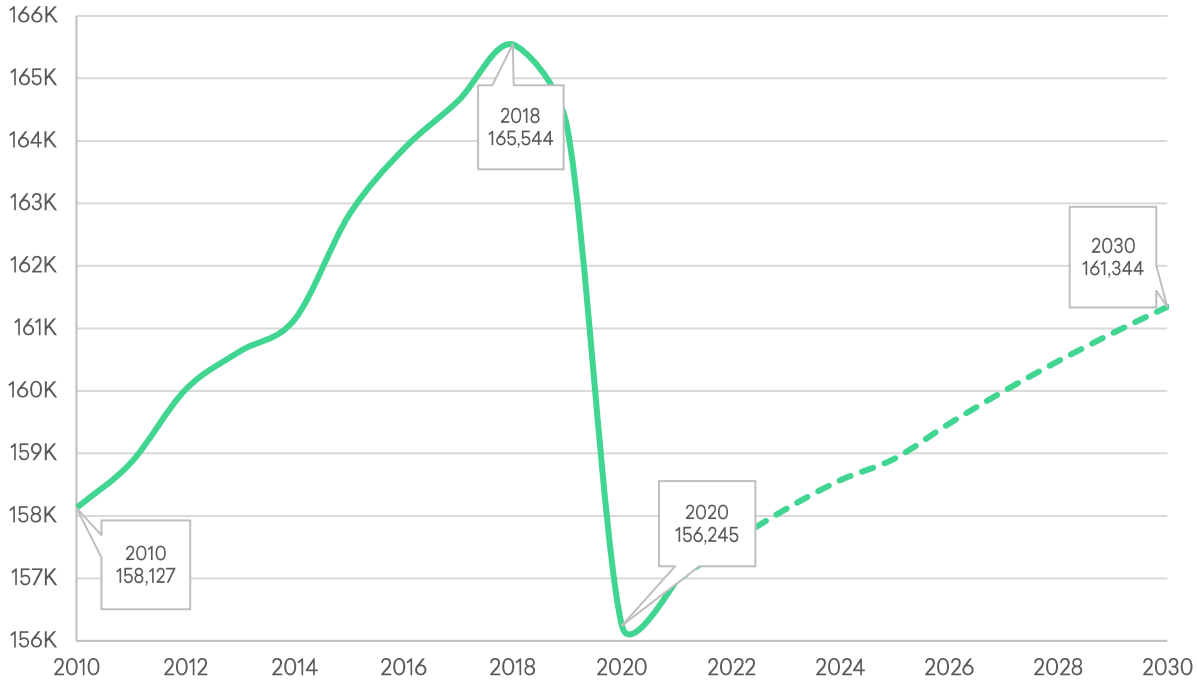
Figure 01: Historical and Projected Population in the MRRPC Service Region, 2010 to 2023



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

As shown in Figure 02, the MRRPC Service Region supported 158,127 jobs in 2010 and by 2018 the Service Region reached its peak at 165,544 jobs. In 2020 the Region lost 9,299 jobs. Due to data limitations, projections may not capture the total impact of COVID-19 on future labor markets.

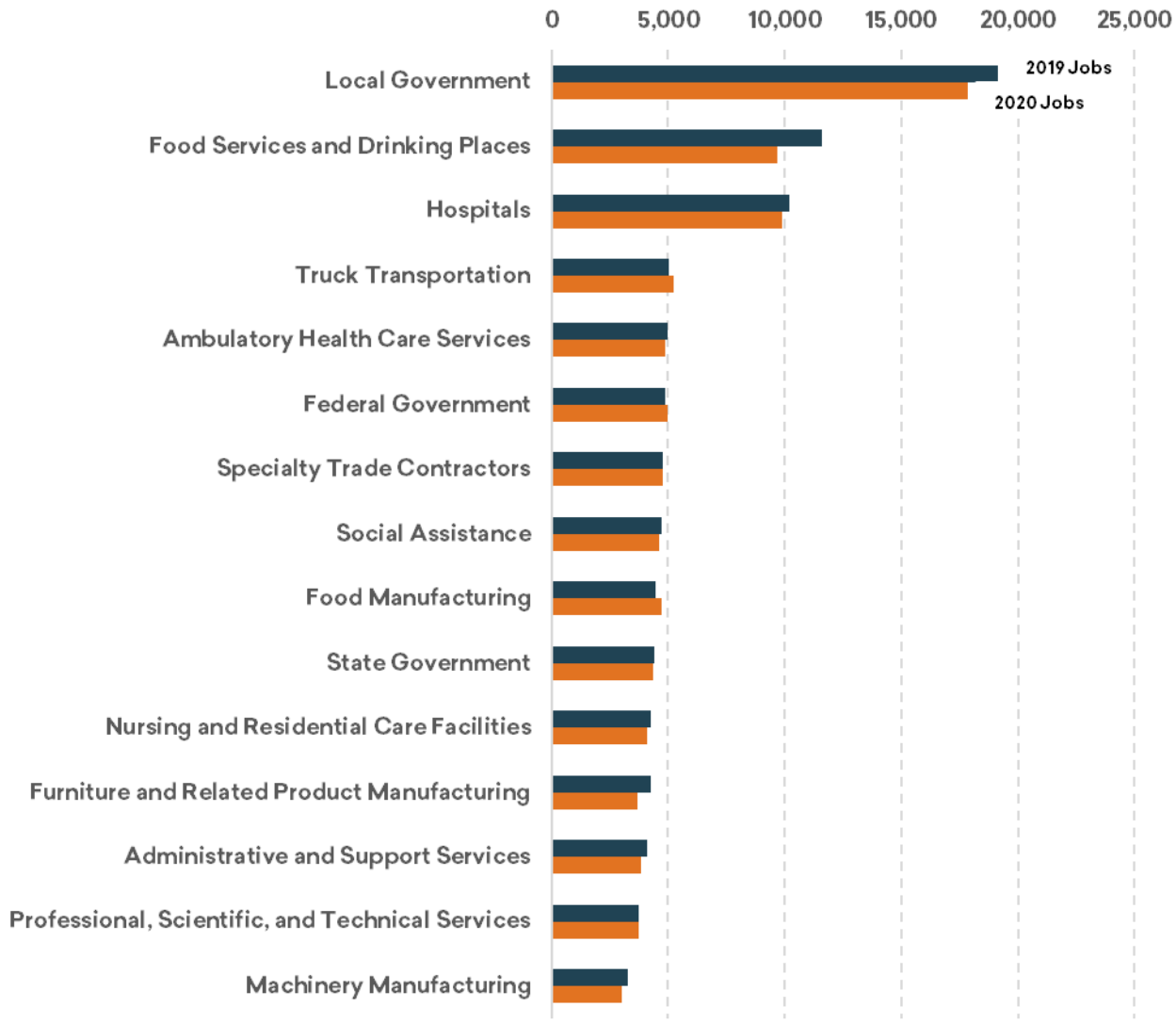
Figure 02: Historical and Projected Jobs in the MRRPC Service Region, 2010 to 2030



Source: Emsi Burning Glass 2021.3.

Figure 03 displays the top industry subsectors in terms of employment in the MRRPC Service Region. Local Government and Food Services and Drinking Places industries were the most affected with 1,279 and 1,928 jobs lost during 2019-2020, respectively.

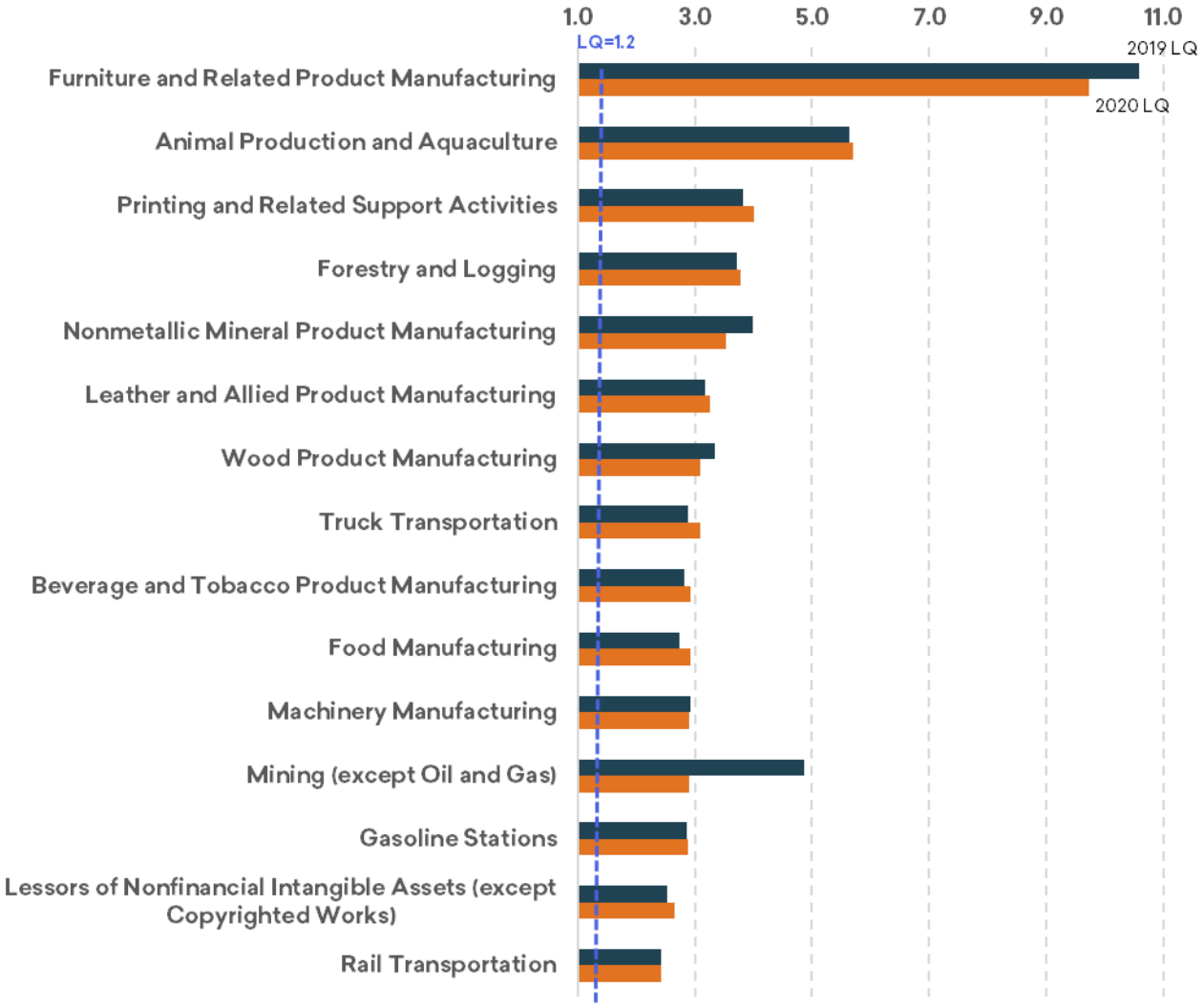
Figure 03: Top Industry Subsectors in the MRRPC by Jobs



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 MRRPC 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 4 industries are within the top 15 in terms of total jobs with relatively high LQs. The appearance of these industry subsectors provides an indication of their strength in the region's economy and offers the Commission 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:

- Truck Transportation
- Food Manufacturing
- Furniture and Related Product Manufacturing
- Machinery Manufacturing

The data in Table 01 shows several of the region's socioeconomic indicators and their disparity. 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 the MRRPC Service Region 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, the MRRPC Service Region shows the lowest percentage of Unemployment and Poverty when compared against the state and the nation.

Table 01: Income, Unemployment, and Poverty Characteristics for the MRRPC Service Region

	AVERAGE MEDIAN HOUSEHOLD INCOME	UNEMPLOYMENT RATE (2020)	AVERAGE PERCAPITA INCOME	AVERAGE POVERTY ALL PEOPLE
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 the MRRPC Service Region, Wisconsin, and the U.S. adults. Educational attainment[5] data is useful for targeting specific population groups with less than or greater than average education levels. Here, the MRRPC Service Region shows the highest percentage of Associate degree holders when compared against the state and the nation.

Figure 05: Highest Educational Attainments of Adults in the MRRPCS Service Region, Wisconsin, and the U.S.

	<HS	HS	Some College	Associate's Degre	Bachelor's Degree	>Bachelor's
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

The labor force that is part of the MRRPC Service Region 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 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 get back 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 our 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 will 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.

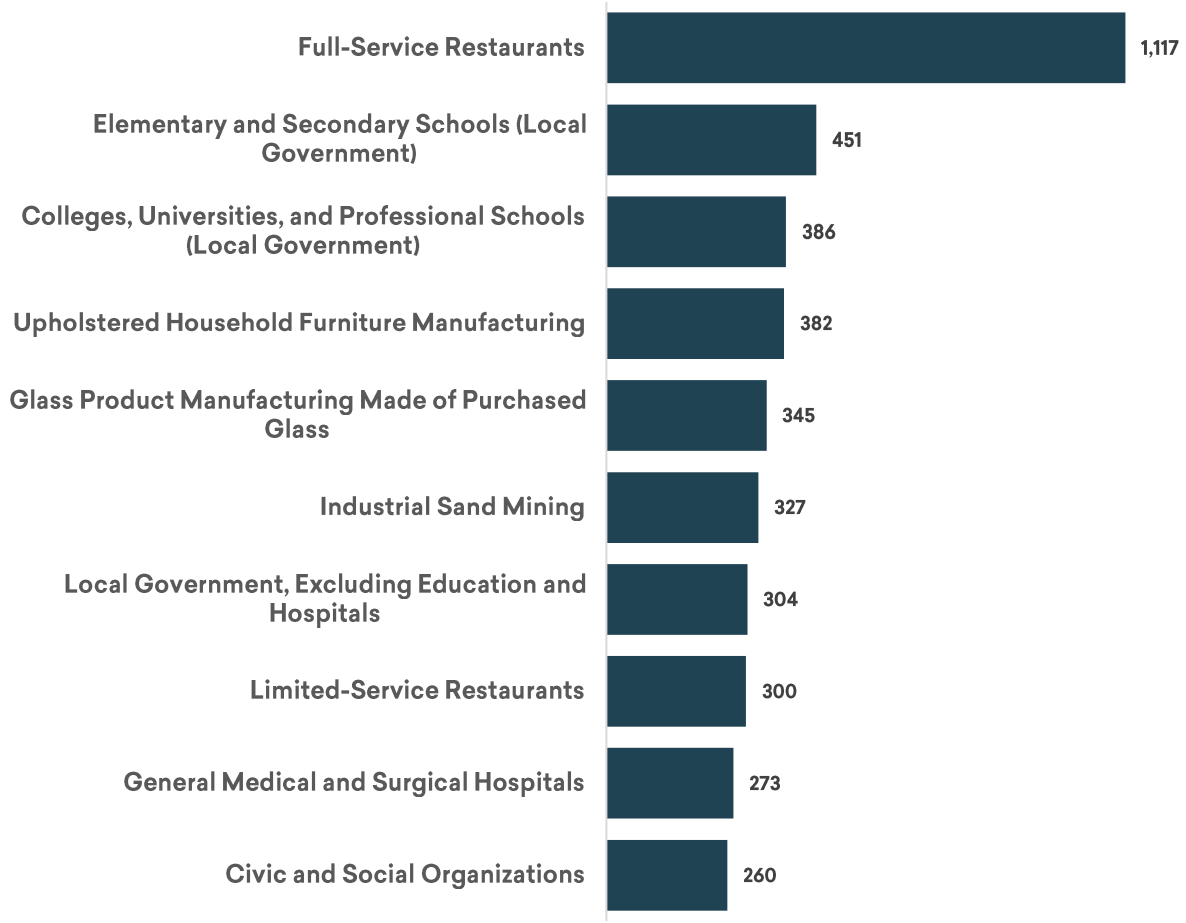
Another description for Type II: business/industry growth or decline that is going to affect the income of individuals and if the individuals spend it or not back in the economy, which will affect the economy as a whole.

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 371. 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 10,693 jobs. The loss on the industries in Figure 06 represents close to 39% 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 12,813 for Type I and 14,692 for Type II economic effect. In other words, because of the initial 10,693 lost jobs, there are 2,120 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 1,879 jobs that were lost because they were no longer supported by the 12,813 jobs already lost in the region (Type II effect).

The top 10 industries in Figure 06 showed a total effect of job loss by 30% compared to their initial effect with a total difference of -587 jobs for Type I and -1,253 Type II. (Table 02).

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

371 Industries
Negatively Affected

10,693
Initial Job Loss

14,692
Total Loss in Jobs*

$717.3 million
Earning Loss*

$162.6 million
Loss on TPI*

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

Industries Name	Initial Effect	Type I	Type II
Full-Service Restaurants	1,117	1,189	1,261
Elementary and Secondary Schools (Local Government)	451	470	559
Colleges, Universities, and Professional Schools (Local Government)	386	398	449
Upholstered Household Furniture Manufacturing	382	464	547
Glass Product Manufacturing Made of Purchased Glass	345	443	521
Industrial Sand Mining	327	424	536
Local Government, Excluding Education and Hospitals	304	355	420
Limited-Service Restaurants	300	338	358
General Medical and Surgical Hospitals	273	377	460
Civic and Social Organizations	260	274	286
Other Industries	6,547	8,080	9,294
All Industries	10,693	12,813	14,692

Source: Multi-regional social account matrix model (MR-SAM). 2021.3, years 2019/2020. [6]

* Loss represents the total lost by Type II

In terms of Earnings loss, the total initial loss of earnings was $538,523,026 where the total effect of Type I is 19% higher and Type II 33% increase over the initial effect. Table 03 shows an initial loss (Initial Effect) of $198,275,722 and an economic impact of $228,561,598 loss on Type I and $254,755,691 on Type II effects, for the top 10 industries, which represents 35.5% 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
Industrial Sand Mining	$32,613,156	$37,828,926	$42,255,108
Elementary and Secondary Schools (Local Government)	$29,667,520	$30,745,220	$34,233,675
General Medical and Surgical Hospitals	$25,038,695	$29,741,955	$33,027,114
Upholstered Household Furniture Manufacturing	$24,701,571	$29,258,032	$32,529,534
Local Government, Excluding Education and Hospitals	$20,935,977	$23,517,556	$26,067,396
Glass Product Manufacturing Made of Purchased Glass	$20,242,126	$25,791,851	$28,899,671
Full-Service Restaurants	$19,180,011	$22,779,388	$25,554,826
Colleges, Universities, and Professional Schools (Local Government)	$17,088,760	$17,778,723	$19,778,563
Limited-Service Restaurants	$5,068,638	$6,832,778	$7,632,859
Civic and Social Organizations	$3,739,268	$4,287,168	$4,776,946
Other Industries	$340,247,304	$414,473,652	$462,532,175
All Industries	$538,523,026	$643,035,249	$717,287,867

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. The MRRPC Service Region lost $162.575,820 on TPI where 15% corresponds to Federal, 39% to State and 46% to Local Government taxes. The top 10 industries represent 15% 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
Industrial Sand Mining	$9,265,302	$1,632,930	$3,536,035	$4,096,337
Full-Service Restaurants	$4,726,928	$649,211	$1,857,753	$2,219,965
Glass Product Manufacturing Made of Purchased Glass	$3,240,574	$972,330	$1,119,447	$1,148,796
Upholstered Household Furniture Manufacturing	$2,112,341	$507,886	$766,515	$837,940
Limited-Service Restaurants	$2,033,695	$283,086	$798,169	$952,440
General Medical and Surgical Hospitals	$2,001,588	$382,075	$755,322	$864,191
Local Government, Excluding Education and Hospitals	$604,939	$106,443	$230,921	$267,575
Elementary and Secondary Schools (Local Government)	$555,993	$93,839	$213,404	$248,750
Colleges, Universities, and Professional Schools (Local Government)	$321,511	$54,567	$123,315	$143,628
Civic and Social Organizations	$287,379	$42,342	$112,105	$132,933
Other Industries	137,425,570	20,532,304	53,525,639	$63,367,627
All Industries	**$162,575,820**	$25,257,014	$63,038,625	$74,280,181

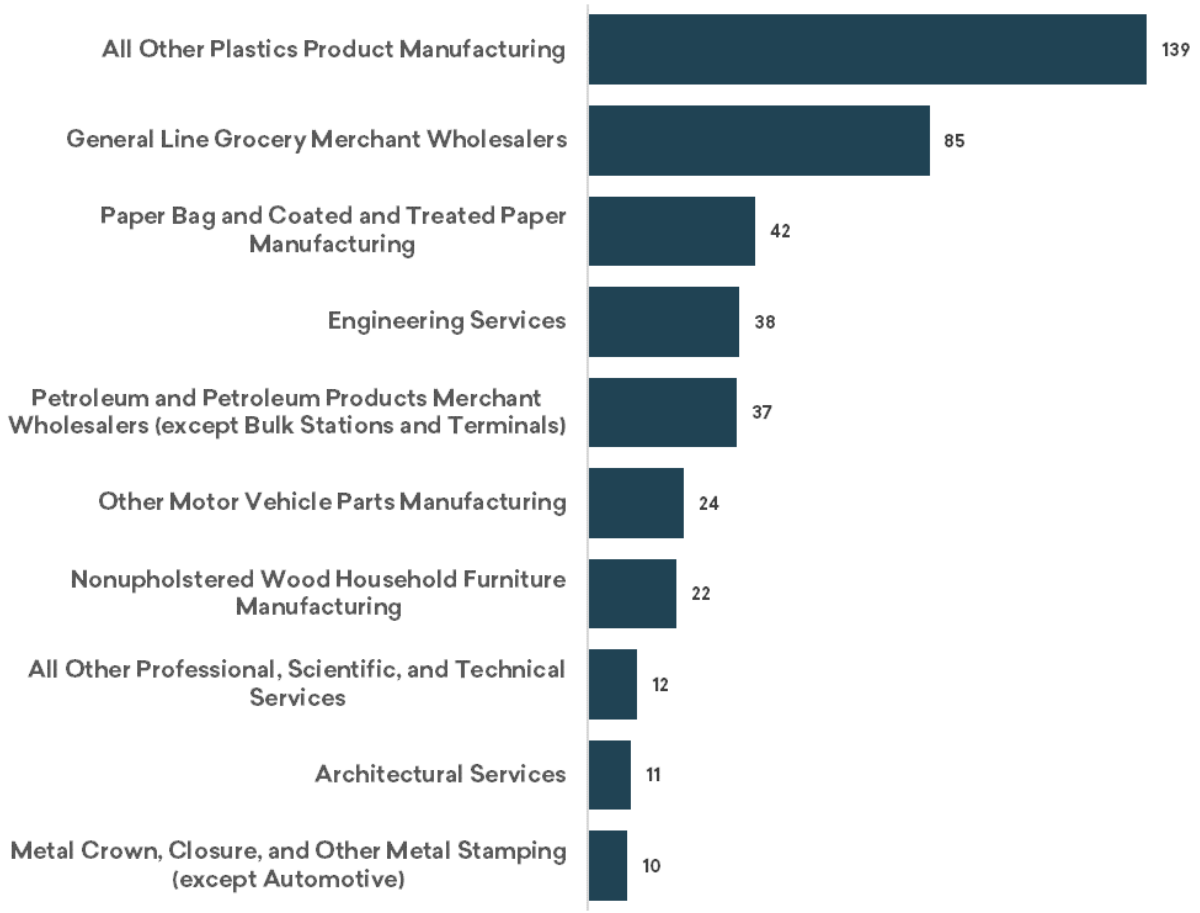
Source: Multi-regional social account matrix model (MR-SAM). 2021.3, years 2019/2020.

Second Scenario:

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

We called this set of industries the "Most Affected," relative to national levels. There was a total of 16 industries in the second scenario. Figure 07 displays the top 10 industries with the highest number of job losses.

Figure 07: Top 10 Most Affected Industries with the Highest Job Losses during 2020



Source: Emsi Burning Glass 2021.3

The number of total jobs lost for the 16 industries adds up to 446 jobs. The losses for the industries in Figure 07 represent close to 94% of all jobs lost during 2020 in the second scenario.

The number of job losses during the pandemic increased to 626 for Type I and to 743 for Type II economic effects. In other words, because of the 446 losses in jobs, there were 179 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 117 jobs lost because they were no longer supported by 626 jobs already lost in the region (Type II effect).

The top 10 industries in Figure 07 showed a total effect of job loss by 64% compared to their initial effect with a total difference of -159 jobs for Type I and -267 Type II (Table 05).

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

16 Industries
Negatively Affected

446
Initial Job Loss

743
Total Loss in Jobs*

$43.7 million
Earning Loss*

$82 million
Loss on TPI*

Table 05: Top 10 Industries Most Affected Industries Scenario Change in Jobs

Industries Name	Initial Effect	Type I	Type II
All Other Plastics Product Manufacturing	139	167	196
General Line Grocery Merchant Wholesalers	85	111	129
Paper Bag and Coated and Treated Paper Manufacturing	42	51	62
Engineering Services	38	46	54
Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	37	110	137
Other Motor Vehicle Parts Manufacturing	24	32	38
Nonupholstered Wood Household Furniture Manufacturing	22	24	26
All Other Professional, Scientific, and Technical Services	12	13	14
Architectural Services	11	14	18
Metal Crown, Closure, and Other Metal Stamping (except Automotive)	10	11	13
All Industries	446	626	743

Source: Multi-regional social account matrix model (MR-SAM). 2021.3, years 2019/2020.[7]

* Loss represents the total lost by Type II

In terms of earningS loss, the initial loss of earnings is $30,269,503 where the total effect of Type I is 29% higher and Type II 44% increase over the initial effect. Table 06 shows an initial loss for the top 10 industries of $28,119,767 as well as when they have an economic impact of $35,867,928 loss on Type I and $40,158,530 on Type II effects.

Table 06: Top 10 Industries Most Affected Industries Scenario Loss Earnings

Industries Name	Initial Effect	Type I	Type II
All Other Plastics Product Manufacturing	$8,103,347	$9,497,966	$10,630,966
General Line Grocery Merchant Wholesalers	$5,758,057	$6,881,466	$7,615,179
Petroleum and Petroleum Products Merchant Wholesalers (except Bulk Stations and Terminals)	$4,390,308	$7,956,299	$9,030,179
Paper Bag and Coated and Treated Paper Manufacturing	$2,948,969	$3,486,222	$3,914,547
Engineering Services	$2,573,230	$2,913,873	$3,244,182
Other Motor Vehicle Parts Manufacturing	$1,684,494	$2,125,593	$2,377,881
Architectural Services	$1,000,337	$1,144,569	$1,277,623
Nonupholstered Wood Household Furniture Manufacturing	$741,584	$836,371	$925,421
Metal Crown, Closure, and Other Metal Stamping (except Automotive)	$577,985	$657,372	$733,499
All Other Professional, Scientific, and Technical Services	$341,456	$368,196	$409,053
Other Industries	2,149,736	3,118,918	3,493,114
All Industries	$30,269,503	$38,986,846	$43,651,644

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 MRRPC Service Region lost $82,065,706 on TPI where 11% corresponds to federal government, 40% to state and 48% to local governments. The top 10 industries represent 86% of the total loss on TPI (Table 07).

Table 07: Top 10 Industries 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)	$67,982,598	$7,358,429	$27,296,591	$33,327,579
All Other Plastics Product Manufacturing	$925,411	$249,028	$328,054	$348,329
General Line Grocery Merchant Wholesalers	$740,993	$172,466	$270,553	$297,974
Paper Bag and Coated and Treated Paper Manufacturing	$374,962	$98,595	$133,597	$142,770
Other Motor Vehicle Parts Manufacturing	$195,944	$54,234	$69,021	$72,689
Engineering Services	$134,712	$26,917	$50,484	$57,312
Architectural Services	$53,294	$10,642	$19,974	$22,678
Metal Crown, Closure, and Other Metal Stamping (except Automotive)	$49,002	$11,924	$17,740	$19,338
Nonupholstered Wood Household Furniture Manufacturing	$35,046	$6,996	$13,136	$14,915
All Other Professional, Scientific, and Technical Services	$15,753	$3,840	$5,701	$6,212
Other Industries	11,557,989	1,275,578	4,633,626	$5,648,785
All Industries	**$82,065,706**	$9,268,648	$32,838,476	$39,958,581

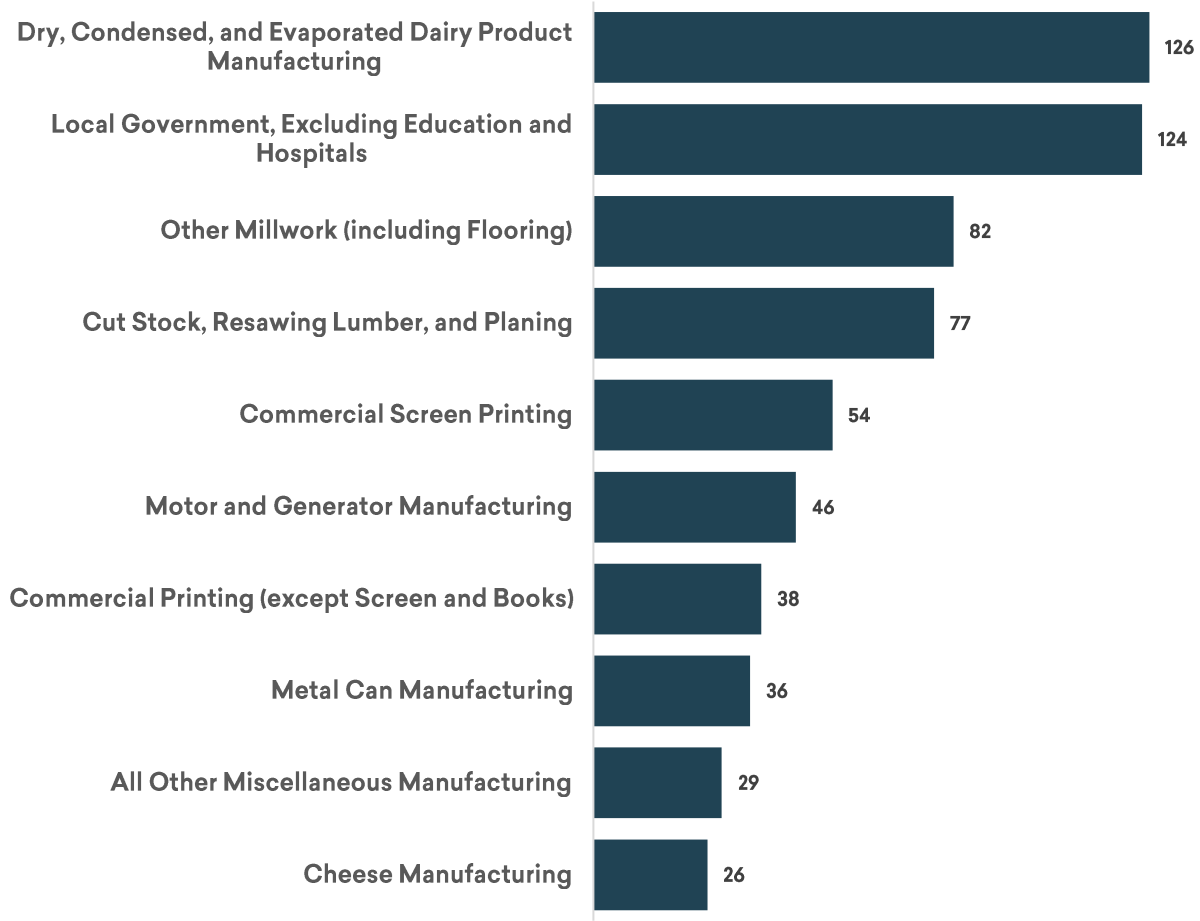
Source: Multi-regional social account matrix model (MR-SAM). 2021.3, years 2019/2020.

Third Scenario:

For our third scenario, we look at industries that are the most relevant to the region. Some of the industries included are Food Manufacturing, Wood Product 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 50. Figure 08 displays the top 10 industries with the highest number of jobs lost.

Figure 08: Top 10 Industries for Most Relevant Industries with the Highest Number of Job Loss during 2020



Source: Emsi Burning Glass 2021.3

The number of total job loss for the 50 industries equals 832 jobs. The loss in industries on Figure 08 represents close to 77% of all jobs lost during 2020 in our third scenario.

The number of job losses increased to 1,220 for Type I and for 1,430 for Type II economic effects. In other words, because of the 832 losses on jobs there were 388 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 210 jobs lost because they were no longer supported by the 1,220 jobs already lost in the region (Type II effect).

The top 10 industries in Figure 08 showed a total effect on job loss of 81% compared to the initial effect with a total difference of -342 jobs for Type I and -518 Type II. (Table 08).

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

50 Industries
Negatively Affected

832
Initial Job Loss

1,430
Total Loss in Jobs*

$78 million
Earning Loss*

$8.4 million
Loss on TPI*

Table 08: Top 10 Industries Most Relevant Industries Scenario Change in Jobs

Industries Name	Initial Effect	Type I	Type II
Dry, Condensed, and Evaporated Dairy Product Manufacturing	126	316	379
Local Government, Excluding Education and Hospitals	124	146	172
Other Millwork (including Flooring)	82	109	124
Cut Stock, Resawing Lumber, and Planing	77	99	113
Commercial Screen Printing	54	67	77
Motor and Generator Manufacturing	46	49	61
Commercial Printing (except Screen and Books)	38	48	55
Metal Can Manufacturing	36	53	67
All Other Miscellaneous Manufacturing	29	33	37
Cheese Manufacturing	26	61	72
Other Industries	193	240	273
All Industries	832	1,220	1,430

Source: Multi-regional social account matrix model (MR-SAM). 2021.3, years 2019/2020. [8]

*Loss represents the total lost by Type II

In terms of earnings loss, the total initial loss of earnings was $48,950,274 where the total effect of Type I was 43% higher and Type II increased 60% over the initial effect. Table 09 shows an initial loss for the top 10 industries as $39,645,749 as well as an economic impact of $57,649,628 lost on Type I and $64,661,054 on Type II effects.

Table 09: Top 10 Industries Most Relevant Industries Scenario Loss Earnings

Industries Name	Initial Effect	Type I	Type II
Local Government, Excluding Education and Hospitals	$8,578,432	$9,636,223	$10,681,010
Dry, Condensed, and Evaporated Dairy Product Manufacturing	$8,199,787	$18,257,239	$20,761,038
Motor and Generator Manufacturing	$3,906,877	$4,107,118	$4,568,538
Other Millwork (including Flooring)	$3,828,862	$5,238,862	$5,833,444
Cut Stock, Resawing Lumber, and Planing	$3,801,774	$4,910,115	$5,469,190
Metal Can Manufacturing	$3,478,585	$4,561,778	$5,121,820
Commercial Screen Printing	$2,627,940	$3,221,712	$3,605,459
Commercial Printing (except Screen and Books)	$2,125,443	$2,565,127	$2,871,339
Cheese Manufacturing	$1,642,477	$3,515,716	$3,927,291
All Other Miscellaneous Manufacturing	$1,455,570	$1,635,737	$1,821,925
Other Industries	9,304,525	12,111,042	13,430,464
All Industries	$48,950,274	$69,760,669	$78,091,519

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 through specifically general sales, and property taxes, showing the MRRPC Service Region lost $8,401,739 on TPI. 26% corresponded to federal government, 36% to state and 38% to local governments. The top 10 industries represent 82% of the total loss on TPI (Table 10).

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

Industries Name	Total Loss on Taxes on Production and Imports	Federal	State	Local
Dry, Condensed, and Evaporated Dairy Product Manufacturing	$3,752,315	$1,135,882	$1,293,302	$1,323,131
Metal Can Manufacturing	$594,094	$150,789	$213,258	$230,046
Cheese Manufacturing	$525,044	$119,187	$192,587	$213,270
Other Millwork (including Flooring)	$455,818	$123,814	$161,248	$170,756
Cut Stock, Resawing Lumber, and Planing	$419,657	$114,616	$148,274	$156,768
Motor and Generator Manufacturing	$281,170	$83,823	$97,288	$100,060
Commercial Screen Printing	$274,270	$65,687	$99,601	$108,982
Local Government, Excluding Education and Hospitals	$247,871	$43,615	$94,619	$109,638
Commercial Printing (except Screen and Books)	$212,532	$51,514	$77,002	$84,016
All Other Miscellaneous Manufacturing	$111,884	$26,995	$40,572	$44,316
Other Industries	1,527,084	285,956	577,912	$663,217
All Industries	**$8,401,739**	$2,201,877	$2,995,663	$3,204,199

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 MRRPC Service Region in each of the output scenarios.

One of the most relevant results came from the total effect on TPI by job loss in all industries, where more than 50% is attributed to the 16 industries under the "Most Affected" scenario.

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

The job projections suggest it will take a long time to reach the number of jobs prior to the pandemic.

Finally, the 10,693 initial lost jobs translated to $717 million in earnings lost and a $163 million loss on TPI. This loss will affect the MRRPC 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.