

# ECONOMIC IMPACT OF HUNTING, FISHING, AND TRAPPING (HF&T) IN MICHIGAN

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## Executive Summary

This project was concerned with identifying and examining the economic impact of hunting, fishing, and trapping (HF&T) in Michigan and in seven geographic regions in Michigan: the Upper Peninsula, the North East Region, the North West Region, the North Central Region, the South East Region, the South West Region, and the South Central Region. The results of the analyses conducted emphasize the economic importance of hunting, fishing, and trapping (HF&T) in Michigan and across these geographic regions. Some of the insights garnered from these analyses are highlighted in this executive summary.

A comparison of Michigan to its Great Lakes neighbors (Minnesota, Wisconsin, Illinois, Indiana, Ohio, Pennsylvania, and New York) reveals that, while these states have similar sets of economic multipliers associated with the HF&T industry, Michigan was the top performer for **Multiplier #3 (employment (jobs created))**. The value of this *in-state* multiplier for Michigan (Table A1, Appendix A) indicates that the state has done a better job of converting demand (expenditures) *by its residents* on HF&T to jobs in the total economy than its Great Lakes neighbors. Michigan has also excelled over its Great Lakes neighbors (except for Ohio) in converting demand or expenditures *by non-residents* on HF&T to jobs across all industries (see its *out-of-state* multipliers in Table A2, Appendix A). In comparison to all states in the US, Michigan ranks eleventh with respect to job creation resulting from HF&T expenditures *by residents*, and fifteenth with respect to job creation arising from HF&T expenditures *by non-residents*.

A comparison of the performance of the seven geographic regions of Michigan with respect to **Mmultiplier #3 (employment (jobs created))** illuminates similarly strong performance for the HF&T industry. With respect to jobs created in all industries resulting from HF&T expenditures *by residents and by non-residents*, HF&T consistently ranked in the top ten per cent of all industries across each of these geographic regions. Across the regions, HF&T was consistently in the top 10% of industries in a given region with respect to its impact on employment (jobs created) for HF&T expenditures *by residents* and also HF&T expenditures *by non-residents* with the exception of the North West Region (which was the in top 10% for *resident* expenditures on HF&T only). Three regions exhibited even better performance for HF&T with respect to jobs created. Jobs created in all industries resulting from HF&T expenditures in the region *by residents* (and *by non-residents*) placed HF&T in the top 6% (7%) of industries in the South Central Region, in the top 6.6% (8.5%) of industries in the South East Region, and in the top 7.3% (7.3%) of industries in the South West Region.

Two HF&T multipliers, **earnings per dollar (Multiplier #2)** and **value added (in dollars) (Multiplier #4)**, were equal to (in only one case) or above the median multiplier across all industry groups in every region for both the *in-state* and *out-of-state* multiplier categories. For some regions, HF&T's performance was even better for **Mmultiplier #4 (value added (in dollars))**. For the UP, the **out-of-state value added (in dollars)** multiplier placed HF&T in the top 30% of industries in the UP in this effect category. For the North East Region, the **in-state value added (in dollars)** multiplier placed HF&T in the top 10% of industries in the region and the **out-of-state value added (in dollars)** multiplier indicated that HF&T was in the top 20% of industries in this region for this effect category. For the North Central Region, the **in-state value added (in dollars)** multiplier revealed that HF&T was in the top 20% of industries in the region and the **out-of-state value added (in dollars)** multiplier showed HF&T to be in the top 30% of industries in the region in this effect category. For both the South East Region and South Central Region, their **in-state value added (in dollars)** multipliers placed HF&T in the top 20% of industries in their respective regions in this effect category. For the South West Region, the **out-of-state value added (in dollars)** multiplier indicated that HF&T was in the top 20% of industries in the region in this effect category.

A comparison of the in-state and out-of-state multipliers across the seven geographic regions in Michigan provides some interesting insights into the economic impact of HF&T across the regions. **Of all the geographic regions, the South East Region has the largest multiplier in every category for the *in-state* multipliers.** This means that the HF&T industry has a greater economic impact in the South East Region from *resident* expenditures on HF&T compared to the other regions based on these multiplier values (and before accounting for actual expenditures on HF&T in the regions). The region with the lowest in-state multiplier in a given category varies. For **Multiplier #1 (total effects (output per dollar spent))**, the North Central Region has the lowest *in-state* multiplier; for **Multiplier #2 (earnings per dollars)**, the North West and South West regions were tied with the lowest *in-state* multipliers; for **Multiplier #3 (employment (jobs created))**, the South West region has the lowest *in-state* multiplier; for **Multiplier #4 (value added (in dollars))**, the North Central Region has the lowest *in-state* multiplier; for **Multiplier #5 (earnings (dollars))**, the North Central Region has the lowest *in-state* multiplier; for **Multiplier #6 (employment (jobs))**, the North Central Region has the lowest *in-state* multiplier.

The pattern for the *out-of-state* multipliers is similar. **The South East Region has the largest multiplier in every category for the *out-of-state* multipliers.** This means that the HF&T industry has a greater economic impact in the South East Region from *non-resident* expenditures on HF&T compared to the other regions based on these multiplier values (and before accounting for actual expenditures on HF&T in the regions). For **Multiplier #1 (total effects (output per dollar spent))**, the North Central Region has the lowest *out-of-state* multiplier; for **Multiplier #2 (earnings per dollars)**, the South West region has the lowest *out-of-state* multiplier; for **Multiplier #3 (employment (jobs created))**, the South West region has the lowest *out-of-state* multiplier; for **Multiplier #4 (value added (in dollars))**, the North Central Region has the lowest *out-of-state* multiplier; for **Multiplier #5 (earnings (dollars))**, the North Central Region has the lowest *out-of-state* multiplier; for **Multiplier #6 (employment (jobs))**, the North East Region has the lowest *out-of-state* multiplier.

The economic effects of hunting and fishing in Michigan and its seven geographic regions based on the **six multiplier categories** and **estimated actual**

hunting expenditures, fishing expenditures, and hunting and fishing expenditures by residents, non-residents, and both residents and non-residents were determined and displayed in the body of this report in a series of tables which have been discussed. Based on the analyses provided in these tables, the regions of Michigan were ranked (see below) in terms of the economic effects of hunting and/or fishing expenditures (calculated by applying the multipliers to estimated actual expenditures). These rankings are contained in the summary table below. One region is ranked above another region if it has better economic effect values for more of the multiplier categories than another region.

**Summary Table: Rankings of Regions Based on the Economic Impact of Estimated Actual Expenditures by Category**

Ranking	Hunting (R)	Hunting (NR)	Hunting (R&NR)	Fishing (R)	Fishing (NR)	Fishing (R&NR)	Hunting & Fishing (R)	Hunting & Fishing (NR)	Hunting & Fishing (R&NR)
1	South East	South East	South East	South East	South East	South East	South East	South East	South East
2	South Central	South Central	South Central	South Central	South Central	South Central	South Central	South Central	South Central
3	North Central	North Central	North Central	South West	South West	South West	South West	South West	South West
4	South West	South West	South West	North Central	North Central	North Central	North Central	North Central	North Central
5	Upper Penin.	Upper Penin.	Upper Penin.	Upper Penin.	Upper Penin.	Upper Penin.	Upper Penin.	Upper Penin.	Upper Penin.
6	North East	North East	North East	North West	North West	North West	North East	North West	North East
7	North West	North West	North West	North East	North East	North East	North West	North East	North West

\*R = Resident Expenditures

\*NR = Non-resident Expenditures

For the most part, the rankings of the regions are fairly consistent. Only the rankings for the (North Central vs. South West regions) and (the North East vs. North West) differ based on whether the expenditures are in the hunting versus fishing categories. **As can be seen, the largest effect across all categories for 2016 is associated with the South East Region since it has the largest in-state and out-of-state multipliers in all categories and the highest expenditures on fishing and hunting for both residents and non-residents.** It is also the most populous region in

Michigan. **In contrast, the North West Region has the lowest economic impact in hunting activities whereas the North East Region has the lowest economic impact in fishing activities.**

Finally, the effects of hunting and fishing expenditures by residents and non-residents combined on Michigan's economy as a whole are summarized. The total effects on Michigan's economy across all industries of hunting and fishing expenditures by both residents and non-residents in 2016 (\$8,288,534,529) was equivalent to an expenditure of \$ 11,222,024,072. This combined expenditure on hunting and fishing by residents and non-residents (\$8,288,534,529) resulted in a total dollar change in the earnings of households employed by all industries within the state of \$3,338,317,326. In addition, this combined expenditure on hunting and fishing by residents and non-residents created 171,002 new jobs across all industries for the state. The total dollar change in value added that occurred in all industries within Michigan for the amount of dollars delivered to final demand (resident and non-resident) for hunting and fishing in 2016 (\$8,288,534,529) was \$7,266,946,707. Thus, \$7,266,946,707 of the total dollar output delivered to final demand arising from hunting and fishing expenditures by residents and non-residents was accomplished by Michigan economic entities (whether firms or households) in 2016. The total dollar change in earnings of households employed by all industries within the state associated with the total expenditure amount of \$8,288,534,529 on hunting and fishing by Michigan residents and non-residents in 2016 turned out to be \$11,247,393,959. Finally, the total change in the number of jobs in all industries within the state for each additional job in HF&T arising from the combined expenditures of \$8,288,534,529 was 9,397 jobs.

## **Introduction**

This project determined the economic impact of hunting, fishing, and trapping on Michigan and on seven regions of Michigan. Michigan's numerous counties were grouped into seven geographic regions that were similar within a region but different between regions. The similarity was largely defined in terms of the outdoor experience in hunting and fishing offered in these regions taking into account seasonal conditions. The analyses in this report were performed at the state level and at the regional level

instead of at the county level because the quality of the aggregated data (at the region and state levels) is much higher than for the county level data.

First, this report addresses the state-wide and region-wide economic effects of hunting, fishing, and trapping (HF&T) by interpreting and discussing the HF&T in-state multipliers (pertaining to Michigan residents) and the HF&T out-of-state multipliers (pertaining to non-Michigan residents) calculated for this project across six multiplier categories: (1) output per dollar spent (total effects); (2) earnings per dollar; (3) employment (jobs created); (4) value added in dollars; (5) earnings (dollars), and (6) employment (jobs). Michigan's in-state and out-of-state HF&T multipliers are compared to each other and to those of other states in the US. For each region, its in-state and out-of-state HF&T multipliers are compared to their corresponding multipliers for other industries in the region and to each other. The purpose is to paint a complete picture of the various economic impacts of HF&T in the state (compared to other states) and in each of the seven regions (compared to the economic effects of other industries in the region).

Second, this report examines the results of applying the in-state and out-of-state multipliers for Michigan and for each of its seven geographic regions to estimates of actual expenditures for 2016 on hunting and/or fishing in the state as a whole and in each of its regions to estimate the actual economic impact of hunting and/or fishing by residents and/or non-residents on the state and on each of its regions. For these analyses, *examples* of the economic effects are described for the state and for one of its regions (the South East Region) to demonstrate how the results can be interpreted. *All of the economic effects* are described for the state and for one of its regions (the South East Region) for the final analysis that provides the economic impact of hunting and fishing expenditures by Michigan residents and non-residents. The interpretation of results for one region gives a template for interpreting the results for the other regions.

Finally, this report describes the use of an EXCEL spreadsheet model that was developed to allow for a "what-if" kind of scenario analysis for policy making purposes. Version 1 of the model (LICENSE SALES SIMULATOR) simulates the economic effects on Michigan and on each of its regions of changes in the number of hunting and fishing licenses sold in the state or in any of its regions to Michigan residents and/or non-

residents. Thus, the economic effects of increasing or decreasing hunting and/or fishing license sales in Michigan or in any of its regions can be immediately estimated. Version 2 of the model (EVENT (EXPENDITURES) SIMULATOR simulates the economic effects on Michigan and on each of its regions of changes in hunting and fishing expenditures by Michigan residents and/or non-residents in the state or in any of its regions. This model allows for the effects of extraneous events in the state or in one of its regions on hunting and/or fishing expenditures by residents and/or non-residents to be directly taken into account. For example, the economic impact of the expected effect of a special event in one region of the state on hunting and fishing expenditures by Michigan residents and non-residents in that region can be estimated.

## **Statewide Economic Effects of Hunting, Fishing, and Trapping (HF&T) in Michigan**

In determining the economic impact of hunting, fishing, and trapping (HF&T) in Michigan, two sets of six multipliers each were used based on data collected by the US Department of Commerce and analyzed by the Bureau of Economic Analysis. The first set of multipliers captures the effect of a defined unit of expenditures by Michigan residents (in-state) on key economic measures such as earnings of households and jobs created. The second set of multipliers shows the effect of a defined unit of expenditures by non-residents (out-of-state) on the same economic measures.

### **Statewide Economic Effects of HF&T Activities of Michigan Residents (In-state):**

**Table 1a: In-State Industry Multipliers for Fishing, Hunting and Trapping for Michigan**

Industry Multipliers					
<u>Multiplier 1</u> Output Per Dollar Spent (total effects) 1.238	<u>Multiplier 2</u> Earnings Per Dollar 0.367	<u>Multiplier 3</u> Employment (jobs created) 19.617	<u>Multiplier 4</u> Value Added (in dollars) 0.81	<u>Multiplier 5</u> Earnings (dollars) 1.236	<u>Multiplier 6</u> Employment (jobs) 1.078

Table 1a above contains the in-state industry multipliers for the state of Michigan. The first multiplier, output per dollar spent (1.238), provides the total effect on the Michigan economy of each dollar spent by Michigan residents on HF&T. It indicates that for every dollar spent by a Michigan resident on HF&T, the total dollar change across all industries is equivalent to an expenditure of \$1.24. The second multiplier, earnings per dollar spent (0.367), represents the total dollar change in earnings of households employed across all industries in the state for each additional dollar spent by Michigan residents on HF&T. Thus, 36.7% of every dollar spent in Michigan by its residents on HF&T goes to household earnings. The third multiplier, employment (jobs created) (19.617), represents the total change in number of jobs that occurs in all industries within the state for each additional million dollars of HFT expenditures by Michigan residents. This multiplier indicates that for every one million dollars spent on HF&T in Michigan by its residents, almost 20 jobs are generated for the state. The fourth multiplier, value added (in dollars) (0.81), represents the total dollar change in value added that occurs in all industries within the state for each additional dollar delivered to final demand for HF&T by Michigan residents. This means that 81% of each additional dollar of output delivered to final demand of Michigan residents for HF&T at the retail level is achieved by Michigan economic entities (whether firms or households). The fifth multiplier, earnings (dollars) (1.236), is the total change in household earnings across all industries within the state that results from an additional dollar of earnings paid directly to households employed in HF&T. Thus, the change in earnings of households employed by all industries within Michigan increases by \$1.24 for each additional dollar paid to households employed in HF&T. The final multiplier, employment (jobs) (1.078), represents the total change in number of jobs in all industries within the state for each additional job in HF&T. This multiplier shows that the number of jobs in all industries in Michigan increases by slightly more than one job for each additional job created in HF&T.



### ***Comparison of Michigan's In-state Multipliers with In-state Multipliers for Other States:***

Table 1 in Appendix A provides a comparison of Michigan's in-state multipliers with those of every state in the union. This enables Michigan policy makers to compare the performance of the state with other states with respect to these key in-state economic multipliers. For example, it is insightful to compare the Michigan in-state industry multipliers to those of Michigan's Great Lakes neighbors: Minnesota, Wisconsin, Illinois, Indiana, Ohio, Pennsylvania, and New York. The numbers show that Michigan, with an employment (jobs created) multiplier of 19.617, has done a better job of converting demand (expenditures) on HF&T activities by its residents to jobs in the total economy than its Great Lakes neighbors. In fact, Michigan ranks in the top eleven states having the highest multiplier in this category (Montana, Louisiana, Virginia, Texas, Florida, Georgia, South Carolina, Arizona, Colorado, Hawaii, and Michigan). In contrast, with the exception of Pennsylvania, Michigan has done slightly worse than its Great Lakes neighbors with respect to the total change in number of jobs in all industries within the state associated with each additional job created in HF&T (multiplier 6). Illinois has the best performance in this category for Great Lakes states; Washington state has the best performance in this category overall.

### **Statewide Economic Effects of HF&T Activities of Non-residents (Out-of-state):**

In Table 2a below, the out-of-state multipliers for the state of Michigan are provided. The interpretation of the multipliers is the same as for the in-state multipliers except that these capture the effect of one unit of expenditures by non-residents on the indicated economic measures.

**Table 2a: Out-State Industry Multipliers for Fishing, Hunting and Trapping for Michigan State**

Industry Multipliers					
<u>Multiplier 1</u>	<u>Multiplier 2</u>	<u>Multiplier 3</u>	<u>Multiplier 4</u>	<u>Multiplier 5</u>	<u>Multiplier 6</u>
Output Per Dollar Spent (total effects)	Earnings Per Dollar	Employment (jobs created)	Value Added (in dollars)	Earnings (dollars)	Employment (jobs)
1.650	0.494	23.224	1.047	1.666	1.276

The first multiplier, output per dollar spent (1.650), indicates that for every non-resident dollar spent in Michigan on HF&T, the total dollar change across all industries is equivalent to an expenditure of \$1.65. The second multiplier, earnings per dollar spent, shows that 49.4% of every non-resident dollar spent in Michigan on HF&T goes to household earnings across all industries. The third multiplier, employment (jobs created) (23.224), is the total change in number of jobs that occurs in all industries within the state for each additional million dollars of final demand in HF&T by non-residents. Thus, for every one million dollars spent on HF&T in Michigan by non-residents, more than 23 jobs are generated for the state. The fourth multiplier, value added (in dollars) (1.047), represents the total dollar change in value added that occurs in all industries within the state for each additional dollar of output delivered to final demand for HF&T. This means that 104.7% of each additional dollar of output delivered to final demand for HF&T (i.e., demand at the retail level) deriving from non-residents is accomplished by Michigan economic entities (whether firms or households). The fifth multiplier, earnings (dollars) (1.666), is the total dollar change in earnings of households employed by all industries within the state for each additional dollar of earnings paid directly to households employed in HF&T. Thus, the change in earnings of households employed by all industries within Michigan increases by \$1.67 for each additional dollar paid directly to households employed in HF&T. The final multiplier, employment (jobs) (1.276), represents the total change in number of jobs in all industries within the state for each additional job in HF&T. This multiplier shows that the number of jobs in all industries in Michigan increases by slightly more than one and a quarter jobs for each additional job created in HF&T attributable to non-resident expenditures in HF&T.

### ***Comparison of Michigan's Out-of-state Multipliers with Out-of-state Multipliers for Other States:***

Table A2 in Appendix A provides a comparison of Michigan's out-of-state multipliers with those of every state in the union. The Michigan in-state industry multipliers were compared with those for its Great Lakes neighbors: Minnesota, Wisconsin, Illinois, Indiana, Ohio, Pennsylvania, and New York. The numbers show that Michigan with an employment (jobs created) multiplier of 23.2239 has done a better job of converting demand (expenditures) on HF&T activities to jobs in the total economy than all of its Great Lakes neighbors except for Ohio (whose multiplier is 23.6840). Michigan ranks in the top fifteen states having the highest multiplier in this category; the state with the best performance in converting demand (expenditures) on HF&T by out-of-state residents to jobs in the total economy is Louisiana with a multiplier of 24.7241. However, with the exception of New York, Michigan has done slightly worse than its Great Lakes neighbors with respect to the total change in number of jobs in all industries within the state associated with each additional job created in HF&T arising from non-resident expenditures (multiplier #6). Illinois has the best performance in this category for Great Lakes states; Oregon has the best performance in this category overall.

### ***Comparison of Michigan's Out-of-state Multipliers with Michigan's In-state Multipliers:***

A comparison of the in-state and out-of-state multipliers for the State of Michigan (see Tables 1a and 2a) reveals that the out-of-state multipliers are significantly larger. The out-of-state multipliers for the six categories presented in these tables were 33.3%, 34.6%, 18.4%, 29.3%, 34.8%, and 18.4% higher, respectively, than their in-state counterparts. This underscores the value of efforts by the state of Michigan to attract out-of-state tourists to its numerous HF&T venues. It points to the overall benefits of the state's "Pure Michigan" marketing campaign.

Later sections of this report provide the results of using the in-state and out-of-state multipliers combined with actual expenditures by in-state resident and out-of-state residents on hunting and fishing to estimate the effects of HF&T on Michigan's economy and on the economies of seven designated regions in Michigan.

## **The Rationale for a Region-based Instead of County-based Analysis of the Economic Effects of HF&T in Michigan**

The Bureau of Economic Analysis primarily reports higher aggregate levels of data for purposes of accuracy. The further that geographical units of data are broken down into smaller geographical units of data, their quality is significantly less than that of the higher level aggregate estimates. For this reason, our analyses focused on geographic *regions* in Michigan instead of breaking down the aggregate data into much smaller county level units.

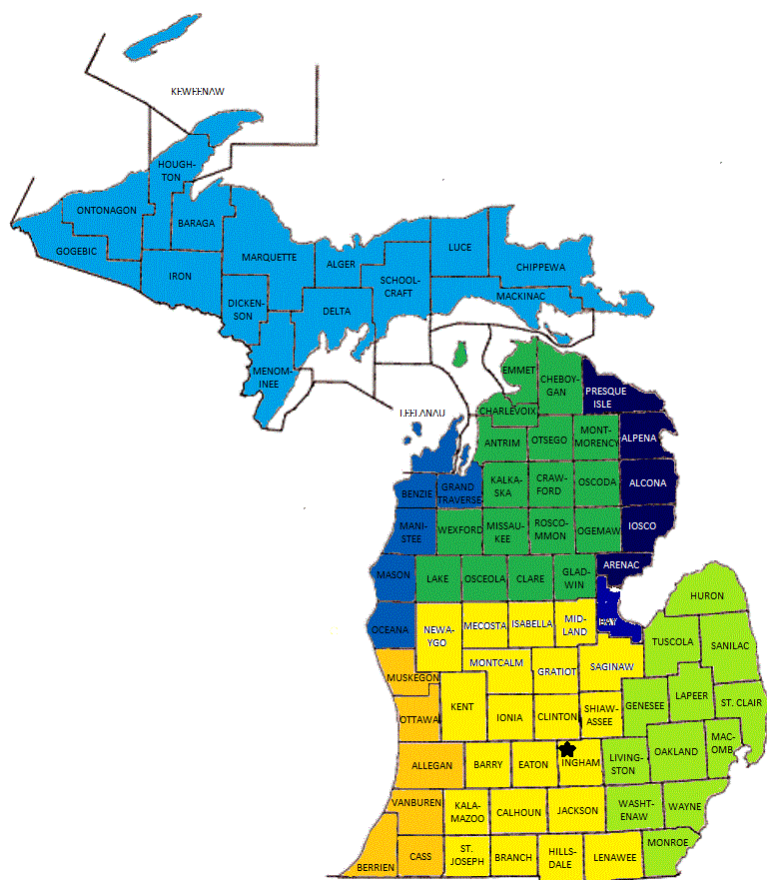
Michigan's numerous counties were divided into seven regions that were similar within region but different between regions. The similarity was defined primarily in terms of the outdoor experience in hunting and fishing offered in these regions taking into account seasonal conditions. The counties were clustered into regions by applying a grouping algorithm to Department of Natural Resource (DNR) data pertaining to recreational activities and to federal government demographic and household income data. Clustering similar counties into regions is appropriate given that 10 to 15% of Michigan's in-land lakes and Great Lakes areas run through the boundaries of multiple counties.

Another reason for grouping the counties into regions for the purpose of these analyses is due to the routine movement of people across county lines for the purposes of employment, shopping, and recreational activities. By grouping the counties into regions, the income and expenditures associated with daily cross county movement is subsumed at the regional level, eliminating the necessity of a formal export tracking model at the county level. Table A below lists the counties comprising the seven economic regions. Figure 1 provides a map of Michigan with the regional divisions displayed.

**Table A. The Seven Economic Regions**

North East	North West	South Central	South East	South West	Upper Peninsula	North Central
Presque Isle	Grand Traverse	Kent	Huron	Muskegon	Mackinac	Emmet
Alpena	Leelanau	Ionia	Tuscola	Ottawa	Chippewa	Cheboygan
Alcona	Benzie	Clinton	Sanilac	Allegan	Luce	Charlevoix
Iosco	Manistee	Shiawassee	Genesee	Vanburen	Schoolcraft	Antrim
Arenac	Mason	Ingham	Lapeer	Cass	Delta	Otsego
Bay	Oceana	Eaton	St. Clair	Berrien	Alger	Montmorency
		Barry	Oakland		Menominee	Oscoda
		Kalamazoo	Livingston		Marquette	Crawford
		Calhoun	Washtenaw		Dickenson	Kalkaska
		Jackson	Wayne		Iron	Wexford
		St. Joseph	Macomb		Baraga	Missaukee
		Branch	Wayne		Houghton	Roscommon
		Hillsdale	Monroe		Keweenaw	Ogemaw
		Lenawee			Ontonagon	Gladwin
		Mecosta			Gogebic	Clare
		Isabella				Lake
		Midland				Osceola

**Figure 1. Map of Michigan with the Seven Economic Regions**



The full analyses for the seven regions are provided next. Note that some of these regions are primarily rural (e.g., the Upper Peninsula Region), some are primarily urban (the Southeast Region), and others represent a combination of rural and urban counties (e.g., the South Central Region). This allows for a comparison of the economic effects of HF&T on rural regions versus urban regions versus mixed regions to assess potential differences that might have important ramifications for policy makers.

To assess the economic impact of HF&T in each of the seven regions in Michigan, two sets of the same six multiplier types used for the state-wide analyses above were calculated for each region using data collected by the US Department of Commerce and analyzed by the Bureau of Economic Analysis. The first set of multipliers for each region captures the effect of a defined unit of expenditures by

Michigan residents (in-state) on key economic measures for the region, such as earnings of households and jobs created. The second set of multipliers for each region reveals the effect of a defined unit of expenditures by non-residents (out-of-state) in the region on the same six economic measures.

## **Economic Effects of HF&T in the Upper Peninsula (UP)**

### **Economic Effects of HF&T Activities of Michigan Residents (In-state) in the UP:**

Table 1b below contains the in-state industry multipliers for the Upper Peninsula (UP) region of Michigan. The first multiplier, output per dollar spent, was 1.113 which indicates that for every dollar spent in the Upper Peninsula by a Michigan resident on HF&T, the effect on this region's overall economy across all industries is equivalent to an expenditure of \$1.11. The second multiplier, earnings per dollar spent, turned out to be 0.324. This represents the share (32.4%) of a dollar spent by a Michigan resident in the UP on HF&T that goes to households employed by all industries. The third multiplier, employment (jobs created), was 18.527 which means that every one million dollars spent on HF&T in the UP by a Michigan resident generates almost 19 jobs across all industries for the state. The fourth multiplier, value added (in dollars), assumed a value of 0.748. This means that 75% of each additional dollar of output delivered to the final demand of Michigan residents for HF&T is achieved by UP economic entities (whether firms or households). The fifth multiplier, earnings (dollars), was 1.119; thus, the household earnings across all industries within the UP increase by \$1.12 for each additional dollar paid directly to households employed in HF&T. The value of the sixth multiplier, employment (jobs), was 1.044: the number of jobs in all industries in the UP increases by slightly more than one job for each additional job created in HF&T.

**Table 1b. In-State Industry Multipliers for Fishing, Hunting and Trapping for the Upper Peninsula (UP)**

Industry Multipliers					
<u>Multiplier 1</u>	<u>Multiplier 2</u>	<u>Multiplier 3</u>	<u>Multiplier 4</u>	<u>Multiplier 5</u>	<u>Multiplier 6</u>
Output Per Dollar Spent (total effects)	Earnings Per Dollar	Employment (jobs created)	Value Added (in dollars)	Earnings (dollars)	Employment (jobs)
1.113	0.324	18.527	0.748	1.119	1.044

***A Comparison of HF&T Industry In-state Multipliers with In-state Multipliers for Other Industries in the Upper Peninsula***

Note that Table B1 in Appendix B provides the six in-state multipliers for all industries in the UP. This table allows for the comparison of the HF&T industry's in-state multipliers for the Upper Peninsula to the in-state multipliers for all other industries in the region. This enables a comparison of HF&T to every other industry in the UP with respect to its economic impact on the region arising from Michigan residents. From the data presented in Table B1, we constructed Table 1b(I) below. This table contains the median, minimum, maximum, and 50<sup>th</sup> to 90<sup>th</sup> percentiles for the six multipliers across all industries in the UP.

**Table 1b (I) Descriptive Statistics for the In-State Multipliers for the Upper Peninsula**

Multipliers	# of Industries (N)	Median	Min	Max	50th Pct	60th Pct	70th Pct	80th Pct	90th Pct
<b>Total Effects</b>	<b>224</b>	1.197	1.047	1.790	1.197	1.218	1.239	1.275	1.325
<b>Earnings Per Dollar</b>		0.304	0.175	0.628	0.304	0.335	0.379	0.460	0.537
<b>Employment (jobs created)</b>		6.556	2.104	30.899	6.556	7.522	9.080	12.612	18.412
<b>Value added (in dollars)</b>		0.619	0.265	0.860	0.619	0.647	0.695	0.725	0.759
<b>Earnings (dollars)</b>		1.237	1.025	2.545	1.237	1.263	1.306	1.367	1.449
<b>Employment (jobs)</b>		1.237	1.020	3.380	1.237	1.280	1.337	1.418	1.527

For example, to provide added insights, we compared the employment (jobs created) multiplier for HF&T (18.527) with this same multiplier for all other industries in the UP based on economic activity in these industries by Michigan residents (see Table



1b(I) above). With respect to the approximately 224 active industry sectors in the UP, HF&T was in the top 10% (90<sup>th</sup> percentile) with respect to impact on job creation in the region. (It one of the top 9.4% of industries in the UP with respect to its effect on creating jobs in the region.) Since hunting and fishing, are often destination type activities, they tend to pull visitors from various parts of the state. They encourage the use of other facilities and services within the region and have natural synergies with other high job creating industries in the UP such as Transit and Ground Passenger Transportation (with an employment (jobs created) multiplier of 25.62, one of the highest in the region); Other Amusement and Recreation Industries (with an employment (jobs created) multiplier of 22.23); Full-service Restaurants (with an employment (jobs created) multiplier of 20.806); and Limited-service Restaurants (with an employment (jobs created) multiplier of 20.748). Of the remaining multipliers, two of them were above the median multiplier (50<sup>th</sup> percentile) in their category (earnings per dollar and value added in dollars) and three were below the median multiplier for their category (output per dollar spent, earnings (dollars), and employment (jobs)).

### **Economic Effects of HF&T Activities of Non-residents (Out-of-state) in the UP:**

Table 2b below contains the out-of-state industry multipliers for the UP region of Michigan. The first multiplier, output per dollar spent, shows that for every non-resident dollar spent on HF&T in the UP, the total effect on the UP's economy across all industries is equal to an expenditure of \$1.31. The second multiplier, earnings per dollar spent, turned out to be 0.388. This represents the share (38.8%) of a dollar spent by a non-resident in the Upper Peninsula on HF&T that goes to the earnings of households employed by all industries in the UP. The third multiplier, employment (jobs created), was 20.540 which means that every one million dollars spent on HF&T in the Upper Peninsula by a non-resident generates over 20 jobs for the state across all industries. The fourth multiplier, value added (in dollars), assumed a value of 0.864. This means that 86.4% of each additional dollar of output delivered to final demand by non-residents for HF&T at the retail level is achieved by Upper Peninsula economic entities (whether firms or households). The fifth multiplier, earnings (dollars), was

1.342. This is the total dollar change in earnings of households employed by all industries within the state for each additional dollar of earnings paid directly to households employed in HF&T. The value of the sixth multiplier, employment (jobs), was 1.157: the numbers of jobs in all industries in the Upper Peninsula increases by slightly more than one job for each additional job created in HF&T based on non-residents' expenditures in this industry.

**Table 2b. Out-State Industry Multipliers for Fishing, Hunting and Trapping for Upper Peninsula**

Industry Multipliers					
<u>Multiplier 1</u>	<u>Multiplier 2</u>	<u>Multiplier 3</u>	<u>Multiplier 4</u>	<u>Multiplier 5</u>	<u>Multiplier 6</u>
Output Per Dollar Spent (total effects)	Earnings Per Dollar	Employment (jobs created)	Value Added (in dollars)	Earnings (dollars)	Employment (jobs)
1.312	0.388	20.540	0.864	1.342	1.157

***A Comparison of HF&T Industry Out-of-state Multipliers with Out-of-state Multipliers for Other Industries in the Upper Peninsula***

Table B2 in Appendix B provides the six out-of-state multipliers for all industries in the UP. This table allows for the comparison of the HF&T industry's out-of-state multipliers for the Upper Peninsula to the out-of-state multipliers for all other industries in the region. Thus, HF&T can be compared to every other industry in the UP with respect to its economic impact on the region arising from non-resident expenditures. The data in Table B2 was used to create Table 2b(II) below. This table contains the median, minimum, maximum, and 50<sup>th</sup> to 90<sup>th</sup> percentiles for the six multipliers across all industries in the Upper Peninsula.

**Table 2b (II) Descriptive Statistics for the Out-of-State Multipliers for Upper Peninsula**

Multipliers	# of Industries (N)	Median	Min	Max	50th Pct	60th Pct	70th Pct	80th Pct	90th Pct
<b>Total Effects</b>		1.418	1.213	1.988	1.418	1.437	1.456	1.480	1.510
<b>Earnings Per Dollar</b>		0.364	0.210	0.753	0.364	0.401	0.454	0.551	0.644
<b>Employment (jobs created)</b>	<b>224</b>	8.335	3.218	34.016	8.335	10.101	11.575	15.635	20.540
<b>Value added (in dollars)</b>		0.728	0.331	1.084	0.728	0.772	0.827	0.876	0.917
<b>Earnings (dollars)</b>		1.483	1.229	3.052	1.483	1.515	1.566	1.640	1.738
<b>Employment (jobs)</b>		1.652	1.111	4.130	1.652	1.720	1.816	1.931	2.040

Based on the information in Table 2b(II) above, we compared the employment (jobs created) multiplier for HF&T (20.540) with this same multiplier for all other industries in the Upper Peninsula based on economic activity in these industries by non-residents. With respect to the approximately 224 active industry sectors in the Upper Peninsula, HF&T was in the top 10% of industries (90<sup>th</sup> percentile) with respect to its impact on job creation in the region. Since hunting and fishing, are often destination type activities, they tend to pull visitors from other parts of the country. They also engender the use of other facilities and services within the region and have natural synergies with other high job creating industries in the Upper Peninsula such as Transit and Ground Passenger Transportation (with an employment (jobs created) multiplier of 28.705, the fifth highest in the region); Other Amusement and Recreation Industries (with an employment (jobs created) multiplier of 24.3684); Full-service Restaurants (with an employment (jobs created) multiplier of 23.4008); and Limited-service Restaurants (with an employment (jobs created) multiplier of 22.8567). Two other multipliers were above the median value across industries in the UP: earnings per dollar and value added (in dollars). In fact, the result for the value added in dollars multiplier revealed that HF&T was in the top 30% of industries in its effect category. Three of the multipliers for HF&T were below the median for all industries in the UP: output per dollar spent (total effect), earnings (dollars), and employment (jobs).

### ***Comparison of the UP Region's Out-of-state Multipliers with the UP Region's In-state Multipliers:***

A comparison of the in-state and out-of-state multipliers for the Upper Peninsula Region (see Tables 1b and 2b) reveals that the out-of-state multipliers are larger in every case. The percentage differences ranged from a high of 19.9% to a low of 10.8% across the six multiplier categories. For example, the multiplier that captures the total change in number of jobs that occurs in all industries within the state for each additional million dollars of final demand in hunting, fishing, and trapping (multiplier 3) was about almost 11% higher for out-of-state residents than for in-state residents. Multiplier 5 (earnings – dollars) was 19.9% higher for out-of-state vis-à-vis in-state. Thus, the economic impact of non-resident dollars spent on HF&T is larger than the impact of Michigan resident dollars for the UP. Nevertheless, the differentials were not quite as large as for the state as a whole.

## **Economic Effects of HF&T in the North East Region (NE)**

### **Economic Effects of HF&T Activities of Michigan Residents (In-state) in the North East Region:**

The in-state multipliers for the North East Region are provided in the next table. The first multiplier was 1.148; this shows that for every dollar spent in the North East Region on HF&T by a resident of the state, the effect on this region's overall economy across all industries is equivalent to an expenditure of \$1.15. Earnings per dollar spent, the second multiplier, assumed a value of 0.319. Thus, the share of a dollar spent by a Michigan resident in the North East Region on HF&T that goes to the earnings of households employed by all industries is 31.9%. The third multiplier (employment (jobs created)) reveals that every one million dollars spent on HF&T in the North East Region by a Michigan resident generates about 18 jobs across all industries for the North East Region. The fourth multiplier, value added (in dollars), was 0.765, indicating that 76.5% of each additional dollar of output delivered to final demand by Michigan residents for HF&T is achieved by North East Region economic entities (firms or households). The fifth multiplier, earnings (dollars), was 1.138. This means that the earnings of

households employed by all industries within the North East Region increases by \$1.14 for each additional dollar of earnings paid directly to households employed by HF&T. The sixth multiplier turned out to be 1.048 indicating that the numbers of jobs in all industries in the North East Region increases by a little over one job for each additional job created in HF&T based on Michigan residents' HF&T expenditures.

**Table 1c. In-State Industry Multipliers for Fishing, Hunting and Trapping for the North East Region**

Industry Multipliers					
<u>Multiplier 1</u> Output Per Dollar Spent (total effects)	<u>Multiplier 2</u> Earnings Per Dollar	<u>Multiplier 3</u> Employment (jobs created)	<u>Multiplier 4</u> Value Added (in dollars)	<u>Multiplier 5</u> Earnings (dollars)	<u>Multiplier 6</u> Employment (jobs)
1.148	0.319	18.015	0.765	1.138	1.048

***A Comparison of HF&T Industry In-state Multipliers with In-state Multipliers for Other Industries in the North East Region***

Table C1 in Appendix C provides the six in-state multipliers for all industries in the North East Region which enables us to compare the HF&T industry's in-state multipliers for the North East Region to the in-state multipliers for all other industries in the region. Thus, we can compare HF&T to every other industry in the North East Region with respect to its economic impact on the region deriving from Michigan residents. Using the data in Table C1, we generated Table 1c(I) below which provides the median, minimum, maximum, and 50<sup>th</sup> to 90<sup>th</sup> percentiles for the six multipliers across all industries in the North East Region.

**Table 1c (I) Descriptive Statistics for the In-State Multipliers for the North East Region**

Multipliers	# of Industries (N)	Median	Min	Max	50th Pct	60th Pct	70th Pct	80th Pct	90th Pct
<b>Total Effects</b>		1.198	1.071	2.041	1.198	1.223	1.258	1.285	1.357
<b>Earnings Per Dollar</b>		0.270	0.116	0.603	0.270	0.298	0.346	0.394	0.440
<b>Employment (jobs created)</b>	<b>203</b>	5.912	1.525	28.142	5.912	6.892	8.530	11.051	16.683
<b>Value added (in dollars)</b>		0.620	0.284	0.855	0.620	0.650	0.692	0.720	0.755
<b>Earnings (dollars)</b>		1.223	1.032	3.167	1.223	1.270	1.317	1.404	1.540
<b>Employment (jobs)</b>		1.231	1.022	4.731	1.231	1.309	1.362	1.446	1.622

Using the information in Table 1c(I), we compared the employment (jobs created) multiplier for HF&T (18.015) arising from Michigan resident demand in this industry with this same multiplier for all other industries in the North East Region (see Table 1b(I) above). Of the 203 active industry sectors in the North East Region, HF&T was in the top 10% (90<sup>th</sup> percentile) with respect to impact on job creation in the region. (It was in the top 7.9% to be exact.) Since hunting and fishing are often destination type activities, they tend to pull visitors from various parts of the state. They encourage the use of other facilities and services within the region and have natural synergies with other high job creating industries in the North East Region, such as Transit and Ground Passenger Transportation (with an employment (jobs) multiplier of 22.194 that is one of the highest in the region); Other Amusement and Recreation Industries (with an employment (jobs) multiplier of 21.1594); Full-service Restaurants (with an employment (jobs) multiplier of 19.2611); and Limited-service Restaurants (with an employment (jobs) multiplier of 19.2234). Of the remaining in-state multipliers, two more of them were above the median multiplier (50<sup>th</sup> percentile) in their category (earnings per dollar and value added in dollars). The value added (in dollars) in-state multiplier was 0.765. This places HF&T in the top 10% (90<sup>th</sup> percentile) with respect to its effect in the value added category on the economy of the North East Region arising from Michigan resident expenditures. Three instate multipliers were below the median multiplier for their category (output per dollar spent, earnings (dollars), and employment (jobs)).

**Economic Effects of HF&T Activities of Non-residents (Out-of-state) in the North East Region:**

Table 2c below contains the out-of-state industry multipliers for the North East Region of Michigan. The first multiplier, output per dollar spent, shows that for every non-resident dollar spent on HF&T in the North East, the total effect across all industries in the North East Region is equivalent to an expenditure of \$1.32. The second multiplier, earnings per dollar spent (0.368) represents the share (36.8%) of a dollar spent by a non-resident in the North East Region on HF&T that winds up in the earnings of households employed by all industries in the North East Region. The third multiplier, employment (jobs created), was 19.549. Thus, every one million dollars spent on HF&T in the North East Region by a non-resident generates close to 20 jobs for the North East Region. The fourth multiplier, value added (in dollars), turned out to be 0.868. This number is the total dollar change in value added that occurs across all industries within the North East Region for each additional dollar of output delivered to non-resident final demand for HF&T at the retail level. This means that 86.8% of each additional dollar of expenditures on HF&T by non-residents goes for output delivered by North East Region economic entities (whether firms or households). The fifth multiplier, earnings (dollars), was 1.314. This represents the total dollar change in earnings of households employed by all industries within the state for each additional dollar of earnings paid directly to households employed in HF&T. The sixth multiplier (employment (jobs)) assumed a value of 1.138 which means that the numbers of jobs in all industries in the North East Region increases by slightly more than one job for each additional job created in HF&T based on non-resident expenditures in this industry.

**Table 2c. Out-State Industry Multipliers for Fishing, Hunting, and Trapping for the North East Region**

Industry Multipliers					
<u>Multiplier 1</u>	<u>Multiplier 2</u>	<u>Multiplier 3</u>	<u>Multiplier 4</u>	<u>Multiplier 5</u>	<u>Multiplier 6</u>
Output Per Dollar Spent	Earnings Per Dollar	Employment (jobs created)	Value Added (in dollars)	Earnings (dollars)	Employment (jobs)
1.323	0.368	19.549	0.868	1.314	1.138

### ***A Comparison of HF&T Industry Out-of-state Multipliers with Out-of-state Multipliers for Other Industries in the North East Region***

Table C2 in Appendix C provides the six out-of-state multipliers for all industries in the North East Region. This table allows for the comparison of the HF&T industry's out-of-state multipliers for the North East Region to the out-of-state multipliers for all other industries in the region. This enables a comparison of HF&T to every other industry in the North East Region with respect to its economic impact on the region arising from non-resident expenditures. Table 2c(II) below was created from the data in Table C2 (Appendix C). This table contains the median, minimum, maximum, and 50<sup>th</sup> to 90<sup>th</sup> percentiles for the six multipliers across all industries in the North East Region.

**Table 2c (II) Descriptive Statistics for the Out-of-State Multipliers for the North East Region**

<b>Multipliers</b>	<b># of Industries (N)</b>	<b>Median</b>	<b>Min</b>	<b>Max</b>	<b>50th Pct</b>	<b>60th Pct</b>	<b>70th Pct</b>	<b>80th Pct</b>	<b>90th Pct</b>
<b>Total Effects</b>	<b>203</b>	1.372	1.182	2.189	1.372	1.386	1.403	1.428	1.494
<b>Earnings Per Dollar</b>		0.311	0.134	0.697	0.311	0.344	0.399	0.454	0.508
<b>Employment (jobs created)</b>		7.400	2.092	29.805	7.400	8.512	10.245	13.171	18.943
<b>Value added (in dollars)</b>		0.711	0.322	1.037	0.711	0.744	0.806	0.842	0.880
<b>Earnings (dollars)</b>		1.412	1.192	3.658	1.412	1.466	1.521	1.621	1.778
<b>Employment (jobs)</b>		1.539	1.090	5.458	1.539	1.626	1.728	1.854	2.135

Using the information in Table 2c(II) above, the employment (jobs created) multiplier for HF&T (19.549) was compared with this same multiplier for all other industries in the North East Region based on economic activity in these industries by non-residents. There are 203 active industry sectors in the North East Region; HF&T was in the 10% of industries (90<sup>th</sup> percentile) with respect to its impact on job creation in the region (even better, it is in the top 8.4%). Since hunting and fishing are often destination type activities, they tend to pull visitors from other parts of the country. They also engender the use of other facilities and services within the region and have natural synergies with other high job creating industries in the North East Region, such as Transit and Ground Passenger Transportation (with an employment (jobs created)



multiplier of 24.2549); Other Amusement and Recreation Industries (with an employment (jobs created) multiplier of 22.7100); Full-service Restaurants (with an employment (jobs created) multiplier of 21.1182); and Limited-service Restaurants (with an employment (jobs created) multiplier of 20.7359). Two other multipliers were above the median value across industries in the North East Region: earnings per dollar and value added (in dollars). The value added in dollars multiplier was high enough in value to place HF&T was in the top 20% of industries for this effect category. Three of the multipliers for HF&T were below the median for all industries in the North East Region: output per dollar spent (total effect), earnings (dollars), and employment (jobs).

***Comparison of the North East Region's Out-of-state Multipliers with the North East Region's In-state Multipliers:***

A comparison of the in-state and out-of-state multipliers for the North East Region (see Tables 1c and 2c above) indicates that the out-of-state multipliers are larger in every case. For example, out-of-state multipliers 1, 2, and 5 (output per dollar spent, earnings per dollar, and earnings (dollars), respectively) were over 15% higher than their corresponding in-state multipliers. The value of out-of-state multiplier 3 (employment (jobs created) was almost 9% higher than its in-state counterpart for the North East region. These numbers reveal that non-resident dollars spent on HF&T have a larger economic impact than Michigan resident dollars. However, the differentials were not quite as large as for the state as a whole.

**Economic Effects of HF&T in the North West Region (NW)**

**Economic Effects of HF&T Activities of Michigan Residents (In-state) in the North West Region:**

The in-state multipliers for the North West Region are provided in Table 1d. The first multiplier, output per dollar spent (1.116), provides the total effect on the North West Region's economy across all industries of each dollar spent by Michigan residents on HF&T. Thus, for every dollar spent by a Michigan resident on HF&T, the effect on the North West Region's economy is equivalent to an expenditure of \$1.12. Earnings

per dollar spent, the second multiplier, was 0.306. This means that 30.6% of every dollar spent in Michigan by its residents on HF&T goes to the earnings of households across all industries. The third multiplier (employment (jobs created)) indicates that every one million dollars spent on HF&T in the North West Region by a Michigan resident generates a little over 17 jobs for the North West Region. The fourth multiplier, value added (in dollars) (0.751) represents the total dollar change in value added that occurs in all industries within the region for each additional dollar delivered to final demand for HF&T by Michigan residents. Thus, 75.1% of each additional dollar of output delivered to final demand by Michigan residents for HF&T at the retail level is achieved by North West Region economic entities (firms or households). The fifth multiplier, earnings (dollars), was 1.123. This is the total dollar change in earnings of households employed by all industries within the region for each additional dollar of earnings paid directly to households employed in HF&T. In other words, the earnings of households employed by all industries within the North West Region increases by \$1.12 for each additional dollar of earnings paid directly to households employed by HF&T. The sixth multiplier, employment (jobs) (1.045), shows that the number of jobs in all industries in the North West Region increases by a little over one job for each additional job created in HF&T attributable to Michigan residents' expenditures in this industry.

**Table 1d. In-State Industry Multipliers for Fishing, Hunting and Trapping for the North West Region**

Industry Multipliers					
<u>Multiplier 1</u> Output Per Dollar Spent (total effects) 1.116	<u>Multiplier 2</u> Earnings Per Dollar 0.306	<u>Multiplier 3</u> Employment (jobs created) 17.441	<u>Multiplier 4</u> Value Added (in dollars) 0.751	<u>Multiplier 5</u> Earnings (dollars) 1.123	<u>Multiplier 6</u> Employment (jobs) 1.045

***A Comparison of HF&T Industry In-state Multipliers with In-state Multipliers for Other Industries in the North West Region***

Table D1 in Appendix D gives the six in-state multipliers for all industries in the North West Region which enables us to compare the HF&T industry's in-state multipliers for the region to the in-state multipliers for all other industries in the region.

Our purpose is to compare HF&T to every other industry in the North West Region with respect to its economic impact on the region deriving from Michigan residents. From the data provided in Table D1, Table 1d(I) was constructed. This table contains the median, minimum, maximum, and 50<sup>th</sup> to 90<sup>th</sup> percentiles for the six multipliers across all industries in the North West Region.

**Table 1d (I) Descriptive Statistics for the In-State Multipliers for the North West Region**

Multipliers	# of Industries (N)	Median	Min	Max	50th Pct	60th Pct	70th Pct	80th Pct	90th Pct
<b>Total Effects</b>	<b>229</b>	1.254	1.075	1.822	1.254	1.278	1.303	1.329	1.390
<b>Earnings Per Dollar</b>		0.305	0.169	0.604	0.305	0.335	0.378	0.455	0.528
<b>Employment (jobs created)</b>		6.921	2.061	30.026	6.921	7.680	9.053	11.957	17.441
<b>Value added (in dollars)</b>		0.647	0.268	0.873	0.647	0.678	0.725	0.756	0.790
<b>Earnings (dollars)</b>		1.287	1.042	2.470	1.287	1.335	1.379	1.467	1.585
<b>Employment (jobs)</b>		1.292	1.034	3.329	1.292	1.352	1.424	1.534	1.730

Consequently, we compared the employment (jobs created) multiplier for HF&T (17.441) arising from Michigan resident activity in this industry with the corresponding multiplier for all other industries in the North West Region (see Table 1d(I) above). Of the 229 active industry sectors in the North West Region, HF&T was in the top 10% (90<sup>th</sup> percentile) concerning its effect on job creation in the region. Since hunting and fishing are often destination type activities, they tend to pull visitors from various parts of the state. They encourage the use of other facilities and services within the region and have natural synergies with other high job creating industries in the North West Region such as Transit and Ground Passenger Transportation (with an employment (jobs created) multiplier of 24.3097 one of the highest in the region); Other Amusement and Recreation Industries (with an employment (jobs created) multiplier of 20.5172); Full-service Restaurants (with an employment (jobs created) multiplier of 19.3789); and Limited-service Restaurants (with an employment (jobs created) multiplier of 19.4356). Of the remaining in-state multipliers, two were above the median multiplier (50<sup>th</sup> percentile) for their category (earnings per dollar and value added in dollars). Three in-state multipliers were below the median multiplier for their category output per dollar spent (total effects), earnings (dollars), and employment (jobs)).

### **Economic Effects of HF&T Activities of Non-residents (Out-of-state) in the North West Region**

Table 2d below contains the out-of-state industry multipliers for the North West Region of Michigan. The first multiplier, output per dollar spent, shows that for every non-resident dollar spent on HF&T in the North West Region, the total effect on the region's economy across all industries is equivalent to an expenditure of \$1.34. The second multiplier, earnings per dollar spent (0.372) represents the portion (37.2%) of a dollar spent by a non-resident in the North West Region on HF&T that goes to earnings of households employed by all industries in the region. The value for the third multiplier, employment (jobs created), was 19.498. For every one million dollars spent on HF&T in the North West Region by non-residents, close to 20 jobs are generated in the North West Region. The fourth multiplier, value added (in dollars), was 0.881. This number is the amount of each additional dollar of output delivered to non-resident final demand for HF&T at the retail level that is achieved by North West Region economic entities. The fifth multiplier, earnings (dollars) (1.369), is the total dollar change in earnings of households employed by all industries within the region for each additional dollar of earnings paid directly to households employed in HF&T. The sixth multiplier (employment (jobs)) was 1.168: the number of jobs in all industries in the North West Region increases by slightly more than one for each additional job created in HF&T based on non-resident expenditures in this industry.

**Table 2d. Out-of-State Industry Multipliers for Fishing, Hunting and Trapping for North West Region**

Industry Multipliers					
<u>Multiplier 1</u>	<u>Multiplier 2</u>	<u>Multiplier 3</u>	<u>Multiplier 4</u>	<u>Multiplier 5</u>	<u>Multiplier 6</u>
Output Per Dollar Spent	Earnings Per Dollar	Employment (jobs created)	Value Added (in dollars)	Earnings (dollars)	Employment (jobs)
(total effects)					
1.335	0.372	19.498	0.881	1.369	1.168

***A Comparison of HF&T Industry Out-of-state Multipliers with Out-of-state Multipliers for Other Industries in the North West Region***

Table D2 in Appendix D provides the six out-of-state multipliers for all industries in the North West Region. This enables a comparison of HF&T to every other industry in the North West Region in terms of its economic impact on the region arising from non-resident expenditures. Table 2d(II) (below) was created from the data in Table D2 (Appendix D). This table contains the median, minimum, maximum, and 50<sup>th</sup> to 90<sup>th</sup> percentiles for the six multipliers across all industries in the North West Region.

**Table 2d (II) Descriptive Statistics for the Out-of-State Multipliers for the North West Region**

Multipliers	# of Industries (N)	Median	Min	Max	50th Pct	60th Pct	70th Pct	80th Pct	90th Pct
<b>Total Effects</b>	<b>229</b>	1.503	1.244	2.044	1.503	1.528	1.547	1.578	1.614
<b>Earnings Per Dollar</b>		0.372	0.206	0.736	0.372	0.408	0.461	0.555	0.643
<b>Employment (jobs created)</b>		8.721	3.371	33.344	8.721	10.465	11.877	15.471	20.180
<b>Value added (in dollars)</b>		0.779	0.348	1.124	0.779	0.823	0.881	0.928	0.989
<b>Earnings (dollars)</b>		1.568	1.270	3.010	1.568	1.626	1.680	1.787	1.931
<b>Employment (jobs)</b>		1.751	1.154	4.141	1.751	1.842	1.973	2.100	2.353

Using the information in Table 2d(II) above, the out-of-state employment (jobs created) multiplier for HF&T (19.498) was compared with this same multiplier for all other industries in the North West Region based on non-resident economic activity. With respect to the 229 active industry sectors in the North West Region, HF&T was in the top 20% of industries (80<sup>th</sup> percentile) with respect to its impact on job creation in the region. Since hunting and fishing are often destination type activities they tend to pull visitors from other parts of the country. They also engender the use of other facilities and services within the region and have natural synergies with other high job creating industries in the North West Region such as Transit and Ground Passenger Transportation (with an employment (jobs created) multiplier of 27.5572); Other Amusement and Recreation Industries (with an employment (jobs created) multiplier of 22.7249); Full-service Restaurants (with an employment (jobs created) multiplier of 22.0358); and Limited-service Restaurants (with an employment (jobs created)

multiplier of 21.6467). One other multiplier for HF&T was above the median value across all industries in the North West Region (value added (in dollars)), one multiplier was at the median (earnings per dollar), and three multipliers were below the median (output per dollar spent (total effect), earnings (dollars), and employment (jobs)).

### ***Comparison of the North West Regions Out-of-state Multipliers with the North West Region's In-state Multipliers:***

A comparison of the in-state and out-of-state multipliers for the North West Region (see Tables 1d and 2d above) indicates that the out-of-state multipliers are larger in every case. For example, out-of-state multipliers 1, 2, 4, and 5 (output per dollar spent, earnings per dollar, value added (in dollars) and earnings (dollars), respectively) were 19.6%, 21.6%, 17.3%, and 21.9% higher, respectively, than their in-state counterparts. Both out-of-state multipliers 3 (employment (jobs created) and 6 (employment (jobs)) were 11.8% higher than their corresponding in-state multipliers. Thus, non-resident dollars spent on HF&T in the North West Region has a larger economic impact than Michigan resident dollars. The differences, however, were not quite as large as for the state as a whole.

## **Economic Effects of HF&T in the North Central (NC) Region**

### **Economic Effects of HF&T Activities of Michigan Residents (In-state) in the North Central Region:**

The in-state industry multipliers for the North Central (NC) region of Michigan are provided in the next table. The value of output per dollar spent (multiplier 1) was 1.099. This means that for every dollar spent in the North Central Region by a Michigan resident on HF&T, the effect on this region's overall economy across all industries is equal to an expenditure of \$1.10. The second multiplier, earnings per dollar spent, assumed a value of 0.317. This represents the portion (31.7%) of a dollar spent by a Michigan resident in the North Central Region on HF&T that ends up in household earnings across all industries. The third multiplier, employment (jobs created), was 18.388; thus, every one million dollars spent on HF&T in the North Central Region by a

Michigan resident generates more than 18 jobs for the region. The fourth multiplier, value added (in dollars), was 0.739. This means that 74% of each additional dollar of output delivered to final demand by Michigan residents for HF&T is achieved by North Central Region economic entities. The fifth multiplier, earnings (dollars), turned out to be 1.095 showing that the change in earnings of households employed by all industries within the North Central Region increases by \$1.10 for each additional dollar paid directly to households employed in the HF&T industry where the employment is derived from Michigan residents' HF&T expenditures. The sixth multiplier (employment (jobs)) was 1.035 meaning that the numbers of jobs in all industries in the North Central Region increases by slightly more than one job for each additional job created in HF&T from Michigan residents' expenditures in this industry.

**Table 1e. In-State Industry Multipliers for Fishing, Hunting and Trapping for the North Central Region**

Industry Multipliers					
<u>Multiplier 1</u>	<u>Multiplier 2</u>	<u>Multiplier 3</u>	<u>Multiplier 4</u>	<u>Multiplier 5</u>	<u>Multiplier 6</u>
Output Per Dollar Spent (total effects)	Earnings Per Dollar	Employment (jobs created)	Value Added (in dollars)	Earnings (dollars)	Employment (jobs)
1.099	0.317	18.388	0.739	1.095	1.035

***A Comparison of HF&T Industry In-state Multipliers with In-state Multipliers for Other Industries for the North Central Region***

Table E1 in Appendix E provides the six in-state multipliers for all industries in the North Central Region allowing for a comparison of the HF&T industry's in-state multipliers for the North Central Region to the in-state multipliers for all other industries in the region to determine the relative economic impact of HF&T in the North Central Region arising from Michigan residents' HF&T expenditures. From the data contained in Table E1, Table 1e(I) below was created. This table displays the median, minimum, maximum, and 50<sup>th</sup> to 90<sup>th</sup> percentiles for the six multipliers across all industries in the North Central Region.

**Table 1e (I) Descriptive Statistics for the In-State Multipliers for the North Central Region**

Multipliers	# of Industries (N)	Median	Min	Max	50th Pct	60th Pct	70th Pct	80th Pct	90th Pct
<b>Total Effects</b>		1.216	1.060	1.912	1.216	1.240	1.272	1.305	1.382
<b>Earnings Per Dollar</b>		0.293	0.159	0.641	0.293	0.322	0.369	0.433	0.498
<b>Employment (jobs created)</b>	<b>242</b>	6.319	2.104	30.327	6.319	7.540	8.989	11.428	16.105
<b>Value added (in dollars)</b>		0.608	0.259	0.862	0.608	0.637	0.686	0.721	0.763
<b>Earnings (dollars)</b>		1.246	1.031	2.465	1.246	1.295	1.344	1.389	1.525
<b>Employment (jobs)</b>		1.267	1.034	3.781	1.267	1.329	1.378	1.474	1.626

We compared the employment (jobs created) multiplier for HF&T (18.388) with this same multiplier for all other industries in the North Central Region based on economic activity in these industries by Michigan residents (see Table 1e(I) above). With respect to the approximately 242 active industry sectors in the North Central Region, HF&T was in the top 10% (90<sup>th</sup> percentile) with respect to its effect on job creation in the region (it actually made it into the top 8.7%) Hunting and fishing are often destination type activities which tend to draw visitors from various parts of the state. They engender the use of other facilities and services within the region and have natural synergies with other high job creating industries in the North Central Region, such as Transit and Ground Passenger Transportation (with an employment (jobs created) multiplier of 24.6457, one of the highest in the region); Other Amusement and Recreation Industries (with an employment (jobs created) multiplier of 22.7624); Full-service Restaurants (with an employment (jobs created) multiplier of 20.4706); and Limited-service Restaurants (with an employment (jobs created) multiplier of 20.4192). Of the remaining multipliers, two of them were above the median multiplier (50<sup>th</sup> percentile) in their category (earnings per dollar and value added in dollars). In fact, the value added in dollars multiplier (multiplier 4) indicated that HF&T was in the top 20% of industry sectors in the North Central Region in terms of its economic effect in the region. Three multipliers were below the median multiplier value for their category: output per dollar spent, earnings (dollars), and employment (jobs).



**Economic Effects of HF&T Activities of Non-residents (Out-of-state) in the North Central Region:**

Table 2e (below) provides the out-of-state industry multipliers for the North Central Region of Michigan. The first multiplier, output per dollar spent, shows that for every non-resident dollar spent on HF&T in the North Central Region, the total effect on the North Central Region's economy across all industries is equivalent to an expenditure of \$1.28. The second multiplier, earnings per dollar spent, was 0.375. Thus, 37.5% of a dollar spent by a non-resident in the North Central Region on HF&T goes to the earnings of households employed by all industries in the region. The third multiplier, employment (jobs created), was 20.235. This means that every one million dollars spent on HF&T and trapping in the North Central Region by a non-resident generates over 20 jobs for the North Central Region. The fourth multiplier, value added (in dollars), turned out to be 0.848; therefore, 84.8% of each additional dollar of output delivered to final non-resident demand for HF&T at the retail level is accomplished by North Central economic entities whether firms or households. The fifth multiplier, earnings (dollars) (1.295), represents the total dollar change in earnings of households employed by all industries within the state for each additional dollar of earnings paid directly to households employed in HF&T. The value of the sixth multiplier, employment (jobs), was 1.139. This means that the number of jobs in all industries in the North Central Region increases by slightly more than one job for each additional job created in HF&T based on non-residents' expenditures on HF&T.

**Table 2e. Out-of-State Industry Multipliers for Fishing, Hunting and Trapping for the North Central Region**

Industry Multipliers					
<u>Multiplier 1</u>	<u>Multiplier 2</u>	<u>Multiplier 3</u>	<u>Multiplier 4</u>	<u>Multiplier 5</u>	<u>Multiplier 6</u>
Output Per Dollar Spent (total effects)	Earnings Per Dollar	Employment (jobs created)	Value Added (in dollars)	Earnings (dollars)	Employment (jobs)
1.284	0.375	20.235	0.848	1.295	1.139

***A Comparison of HF&T Industry Out-of-state Multipliers with Out-of-state Multipliers for Other Industries in the North Central Region***

Table E2 in Appendix E provides the six out-of-state multipliers for all industries in the North Central Region enabling a comparison of the HF&T industry's out-of-state multipliers for the North Central Region to the out-of-state multipliers for all other industries in the region. Thus, HF&T can be compared to every other industry in the North Central Region with respect to its economic impact on the region arising from non-resident expenditures. The data in Table E2 was used to create Table 2e(II) below. This table contains the median, minimum, maximum, and 50<sup>th</sup> to 90<sup>th</sup> percentiles for the six multipliers across all industries in the North Central Region.

**Table 2e (II) Descriptive Statistics for the Out-of-State Multipliers for the North Central Region**

Multipliers	# of Industries (N)	Median	Min	Max	50th Pct	60th Pct	70th Pct	80th Pct	90th Pct
<b>Total Effects</b>	<b>242</b>	1.418	1.203	2.097	1.418	1.435	1.457	1.482	1.565
<b>Earnings Per Dollar</b>		0.346	0.188	0.758	0.346	0.381	0.436	0.512	0.589
<b>Employment (jobs created)</b>		7.981	3.030	32.538	7.981	9.564	11.065	13.933	18.646
<b>Value added (in dollars)</b>		0.710	0.324	1.070	0.710	0.754	0.803	0.862	0.898
<b>Earnings (dollars)</b>		1.474	1.220	2.915	1.474	1.532	1.590	1.643	1.804
<b>Employment (jobs)</b>		1.675	1.116	4.554	1.675	1.744	1.836	1.965	2.120

From the information in Table 2e(II) above, we compared the employment (jobs created) multiplier for HF&T (20.235) with this same multiplier for all other industries in the North Central Region based on economic activity in these industries by non-residents. With respect to the approximately 242 active industry sectors in the North Central Region, HF&T was in the top 10% of industries (90<sup>th</sup> percentile) in its impact on job creation in the region. Since hunting and fishing are often destination type activities, they tend to pull visitors from other parts of the country. They also engender the use of other facilities and services within the region and have natural synergies with other high job creating industries in the North Central Region such as Transit and Ground Passenger Transportation (with an employment (jobs created) multiplier of 27.4370, the fourth highest in the region); Other Amusement and Recreation Industries (with an employment (jobs created) multiplier of 24.8064); Full-service Restaurants (with an

employment (jobs created) multiplier of 22.8640); and Limited-service Restaurants (with an employment (jobs created) multiplier of 22.3673). Two other multipliers for HF&T were above the median value across industries in the North Central Region: earnings per dollar and value added (in dollars). In fact, the result for the value added in dollars multiplier revealed that HF&T was in the top 30% of industries in its effect category. Three of the multipliers for HF&T were below the median for all industries in the North Central Region: output per dollar spent (total effect), earnings (dollars), and employment (jobs).

### ***Comparison of the North Central Region's Out-of-state Multipliers with the North Central Region's In-state Multipliers:***

We compared the in-state and out-of-state multipliers for the North Central Region (see Tables 1e and 2e) and found that the out-of-state multipliers are larger in every case. The percentage differences ranged from a high of 18.3% to a low of 10% across the six multiplier categories. For example, the multiplier that captures the total change in the number of jobs that occurs in all industries within the state for each additional million dollars of final demand in HF&T (multiplier 3) was 10% higher for out-of-state residents than for in-state residents. Multiplier 5 (earnings (dollars)) was 18.3% higher for out-of-state vis-à-vis in-state. It appears that the economic impact of non-resident dollars spent on HF&T is larger than the impact of Michigan resident dollars for the UP. Nevertheless, the differences were not as large as for the state as a whole.

## **Economic Effects of HF&T in the South East Region (SE)**

### **Economic Effects of HF&T Activities of Michigan Residents (In-state) in the South East Region:**

The six in-state multipliers calculated for the South East Region of Michigan are given in Table 1f. The first multiplier, output per dollar spent, was 1.241. Thus, for every dollar spent in the South East Region on HF&T by Michigan residents, the effect on this region's economy across all industries is equivalent in impact to an expenditure of \$1.24. The second multiplier, earnings per dollar spent, assumed a value of 0.362 which is the share (36.2%) of a resident dollar spent in the South East Region on HF&T

that goes to the earnings of households across all industries in the region. The third multiplier, employment (jobs created), was 19.322 which means that every one million dollars spent on HF&T by Michigan residents in the South East Region generates a little over 19 jobs for the region. The fourth multiplier, value added (in dollars), turned out to be 0.812; therefore, 81.2% of each additional dollar of output delivered to final demand for HF&T (by Michigan residents at the retail level) is achieved by South East Region economic entities (whether firms or households). The fifth multiplier, earnings (dollars), assumed a value of 1.237. This means that the change in earnings of households employed by all industries within the South East Region increases by \$1.24 for each additional dollar paid to households employed in HF&T. The sixth multiplier employment (jobs) was 1.077; the numbers of jobs in all industries in the South East Region increases by slightly more than one job for each additional job created in HF&T deriving from Michigan residents' HF&T expenditures.

**Table 1f. In-State Industry Multipliers for Fishing, Hunting and Trapping for the South East Region**

Industry Multipliers					
<u>Multiplier 1</u> Output Per Dollar Spent (total effects) 1.241	<u>Multiplier 2</u> Earnings Per Dollar 0.362	<u>Multiplier 3</u> Employment (jobs created) 19.322	<u>Multiplier 4</u> Value Added (in dollars) 0.812	<u>Multiplier 5</u> Earnings (dollars) 1.237	<u>Multiplier 6</u> Employment (jobs) 1.077

***A Comparison of HF&T Industry In-state Multipliers with In-state Multipliers for Other Industries in the South East Region***

Table F1 in Appendix F provides the six in-state multipliers for all industries in the South East Region which enables us to compare the HF&T industry's in-state multipliers for the South East Region to the in-state multipliers for all other industries in the region. Thus, we can compare HF&T to every other industry in the South East Region with respect to its economic impact on the region deriving from Michigan residents. Using the data in Table F1, we created Table 1f(I) below which provides the median,

minimum, maximum, and 50<sup>th</sup> to 90<sup>th</sup> percentiles for the six multipliers across all industries in the South East Region.

**Table 1f (I) Descriptive Statistics for the In-State Multipliers for the South East Region**

Multipliers	# of Industries (N)	Median	Min	Max	50th Pct	60th Pct	70th Pct	80th Pct	90th Pct
<b>Total Effects</b>		1.489	1.084	2.006	1.489	1.531	1.581	1.650	1.706
<b>Earnings Per Dollar</b>		0.357	0.172	0.704	0.357	0.380	0.419	0.486	0.564
<b>Employment (jobs created)</b>	<b>351</b>	6.625	1.549	33.827	6.625	7.426	8.955	10.528	17.056
<b>Value added (in dollars)</b>		0.718	0.289	0.939	0.718	0.751	0.785	0.818	0.861
<b>Earnings (dollars)</b>		1.639	1.079	2.496	1.639	1.720	1.842	1.957	2.128
<b>Employment (jobs)</b>		1.661	1.038	3.368	1.661	1.747	1.823	1.970	2.214

To gain insights regarding the impact of HF&T on the South East Region of Michigan from this information, we compared the employment (jobs) multiplier for HF&T (19.322) with this same multiplier for all other industries in the South East Region. There are approximately 351 active industry sectors in the South East Region of Michigan; the HF&T multiplier placed it in the top 23 industries in the region for generating jobs based on expenditures (in millions of dollars). In other words, HF&T was in the top 6.6% of industries in the region with respect to impact on job creation. As noted earlier, hunting and fishing are often destination type activities which tend to pull visitors from both in-state and out-of-state. As such they engender the use of other facilities and services within the South East Region and have natural synergies with other high job creating industries in the region including Transit and Ground Passenger Transportation (with an employment (jobs) multiplier of 25.87, one of the highest in the region); Other Amusement and Recreation Industries (with an employment (jobs) multiplier of 25.6229); Full-service Restaurants (with an employment (jobs) multiplier of 22.5801); and Limited-service Restaurants (with an employment (jobs) multiplier of 22.5579). For the remaining in-state multipliers, two more of them were above the median multiplier (50<sup>th</sup> percentile) in their category (earnings per dollar and value added in dollars). The value added (in dollars) in-state multiplier was 0.812 indicating that HF&T is in the top 20% (80<sup>th</sup> percentile) with respect to this industry's impact in the value added category on the economy of the South East Region arising from Michigan

resident expenditures. Three instate multipliers were below the median multiplier for their category (output per dollar spent, earnings (dollars), and employment (jobs)).

**Economic Effects of HF&T Activities of Non-residents (Out-of-state) in the South East Region:**

Table 2f below contains the out-of-state industry multipliers for the South East Region of Michigan. The first multiplier, output per dollar spent, indicates that for every non-resident dollar spent on HF&T in the South East, the total effect on the South East Region's economy across all industries is equivalent to an expenditure of \$1.64. The second multiplier, earnings per dollar spent, is 0.484. This represents the share (48.4%) of a dollar spent by a non-resident in the South East Region on HF&T that goes to household earnings across all industries. The value of the third multiplier (employment (jobs created)) was 22.800, which means that every one million dollars spent on HF&T in the South East Region by non-residents creates almost 23 jobs for the region. The fourth multiplier, value added (in dollars), assumed a value of 1.047. This is the total dollar change in value added that occurs in all industries in the region for each additional dollar of output delivered to (non-resident) final demand by the HF&T industry. This means that 104.7% of each additional dollar of expenditures on HF&T by non-residents goes for output delivered by South East Region economic entities (firms or households). The fifth multiplier (earnings (dollars)) turned out to be 1.655. This number represents the total dollar change in earnings of households employed by all industries within the state for each additional dollar of earnings paid directly to households employed in HF&T. Employment (jobs), the sixth multiplier, assumed a value of 1.271 indicating that the number of jobs in all industries in the South East Region increases by slightly more than one and a quarter jobs for each additional job created in HF&T based on non-resident expenditures on HF&T.

**Table 2f. Out-State Industry Multipliers for Fishing, Hunting and Trapping for the South East Region**

Industry Multipliers					
<u>Multiplier 1</u>	<u>Multiplier 2</u>	<u>Multiplier 3</u>	<u>Multiplier 4</u>	<u>Multiplier 5</u>	<u>Multiplier 6</u>
Output Per Dollar Spent (total effects)	Earnings Per Dollar	Employment (jobs created)	Value Added (in dollars)	Earnings (dollars)	Employment (jobs)
1.640	0.484	22.800	1.047	1.655	1.271

***A Comparison of HF&T Industry Out-of-state Multipliers with Out-of-state Multipliers for Other Industries in the South East Region***

The six out-of-state multipliers for all industries in the South East Region are provided in Table F2 in Appendix F. These multipliers enable a comparison of HF&T to every other industry in the South East Region with respect to its economic impact on the region arising from non-resident expenditures. From Table F2 (Appendix F), we created Table 2f(II) (below), which gives the median, minimum, maximum, and 50<sup>th</sup> to 90<sup>th</sup> percentiles for the six out-of-state multipliers across all industries in the South East Region.

**Table 2f (II) Descriptive Statistics for the Out-of-State Multipliers for the South East Region**

Multipliers	# of Industries (N)	Median	Min	Max	50th Pct	60th Pct	70th Pct	80th Pct	90th Pct
<b>Total Effects</b>	<b>351</b>	1.947	1.273	2.399	1.947	1.995	2.024	2.071	2.139
<b>Earnings Per Dollar</b>		0.478	0.230	0.942	0.478	0.508	0.560	0.651	0.755
<b>Employment (jobs created)</b>		10.161	3.198	38.429	10.161	11.173	12.924	15.360	21.489
<b>Value added (in dollars)</b>		0.941	0.401	1.390	0.941	1.002	1.057	1.107	1.205
<b>Earnings (dollars)</b>		2.194	1.444	3.341	2.194	2.303	2.466	2.619	2.848
<b>Employment (jobs)</b>		2.545	1.231	5.260	2.545	2.676	2.917	3.115	3.486

Based on the table above, the employment (jobs created) multiplier for HF&T (22.800) was compared with this same multiplier for all other industries in the South East Region based on economic activity in these industries by non-residents. There are 351 active industry sectors in the South East Region; HF&T was in the top 10% of industries (90<sup>th</sup> percentile) with respect to its impact on job creation in the region. (It

actually was in the top 8.5%). As destination type activities, HF&T tend to draw visitors from other parts of the country. They also engender the use of other facilities and services within the region and have natural synergies with other high job creating industries in the South East Region such as Transit and Ground Passenger Transportation (with an employment (jobs created) multiplier of 31.2571); Other Amusement and Recreation Industries (with an employment (jobs created) multiplier of 29.9260); Full-service Restaurants (with an employment (jobs created) multiplier of 27.4362); and Limited-service Restaurants (with an employment (jobs created) multiplier of 26.5848). Two other multipliers were above the median value across industries in the South East Region: earnings per dollar and value added (in dollars). The remaining three out-of-state multipliers for HF&T (output per dollar spent (total effect), earnings (dollars), and employment (jobs)) were below the median for all industries in the South East Region.

***Comparison of the South East Region's Out-of-state Multipliers with the South East Region's In-state Multipliers:***

A comparison of the in-state and out-of-state multipliers for the South East Region (see Tables 1f and 2f above) indicates that the out-of-state multipliers are larger in every case. For example, out-of-state multipliers 1, 2, 3, 4, 5 and 6 are 32.2%, 33.7%, 18%, 28.9%, 33.8%, and 18% higher, respectively, than their in-state multiplier counterparts. These percentages demonstrate that non-resident dollars spent on HF&T have a larger economic impact than Michigan resident dollars. These differences were quite comparable to those for the state as a whole.

**Economic Effects of HF&T in the South West Region (SW)**

**Economic Effects of HF&T Activities of Michigan Residents (In-state) in the South West Region:**

Table 1g provides the six in-state multipliers calculated for the South West Region. The result for output per dollar spent (the first multiplier) was 1.145. This means that for every dollar spent in the South West Region on HF&T by Michigan



residents, the effect on its economy across all industries is equivalent to an expenditure of \$1.15. The second multiplier, earnings per dollar spent, indicates that 30.6% of a resident dollar spent in the South West Region on HF&T winds up in household earnings across all industries in the region. The third multiplier, employment (jobs created), was 17.390; every one million dollars spent on HF&T by Michigan residents in the South West generates over 17 jobs for the region. The fourth multiplier, value added (in dollars) indicates that 76.2% of each additional dollar of output delivered to the final demand of Michigan residents for HF&T is achieved by South West Region economic entities (firms or households). The fifth multiplier, earnings (dollars), assumed a value of 1.131. Thus, the change in earnings of households employed by all industries within the South West Region increases by \$1.13 for each additional dollar paid to households employed in the HF&T industry in the region. The sixth multiplier employment (jobs) was 1.047 revealing that the numbers of jobs in all industries in the South West Region increases by slightly more than one job for each additional job created in HF&T deriving from Michigan residents' HF&T expenditures.

**Table 1g. In-State Industry Multipliers for Fishing, Hunting, and Trapping for the South West Region**

Industry Multipliers					
<u>Multiplier 1</u> Output Per Dollar Spent (total effects) 1.145	<u>Multiplier 2</u> Earnings Per Dollar 0.306	<u>Multiplier 3</u> Employment (jobs created) 17.390	<u>Multiplier 4</u> Value Added (in dollars) 0.762	<u>Multiplier 5</u> Earnings (dollars) 1.131	<u>Multiplier 6</u> Employment (jobs) 1.047

***A Comparison of HF&T Industry In-state Multipliers with In-state Multipliers for Other Industries in the South West Region***

The six in-state multipliers for all industries in the South West Region are given in Table G1 in Appendix G. Thus, we can compare the HF&T industry's in-state multipliers for the South West Region to the in-state multipliers for all other industries in the region to determine its relative economic impact on the region. Using the data in Table G1, we constructed Table 1g(l) (below) which gives the median, minimum,

maximum, and 50<sup>th</sup> to 90<sup>th</sup> percentiles for the six multipliers across all industries in the South West Region.

**Table 1g (I) Descriptive Statistics for the In-State Multipliers for the South West Region**

Multipliers	# of Industries (N)	Median	Min	Max	50th Pct	60th Pct	70th Pct	80th Pct	90th Pct
<b>Total Effects</b>	<b>303</b>	1.292	1.048	2.279	1.292	1.326	1.369	1.406	1.479
<b>Earnings Per Dollar</b>		0.273	0.133	0.596	0.273	0.297	0.328	0.381	0.458
<b>Employment (jobs created)</b>		5.394	1.172	29.289	5.394	6.449	7.672	9.306	14.194
<b>Value added (in dollars)</b>		0.617	0.273	0.867	0.617	0.658	0.684	0.729	0.777
<b>Earnings (dollars)</b>		1.337	1.037	2.974	1.337	1.413	1.474	1.568	1.693
<b>Employment (jobs)</b>		1.391	1.035	4.483	1.391	1.459	1.539	1.623	1.823

To gain insights regarding the impact of HF&T on the South West Region of Michigan from this information, we compared the employment (jobs) multiplier for HF&T (17.390) with this same multiplier for all other industries in the South West Region. With respect to the approximately 303 active industry sectors in the South West Region of Michigan, the HF&T multiplier placed it in the top 22 industries in the region for generating jobs based on expenditures (in millions of dollars). In other words, HF&T was in the top 7.3% of industries in the region with respect to impact on job creation. As noted earlier, hunting and fishing are often destination type activities which tend to pull visitors from both in-state and out-of-state. As such they encourage the use of other facilities and services within the South West Region and have natural synergies with other high job creating industries in the region including Transit and Ground Passenger Transportation (with an employment (jobs) multiplier of 22.7374, one of the highest in the region); Other Amusement and Recreation Industries (with an employment (jobs) multiplier of 18.9322); Full-service Restaurants (with an employment (jobs) multiplier of 19.5800); and Limited-service Restaurants (with an employment (jobs) multiplier of 19.5501). For the remaining in-state multipliers, two more of them were above the median multiplier (50<sup>th</sup> percentile) in their category (earnings per dollar and value added in dollars). Three instate multipliers were below the median multiplier for their category (output per dollar spent, earnings (dollars), and employment (jobs) (see Table 1g(I)).

**Economic Effects of HF&T Activities of Non-residents (Out-of-state) in the South West Region:**

Table 2g below contains the out-of-state industry multipliers for the South West Region of Michigan. The output per dollar spent multiplier demonstrates that for every non-resident dollar spent on HF&T in the region, the total effect on the region's economy across all industries is equivalent to an expenditure of \$1.35. The second multiplier, earnings per dollar spent, was 0.365. This indicates the portion (36.5%) of a dollar spent by a non-resident in the South West Region on HF&T that goes to the earnings of household across all industries in the region. The value of the third multiplier (employment (jobs created)) was 19.202 which means that every one million dollars spent on HF&T in the South West Region by non-residents generates over 19 jobs for the region. The value of the fourth multiplier (value added (in dollars)) turned out to be 0.881. This is the share of each additional dollar of output delivered to final (non-resident) demand for HF&T at the retail level that is achieved by South West Region economic entities (firms or households). The fifth multiplier (earnings (dollars)) was 1.348. This number is the total dollar change in earnings of households employed by all industries within the region for each additional dollar of earnings paid directly to households employed in HF&T in the region. The final multiplier (1.156) tells us that the number of jobs in all industries in the South West Region increases by slightly more than one and a quarter jobs for each additional job created in HF&T based on non-resident expenditures on HF&T.

**Table 2g. Out-State Industry Multipliers for Fishing, Hunting and Trapping for the South West Region**

Industry Multipliers					
<u>Multiplier 1</u>	<u>Multiplier 2</u>	<u>Multiplier 3</u>	<u>Multiplier 4</u>	<u>Multiplier 5</u>	<u>Multiplier 6</u>
Output Per Dollar Spent (total effects)	Earnings Per Dollar	Employment (jobs created)	Value Added (in dollars)	Earnings (dollars)	Employment (jobs)
1.353	0.365	19.202	0.881	1.348	1.156

### ***A Comparison of HF&T Industry Out-of-state Multipliers with Out-of-state Multipliers for Other Industries in the South West Region***

The six out-of-state multipliers for all industries in the South West Region are provided in Table G2 in Appendix G. These multipliers enable a comparison of HF&T to every other industry in the South West Region in terms of its economic impact on the region deriving from non-resident expenditures. Table 2g(II) (below) contains the median, minimum, maximum, and 50<sup>th</sup> to 90<sup>th</sup> percentiles for the six out-of-state multipliers across all industries in the South West Region.

**Table 2g (II) Descriptive Statistics for the Out-of-State Multipliers for South West**

<b>Multipliers</b>	<b># of Industries (N)</b>	<b>Median</b>	<b>Min</b>	<b>Max</b>	<b>50th Pct</b>	<b>60th Pct</b>	<b>70th Pct</b>	<b>80th Pct</b>	<b>90th Pct</b>
<b>Total Effects</b>	<b>303</b>	1.510	1.139	2.524	1.510	1.537	1.564	1.597	1.665
<b>Earnings Per Dollar</b>		0.325	0.159	0.710	0.325	0.353	0.391	0.454	0.546
<b>Employment (jobs created)</b>		6.981	1.962	32.149	6.981	8.237	9.764	11.947	16.261
<b>Value added (in dollars)</b>		0.729	0.325	1.094	0.729	0.768	0.820	0.870	0.934
<b>Earnings (dollars)</b>		1.593	1.235	3.543	1.593	1.683	1.755	1.868	2.016
<b>Employment (jobs)</b>		1.847	1.132	5.555	1.847	1.957	2.053	2.159	2.484

We compared the employment (jobs created) multiplier for HF&T (19.202) with this same multiplier for all other industries in the South West Region based on economic activity in these industries by non-residents. There are 303 active industry sectors in the South West Region; HF&T was in the top 7.3% of industries with respect to its impact on job creation in the region. As destination type activities, HF&T tend to pull visitors from other parts of the country. They also engender the use of other facilities and services within the region and have natural synergies with other high job creating industries in the South West Region, such as Transit and Ground Passenger Transportation (with an employment (jobs created) multiplier of 25.3897); Other Amusement and Recreation Industries (with an employment (jobs created) multiplier of 20.7269); Full-service Restaurants (with an employment (jobs created) multiplier of 21.9806); and Limited-service Restaurants (with an employment (jobs created) multiplier of 21.5266). Two other multipliers were above the median value across

industries in the South West Region: earnings per dollar and value added (in dollars). The value added (in dollars) out-of-state multiplier places HF&T in the top 20% (80<sup>th</sup> percentile) of industries in the region with respect to its effect in this economic dimension. The remaining three out-of-state multipliers for HF&T (output per dollar spent (total effect), earnings (dollars), and employment (jobs)) were below the median for all industries in the South West Region.

### ***Comparison of the South West Region's Out-of-state Multipliers with the South West Region's In-state Multipliers:***

A comparison of the in-state and out-of-state multipliers for the South West Region (see Tables 1g and 2g above) indicates that the out-of-state multipliers are larger in every case. For example, out-of-state multipliers 1, 2, 3, 4, 5, and 6 are 18.2%, 19.3%, 10.4%, 15.6%, 19.2%, and 10.4% higher, respectively, than their in-state multiplier counterparts. These percentages demonstrate that non-resident dollars spent on HF&T have a larger economic impact than Michigan resident dollars. The differences were not as high as those for the state as a whole.

## **Economic Effects of HF&T in the South Central (SC) Region**

### **Economic Effects of HF&T Activities of Michigan Residents (In-state) in the South Central Region:**

The in-state industry multipliers for the South Central (SC) region of Michigan are provided in the next table. The value of output per dollar spent (multiplier 1) was 1.193. This means that for every dollar spent in the South Central Region by a Michigan resident on HF&T, the effect on this region's overall economy across all industries is equivalent to an expenditure of \$1.19. The second multiplier, earnings per dollar spent, assumed a value of 0.332. This represents the portion (33.2%) of a dollar spent by a Michigan resident in the South Central Region on HF&T that ends up in household earnings across all industries. The third multiplier, employment (jobs created), was 18.372; thus, every one million dollars spent on HF&T in the South Central Region by a Michigan resident generates a little over 18 jobs for the region. The fourth multiplier,

value added (in dollars), was 0.791. This represents the total dollar change in value added that occurs in all industries in the region for each additional dollar of output delivered to final demand by the HF&T industry in the region. This means that 79% of each additional dollar of output delivered to final (resident) demand for HF&T is achieved by South Central Region economic entities. The fifth multiplier, earnings (dollars), turned out to be 1.178 showing that the change in earnings of households employed by all industries within the South Central Region increases by \$1.18 for each additional dollar paid to households employed in the HF&T industry (where employment is derived from Michigan residents' HF&T expenditures). The sixth multiplier (employment (jobs)) was 1.062 meaning that the numbers of jobs in all industries in the South Central Region increases by slightly more than one job for each additional job created in HF&T in the region arising from Michigan residents' expenditures in this industry.

**Table 1h. In-State Industry Multipliers for Fishing, Hunting and Trapping for South Central Region**

Industry Multipliers					
<u>Multiplier 1</u>	<u>Multiplier 2</u>	<u>Multiplier 3</u>	<u>Multiplier 4</u>	<u>Multiplier 5</u>	<u>Multiplier 6</u>
Output Per Dollar Spent	Earnings Per Dollar	Employment (jobs created)	Value Added (in dollars)	Earnings (dollars)	Employment (jobs)
1.193	0.332	18.372	0.791	1.178	1.062

***A Comparison of HF&T Industry In-state Multipliers with In-state Multipliers for Other Industries for the South Central Region***

Table H1 in Appendix H provides the six in-state multipliers for all industries in the South Central Region allowing for a comparison of the HF&T industry's in-state multipliers for the South Central Region to the in-state multipliers for all other industries in the region to determine the relative economic impact of HF&T in the South Central Region arising from Michigan residents' HF&T activities. From the data contained in Table H1, we created Table 1h(I) below. This table displays the median, minimum, maximum, and 50<sup>th</sup> to 90<sup>th</sup> percentiles for the six multipliers across all industries in the South Central Region.

**Table 1h (I) Descriptive Statistics for the In-State Multipliers for the South Central Region**

Multipliers	# of Industries (N)	Median	Min	Max	50th Pct	60th Pct	70th Pct	80th Pct	90th Pct
<b>Total Effects</b>		1.414	1.075	2.175	1.414	1.482	1.531	1.581	1.673
<b>Earnings Per Dollar</b>		0.299	0.152	0.636	0.299	0.320	0.352	0.407	0.483
<b>Employment (jobs created)</b>	<b>331</b>	5.648	1.362	30.601	5.648	6.554	7.893	9.574	14.829
<b>Value added (in dollars)</b>		0.667	0.288	0.891	0.667	0.699	0.735	0.777	0.815
<b>Earnings (dollars)</b>		1.522	1.059	2.779	1.522	1.617	1.698	1.821	1.972
<b>Employment (jobs)</b>		1.549	1.046	4.361	1.549	1.647	1.726	1.860	2.099

We compared the employment (jobs created) multiplier for HF&T (18.372) with this same multiplier for all other industries in the South Central Region based on economic activity in these industries by Michigan residents (see Table 1h(I) above). With respect to the approximately 331 active industry sectors in the South Central Region, HF&T was in the top 6% with respect to its effect on job creation in the region. Hunting and fishing are often destination type activities which tend to draw visitors from various parts of the state. They engender the use of other facilities and services within the region and have natural synergies with other high job creating industries in the South Central Region such as Transit and Ground Passenger Transportation (with an employment (jobs created) multiplier of 22.7353, one of the highest in the region); Other Amusement and Recreation Industries (with an employment (jobs created) multiplier of 23.1866); Full-service Restaurants (with an employment (jobs created) multiplier of 20.5866); and Limited-service Restaurants (with an employment (jobs created) multiplier of 20.5378). Of the remaining multipliers, two of them were above the median (50<sup>th</sup> percentile) in their category (earnings per dollar and value added in dollars). In fact, the value added in dollars multiplier (multiplier 4) indicated that HF&T was in the top 20% of industry sectors (80<sup>th</sup> percentile) in the South Central Region in terms of its specific economic effect. Three multipliers were below the median multiplier value for their category: output per dollar spent, earnings (dollars), and employment (jobs).

**Economic Effects of HF&T Activities of Non-residents (Out-of-state) in the South Central Region:**

Table 2e (below) provides the out-of-state industry multipliers for the South Central (SC) Region of Michigan. The first multiplier, output per dollar spent, shows that for every non-resident dollar spent on HF&T in the South Central Region, the total effect on the South Central Region's economy across all industries is equivalent to an expenditure of \$1.50. The second multiplier, earnings per dollar spent, was 0.418. Thus, 41.8% of a dollar spent by a non-resident in the South Central Region on HF&T goes to household earnings across all industries in the region. The third multiplier, employment (jobs created), was 20.867. This means that every one million dollars spent on HF&T in the South Central Region by a non-resident generates close to 21 jobs for the region. The fourth multiplier, value added (in dollars), turned out to be 0.970; therefore, 97% of each additional dollar of output delivered to final (non-resident) demand for HF&T at the retail level is achieved by South Central economic entities whether firms or households. The fifth multiplier, earnings (dollars) (1.483), represents the total dollar change in earnings of households employed by all industries within the region for each additional dollar of earnings paid directly to households employed in HF&T. The value of the sixth multiplier, employment (jobs), was 1.206. This means that the number of jobs in all industries in the South Central Region increases by slightly more than one job for each additional job created in HF&T based on non-residents' HF&T expenditures in the region.

**Table 2h. Out-State Industry Multipliers for Fishing, Hunting, and Trapping for the South Central Region**

Industry Multipliers					
<u>Multiplier 1</u>	<u>Multiplier 2</u>	<u>Multiplier 3</u>	<u>Multiplier 4</u>	<u>Multiplier 5</u>	<u>Multiplier 6</u>
Output Per Dollar Spent	Earnings Per Dollar	Employment (jobs created)	Value Added (in dollars)	Earnings (dollars)	Employment (jobs)
1.502	0.418	20.867	0.970	1.483	1.206



### ***A Comparison of HF&T Industry Out-of-state Multipliers with Out-of-state Multipliers for Other Industries in the South Central Region***

Table H2 in Appendix H provides the six out-of-state multipliers for all industries in the South Central Region enabling a comparison of the HF&T industry's out-of-state multipliers for the South Central Region to the out-of-state multipliers for all other industries in the region. Thus, HF&T can be compared to every other industry in the South Central Region with respect to its economic impact on the region arising from non-resident expenditures. The data in Table H2 was used to create Table 2h(II) below. This table contains the median, minimum, maximum, and 50<sup>th</sup> to 90<sup>th</sup> percentiles for the six multipliers across all industries in the South Central Region.

**Table 2h (II) Descriptive Statistics for the Out-of-State Multipliers for the South Central Region**

Multipliers	# of Industries (N)	Median	Min	Max	50th Pct	60th Pct	70th Pct	80th Pct	90th Pct
<b>Total Effects</b>	<b>331</b>	1.747	1.216	2.522	1.747	1.787	1.831	1.872	1.950
<b>Earnings Per Dollar</b>		0.377	0.191	0.800	0.377	0.403	0.444	0.513	0.609
<b>Employment (jobs created)</b>		7.982	2.501	33.654	7.982	9.081	10.790	12.524	17.823
<b>Value added (in dollars)</b>		0.832	0.370	1.211	0.832	0.869	0.929	0.979	1.060
<b>Earnings (dollars)</b>		1.916	1.333	3.499	1.916	2.036	2.137	2.293	2.483
<b>Employment (jobs)</b>		2.212	1.182	5.748	2.212	2.356	2.484	2.698	3.000

From the information in Table 2h(II) above, we compared the employment (jobs created) multiplier for HF&T (20.867) with this same multiplier for all other industries in the South Central Region based on economic activity in these industries by non-residents. With respect to the 331 active industry sectors in the South Central Region, HF&T was in the top 7% of industries with respect to its impact on job creation in the region. Since hunting and fishing are often destination type activities, they tend to pull visitors from other parts of the country. They also engender the use of other facilities and services within the region and have natural synergies with other high job creating industries in the South Central Region, such as Transit and Ground Passenger Transportation (with an employment (jobs created) multiplier of 26.2461, the fourth highest in the region); Other Amusement and Recreation Industries (with an employment (jobs created) multiplier of 26.0584); Full-service Restaurants (with an

employment (jobs created) multiplier of 23.9005); and Limited-service Restaurants (with an employment (jobs created) multiplier of 23.2687). Two other multipliers for HG&T were above the median value across industries in the South Central Region: earnings per dollar and value added (in dollars). Three of the multipliers for HF&T were below the median for all industries in the South Central Region: output per dollar spent (total effect), earnings (dollars), and employment (jobs).

***Comparison of the South Central Region's Out-of-state Multipliers with the South Central Region's In-state Multipliers:***

We compared the in-state and out-of-state multipliers for the South Central Region (see Tables 1h and 2h) and found that the out-of-state multipliers are larger in every case. The percentage differences ranged from a high of 25.9% to a low of 13.6% across the six multiplier categories. For example, the multipliers that capture the total effects, earnings per dollar, and the earnings (dollars) were all 25.9% higher for out-of-state residents than for in-state residents. Multiplier 3 (employment (jobs created)) and multiplier 6 (employment (jobs)) were both 13.6% higher for out-of-state vis-à-vis in-state. The economic impact of non-resident dollars spent on HF&T is larger than the impact of Michigan resident dollars for the South Central Region. Nevertheless, the differences were not quite as large as for the state as a whole.

**Estimating the Total Economic Impact of Hunting and Fishing on the State of Michigan and its Seven Regions Based on Actual Expenditures**

In this section, the in-state and out-of-state multipliers for Michigan and for each of the seven economic regions are applied to estimates of actual expenditures on hunting and fishing in the state as a whole and in each of the regions to determine the total economic impact of hunting and fishing on the state as a whole and on its regions in dollar terms. For convenience, the in-state multipliers for Michigan and its seven economic regions are reproduced in Tables 1i(I) and 1i(II) below.

**Table 1i (I). In-state (Michigan Resident) Industry Multipliers for Hunting, Fishing, and Trapping by Region and by State**

Region	Total Effects	Earnings Per Dollar	Employment (jobs created)	Value added (in dollars)	Earnings (dollars)	Employment (jobs)
North Central	1.099	0.317	18.388	0.739	1.095	1.035
North East	1.148	0.319	18.015	0.765	1.138	1.048
North West	1.116	0.306	17.441	0.751	1.123	1.045
South Central	1.193	0.332	18.372	0.791	1.178	1.062
South East	1.241	0.362	19.322	0.812	1.237	1.077
South West	1.145	0.306	17.390	0.762	1.131	1.047
Upper Peninsula	1.113	0.324	18.527	0.748	1.119	1.044
<b>Michigan</b>	<b>1.238</b>	<b>0.367</b>	<b>19.617</b>	<b>0.810</b>	<b>1.236</b>	<b>1.078</b>

**Table 1i (II). Out-of-state (Non-Michigan Resident) Industry Multipliers for Hunting, Fishing, and Trapping by Region and by State**

Region	Total Effects	Earnings Per Dollar	Employment (jobs created)	Value added (in dollars)	Earnings (dollars)	Employment (jobs)
North Central	1.284	0.375	20.235	0.848	1.295	1.139
North East	1.323	0.368	19.549	0.868	1.314	1.138
North West	1.335	0.372	19.498	0.881	1.369	1.168
South Central	1.502	0.418	20.867	0.970	1.483	1.206
South East	1.640	0.484	22.800	1.047	1.655	1.271
South West	1.353	0.365	19.202	0.881	1.348	1.156
Upper Peninsula	1.312	0.388	20.540	0.864	1.342	1.157
<b>Michigan</b>	<b>1.650</b>	<b>0.494</b>	<b>23.224</b>	<b>1.047</b>	<b>1.666</b>	<b>1.276</b>

It is interesting to note that across the seven geographic regions, the South East Region of Michigan has the largest multiplier in every category for the in-state multipliers (Table 1i(I)). The region having the lowest in-state multiplier in a given category varies. For total effects, the North Central Region has the lowest in-state multiplier; for earnings per dollars, the North West and South West regions are tied with the lowest in-state multiplier; for employment (jobs created), the South West region has the lowest in-state multiplier; for value added (in dollars), the North Central Region has the lowest in-state multiplier; for earnings (dollars), the North Central Region has the lowest in-state multiplier; for employment (jobs), the North Central Region has the lowest in-state multiplier.

With respect to out-of-state multipliers, the pattern is similar. The South East Region has the largest multiplier in every category for the out-of-state multipliers (see Table 1i(II)). For total effects, the North Central Region has the lowest out-of-state multiplier; for earnings per dollars, the South West region has the lowest out-of-state multiplier; for employment (jobs created), the South West region has the lowest out-of-state multiplier; for value added (in dollars), the North Central Region has the lowest out-of-state multiplier; for earnings (dollars), the North Central Region has the out-of-state multiplier; for employment (jobs), the North East Region has the lowest out-of-state multiplier.

To determine total economic impact, we began by estimating hunting and fishing expenditures by Michigan residents and non-Michigan residents for every county in Michigan based upon the actual number of hunting licenses and fishing licenses sold in those counties in 2016. The number of hunting and fishing licenses sold in 2016 in each county of Michigan was provided by the Department of Natural Resources (DNR). Hunting and fishing expenditures in 2016 by Michigan residents and non-residents by county were estimated using this DNR data and additional data provided by the Federal Bureau of Economic Analysis, the US Department of Commerce, and the US Travel, Tourism, and Recreation Administration. The results of the estimation process for every county in Michigan are shown in Appendix I. The results of the estimation process for Michigan and its seven economic regions are contained in the table below. As noted previously, smaller geographic units of data are less accurate than higher level aggregates. Thus, the analyses to determine the total economic effects of estimated actual expenditures on hunting and fishing focus on Michigan and its seven geographic regions instead of on the individual counties comprising these regions.

**Table 2i. Estimated Hunting & Fishing Expenditures of Michigan and Non-Michigan Residents by Region and the State**

<b>Region</b>	<b>LY 2016 Hunting License Sales</b>	<b>Estimated Hunting Expenditures of Michigan Residents</b>	<b>Estimated Hunting Expenditures of Non-Michigan Residents</b>	<b>LY 2016 Fishing License Sales</b>	<b>Estimated Fishing Expenditures of Michigan Residents</b>	<b>Estimated Fishing Expenditures of Non-Michigan Residents</b>
<b>North Central</b>	312,623	514,045,999	182,790,669	114,132	88,760,458	48,734,364
<b>North East</b>	141,344	232,411,941	82,643,837	51,458	40,018,886	21,972,566
<b>North West</b>	138,838	228,291,323	81,178,579	53,381	41,514,405	22,793,687
<b>South Central</b>	913,696	1,502,390,333	534,238,053	417,424	324,630,645	178,240,048
<b>South East</b>	948,401	1,559,455,766	554,530,064	527,535	410,263,971	225,257,445
<b>South West</b>	295,879	486,513,841	173,000,452	143,075	111,269,427	61,093,025
<b>Upper Peninsula</b>	207,193	340,687,451	121,145,748	100,159	77,893,653	42,767,893
<b>Michigan</b>	<b>2,957,974</b>	<b>4,863,796,654</b>	<b>1,729,527,402</b>	<b>1,407,164</b>	<b>1,094,351,445</b>	<b>600,859,028</b>

The in-state industry multipliers in Table 1i(I) were applied to the estimated hunting expenditures of Michigan residents (Table 2i above) to determine the economic impact of hunting expenditures by Michigan residents in 2016.

The results are provided in Table 3i(I) below. Note that the impact of an estimated \$4,863,796,654 dollars spent on hunting in Michigan by Michigan residents in 2016 is equal to an expenditure of \$6,021,380,258 dollars in terms of its total effect on Michigan's economy across all industries. Also, an expenditure of this magnitude (\$4,863,796,654) by Michigan residents on hunting in 2016 generated approximately 95,413 new jobs across all industries in the state. Likewise, the effect of an estimated \$1,559,455,766 dollars spent on hunting in the South East Region by Michigan residents in 2016 is equivalent to an expenditure of \$1,935,284,606 with respect to its total effects on the South East Region's economy across all industries and generated about 30,132 jobs across all industries in the South East Region. The total effects of hunting expenditures in 2016 by Michigan residents was greater for the South East Region than all other regions in Michigan since this region has the highest in-state multiplier in every category and the highest estimated hunting expenditures for Michigan residents .

**Table 3i (I) Economic Impact of Hunting Expenditures for Michigan Residents**

	<b>Total Effects</b>	<b>Earnings Per Dollar</b>	<b>Employment (jobs created)</b>	<b>Value added (in dollars)</b>	<b>Earnings (dollars)</b>	<b>Employment (jobs)</b>
<b>North Central</b>	564,936,553	162,901,177	9,452	379,777,184	562,726,155	532
<b>North East</b>	266,785,667	74,046,444	4,187	177,818,376	264,391,824	244
<b>North West</b>	254,704,629	69,765,828	3,982	171,515,271	256,462,472	239
<b>South Central</b>	1,791,600,472	499,094,069	27,602	1,187,789,797	1,769,966,051	1,595
<b>South East</b>	1,935,284,606	563,899,205	30,132	1,265,810,245	1,928,423,000	1,679
<b>South West</b>	556,912,394	148,970,538	8,460	370,480,290	550,441,760	509
<b>Upper Peninsula</b>	379,082,927	110,246,459	6,312	254,663,870	381,127,051	356
<b>Michigan</b>	<b>6,021,380,258</b>	<b>1,785,013,372</b>	<b>95,413</b>	<b>3,939,675,290</b>	<b>6,011,652,664</b>	<b>5,243</b>

In the same manner, the out-of-state multipliers in Table 1i(II) were applied to the estimated hunting expenditures of non-Michigan residents (Table 2i) to assess the economic effect of hunting expenditures by non-Michigan residents in 2016. Table 3i(II) below reveals the results. Consider that there is a total effect of \$2,854,239,072 for the state of Michigan across all industries associated with an estimated \$1,729,527,402 spent on hunting in Michigan by non-residents. In addition, an expenditure of \$1,729,527,402 on hunting by non-residents led to the creation of 40,166 new jobs across all industries for the state. The impact of an estimated 554,530,064 dollars spent on hunting in the South East region by non-residents in 2016 translated to an equivalent expenditure of \$909,318,399 with regards to its total effect on the region across all industries; its effect on job creation in the region was 12,643 new jobs across all industries. The total effects of hunting expenditures by non-residents in 2016 for the South East Region were greater than for the other regions in Michigan since this region has the highest out-of-state multiplier in every category and the highest estimated hunting expenditures for non-residents.

**Table 3i (II) Economic Impact of Hunting Expenditures for Non-Michigan Residents**

	<b>Total Effects</b>	<b>Earnings Per Dollar</b>	<b>Employment (jobs created)</b>	<b>Value added (in dollars)</b>	<b>Earnings (dollars)</b>	<b>Employment (jobs)</b>
<b>North Central</b>	234,758,056	68,528,222	3,699	154,951,650	236,677,358	208
<b>North East</b>	109,337,796	30,404,668	1,616	71,718,322	108,560,944	94
<b>North West</b>	108,365,285	30,222,785	1,583	71,526,446	111,125,357	95
<b>South Central</b>	802,585,827	223,471,778	11,148	518,424,607	792,435,304	644
<b>South East</b>	909,318,399	268,448,004	12,643	580,759,336	917,913,615	705
<b>South West</b>	234,052,312	63,110,565	3,322	152,413,398	233,152,709	200
<b>Upper Peninsula</b>	158,943,221	47,004,550	2,488	104,706,270	162,517,021	140
<b>Michigan</b>	<b>2,854,239,072</b>	<b>854,732,442</b>	<b>40,166</b>	<b>1,811,507,001</b>	<b>2,881,911,510</b>	<b>2,207</b>

Table 4i gives the combined economic effect of hunting expenditures by both Michigan and non-Michigan residents in 2016 on the state of Michigan and its seven economic regions. The numbers in table 4i were obtained by adding together the corresponding numbers in Tables 3i(I) and 3i(II). The table reveals that the total effects of hunting expenditures by Michigan residents and non-residents in 2016 (\$4,863,796,654 + \$1,729,527,402 from Table 2i) is equivalent to an expenditure of \$8,875,619,329 in terms of its impact on Michigan's economy across all industries. The combined expenditures on hunting by both Michigan residents and non-residents led to the creation of 135,579 new jobs for the state. For the South East Region, the combined expenditures by Michigan residents and non-residents on hunting in 2016 (\$1,559,455,766 + 554,530,064) was equivalent to an expenditure of \$2,844,603,005 in terms of its impact on the South East Region's economy in 2016 and resulted in the creation of 42,775 new jobs in the region. In providing an example of the economic effects of the hunting expenditures of both Michigan residents and non-residents, we focused on the South East Region since the effects across all categories are the greatest in comparison to the other regions. This is due to the fact that both the in-state multipliers and out-of-state multipliers in every category are the highest for the South East Region and that the expenditures on hunting by both residents and non-residents are also the highest for this region.

**Table 4i. Economic Impact of Hunting Expenditures for Both Michigan and Non-Michigan Residents**

	Total Effects	Earnings Per Dollar	Employment (jobs created)	Value added (in dollars)	Earnings (dollars)	Employment (jobs)
<b>North Central</b>	799,694,609	231,429,399	13,151	534,728,834	799,403,513	740
<b>North East</b>	376,123,463	104,451,112	5,803	249,536,698	372,952,768	338
<b>North West</b>	363,069,914	99,988,613	5,564	243,041,717	367,587,829	333
<b>South Central</b>	2,594,186,299	722,565,846	38,750	1,706,214,404	2,562,401,355	2,239
<b>South East</b>	2,844,603,005	832,347,209	42,775	1,846,569,581	2,846,336,615	2,384
<b>South West</b>	790,964,705	212,081,103	11,782	522,893,688	783,594,469	709
<b>Upper Peninsula</b>	538,026,148	157,251,009	8,800	359,370,140	543,644,072	496
<b>Michigan</b>	<b>8,875,619,329</b>	<b>2,639,745,814</b>	<b>135,579</b>	<b>5,751,182,291</b>	<b>8,893,564,174</b>	<b>7,450</b>



The in-state multipliers contained in Table 1i(I) were multiplicatively combined with the estimated fishing expenditures of Michigan residents (2016) in Table 2i to determine their economic effects on the state. Table 5i(I) below delineates the impacts for 2016. For example, the effect of an estimated \$1,094,351,445 spent on fishing in Michigan by residents in 2016 (Table 2i) is equal to an expenditure of \$1,354,807,089 with respect to its total effect on Michigan's economy. 21,486 new job for the state also resulted from the fishing related expenditures of Michigan residents (see Table 5i(I) below). The effect of an estimated \$410,263,971 spent on fishing in Michigan's South East Region by residents in 2016 is equal to an expenditure of \$509,137,588 in terms of its total effect on this region's economy; in addition this expenditure led to the creation of approximately 7,927 new jobs for the region. As was the case with the effect of hunting expenditures, the total effects of fishing expenditures by Michigan residents in 2016 was greater in the South East Region compared to the other regions since the South East Region has the highest in-state multiplier across the multiplier categories and also the highest estimated fishing expenditures for residents.

**Table 5i(I). Economic Impact of Fishing Expenditures for Michigan Residents**

	<b>Total Effects</b>	<b>Earnings Per Dollar</b>	<b>Employment (jobs created)</b>	<b>Value added (in dollars)</b>	<b>Earnings (dollars)</b>	<b>Employment (jobs)</b>
<b>North Central</b>	97,547,743	28,128,189	1,632	65,576,226	97,166,073	92
<b>North East</b>	45,937,679	12,750,017	721	30,618,450	45,525,485	42
<b>North West</b>	46,317,622	12,686,802	724	31,189,772	46,637,283	43
<b>South Central</b>	387,122,044	107,842,300	5,964	256,652,988	382,447,363	345
<b>South East</b>	509,137,588	148,351,452	7,927	333,011,265	507,332,427	442
<b>South West</b>	127,370,113	34,070,699	1,935	84,731,669	125,890,230	117
<b>Upper Peninsula</b>	86,672,268	25,206,386	1,443	58,225,506	87,139,630	81
<b>Michigan</b>	<b>1,354,807,089</b>	<b>401,626,980</b>	<b>21,468</b>	<b>886,424,670</b>	<b>1,352,618,386</b>	<b>1,180</b>

The out-of-state multipliers in Table 1i(II) were applied to the estimated fishing expenditures of non-Michigan residents (Table 2i) to assess the economic effect of fishing expenditures by non-residents in 2016. Table 5i(II) delineates the outcomes. Note that there is a total effect of \$991,597,654 in the state of Michigan resulting from an estimated \$600,859,028 spent on fishing in Michigan by non-residents. In addition, the expenditure of \$600,859,028 on fishing by non-residents led to the creation of 13,954 new jobs for the state. The impact of an estimated \$225,257,445 spent on fishing in the South East region by non-residents in 2016 translated to an equivalent expenditure of \$369,377,158 with regards to its total effect on the region; furthermore, it generated 5,136 new jobs. The total effects of fishing expenditures by non-residents in 2016 for the South East Region were greater than for the other regions in Michigan since this region has the highest out-of-state multiplier in every category and the highest estimated fishing expenditures for non-residents.

**Table 5i (II). Economic Impact of Fishing Expenditures for Non-Michigan Residents**

	<b>Total Effects</b>	<b>Earnings Per Dollar</b>	<b>Employment (jobs created)</b>	<b>Value added (in dollars)</b>	<b>Earnings (dollars)</b>	<b>Employment (jobs)</b>
<b>North Central</b>	62,589,544	18,270,513	986	41,312,120	63,101,255	56
<b>North East</b>	29,069,705	8,083,707	430	19,067,793	28,863,163	25
<b>North West</b>	30,427,293	8,486,090	444	20,083,518	31,202,278	27
<b>South Central</b>	267,770,024	74,557,812	3,719	172,964,143	264,383,463	215
<b>South East</b>	369,377,158	109,047,129	5,136	235,912,122	372,868,649	286
<b>South West</b>	82,652,754	22,286,736	1,173	53,822,955	82,335,070	71
<b>Upper Peninsula</b>	56,111,476	16,593,942	878	36,964,290	57,373,128	49
<b>Michigan</b>	<b>991,597,654</b>	<b>296,944,532</b>	<b>13,954</b>	<b>629,339,746</b>	<b>1,001,211,398</b>	<b>767</b>

In Table 6i, the economic effects of fishing expenditures by both Michigan residents and non-residents for 2016 in the state of Michigan and its seven economic regions are combined. The numbers in table 6i were obtained by adding together the corresponding numbers in Tables 5i(I) and 5i(II). Table 6i shows that the total effects of fishing expenditures by Michigan residents and non-residents in 2016 (\$1,094,351,445 + \$600,859,028 from Table 2i) is equivalent to an expenditure of \$2,346,404,743 with respect to its impact on Michigan's economy. The combined expenditures on fishing by both Michigan residents and non-residents led to the creation of 35,422 new jobs for the state. For the South East Region, the combined expenditures by Michigan residents and non-residents on fishing in 2016 (\$410,263,971 + \$225,257,445) was equivalent to an expenditure of \$878,514,746 in terms of its total effects on the South East Region's economy in 2016 and brought about the creation of 13,063 new jobs in the region.

**Table 6i. Economic Impact of Fishing Expenditures for Both Michigan and Non-Michigan Residents**

	<b>Total Effects</b>	<b>Earnings Per Dollar</b>	<b>Employment (jobs created)</b>	<b>Value added (in dollars)</b>	<b>Earnings (dollars)</b>	<b>Employment (jobs)</b>
<b>North Central</b>	160,137,287	46,398,702	2,618	106,888,347	160,267,328	147
<b>North East</b>	75,007,384	20,833,724	1,150	49,686,242	74,388,647	67
<b>North West</b>	76,744,914	21,172,892	1,168	51,273,290	77,839,561	70
<b>South Central</b>	654,892,068	182,400,112	9,684	429,617,131	646,830,826	560
<b>South East</b>	878,514,746	257,398,581	13,063	568,923,387	880,201,075	728
<b>South West</b>	210,022,867	56,357,434	3,108	138,554,624	208,225,300	187
<b>Upper Peninsula</b>	142,783,743	41,800,329	2,322	95,189,796	144,512,758	131
<b>Michigan</b>	<b>2,346,404,743</b>	<b>698,571,512</b>	<b>35,422</b>	<b>1,515,764,416</b>	<b>2,353,829,784</b>	<b>1,946</b>

Table 7i(I) (below) provides the additive economic impact in 2016 on the state of Michigan and its seven economic regions of both hunting and fishing expenditures by Michigan residents. The numbers in table 7i(I) were obtained by adding together the corresponding numbers in Tables 3i(I) and 5i(I). The table reveals that the total effects of hunting and fishing expenditures by Michigan residents in 2016 (\$4,863,796,654 + \$1,094,351,445 from Table 2i) is equivalent to an expenditure of \$7,376,187,347 dollars in terms of its total effects on Michigan's economy. The combined expenditures on hunting and fishing by Michigan residents created 116,881 new jobs for the state. For the South East Region, the combined hunting and fishing expenditures by Michigan residents in 2016 (\$1,559,455,766 + \$410,263,971 from Table 2i) was equivalent to an expenditure of \$2,444,422,194 in terms of its total effects on the South East Region's economy in 2016; the combined expenditure also led to the creation of 38,059 new jobs in the region. Note that the regional example given of the economic effects of both hunting and fishing expenditures of Michigan residents in 2016 was centered on South East Region. The economic effects on the South East Region were larger than any other region in Michigan because the in-state multipliers for this region are the largest across the board and the expenditures on hunting and fishing by Michigan residents in this region are also larger than for any other region.

**Table 7i(I). Economic Impact of Hunting & Fishing Expenditures for Michigan Residents**

	<b>Total Effects</b>	<b>Earnings Per Dollar</b>	<b>Employment (jobs created)</b>	<b>Value added (in dollars)</b>	<b>Earnings (dollars)</b>	<b>Employment (jobs)</b>
<b>North Central</b>	662,484,296	191,029,366	11,084	445,353,410	659,892,228	624
<b>North East</b>	312,723,346	86,796,461	4,908	208,436,826	309,917,309	286
<b>North West</b>	301,022,251	82,452,630	4,706	202,705,043	303,099,755	282
<b>South Central</b>	2,178,722,516	606,936,369	33,566	1,444,442,785	2,152,413,414	1,940
<b>South East</b>	2,444,422,194	712,250,657	38,059	1,598,821,511	2,435,755,427	2,121
<b>South West</b>	684,282,507	183,041,237	10,395	455,211,959	676,331,989	626
<b>Upper Peninsula</b>	465,755,194	135,452,845	7,755	312,889,375	468,266,681	437
<b>Michigan</b>	<b>7,376,187,347</b>	<b>2,186,640,352</b>	<b>116,881</b>	<b>4,826,099,960</b>	<b>7,364,271,050</b>	<b>6,423</b>

In Table 7i(II) below, the combined economic impact of both hunting and fishing expenditures for 2016 by non-residents on the state of Michigan and its seven economic regions is displayed. The numbers in table 7i(II) were calculated by adding together the corresponding numbers in Tables 3i(II) and 5i(II). The table below shows that the total effects on Michigan's economy of hunting and fishing expenditures by non-residents in 2016 (\$1,729,527,402 + \$600,859,028 from Table 2i) is equivalent to an expenditure of \$3,845,836,725. In addition, the combined expenditures on hunting and fishing by non-residents resulted in the creation of 54,121 new jobs for the state. For the South East Region, the combined hunting and fishing expenditures by Michigan residents in 2016 (\$554,530,064 + \$225,257,445 from Table 2i) was equivalent to an expenditure of \$1,278,695,557 with respect to its total effects on the South East Region's economy in 2016. The combined expenditures on hunting and fishing by non-residents led to the creation of 17,779 new jobs for the region. The economic effects on the South East Region were larger than for any other region in Michigan because the out-of-state multipliers for this region are the largest across the board and the expenditures on hunting and fishing by non-residents residents in this region are also larger than for any other region.

**Table 7i (II) Economic Impact of Hunting & Fishing Expenditures for Non-Michigan Residents**

	<b>Total Effects</b>	<b>Earnings Per Dollar</b>	<b>Employment (jobs created)</b>	<b>Value added (in dollars)</b>	<b>Earnings (dollars)</b>	<b>Employment (jobs)</b>
<b>North Central</b>	297,347,600	86,798,735	4,685	196,263,770	299,778,613	264
<b>North East</b>	138,407,501	38,488,375	2,045	90,786,115	137,424,107	119
<b>North West</b>	138,792,578	38,708,875	2,027	91,609,964	142,327,635	121
<b>South Central</b>	1,070,355,851	298,029,590	14,867	691,388,749	1,056,818,767	859
<b>South East</b>	1,278,695,557	377,495,133	17,779	816,671,458	1,290,782,264	991
<b>South West</b>	316,705,065	85,397,300	4,495	206,236,353	315,487,779	271
<b>Upper Peninsula</b>	215,054,697	63,598,493	3,367	141,670,560	219,890,149	190
<b>Michigan</b>	<b>3,845,836,725</b>	<b>1,151,676,974</b>	<b>54,121</b>	<b>2,440,846,747</b>	<b>3,883,122,908</b>	<b>2,974</b>

The final table in this report, Table 8i (below), aggregates the economic impact on Michigan and its seven regions of the hunting and fishing expenditures of both Michigan residents and non-residents in 2016. To produce Table 8i, the numbers in Table 7i(I) and 7i(II) were added together. The results for Michigan and then for the South East Region (as an example of the regions) are explicated below.

**Table 8i. Economic Impact of Hunting & Fishing Expenditures for Both Michigan and Non-Michigan Residents**

	<b>Total Effects</b>	<b>Earnings Per Dollar</b>	<b>Employment (jobs created)</b>	<b>Value added (in dollars)</b>	<b>Earnings (dollars)</b>	<b>Employment (jobs)</b>
<b>North Central</b>	959,831,896	277,828,101	15,769	641,617,181	959,670,841	888
<b>North East</b>	451,130,847	125,284,836	6,953	299,222,940	447,341,416	405
<b>North West</b>	439,814,829	121,161,505	6,733	294,315,007	445,427,390	403
<b>South Central</b>	3,249,078,367	904,965,959	48,434	2,135,831,534	3,209,232,181	2,799
<b>South East</b>	3,723,117,751	1,089,745,790	55,837	2,415,492,969	3,726,537,690	3,112
<b>South West</b>	1,000,987,572	268,438,537	14,890	661,448,312	991,819,768	897
<b>Upper Peninsula</b>	680,809,891	199,051,338	11,122	454,559,935	688,156,830	627
<b>Michigan</b>	<b>11,222,024,072</b>	<b>3,338,317,326</b>	<b>171,002</b>	<b>7,266,946,707</b>	<b>11,247,393,959</b>	<b>9,397</b>

Table 8i reveals that the total effects on Michigan's economy across all industries of hunting and fishing expenditures by both residents and non-residents in 2016 (\$4,863,796,654 + \$1,094,351,445 + \$1,729,527,402 + \$600,859,028 = \$8,288,534,529 from Table 2i) was equivalent to an expenditure of \$11,222,024,072. It also shows that this combined expenditure on hunting and fishing by residents and non-residents (\$8,288,534,529) resulted in a total dollar change in the earnings of households employed by all industries within the state of \$3,338,317,326. In addition, this combined expenditure on hunting and fishing by residents and non-residents created 171,002 new jobs in all industries for the state. The total dollar change in value added that occurred in all industries within Michigan for the amount of dollars delivered to final demand (resident and non-resident) for hunting and fishing in 2016 (\$8,288,534,529) was \$ 7,266,946,707. Thus, 7,266,946,707 dollars of the total dollar output delivered to final demand arising from hunting and fishing expenditures by residents and non-residents was accomplished by Michigan economic entities (whether firms or households) in

2016. The total dollar change in earnings of households employed by all industries within the state associated with the total expenditure amount of \$8,288,534,529 on hunting and fishing by Michigan residents and non-residents in 2016 turned out to be \$11,247,393,959. Finally, the total change in the number of jobs in all industries within the state for each additional job in HF&T arising from the combined expenditures of \$8,288,534,529 was 9,397 jobs.

Since the South East Region had the greatest economic impact of all the regions in Michigan from hunting and fishing expenditures by residents and non-residents in 2016, we chose it as an example of how to interpret the regional results provided in Table 8i. From the table, we see that the total effects on the South East Region's economy across all industries of hunting and fishing expenditures by residents and non-resident in 2016 ( $\$1,559,455,766 + \$410,263,971 + \$554,530,064 + \$225,257,445 = \$2,749,507,246$  (see Table 2i)) were equal to an expenditure of \$3,723,117,751 (a number close to \$1,000,000 larger). The combined expenditure on hunting and fishing by residents and non-residents in the South East Region in 2016 caused a total dollar change in the earnings of households employed by all industries in the region of \$1,089,745,790 and resulted in the creation of 55,837 new jobs in the region. The total dollar change in value added in all industries in the South East Region for the magnitude of dollars delivered to final demand for hunting and fishing activities in the South East Region by Michigan residents and non-residents in 2016 (\$2,749,507,246) was \$2,415,492,969. This means that \$2,415,492,969 of the total dollar output delivered to final demand deriving from hunting and fishing expenditures in the South East Region by residents and non-residents was carried out by South East Region firms or households. The total dollar change in earnings of households employed by all industries in the South East Region arising from the total expenditure of \$2,749,507,246 on hunting and fishing in the region by Michigan residents and non-residents was \$3,726,537,690. Last, the total change in the number of jobs in all industries within the region for each additional job in HF&T arising from the combined expenditures of \$2,749,507,246 was 3,112 jobs.

The numbers in Table 8i for the remaining regions can be interpreted in the same manner. For example, the total effects on each of the regional economies arising from combined hunting and fishing expenditures by Michigan residents and non-residents in those regions (see Table 2i) were \$959,831,896, \$451,130,847, \$439,814,829, \$3,249,078,367, \$1,000,987,572, and \$680,809,891, respectively, for the North Central Region, the North East Region, the North West Region, the South Central Region, the South West Region, and the Upper Peninsula Region. The number of new jobs created in HF&T in each of the remaining regions in 2016 arising from the combined hunting and fishing expenditures by Michigan residents and non-residents in each of these regions (see Table 2i) were 15,769, 6,953, 6,733, 48,434, 14,890, and 11,122, respectively, for the North Central Region, the North East Region, the North West Region, the South Central Region, the South West Region, and the Upper Peninsula Region (see Table 8i).

As noted before, the largest effect across all categories for 2016 is associated with the South East Region since it has the largest in-state and out-of-state multipliers in all categories and the highest expenditures on fishing and hunting for both residents and non-residents. It is also the most populous region in Michigan. In contrast, the North West Region has the lowest economic impact in hunting activities and North East Region has the lowest economic impact in fishing activities. Overall, the North West Region exhibits the lowest economic impact for hunting and fishing activities together.

## **EXCEL SPREADSHEET SIMULATION MODEL FOR SCENARIO ANALYSIS**

Two versions of an EXCEL spreadsheet model were developed to allow for scenario analysis for policy making purposes. The first model (LICENSE SALES SIMULATOR) simulates the economic effects on Michigan and each of its regions of changes in the number of hunting and fishing licenses sold in the state or in any of its regions to Michigan residents and/or non-residents. Thus, the economic effects of increasing or decreasing hunting and/or fishing license sales in Michigan or any of its regions can be immediately estimated. The second model (EVENT (EXPENDITURES)



SIMULATOR simulates the economic effects on Michigan and each of its regions of changes in hunting and fishing expenditures by Michigan residents and/or non-residents in the state or in any of its regions. This model allows for the effects of extraneous events in the state or one of its regions on hunting and/or fishing expenditures by residents and/or non-residents to be directly taken into account. For example, the effect of a special event in one region of the state on hunting and fishing expenditures in that region by Michigan residents and non-residents can be estimated. The simulators use the in-state and out-of-state multipliers contained in Tables 1i(I) and 1i(II) (see previous section of this report) and produce results like those shown in Tables 3i(I), 3i(II), 4i, 5i(I), 5i(II), 6i, 7i(I), 7i(II), and 8i in the previous section of this report.

## APPENDIX A.

**Table A1. In-state Industry Multipliers for the State of Michigan**

STATE	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
1. Alabama	1.2852	0.3711	15.1623	0.8247	1.2680	1.1259
2. Alaska	1.2318	0.3428	10.4711	0.8002	1.2272	1.1265
3. Arizona	1.2252	0.3670	19.6688	0.8117	1.2415	1.0844
4. Arkansas	1.2744	0.3639	14.9631	0.8201	1.2490	1.1161
5. California	1.3099	0.3852	11.8529	0.8416	1.2952	1.1411
6. Colorado	1.2412	0.3696	19.6430	0.8170	1.2428	1.0765
7. Connecticut	1.2274	0.3508	13.9051	0.8102	1.2248	1.0860
8. Delaware	1.2581	0.3245	17.4571	0.8124	1.2083	1.0593
9. District of Columbia	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10. Florida	1.2321	0.3720	19.8284	0.8158	1.2500	1.0858
11. Georgia	1.2668	0.3752	19.7501	0.8305	1.2751	1.0938
12. Hawaii	1.2286	0.3635	19.6219	0.7978	1.2177	1.0713
13. Idaho	1.1741	0.3481	21.2695	0.7811	1.1789	1.0626
14. Illinois	1.3361	0.3842	15.0321	0.8514	1.3092	1.1132
15. Indiana	1.3053	0.3737	15.1317	0.8296	1.2642	1.1124
16. Iowa	1.1984	0.3482	14.7013	0.7916	1.1916	1.0932
17. Kansas	1.3086	0.3705	15.0566	0.8389	1.2539	1.1072
18. Kentucky	1.3134	0.3758	15.2815	0.8379	1.2677	1.1201
19. Louisiana	1.3015	0.3788	21.1504	0.8355	1.2752	1.0780
20. Maine	1.1899	0.3565	11.2417	0.7903	1.1964	1.1338
21. Maryland	1.1994	0.3425	18.5404	0.7974	1.2053	1.0632
22. Massachusetts	1.1836	0.3274	10.0629	0.7908	1.1979	1.1064
23. Michigan	1.2381	0.3666	19.6166	0.8101	1.2360	1.0779
24. Minnesota	1.2913	0.3721	19.4787	0.8275	1.2662	1.0803
25. Mississippi	1.2915	0.3670	14.6451	0.8230	1.2507	1.1227
26. Missouri	1.2565	0.3608	14.8304	0.8242	1.2429	1.1102
27. Montana	1.2375	0.3595	21.3935	0.8045	1.2193	1.0705
28. Nebraska	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
29. Nevada	1.1894	0.3566	14.9611	0.7911	1.2008	1.0947
30. New Hampshire	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31. New Jersey	1.2871	0.3689	11.0385	0.8362	1.2600	1.1331
32. New Mexico	1.2402	0.3544	19.1478	0.8046	1.2232	1.0771
33. New York	1.1882	0.3444	18.8850	0.7923	1.1764	1.0514
34. North Carolina	1.2367	0.3660	19.6112	0.8129	1.2375	1.0806
35. North Dakota	1.2775	0.3588	19.0141	0.8248	1.2389	1.0699
36. Ohio	1.3142	0.3773	19.5813	0.8383	1.2845	1.0864
37. Oklahoma	1.2997	0.3735	15.0495	0.8355	1.2824	1.1229
38. Oregon	1.2334	0.3598	11.1506	0.8118	1.2288	1.1447
39. Pennsylvania	1.2886	0.3689	19.3496	0.8317	1.2595	1.0767
40. Rhode Island	1.1916	0.3432	10.7411	0.7917	1.1717	1.1021

STATE	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
41. South Carolina	1.2496	0.3670	19.6731	0.8172	1.2476	1.0898
42. South Dakota	1.1809	0.3487	19.2699	0.7843	1.1820	1.0645
43. Tennessee	1.2893	0.3731	15.0686	0.8349	1.2718	1.1160
44. Texas	1.3549	0.3948	19.9794	0.8646	1.3295	1.0964
45. Utah	1.2974	0.3807	18.9064	0.8350	1.2776	1.0971
46. Vermont	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
47. Virginia	1.2305	0.3634	20.5537	0.8115	1.2258	1.0646
48. Washington	1.2888	0.3749	11.2300	0.8265	1.2750	1.1480
49. West Virginia	1.2107	0.3408	14.4248	0.7927	1.1830	1.0882
50. Wisconsin	1.2309	0.3622	15.0060	0.8063	1.2218	1.0999
51. Wyoming	1.2152	0.3518	19.2233	0.7928	1.1916	1.0613

## APPENDIX A.

**Table A2. Out-of-state Industry Multipliers for the State of Michigan**

STATE	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
1. Alabama	1.6757	0.4901	18.8606	1.0485	1.6749	1.4005
2. Alaska	1.5310	0.4360	12.9849	0.9778	1.5608	1.3969
3. Arizona	1.6841	0.5079	23.7198	1.0881	1.7182	1.3078
4. Arkansas	1.6134	0.4669	18.0373	1.0130	1.6028	1.3454
5. California	1.7983	0.5313	15.4137	1.1269	1.7865	1.4839
6. Colorado	1.7315	0.5178	23.8477	1.1068	1.7412	1.3070
7. Connecticut	1.5827	0.4546	16.3711	1.0242	1.5870	1.2786
8. Delaware	1.5669	0.4031	19.7407	0.9949	1.5010	1.1979
9. District of Columbia	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
10. Florida	1.6960	0.5152	24.1768	1.0964	1.7310	1.3239
11. Georgia	1.7777	0.5270	24.2744	1.1315	1.7908	1.3444
12. Hawaii	1.6290	0.4849	22.9710	1.0372	1.6245	1.2542
13. Idaho	1.4954	0.4480	24.4631	0.9684	1.5172	1.2222
14. Illinois	1.8727	0.5396	18.7767	1.1610	1.8389	1.3905
15. Indiana	1.7500	0.5037	18.7187	1.0803	1.7042	1.3761
16. Iowa	1.5266	0.4471	17.7432	0.9809	1.5301	1.3195
17. Kansas	1.6997	0.4796	18.2887	1.0644	1.6231	1.3449
18. Kentucky	1.7239	0.4932	18.7463	1.0670	1.6637	1.3740
19. Louisiana	1.6905	0.5005	24.7241	1.0605	1.6849	1.2601
20. Maine	1.5504	0.4717	14.6960	1.0050	1.5830	1.4822
21. Maryland	1.5847	0.4522	21.3414	1.0287	1.5910	1.2238
22. Massachusetts	1.5407	0.4316	12.6832	1.0044	1.5788	1.3945
23. Michigan	1.6503	0.4942	23.2239	1.0474	1.6663	1.2761
24. Minnesota	1.7746	0.5130	23.1913	1.1061	1.7458	1.2862
25. Mississippi	1.6481	0.4740	18.0215	1.0244	1.6155	1.3815
26. Missouri	1.7027	0.4859	18.4260	1.0823	1.6741	1.3793
27. Montana	1.5571	0.4613	24.6532	0.9934	1.5646	1.2336
28. Nebraska	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
29. Nevada	1.5530	0.4673	18.2769	1.0115	1.5735	1.3373
30. New Hampshire	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31. New Jersey	1.7562	0.4999	14.2425	1.1134	1.7075	1.4620
32. New Mexico	1.5713	0.4577	22.4353	0.9975	1.5798	1.2620
33. New York	1.5531	0.4435	21.2966	1.0099	1.5151	1.1857
34. North Carolina	1.6855	0.5013	23.5111	1.0770	1.6948	1.2955
35. North Dakota	1.5901	0.4486	21.5153	1.0070	1.5490	1.2107
36. Ohio	1.7985	0.5207	23.6840	1.1124	1.7727	1.3140
37. Oklahoma	1.7086	0.5004	18.6968	1.0718	1.7183	1.3951
38. Oregon	1.6171	0.4746	14.5098	1.0370	1.6210	1.4895
39. Pennsylvania	1.7551	0.5047	22.8692	1.1003	1.7233	1.2726
40. Rhode Island	1.5331	0.4383	13.4251	0.9959	1.4964	1.3775

STATE	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
41. South Carolina	1.6830	0.4960	23.6222	1.0714	1.6859	1.3086
42. South Dakota	1.4957	0.4467	22.1276	0.9682	1.5142	1.2224
43. Tennessee	1.7915	0.5195	18.9374	1.1235	1.7706	1.4025
44. Texas	1.9350	0.5671	24.3380	1.2024	1.9095	1.3356
45. Utah	1.7859	0.5278	23.3485	1.1197	1.7716	1.3548
46. Vermont	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
47. Virginia	1.6412	0.4804	23.8350	1.0556	1.6205	1.2346
48. Washington	1.7183	0.5033	14.5666	1.0793	1.7121	1.4891
49. West Virginia	1.4976	0.4248	17.0728	0.9611	1.4747	1.2880
50. Wisconsin	1.6147	0.4820	18.4061	1.0269	1.6257	1.3491
51. Wyoming	1.4647	0.4296	21.6077	0.9400	1.4552	1.1930

## APPENDIX B.

**Table B1. In-state Industry Multipliers for the Upper Peninsula Region**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
1111C0 Oilseed and grain farming	1.3263	0.2525	9.1781	0.3262	1.7033	1.5146
111200 Vegetable and melon farming	1.1662	0.3157	14.4300	0.7656	1.2115	1.1409
111300 Fruit and tree nut farming	1.1529	0.3749	21.4573	0.7601	1.1833	1.0982
111400 Greenhouse, nursery, and floriculture production	1.2281	0.4585	23.0761	0.7106	1.1899	1.1359
111900 Other crop farming	1.2163	0.3330	13.5635	0.6400	1.2784	1.2019
1121A0 Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	1.2956	0.2220	8.9167	0.4584	1.4610	1.3248
112120 Dairy cattle and milk production	1.2362	0.2522	10.8514	0.4886	1.3803	1.2239
112A00 Animal production, except cattle and poultry and eggs	1.1130	0.2321	9.7014	0.7530	1.1587	1.1077
112300 Poultry and egg production	1.1421	0.2136	7.0265	0.3307	1.2390	1.1521
113000 Forestry and logging	1.3848	0.4894	16.0361	0.7618	1.4193	1.4270
114000 Fishing, hunting and trapping	1.1127	0.3236	18.5269	0.7475	1.1187	1.0439
115000 Support activities for agriculture and forestry	1.0684	0.6241	25.3889	0.7616	1.0343	1.0199
211000 Oil and gas extraction	1.0900	0.2046	3.5877	0.7492	1.1353	1.1284
212100 Coal mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2122A0 Iron, gold, silver, and other metal ore mining	1.1768	0.1918	2.9335	0.6338	1.2535	1.2780
212230 Copper, nickel, lead, and zinc mining	1.1760	0.1904	3.0961	0.7219	1.2447	1.2624
212310 Stone mining and quarrying	1.1741	0.2080	4.2998	0.7255	1.2750	1.2358
2123A0 Other nonmetallic mineral mining and quarrying	1.1908	0.2337	4.7442	0.6816	1.2541	1.2099
213111 Drilling oil and gas wells	1.1346	0.3106	6.0920	0.7318	1.1412	1.1356
21311A Other support activities for mining	1.1289	0.3291	5.6126	0.7582	1.1243	1.1664
2211A0 Electric power generation, transmission, and distribution*	1.1633	0.1791	2.1035	0.6613	1.3467	1.8739
221200 Natural gas distribution	1.1515	0.1759	2.1476	0.5029	1.3224	1.5858
221300 Water, sewage and other systems	1.2346	0.2475	4.2985	0.8015	1.3727	1.4345
23030A Maintenance and repair	1.2841	0.3934	8.2808	0.7040	1.2231	1.3065
2332C0 Nonresidential structures	1.2258	0.5234	10.2261	0.7038	1.1133	1.1245
233293 Highways and streets	1.2968	0.3456	6.4774	0.6574	1.2396	1.2661
2334B0 Residential structures	1.3726	0.3849	8.1838	0.6462	1.3312	1.4823
321100 Sawmills and wood preservation	1.7611	0.3689	9.3740	0.6094	2.5449	3.2220
321200 Veneer, plywood, and engineered wood product manufacturing	1.6312	0.3098	7.0498	0.5368	2.0459	2.3150
321910 Millwork	1.5211	0.3428	7.6349	0.5463	1.5925	1.6810
3219A0 All other wood product manufacturing	1.4586	0.3054	7.1807	0.5225	1.5432	1.5329
327100 Clay product and refractory manufacturing	1.2424	0.3229	6.2930	0.6188	1.2133	1.2008
327200 Glass and glass product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327310 Cement manufacturing	1.2790	0.1991	2.8366	0.6475	1.4317	1.5867
327320 Ready-mix concrete manufacturing	1.3536	0.2393	4.4109	0.4694	1.4970	1.5494
327330 Concrete pipe, brick, and block manufacturing	1.3007	0.2542	5.0889	0.6097	1.3844	1.3853
327390 Other concrete product manufacturing	1.3298	0.2902	6.1562	0.5627	1.3602	1.3368

327400 Lime and gypsum product manufacturing	1.3234	0.2079	3.3178	0.5294	1.4949	1.5872
327910 Abrasive product manufacturing	1.1829	0.1787	3.4554	0.6598	1.2852	1.2772
327991 Cut stone and stone product manufacturing	1.2738	0.3346	7.7928	0.6036	1.2484	1.2044
327992 Ground or treated mineral and earth manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327993 Mineral wool manufacturing	1.2435	0.2380	4.6857	0.6063	1.2839	1.2589
327999 Miscellaneous nonmetallic mineral products	1.3566	0.2827	5.0498	0.5839	1.3934	1.4230
331110 Iron and steel mills and ferroalloy manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331200 Steel product manufacturing from purchased steel	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33131A Alumina refining and primary aluminum production	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331314 Secondary smelting and alloying of aluminum	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33131B Aluminum product manufacturing from purchased aluminum	1.2776	0.2005	3.6237	0.2925	1.4423	1.4609
33141A Primary smelting and refining of nonferrous metal (except aluminum)	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331420 Copper rolling, drawing, extruding, and alloying	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331490 Nonferrous metal (except copper and aluminum) rolling, drawing, extruding, and alloying	1.3019	0.2026	3.3337	0.4313	1.4570	1.5266
331510 Ferrous metal foundries	1.2309	0.2758	4.9125	0.5243	1.2652	1.2845
331520 Nonferrous metal foundries	1.2026	0.2454	4.6821	0.4980	1.2595	1.2537
33211A All other forging, stamping, and sintering	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332114 Custom roll forming	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33211B Crown and closure manufacturing and metal stamping	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332200 Cutlery and handtool manufacturing	1.2144	0.2932	5.0116	0.5848	1.2046	1.2353
332310 Plate work and fabricated structural product manufacturing	1.2332	0.2558	4.8128	0.4434	1.2795	1.2924
332320 Ornamental and architectural metal products manufacturing	1.2749	0.2708	5.1390	0.4583	1.3092	1.3090
332410 Power boiler and heat exchanger manufacturing	1.2830	0.2719	4.0247	0.5501	1.3061	1.3888
332420 Metal tank (heavy gauge) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332430 Metal can, box, and other metal container (light gauge) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332500 Hardware manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332600 Spring and wire product manufacturing	1.2532	0.3021	6.0218	0.5182	1.2471	1.2391
332710 Machine shops	1.2824	0.3785	7.1261	0.6123	1.2205	1.2307
332720 Turned product and screw, nut, and bolt manufacturing	1.2177	0.2059	3.6712	0.5802	1.3484	1.3813
332800 Coating, engraving, heat treating and allied activities	1.2627	0.2605	5.2598	0.5581	1.2779	1.2592
33291A Valve and fitting (except plumbing) manufacturing	1.2138	0.2241	3.6988	0.5386	1.2920	1.3410
332913 Plumbing fixture fitting and trim manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332991 Ball and roller bearing manufacturing	1.2378	0.2874	4.3106	0.6277	1.2530	1.2950
33299A Ammunition, arms, ordnance, and accessories manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332996 Fabricated pipe and pipe fitting manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33299B Other fabricated metal manufacturing	1.2658	0.2670	4.9051	0.4962	1.2751	1.2804
333111 Farm machinery and equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333112 Lawn and garden equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333120 Construction machinery manufacturing	1.2384	0.2016	4.0047	0.4350	1.3976	1.3587

333130 Mining and oil and gas field machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3332A0 Industrial machinery (except semiconductor machinery) manufacturing	1.2943	0.3058	4.8733	0.5223	1.3157	1.3858
333295 Semiconductor machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33331B All other commercial and service industry machinery manufacturing	1.1634	0.3355	5.6350	0.5104	1.1448	1.1642
333314 Optical instrument and lens manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333315 Photographic and photocopying equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33341A Air purification and ventilation equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333414 Heating equipment (except warm air furnaces) manufacturing	1.2878	0.2290	4.1045	0.5327	1.3985	1.4333
333415 Air conditioning, refrigeration, and warm air heating equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333511 Industrial mold manufacturing	1.2353	0.4350	7.5216	0.6455	1.1505	1.1624
33351A Metal cutting and forming machine tool manufacturing	1.2385	0.3340	5.3987	0.5957	1.2143	1.2557
333514 Special tool, die, jig, and fixture manufacturing	1.2680	0.3881	6.6337	0.6192	1.2108	1.2331
33351B Cutting and machine tool accessory, rolling mill, and other metalworking machinery manufacturing	1.2923	0.3240	5.3945	0.5677	1.2536	1.2807
333611 Turbine and turbine generator set units manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333612 Speed changer, industrial high-speed drive, and gear manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333613 Mechanical power transmission equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333618 Other engine equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33391A Pump and pumping equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333912 Air and gas compressor manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333920 Material handling equipment manufacturing	1.2254	0.1940	2.8925	0.4902	1.3953	1.5334
333991 Power-driven handtool manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33399A Other general purpose machinery manufacturing	1.2494	0.2399	3.5173	0.4960	1.3161	1.4423
333993 Packaging machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333994 Industrial process furnace and oven manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33399B Fluid power process machinery	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334111 Electronic computer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334112 Computer storage device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33411A Computer terminals and other computer peripheral equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334210 Telephone apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334220 Broadcast and wireless communications equipment	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334290 Other communications equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334300 Audio and video equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33441A Other electronic component manufacturing	1.1852	0.3465	7.0218	0.6286	1.1560	1.1429
334413 Semiconductor and related device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334418 Printed circuit assembly (electronic assembly) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334510 Electromedical and electrotherapeutic apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334511 Search, detection, and navigation instruments manufacturing	1.1333	0.2894	3.8199	0.6192	1.1424	1.2176



334512 Automatic environmental control manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334513 Industrial process variable instruments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334514 Totalizing fluid meter and counting device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334515 Electricity and signal testing instruments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334516 Analytical laboratory instrument manufacturing	1.1893	0.2381	3.6523	0.5935	1.2365	1.3098
334517 Irradiation apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33451A Watch, clock, and other measuring and controlling device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334610 Manufacturing and reproducing magnetic and optical media	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335110 Electric lamp bulb and part manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335120 Lighting fixture manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335210 Small electrical appliance manufacturing	1.1942	0.2393	4.0682	0.4872	1.2360	1.2475
335221 Household cooking appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335222 Household refrigerator and home freezer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335224 Household laundry equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335228 Other major household appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335311 Power, distribution, and specialty transformer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335312 Motor and generator manufacturing	1.2016	0.2060	4.2123	0.4541	1.2977	1.2453
335313 Switchgear and switchboard apparatus manufacturing	1.2302	0.2117	4.1745	0.5270	1.3440	1.2997
335314 Relay and industrial control manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335911 Storage battery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335912 Primary battery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335920 Communication and energy wire and cable manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335930 Wiring device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335991 Carbon and graphite product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335999 All other miscellaneous electrical equipment and component manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336111 Automobile manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336112 Light truck and utility vehicle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336120 Heavy duty truck manufacturing	1.1904	0.1805	3.6120	0.2654	1.2979	1.2506
336211 Motor vehicle body manufacturing	1.3796	0.2266	4.1791	0.4049	1.4859	1.4933
336212 Truck trailer manufacturing	1.3478	0.2339	4.8748	0.3961	1.4293	1.3733
336213 Motor home manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336214 Travel trailer and camper manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336310 Motor vehicle gasoline engine and engine parts manufacturing	1.3585	0.2241	3.6264	0.4399	1.5965	1.7445
336320 Motor vehicle electrical and electronic equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3363A0 Motor vehicle steering, suspension component (except spring), and brake systems manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336350 Motor vehicle transmission and power train parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336360 Motor vehicle seating and interior trim manufacturing	1.4019	0.2209	4.0432	0.3769	1.5885	1.6192
336370 Motor vehicle metal stamping	1.1819	0.2019	3.2617	0.4281	1.2741	1.3297
336390 Other motor vehicle parts manufacturing	1.2745	0.2270	4.0112	0.4048	1.3979	1.4364

336411 Aircraft manufacturing	1.1134	0.2128	3.5781	0.5149	1.1500	1.1606
336412 Aircraft engine and engine parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336413 Other aircraft parts and auxiliary equipment manufacturing	1.1971	0.2261	3.5842	0.6203	1.2509	1.3050
336414 Guided missile and space vehicle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33641A Propulsion units and parts for space vehicles and guided missiles	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336500 Railroad rolling stock manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336611 Ship building and repairing	1.2576	0.2767	5.3448	0.5236	1.2692	1.2780
336612 Boat building	1.3041	0.2184	4.3365	0.4202	1.4613	1.4285
336991 Motorcycle, bicycle, and parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336992 Military armored vehicle, tank, and tank component manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336999 All other transportation equipment manufacturing	1.2728	0.1950	3.2949	0.3614	1.4023	1.4230
337110 Wood kitchen cabinet and countertop manufacturing	1.4110	0.3768	8.7627	0.5526	1.3268	1.3170
337121 Upholstered household furniture manufacturing	1.1959	0.2569	6.8831	0.3927	1.2244	1.1586
337122 Nonupholstered wood household furniture manufacturing	1.3247	0.3450	8.9825	0.5869	1.2690	1.2198
33712A Other household nonupholstered furniture	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
337127 Institutional furniture manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33721A Office furniture and custom architectural woodwork and millwork manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
337215 Showcase, partition, shelving, and locker manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
337900 Other furniture related product manufacturing	1.2754	0.2475	5.5015	0.4986	1.3674	1.3249
339112 Surgical and medical instrument manufacturing	1.2167	0.2929	4.5930	0.6863	1.2148	1.2535
339113 Surgical appliance and supplies manufacturing	1.2059	0.2418	3.6694	0.6469	1.2645	1.3691
339114 Dental equipment and supplies manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339115 Ophthalmic goods manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339116 Dental laboratories	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339910 Jewelry and silverware manufacturing	1.1635	0.2077	4.9377	0.4090	1.2485	1.2149
339920 Sporting and athletic goods manufacturing	1.2388	0.2443	4.7440	0.5216	1.3027	1.3065
339930 Doll, toy, and game manufacturing	1.1719	0.1821	4.1517	0.4461	1.3099	1.2494
339940 Office supplies (except paper) manufacturing	1.2139	0.2482	6.7704	0.5337	1.2531	1.1680
339950 Sign manufacturing	1.2503	0.3091	7.0966	0.5258	1.2227	1.1836
339990 All other miscellaneous manufacturing	1.2654	0.2770	5.1886	0.5083	1.3107	1.3400
311111 Dog and cat food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311119 Other animal food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311210 Flour milling and malt manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311221 Wet corn milling	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31122A Soybean and other oilseed processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311225 Fats and oils refining and blending	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311230 Breakfast cereal manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311300 Sugar and confectionery product manufacturing	1.4409	0.2384	6.3617	0.4923	1.6793	1.7166
311410 Frozen food manufacturing	1.2575	0.2057	4.9856	0.3343	1.4493	1.4930
311420 Fruit and vegetable canning, pickling, and drying	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31151A Fluid milk and butter manufacturing	1.7902	0.3078	8.6275	0.4932	2.1682	3.3799
311513 Cheese manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

311514 Dry, condensed, and evaporated dairy product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311520 Ice cream and frozen dessert manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31161A Animal (except poultry) slaughtering, rendering, and processing	1.3298	0.2098	5.6218	0.3115	1.4779	1.6388
311615 Poultry processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311700 Seafood product preparation and packaging	1.1985	0.1956	4.4024	0.3558	1.3779	1.5310
311810 Bread and bakery product manufacturing	1.2129	0.2455	7.4054	0.4552	1.2634	1.1773
3118A0 Cookie, cracker, pasta, and tortilla manufacturing	1.2268	0.1924	3.7827	0.4426	1.3555	1.3987
311910 Snack food manufacturing	1.2466	0.2044	5.2414	0.5169	1.4396	1.5228
311920 Coffee and tea manufacturing	1.2849	0.2147	4.9185	0.3716	1.5122	1.5531
311930 Flavoring syrup and concentrate manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311940 Seasoning and dressing manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311990 All other food manufacturing	1.3230	0.2217	6.1996	0.3654	1.5620	1.5944
312110 Soft drink and ice manufacturing	1.2784	0.2009	3.5702	0.3458	1.4155	1.4784
312120 Breweries	1.1329	0.1750	4.2270	0.5023	1.2328	1.1834
312130 Wineries	1.2000	0.1943	5.3166	0.4221	1.3690	1.2401
312140 Distilleries	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
312200 Tobacco product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313100 Fiber, yarn, and thread mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313200 Fabric mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313300 Textile and fabric finishing and fabric coating mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314110 Carpet and rug mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314120 Curtain and linen mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314900 Other textile product mills	1.1304	0.2798	8.2671	0.4524	1.1407	1.0956
315000 Apparel manufacturing	1.1824	0.4079	15.4264	0.5810	1.1617	1.1159
316000 Leather and allied product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322110 Pulp mills	1.5684	0.2718	5.0883	0.5561	1.9145	2.3673
322120 Paper mills	1.3643	0.2277	3.4638	0.5156	1.6042	2.1071
322130 Paperboard mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322210 Paperboard container manufacturing	1.3513	0.2487	4.4625	0.4114	1.4241	1.4274
322220 Paper bag and coated and treated paper manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322230 Stationery product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322291 Sanitary paper product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322299 All other converted paper product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
323110 Printing	1.2230	0.3093	7.2907	0.5661	1.2296	1.2296
323120 Support activities for printing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324110 Petroleum refineries	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324121 Asphalt paving mixture and block manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324122 Asphalt shingle and coating materials manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324190 Other petroleum and coal products manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325110 Petrochemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325120 Industrial gas manufacturing	1.2327	0.1889	2.8659	0.6287	1.3304	1.3800
325130 Synthetic dye and pigment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325180 Other basic inorganic chemical manufacturing	1.2854	0.2013	2.7096	0.5589	1.4183	1.5756
325190 Other basic organic chemical	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

manufacturing						
325211 Plastics material and resin manufacturing	1.1595	0.1784	2.2055	0.2798	1.2566	1.4137
3252A0 Synthetic rubber and artificial and synthetic fibers and filaments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325310 Fertilizer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325320 Pesticide and other agricultural chemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325411 Medicinal and botanical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325412 Pharmaceutical preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325413 In-vitro diagnostic substance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325414 Biological product (except diagnostic) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325510 Paint and coating manufacturing	1.1745	0.1819	2.5236	0.4046	1.2816	1.3725
325520 Adhesive manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325610 Soap and cleaning compound manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325620 Toilet preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325910 Printing ink manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3259A0 All other chemical product and preparation manufacturing	1.2149	0.1900	3.1070	0.4144	1.3384	1.3475
326110 Plastics packaging materials and unlaminated film and sheet manufacturing	1.2485	0.1928	3.1927	0.4168	1.3581	1.3990
326120 Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	1.1864	0.2254	4.0448	0.4272	1.2203	1.2146
326130 Laminated plastics plate, sheet (except packaging), and shape manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326140 Polystyrene foam product manufacturing	1.1970	0.1948	3.7225	0.4213	1.2942	1.3108
326150 Urethane and other foam product (except polystyrene) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326160 Plastics bottle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326190 Other plastics product manufacturing	1.2903	0.2120	4.0906	0.4144	1.4234	1.4206
326210 Tire manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326220 Rubber and plastics hoses and belting manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326290 Other rubber product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
420000 Wholesale trade	1.1264	0.3467	5.1884	0.7521	1.1247	1.1934
441000 Motor vehicle and parts dealers	1.1013	0.4485	9.3039	0.8311	1.0644	1.0749
445000 Food and beverage stores	1.1445	0.4074	17.5299	0.7507	1.0999	1.0508
452000 General merchandise stores	1.1296	0.3551	15.8002	0.7165	1.1152	1.0544
4A0000 Other retail	1.1504	0.3780	15.5495	0.7251	1.1211	1.0651
481000 Air transportation	1.1431	0.2336	3.2510	0.5213	1.2191	1.3841
482000 Rail transportation	1.1660	0.2744	3.6012	0.6081	1.1962	1.3404
483000 Water transportation	1.2418	0.2168	4.3064	0.4325	1.4578	1.5018
484000 Truck transportation	1.2352	0.3821	8.4362	0.5719	1.2474	1.2383
485A00 Transit and ground passenger transportation*	1.1774	0.4955	25.6223	0.5555	1.1180	1.0448
486000 Pipeline transportation	1.1965	0.3504	3.9811	0.6171	1.1898	1.3872
48A000 Scenic and sightseeing transportation and support activities for transportation	1.3018	0.4390	9.1650	0.6688	1.2962	1.3117
492000 Couriers and messengers	1.2220	0.3604	10.9628	0.6397	1.2372	1.1592
493000 Warehousing and storage	1.1679	0.3939	9.0801	0.6984	1.1291	1.1255
511110 Newspaper publishers	1.2279	0.3523	9.0973	0.6606	1.2131	1.1668
511120 Periodical publishers	1.2505	0.2790	5.0187	0.6082	1.3323	1.4273
511130 Book publishers	1.1027	0.1787	3.2107	0.7974	1.1978	1.2498
5111A0 Directory, mailing list, and other publishers	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

511200 Software publishers	1.0966	0.3023	3.9040	0.7386	1.1071	1.2092
512100 Motion picture and video industries	1.1049	0.1968	7.3701	0.6070	1.1874	1.1132
512200 Sound recording industries	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
515100 Radio and television broadcasting	1.1524	0.5561	8.4643	0.6729	1.1069	1.1297
515200 Cable and other subscription programming	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
517110 Wired telecommunications carriers	1.1305	0.1793	3.1236	0.6878	1.2014	1.2357
517210 Wireless telecommunications carriers (except satellite)	1.2066	0.2018	3.7922	0.6162	1.3521	1.3946
517A00 Satellite, telecommunications resellers, and all other telecommunications	1.1817	0.4145	6.8356	0.7257	1.1083	1.1340
518200 Data processing, hosting, and related services	1.2575	0.3144	5.8578	0.6403	1.2841	1.4021
5191A0 News syndicates, libraries, archives, and all other information services	1.0827	0.2966	6.4071	0.7001	1.0860	1.0968
519130 Internet publishing and broadcasting and Web search portals	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
52A000 Monetary authorities and depository credit intermediation	1.1826	0.2779	5.4509	0.7132	1.2373	1.3417
522A00 Nondepository credit intermediation and related activities	1.2293	0.3878	5.4372	0.6289	1.2073	1.4130
523A00 Securities and commodity contracts intermediation and brokerage	1.1410	0.4706	14.6535	0.5575	1.0922	1.0688
523900 Other financial investment activities	1.2254	0.3273	13.6488	0.4444	1.2476	1.1226
524100 Insurance carriers	1.2023	0.2734	4.5108	0.6805	1.3111	1.4184
524200 Insurance agencies, brokerages, and related activities	1.2839	0.4246	8.1434	0.6629	1.2568	1.3014
525000 Funds, trusts, and other financial vehicles	1.1478	0.1873	8.9360	0.3040	1.2579	1.1426
531000 Real estate	1.1760	0.1951	7.3858	0.8059	1.3099	1.1729
532100 Automotive equipment rental and leasing	1.1557	0.2683	4.3360	0.7612	1.1934	1.2997
532A00 Consumer goods and general rental centers	1.1370	0.4618	9.5544	0.7906	1.0804	1.0898
532400 Commercial and industrial machinery and equipment rental and leasing	1.1116	0.2381	2.8363	0.8120	1.1601	1.3250
533000 Lessors of nonfinancial intangible assets	1.2061	0.2126	3.0880	0.6509	1.4275	1.8067
541100 Legal services	1.0934	0.5248	6.9058	0.8032	1.0523	1.1125
541511 Custom computer programming services	1.0987	0.6043	7.8157	0.7588	1.0584	1.1204
541512 Computer systems design services	1.1591	0.5546	7.4358	0.7278	1.1005	1.2042
54151A Other computer related services, including facilities management	1.1323	0.5418	6.9538	0.7697	1.0750	1.1645
541200 Accounting, tax preparation, bookkeeping, and payroll services	1.0875	0.5373	10.7766	0.8450	1.0524	1.0680
541300 Architectural, engineering, and related services	1.1922	0.4572	6.6346	0.6276	1.1543	1.2729
541400 Specialized design services	1.1458	0.4837	12.7818	0.7423	1.0902	1.0859
541610 Management consulting services	1.1730	0.5453	11.6088	0.7144	1.1071	1.1266
5416A0 Environmental and other technical consulting services	1.1554	0.5612	12.6124	0.6990	1.0986	1.1044
541700 Scientific research and development services	1.1956	0.3916	4.5663	0.5654	1.1836	1.4289
541800 Advertising, public relations, and related services	1.1411	0.3115	5.4544	0.6747	1.1565	1.2373
5419A0 Marketing research and all other miscellaneous professional, scientific, and technical services	1.1202	0.4394	8.6642	0.7189	1.0832	1.1016
541920 Photographic services	1.1780	0.4696	17.0735	0.6357	1.1158	1.0834
541940 Veterinary services	1.1992	0.4597	13.8916	0.6004	1.1424	1.1222
550000 Management of companies and enterprises	1.1564	0.4645	4.7773	0.6945	1.1043	1.2464
561100 Office administrative services	1.0749	0.6279	9.8967	0.8320	1.0362	1.0572
561200 Facilities support services	1.2404	0.3081	9.2350	0.6650	1.2667	1.1970

561300 Employment services	1.0715	0.6053	22.3374	0.8321	1.0406	1.0297
561400 Business support services	1.1548	0.4883	13.6702	0.7172	1.1072	1.0926
561500 Travel arrangement and reservation services	1.2182	0.3234	8.4163	0.5975	1.2492	1.2425
561600 Investigation and security services	1.1164	0.5522	21.9543	0.7689	1.0645	1.0388
561700 Services to buildings and dwellings	1.1389	0.3706	15.4497	0.7038	1.1206	1.0671
561900 Other support services	1.2136	0.4364	11.7534	0.6261	1.1676	1.1659
562000 Waste management and remediation services	1.2241	0.2962	6.1049	0.5886	1.2551	1.2799
611100 Elementary and secondary schools	1.1403	0.5369	23.7660	0.7464	1.0745	1.0402
611A00 Junior colleges, colleges, universities, and professional schools	1.1908	0.4870	17.0341	0.7147	1.1002	1.0707
611B00 Other educational services	1.1576	0.5540	29.5249	0.6751	1.0849	1.0382
621100 Offices of physicians	1.1216	0.5444	7.2961	0.7030	1.0694	1.1415
621200 Offices of dentists	1.1245	0.4804	10.4503	0.7062	1.0773	1.0826
621300 Offices of other health practitioners	1.1124	0.4630	12.1350	0.7437	1.0704	1.0669
621400 Outpatient care centers	1.1885	0.3693	7.4473	0.6478	1.1536	1.1804
621500 Medical and diagnostic laboratories	1.1272	0.4877	8.6968	0.6946	1.0847	1.1046
621600 Home health care services	1.1210	0.5809	18.4115	0.7344	1.0592	1.0465
621900 Other ambulatory health care services	1.1794	0.4417	11.5091	0.6576	1.1195	1.0977
622000 Hospitals	1.1568	0.4628	8.1942	0.6469	1.1150	1.1631
623A00 Nursing and community care facilities	1.1476	0.4919	16.8530	0.6958	1.0842	1.0628
623B00 Residential mental retardation, mental health, substance abuse and other facilities	1.1193	0.5585	20.2440	0.7552	1.0571	1.0387
624100 Individual and family services	1.1302	0.5442	22.8372	0.7098	1.0658	1.0388
624A00 Community food, housing, and other relief services, including rehabilitation services	1.1977	0.4552	19.9404	0.6151	1.1275	1.0726
624400 Child day care services	1.1536	0.5011	30.8986	0.7074	1.0782	1.0337
711100 Performing arts companies	1.1211	0.3649	29.4640	0.6218	1.1066	1.0315
711200 Spectator sports	1.0469	0.5902	14.4715	0.8175	1.0248	1.0246
711A00 Promoters of performing arts and sports and agents for public figures	1.1883	0.3049	20.0188	0.5744	1.2272	1.0951
711500 Independent artists, writers, and performers	1.0863	0.2758	7.3772	0.6198	1.1206	1.1144
712000 Museums, historical sites, zoos, and parks	1.2082	0.3677	14.8674	0.5853	1.1778	1.1022
713100 Amusement parks and arcades	1.1091	0.3091	15.6870	0.7503	1.1040	1.0428
713200 Gambling industries (except casino hotels)	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
713900 Other amusement and recreation industries	1.1952	0.3430	22.2343	0.6317	1.1663	1.0560
721000 Accommodation	1.1498	0.3187	9.7385	0.7181	1.1529	1.1145
722110 Full-service restaurants	1.1880	0.4170	20.8063	0.6214	1.1299	1.0551
722211 Limited-service restaurants	1.1796	0.3390	20.7478	0.6475	1.1519	1.0536
722A00 All other food and drinking places	1.2326	0.2388	11.4025	0.4766	1.3088	1.1376
811100 Automotive repair and maintenance	1.1718	0.4947	12.8275	0.6680	1.0979	1.0864
811200 Electronic and precision equipment repair and maintenance	1.1261	0.5418	9.0503	0.7298	1.0742	1.1074
811300 Commercial and industrial machinery and equipment repair and maintenance	1.0948	0.5898	9.8449	0.8128	1.0445	1.0598
811400 Personal and household goods repair and maintenance	1.1183	0.2966	8.2456	0.7320	1.1227	1.1109
812100 Personal care services	1.1430	0.5997	29.0017	0.7302	1.0734	1.0417
812200 Death care services	1.1313	0.5212	15.7859	0.7202	1.0670	1.0452
812300 Dry-cleaning and laundry services	1.1695	0.5260	18.6577	0.7247	1.1045	1.0762
812900 Other personal services	1.1537	0.4463	18.9872	0.6867	1.1091	1.0638
813100 Religious organizations	1.2144	0.2098	6.1477	0.4255	1.3497	1.3090

<b>813A00 Grantmaking, giving, and social advocacy organizations</b>	1.0847	0.4794	12.0574	0.7657	1.0569	1.0630
<b>813B00 Civic, social, professional, and similar organizations</b>	1.0957	0.6187	21.2958	0.8603	1.0467	1.0341
<b>491000 Postal service</b>	1.1052	0.5625	8.6078	0.8370	1.0539	1.0935
<b>S00A00 Other government enterprises</b>	1.3903	0.3400	6.9797	0.6273	1.5048	1.5003
<b>H00000 Households</b>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

## APPENDIX B.

**Table B2. Out-state Industry Multipliers for the Upper Peninsula Region**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
1111C0 Oilseed and grain farming	1.4818	0.3028	10.7490	0.4173	2.0426	1.7738
111200 Vegetable and melon farming	1.3606	0.3786	16.3940	0.8795	1.4528	1.2962
111300 Fruit and tree nut farming	1.3838	0.4495	23.7895	0.8954	1.4190	1.2176
111400 Greenhouse, nursery, and floriculture production	1.5105	0.5498	25.9285	0.8761	1.4269	1.2763
111900 Other crop farming	1.4214	0.3994	15.6353	0.7602	1.5330	1.3855
1121A0 Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	1.4323	0.2662	10.2976	0.5385	1.7520	1.5300
112120 Dairy cattle and milk production	1.3915	0.3025	12.4206	0.5797	1.6553	1.4009
112A00 Animal production, except cattle and poultry and eggs	1.2560	0.2784	11.1456	0.8368	1.3895	1.2726
112300 Poultry and egg production	1.2737	0.2562	8.3556	0.4078	1.4858	1.3700
113000 Forestry and logging	1.6862	0.5869	19.0809	0.9384	1.7020	1.6979
114000 Fishing, hunting and trapping	1.3120	0.3880	20.5399	0.8643	1.3415	1.1574
115000 Support activities for agriculture and forestry	1.4528	0.7484	29.2715	0.9868	1.2404	1.1759
211000 Oil and gas extraction	1.2160	0.2453	4.8603	0.8230	1.3614	1.5287
212100 Coal mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2122A0 Iron, gold, silver, and other metal ore mining	1.2949	0.2300	4.1265	0.7030	1.5032	1.7978
212230 Copper, nickel, lead, and zinc mining	1.2933	0.2283	4.2807	0.7907	1.4926	1.7455
212310 Stone mining and quarrying	1.3022	0.2494	5.5936	0.8005	1.5289	1.6077
2123A0 Other nonmetallic mineral mining and quarrying	1.3348	0.2802	6.1981	0.7660	1.5039	1.5806
213111 Drilling oil and gas wells	1.3259	0.3725	8.0243	0.8439	1.3685	1.4957
21311A Other support activities for mining	1.3317	0.3947	7.6601	0.8770	1.3482	1.5918
2211A0 Electric power generation, transmission, and distribution*	1.2737	0.2148	3.2179	0.7260	1.6149	2.8667
221200 Natural gas distribution	1.2599	0.2109	3.2419	0.5664	1.5858	2.3939
221300 Water, sewage and other systems	1.3870	0.2968	5.8381	0.8909	1.6461	1.9483
23030A Maintenance and repair	1.5264	0.4717	10.7280	0.8460	1.4667	1.6927
2332C0 Nonresidential structures	1.5481	0.6276	13.4821	0.8927	1.3350	1.4826
233293 Highways and streets	1.5097	0.4144	8.6273	0.7821	1.4864	1.6864
2334B0 Residential structures	1.6096	0.4616	10.5783	0.7852	1.5963	1.9160
321100 Sawmills and wood preservation	1.9883	0.4424	11.6691	0.7425	3.0517	4.0108
321200 Veneer, plywood, and engineered wood product manufacturing	1.8220	0.3715	8.9770	0.6486	2.4533	2.9479
321910 Millwork	1.7323	0.4111	9.7676	0.6700	1.9096	2.1506
3219A0 All other wood product manufacturing	1.6467	0.3662	9.0807	0.6327	1.8506	1.9385
327100 Clay product and refractory manufacturing	1.4413	0.3873	8.3020	0.7354	1.4550	1.5842
327200 Glass and glass product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327310 Cement manufacturing	1.4016	0.2387	4.0750	0.7193	1.7169	2.2795
327320 Ready-mix concrete manufacturing	1.5010	0.2870	5.8996	0.5557	1.7951	2.0724
327330 Concrete pipe, brick, and block manufacturing	1.4573	0.3049	6.6706	0.7015	1.6602	1.8159
327390 Other concrete product manufacturing	1.5085	0.3480	7.9615	0.6675	1.6311	1.7288
327400 Lime and gypsum product manufacturing	1.4514	0.2493	4.6110	0.6044	1.7927	2.2059
327910 Abrasive product manufacturing	1.2929	0.2143	4.5671	0.7243	1.5412	1.6882
327991 Cut stone and stone product manufacturing	1.4798	0.4012	9.8741	0.7244	1.4970	1.5261
327992 Ground or treated mineral and earth manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000



327993 Mineral wool manufacturing	1.3901	0.2854	6.1663	0.6922	1.5397	1.6567
327999 Miscellaneous nonmetallic mineral products	1.5307	0.3390	6.8086	0.6860	1.6709	1.9187
331110 Iron and steel mills and ferroalloy manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331200 Steel product manufacturing from purchased steel	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33131A Alumina refining and primary aluminum production	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331314 Secondary smelting and alloying of aluminum	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33131B Aluminum product manufacturing from purchased aluminum	1.4012	0.2405	4.8713	0.3649	1.7296	1.9638
33141A Primary smelting and refining of nonferrous metal (except aluminum)	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331420 Copper rolling, drawing, extruding, and alloying	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331490 Nonferrous metal (except copper and aluminum) rolling, drawing, extruding, and alloying	1.4266	0.2429	4.5940	0.5045	1.7472	2.1037
331510 Ferrous metal foundries	1.4008	0.3308	6.6286	0.6238	1.5172	1.7332
331520 Nonferrous metal foundries	1.3538	0.2943	6.2088	0.5866	1.5104	1.6625
33211A All other forging, stamping, and sintering	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332114 Custom roll forming	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33211B Crown and closure manufacturing and metal stamping	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332200 Cutlery and handtool manufacturing	1.3950	0.3516	6.8358	0.6906	1.4445	1.6850
332310 Plate work and fabricated structural product manufacturing	1.3907	0.3067	6.4040	0.5357	1.5344	1.7198
332320 Ornamental and architectural metal products manufacturing	1.4418	0.3248	6.8240	0.5560	1.5700	1.7382
332410 Power boiler and heat exchanger manufacturing	1.4505	0.3260	5.7160	0.6482	1.5662	1.9725
332420 Metal tank (heavy gauge) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332430 Metal can, box, and other metal container (light gauge) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332500 Hardware manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332600 Spring and wire product manufacturing	1.4392	0.3622	7.9009	0.6272	1.4955	1.6257
332710 Machine shops	1.5155	0.4538	9.4806	0.7488	1.4636	1.6373
332720 Turned product and screw, nut, and bolt manufacturing	1.3445	0.2469	4.9523	0.6546	1.6169	1.8633
332800 Coating, engraving, heat treating and allied activities	1.4232	0.3123	6.8802	0.6521	1.5324	1.6472
33291A Valve and fitting (except plumbing) manufacturing	1.3518	0.2687	5.0928	0.6195	1.5493	1.8464
332913 Plumbing fixture fitting and trim manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332991 Ball and roller bearing manufacturing	1.4148	0.3446	6.0986	0.7315	1.5026	1.8321
33299A Ammunition, arms, ordnance, and accessories manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332996 Fabricated pipe and pipe fitting manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33299B Other fabricated metal manufacturing	1.4302	0.3201	6.5659	0.5926	1.5291	1.7140
333111 Farm machinery and equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333112 Lawn and garden equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333120 Construction machinery manufacturing	1.3626	0.2417	5.2586	0.5078	1.6760	1.7841
333130 Mining and oil and gas field machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3332A0 Industrial machinery (except semiconductor machinery) manufacturing	1.4826	0.3667	6.7756	0.6326	1.5778	1.9268
333295 Semiconductor machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33331B All other commercial and service industry machinery manufacturing	1.3700	0.4024	7.7225	0.6315	1.3728	1.5955
333314 Optical instrument and lens manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333315 Photographic and photocopying equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

33341A Air purification and ventilation equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333414 Heating equipment (except warm air furnaces) manufacturing	1.4288	0.2746	5.5289	0.6153	1.6771	1.9307
333415 Air conditioning, refrigeration, and warm air heating equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333511 Industrial mold manufacturing	1.5032	0.5216	10.2275	0.8025	1.3797	1.5806
33351A Metal cutting and forming machine tool manufacturing	1.4442	0.4005	7.4763	0.7163	1.4562	1.7389
333514 Special tool, die, jig, and fixture manufacturing	1.5071	0.4655	9.0485	0.7593	1.4520	1.6819
33351B Cutting and machine tool accessory, rolling mill, and other metalworking machinery manufacturing	1.4918	0.3885	7.4099	0.6846	1.5033	1.7592
333611 Turbine and turbine generator set units manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333612 Speed changer, industrial high-speed drive, and gear manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333613 Mechanical power transmission equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333618 Other engine equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33391A Pump and pumping equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333912 Air and gas compressor manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333920 Material handling equipment manufacturing	1.3448	0.2327	4.0995	0.5602	1.6732	2.1733
333991 Power-driven handtool manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33399A Other general purpose machinery manufacturing	1.3972	0.2877	5.0101	0.5826	1.5782	2.0544
333993 Packaging machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333994 Industrial process furnace and oven manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33399B Fluid power process machinery	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334111 Electronic computer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334112 Computer storage device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33411A Computer terminals and other computer peripheral equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334210 Telephone apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334220 Broadcast and wireless communications equipment	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334290 Other communications equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334300 Audio and video equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33441A Other electronic component manufacturing	1.3986	0.4155	9.1772	0.7536	1.3863	1.4938
334413 Semiconductor and related device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334418 Printed circuit assembly (electronic assembly) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334510 Electromedical and electrotherapeutic apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334511 Search, detection, and navigation instruments manufacturing	1.3115	0.3470	5.6201	0.7237	1.3700	1.7915
334512 Automatic environmental control manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334513 Industrial process variable instruments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334514 Totalizing fluid meter and counting device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334515 Electricity and signal testing instruments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334516 Analytical laboratory instrument manufacturing	1.3359	0.2856	5.1337	0.6795	1.4828	1.8411
334517 Irradiation apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33451A Watch, clock, and other measuring and controlling device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334610 Manufacturing and reproducing magnetic and optical media	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

335110 Electric lamp bulb and part manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335120 Lighting fixture manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335210 Small electrical appliance manufacturing	1.3416	0.2870	5.5571	0.5735	1.4822	1.7041
335221 Household cooking appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335222 Household refrigerator and home freezer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335224 Household laundry equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335228 Other major household appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335311 Power, distribution, and specialty transformer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335312 Motor and generator manufacturing	1.3285	0.2470	5.4936	0.5284	1.5562	1.6241
335313 Switchgear and switchboard apparatus manufacturing	1.3606	0.2538	5.4915	0.6034	1.6117	1.7097
335314 Relay and industrial control manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335911 Storage battery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335912 Primary battery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335920 Communication and energy wire and cable manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335930 Wiring device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335991 Carbon and graphite product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335999 All other miscellaneous electrical equipment and component manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336111 Automobile manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336112 Light truck and utility vehicle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336120 Heavy duty truck manufacturing	1.3015	0.2164	4.7347	0.3306	1.5564	1.6393
336211 Motor vehicle body manufacturing	1.5192	0.2718	5.5890	0.4867	1.7819	1.9971
336212 Truck trailer manufacturing	1.4918	0.2805	6.3298	0.4805	1.7140	1.7832
336213 Motor home manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336214 Travel trailer and camper manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336310 Motor vehicle gasoline engine and engine parts manufacturing	1.4965	0.2687	5.0205	0.5208	1.9145	2.4152
336320 Motor vehicle electrical and electronic equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3363A0 Motor vehicle steering, suspension component (except spring), and brake systems manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336350 Motor vehicle transmission and power train parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336360 Motor vehicle seating and interior trim manufacturing	1.5379	0.2649	5.4173	0.4566	1.9049	2.1695
336370 Motor vehicle metal stamping	1.3062	0.2421	4.5176	0.5009	1.5278	1.8416
336390 Other motor vehicle parts manufacturing	1.4143	0.2722	5.4235	0.4867	1.6763	1.9422
336411 Aircraft manufacturing	1.2444	0.2552	4.9018	0.5917	1.3790	1.5899
336412 Aircraft engine and engine parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336413 Other aircraft parts and auxiliary equipment manufacturing	1.3364	0.2711	4.9906	0.7019	1.5001	1.8170
336414 Guided missile and space vehicle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33641A Propulsion units and parts for space vehicles and guided missiles	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336500 Railroad rolling stock manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336611 Ship building and repairing	1.4280	0.3318	7.0661	0.6234	1.5220	1.6896
336612 Boat building	1.4386	0.2619	5.6952	0.4990	1.7524	1.8761
336991 Motorcycle, bicycle, and parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336992 Military armored vehicle, tank, and tank component manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336999 All other transportation equipment manufacturing	1.3929	0.2338	4.5080	0.4317	1.6816	1.9468

337110 Wood kitchen cabinet and countertop manufacturing	1.6431	0.4519	11.1069	0.6886	1.5911	1.6693
337121 Upholstered household furniture manufacturing	1.3541	0.3081	8.4812	0.4855	1.4683	1.4276
337122 Nonupholstered wood household furniture manufacturing	1.5372	0.4138	11.1291	0.7114	1.5218	1.5113
33712A Other household nonupholstered furniture	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
337127 Institutional furniture manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33721A Office furniture and custom architectural woodwork and millwork manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
337215 Showcase, partition, shelving, and locker manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
337900 Other furniture related product manufacturing	1.4279	0.2968	7.0411	0.5879	1.6397	1.6957
339112 Surgical and medical instrument manufacturing	1.3972	0.3513	6.4154	0.7920	1.4567	1.7509
339113 Surgical appliance and supplies manufacturing	1.3548	0.2900	5.1738	0.7342	1.5164	1.9305
339114 Dental equipment and supplies manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339115 Ophthalmic goods manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339116 Dental laboratories	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339910 Jewelry and silverware manufacturing	1.2914	0.2490	6.2297	0.4840	1.4972	1.5328
339920 Sporting and athletic goods manufacturing	1.3892	0.2929	6.2637	0.6097	1.5622	1.7250
339930 Doll, toy, and game manufacturing	1.2841	0.2184	5.2848	0.5119	1.5708	1.5904
339940 Office supplies (except paper) manufacturing	1.3668	0.2976	8.3144	0.6233	1.5027	1.4344
339950 Sign manufacturing	1.4407	0.3707	9.0197	0.6374	1.4662	1.5043
339990 All other miscellaneous manufacturing	1.4360	0.3321	6.9116	0.6083	1.5718	1.7850
311111 Dog and cat food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311119 Other animal food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311210 Flour milling and malt manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311221 Wet corn milling	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31122A Soybean and other oilseed processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311225 Fats and oils refining and blending	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311230 Breakfast cereal manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311300 Sugar and confectionery product manufacturing	1.5877	0.2859	7.8447	0.5783	2.0138	2.1167
311410 Frozen food manufacturing	1.3843	0.2467	6.2655	0.4086	1.7380	1.8763
311420 Fruit and vegetable canning, pickling, and drying	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31151A Fluid milk and butter manufacturing	1.9798	0.3691	10.5423	0.6043	2.6001	4.1300
311513 Cheese manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311514 Dry, condensed, and evaporated dairy product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311520 Ice cream and frozen dessert manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31161A Animal (except poultry) slaughtering, rendering, and processing	1.4591	0.2516	6.9270	0.3872	1.7723	2.0192
311615 Poultry processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311700 Seafood product preparation and packaging	1.3190	0.2345	5.6192	0.4264	1.6523	1.9541
311810 Bread and bakery product manufacturing	1.3641	0.2944	8.9327	0.5438	1.5150	1.4201
3118A0 Cookie, cracker, pasta, and tortilla manufacturing	1.3453	0.2307	4.9797	0.5120	1.6254	1.8413
311910 Snack food manufacturing	1.3725	0.2451	6.5127	0.5906	1.7263	1.8922
311920 Coffee and tea manufacturing	1.4171	0.2574	6.2540	0.4490	1.8134	1.9748
311930 Flavoring syrup and concentrate manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311940 Seasoning and dressing manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311990 All other food manufacturing	1.4595	0.2659	7.5790	0.4454	1.8731	1.9492
312110 Soft drink and ice manufacturing	1.4022	0.2410	4.8202	0.4183	1.6974	1.9961
312120 Breweries	1.2407	0.2099	5.3157	0.5654	1.4783	1.4881
312130 Wineries	1.3197	0.2330	6.5256	0.4922	1.6417	1.5221
312140 Distilleries	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

312200 Tobacco product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313100 Fiber, yarn, and thread mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313200 Fabric mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313300 Textile and fabric finishing and fabric coating mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314110 Carpet and rug mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314120 Curtain and linen mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314900 Other textile product mills	1.3027	0.3355	10.0076	0.5534	1.3679	1.3262
315000 Apparel manufacturing	1.4336	0.4892	17.9641	0.7282	1.3931	1.2994
316000 Leather and allied product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322110 Pulp mills	1.7358	0.3259	6.7790	0.6542	2.2959	3.1539
322120 Paper mills	1.5045	0.2731	4.8806	0.5978	1.9237	2.9690
322130 Paperboard mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322210 Paperboard container manufacturing	1.5045	0.2982	6.0094	0.5011	1.7077	1.9222
322220 Paper bag and coated and treated paper manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322230 Stationery product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322291 Sanitary paper product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322299 All other converted paper product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
323110 Printing	1.4135	0.3709	9.2149	0.6778	1.4746	1.5542
323120 Support activities for printing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324110 Petroleum refineries	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324121 Asphalt paving mixture and block manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324122 Asphalt shingle and coating materials manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324190 Other petroleum and coal products manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325110 Petrochemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325120 Industrial gas manufacturing	1.3490	0.2265	4.0408	0.6968	1.5954	1.9457
325130 Synthetic dye and pigment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325180 Other basic inorganic chemical manufacturing	1.4094	0.2414	3.9621	0.6315	1.7008	2.3039
325190 Other basic organic chemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325211 Plastics material and resin manufacturing	1.2694	0.2139	3.3152	0.3441	1.5068	2.1249
3252A0 Synthetic rubber and artificial and synthetic fibers and filaments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325310 Fertilizer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325320 Pesticide and other agricultural chemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325411 Medicinal and botanical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325412 Pharmaceutical preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325413 In-vitro diagnostic substance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325414 Biological product (except diagnostic) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325510 Paint and coating manufacturing	1.2865	0.2182	3.6555	0.4703	1.5369	1.9880
325520 Adhesive manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325610 Soap and cleaning compound manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325620 Toilet preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325910 Printing ink manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3259A0 All other chemical product and preparation manufacturing	1.3319	0.2278	4.2890	0.4829	1.6050	1.8602
326110 Plastics packaging materials and unlaminated film and sheet manufacturing	1.3673	0.2312	4.3920	0.4864	1.6286	1.9246
326120 Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	1.3253	0.2703	5.4471	0.5086	1.4633	1.6356
326130 Laminated plastics plate, sheet (except packaging), and shape manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

326140 Polystyrene foam product manufacturing	1.3170	0.2335	4.9341	0.4916	1.5519	1.7375
326150 Urethane and other foam product (except polystyrene) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326160 Plastics bottle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326190 Other plastics product manufacturing	1.4209	0.2542	5.4094	0.4909	1.7069	1.8786
326210 Tire manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326220 Rubber and plastics hoses and belting manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326290 Other rubber product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
420000 Wholesale trade	1.3400	0.4158	7.3456	0.8772	1.3487	1.6895
441000 Motor vehicle and parts dealers	1.3776	0.5379	12.0944	0.9930	1.2765	1.3973
445000 Food and beverage stores	1.3954	0.4886	20.0645	0.8977	1.3190	1.2027
452000 General merchandise stores	1.3483	0.4258	18.0090	0.8447	1.3374	1.2018
4A0000 Other retail	1.3832	0.4533	17.9009	0.8615	1.3444	1.2261
481000 Air transportation	1.2869	0.2801	4.7040	0.6056	1.4619	2.0028
482000 Rail transportation	1.3350	0.3291	5.3086	0.7072	1.4345	1.9759
483000 Water transportation	1.3753	0.2599	5.6550	0.5108	1.7481	1.9722
484000 Truck transportation	1.4705	0.4582	10.8132	0.7098	1.4959	1.5872
485A00 Transit and ground passenger transportation*	1.4826	0.5942	28.7050	0.7344	1.3407	1.1705
486000 Pipeline transportation	1.4123	0.4202	6.1609	0.7435	1.4268	2.1467
48A000 Scenic and sightseeing transportation and support activities for transportation	1.5722	0.5265	11.8964	0.8272	1.5544	1.7026
492000 Couriers and messengers	1.4440	0.4321	13.2047	0.7697	1.4836	1.3962
493000 Warehousing and storage	1.4105	0.4724	11.5306	0.8406	1.3540	1.4292
511110 Newspaper publishers	1.4449	0.4225	11.2890	0.7877	1.4547	1.4479
511120 Periodical publishers	1.4224	0.3345	6.7543	0.7089	1.5976	1.9208
511130 Book publishers	1.2128	0.2143	4.3226	0.8619	1.4363	1.6826
5111A0 Directory, mailing list, and other publishers	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511200 Software publishers	1.2827	0.3625	5.7846	0.8477	1.3276	1.7918
512100 Motion picture and video industries	1.2260	0.2359	8.5942	0.6780	1.4239	1.2980
512200 Sound recording industries	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
515100 Radio and television broadcasting	1.4949	0.6668	11.9237	0.8736	1.3273	1.5914
515200 Cable and other subscription programming	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
517110 Wired telecommunications carriers	1.2409	0.2150	4.2389	0.7525	1.4407	1.6770
517210 Wireless telecommunications carriers (except satellite)	1.3308	0.2419	5.0474	0.6891	1.6214	1.8562
517A00 Satellite, telecommunications resellers, and all other telecommunications	1.4369	0.4970	9.4140	0.8753	1.3290	1.5617
518200 Data processing, hosting, and related services	1.4511	0.3770	7.8138	0.7538	1.5399	1.8702
5191A0 News syndicates, libraries, archives, and all other information services	1.2653	0.3556	8.2520	0.8072	1.3023	1.4126
519130 Internet publishing and broadcasting and Web search portals	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
52A000 Monetary authorities and depository credit intermediation	1.3538	0.3333	7.1798	0.8135	1.4837	1.7672
522A00 Nondepository credit intermediation and related activities	1.4681	0.4650	7.8496	0.7689	1.4478	2.0399
523A00 Securities and commodity contracts intermediation and brokerage	1.4308	0.5644	17.5814	0.7274	1.3097	1.2823
523900 Other financial investment activities	1.4270	0.3925	15.6853	0.5625	1.4961	1.2901
524100 Insurance carriers	1.3707	0.3279	6.2117	0.7791	1.5722	1.9532
524200 Insurance agencies, brokerages, and related activities	1.5454	0.5091	10.7847	0.8161	1.5072	1.7235
525000 Funds, trusts, and other financial vehicles	1.2632	0.2246	10.1014	0.3716	1.5084	1.2916
531000 Real estate	1.2962	0.2339	8.5994	0.8763	1.5708	1.3657

532100 Automotive equipment rental and leasing	1.3210	0.3217	6.0050	0.8581	1.4311	1.7999
532A00 Consumer goods and general rental centers	1.4214	0.5538	12.4273	0.9573	1.2955	1.4175
532400 Commercial and industrial machinery and equipment rental and leasing	1.2582	0.2855	4.3173	0.8979	1.3912	2.0169
533000 Lessors of nonfinancial intangible assets	1.3370	0.2549	4.4105	0.7277	1.7118	2.5804
541100 Legal services	1.4167	0.6294	10.1708	0.9926	1.2619	1.6385
541511 Custom computer programming services	1.4709	0.7247	11.5751	0.9769	1.2692	1.6594
541512 Computer systems design services	1.5007	0.6651	10.8864	0.9279	1.3197	1.7629
54151A Other computer related services, including facilities management	1.4660	0.6497	10.3245	0.9652	1.2891	1.7290
541200 Accounting, tax preparation, bookkeeping, and payroll services	1.4185	0.6443	14.1193	1.0389	1.2620	1.3993
541300 Architectural, engineering, and related services	1.4738	0.5483	9.4791	0.7926	1.3842	1.8187
541400 Specialized design services	1.4437	0.5801	15.7913	0.9169	1.3073	1.3415
541610 Management consulting services	1.5088	0.6539	15.0010	0.9112	1.3276	1.4558
5416A0 Environmental and other technical consulting services	1.5010	0.6730	16.1036	0.9016	1.3174	1.4102
541700 Scientific research and development services	1.4368	0.4697	7.0028	0.7067	1.4193	2.1913
541800 Advertising, public relations, and related services	1.3329	0.3735	7.3920	0.7871	1.3868	1.6768
5419A0 Marketing research and all other miscellaneous professional, scientific, and technical services	1.3908	0.5269	11.3977	0.8775	1.2990	1.4492
541920 Photographic services	1.4673	0.5632	19.9952	0.8052	1.3380	1.2688
541940 Veterinary services	1.4824	0.5512	16.7514	0.7663	1.3699	1.3533
550000 Management of companies and enterprises	1.4425	0.5570	7.6672	0.8622	1.3242	2.0004
561100 Office administrative services	1.4616	0.7529	13.8028	1.0586	1.2426	1.4745
561200 Facilities support services	1.4301	0.3695	11.1518	0.7762	1.5190	1.4455
561300 Employment services	1.4443	0.7258	26.1029	1.0505	1.2479	1.2033
561400 Business support services	1.4556	0.5856	16.7081	0.8934	1.3277	1.3354
561500 Travel arrangement and reservation services	1.4174	0.3879	10.4285	0.7143	1.4981	1.5396
561600 Investigation and security services	1.4565	0.6622	25.3899	0.9682	1.2765	1.2013
561700 Services to buildings and dwellings	1.3672	0.4444	17.7552	0.8376	1.3438	1.2264
561900 Other support services	1.4824	0.5234	14.4685	0.7836	1.4002	1.4352
562000 Waste management and remediation services	1.4065	0.3552	7.9476	0.6955	1.5051	1.6663
611100 Elementary and secondary schools	1.4711	0.6439	27.1065	0.9402	1.2885	1.1864
611A00 Junior colleges, colleges, universities, and professional schools	1.4908	0.5840	20.0636	0.8905	1.3194	1.2612
611B00 Other educational services	1.4989	0.6644	32.9717	0.8751	1.3010	1.1594
621100 Offices of physicians	1.4569	0.6528	10.6829	0.8995	1.2824	1.6714
621200 Offices of dentists	1.4204	0.5760	13.4387	0.8796	1.2919	1.3922
621300 Offices of other health practitioners	1.3975	0.5552	15.0153	0.9108	1.2836	1.3201
621400 Outpatient care centers	1.4159	0.4428	9.7447	0.7810	1.3834	1.5446
621500 Medical and diagnostic laboratories	1.4276	0.5848	11.7306	0.8706	1.3008	1.4899
621600 Home health care services	1.4787	0.6966	22.0252	0.9441	1.2701	1.2519
621900 Other ambulatory health care services	1.4514	0.5296	14.2568	0.8170	1.3425	1.3598
622000 Hospitals	1.4418	0.5550	11.0735	0.8140	1.3371	1.5717
623A00 Nursing and community care facilities	1.4506	0.5899	19.9132	0.8733	1.3002	1.2558
623B00 Residential mental retardation, mental health, substance abuse and other facilities	1.4634	0.6698	23.7187	0.9568	1.2676	1.2170
624100 Individual and family services	1.4653	0.6526	26.2226	0.9062	1.2780	1.1928
624A00 Community food, housing, and other relief services, including rehabilitation services	1.4780	0.5458	22.7721	0.7794	1.3521	1.2249
624400 Child day care services	1.4622	0.6009	34.0161	0.8883	1.2929	1.1380
711100 Performing arts companies	1.3459	0.4376	31.7340	0.7535	1.3270	1.1109

<b>711200 Spectator sports</b>	1.4105	0.7078	18.1436	1.0306	1.2289	1.2846
<b>711A00 Promoters of performing arts and sports and agents for public figures</b>	1.3761	0.3657	21.9159	0.6845	1.4716	1.1989
<b>711500 Independent artists, writers, and performers</b>	1.2561	0.3307	9.0929	0.7194	1.3438	1.3735
<b>712000 Museums, historical sites, zoos, and parks</b>	1.4347	0.4410	17.1552	0.7180	1.4124	1.2718
<b>713100 Amusement parks and arcades</b>	1.2995	0.3707	17.6101	0.8619	1.3239	1.1707
<b>713200 Gambling industries (except casino hotels)</b>	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>713900 Other amusement and recreation industries</b>	1.4065	0.4114	24.3684	0.7555	1.3987	1.1573
<b>721000 Accommodation</b>	1.3462	0.3822	11.7214	0.8332	1.3825	1.3415
<b>722110 Full-service restaurants</b>	1.4449	0.5001	23.4008	0.7719	1.3550	1.1867
<b>722211 Limited-service restaurants</b>	1.3884	0.4065	22.8567	0.7699	1.3813	1.1607
<b>722A00 All other food and drinking places</b>	1.3797	0.2864	12.8883	0.5628	1.5694	1.2859
<b>811100 Automotive repair and maintenance</b>	1.4765	0.5932	15.9052	0.8466	1.3165	1.3471
<b>811200 Electronic and precision equipment repair and maintenance</b>	1.4598	0.6498	12.4212	0.9254	1.2881	1.5198
<b>811300 Commercial and industrial machinery and equipment repair and maintenance</b>	1.4581	0.7073	13.5143	1.0257	1.2525	1.4549
<b>811400 Personal and household goods repair and maintenance</b>	1.3010	0.3557	10.0911	0.8391	1.3463	1.3595
<b>812100 Personal care services</b>	1.5124	0.7191	32.7325	0.9466	1.2871	1.1758
<b>812200 Death care services</b>	1.4523	0.6250	19.0284	0.9083	1.2795	1.2598
<b>812300 Dry-cleaning and laundry services</b>	1.4935	0.6308	21.9302	0.9145	1.3245	1.2650
<b>812900 Other personal services</b>	1.4286	0.5352	21.7636	0.8477	1.3301	1.2194
<b>813100 Religious organizations</b>	1.3436	0.2516	7.4531	0.5012	1.6185	1.5869
<b>813A00 Grantmaking, giving, and social advocacy organizations</b>	1.3800	0.5749	15.0401	0.9388	1.2675	1.3259
<b>813B00 Civic, social, professional, and similar organizations</b>	1.4768	0.7419	25.1447	1.0835	1.2552	1.2210
<b>491000 Postal service</b>	1.4516	0.6745	12.1070	1.0400	1.2638	1.5381
<b>S00A00 Other government enterprises</b>	1.5997	0.4078	9.0951	0.7500	1.8045	1.9550
<b>H00000 Households</b>	0.6159	0.1992	6.2212	0.3609	0.0000	0.0000



## APPENDIX C.

**Table C1. Industry In-state Multipliers for the North East Region**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
1111C0 Oilseed and grain farming	1.3684	0.2275	8.3126	0.3104	1.5851	1.4166
111200 Vegetable and melon farming	1.1441	0.2896	13.3809	0.7492	1.1476	1.0926
111300 Fruit and tree nut farming	1.1176	0.3400	19.9048	0.7339	1.1084	1.0521
111400 Greenhouse, nursery, and floriculture production	1.2826	0.4573	23.2194	0.7417	1.2256	1.1803
111900 Other crop farming	1.1854	0.3001	12.3335	0.6142	1.1897	1.1286
1121A0 Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	1.3693	0.2195	8.8733	0.4747	1.4924	1.3615
112120 Dairy cattle and milk production	1.2901	0.2423	10.3973	0.5021	1.3695	1.2110
112A00 Animal production, except cattle and poultry and eggs	1.1097	0.2196	9.1867	0.7456	1.1322	1.0832
112300 Poultry and egg production	1.1863	0.2087	6.8858	0.3444	1.2500	1.1659
113000 Forestry and logging	1.3560	0.4465	14.3918	0.7362	1.3372	1.3225
114000 Fishing, hunting and trapping	1.1479	0.3186	18.0150	0.7651	1.1376	1.0483
115000 Support activities for agriculture and forestry	1.0708	0.6031	24.6277	0.7635	1.0323	1.0217
211000 Oil and gas extraction	1.0852	0.1754	3.0797	0.7468	1.1215	1.1158
212100 Coal mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2122A0 Iron, gold, silver, and other metal ore mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212230 Copper, nickel, lead, and zinc mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212310 Stone mining and quarrying	1.1743	0.1783	3.7133	0.7244	1.2592	1.2293
2123A0 Other nonmetallic mineral mining and quarrying	1.1887	0.2000	4.0892	0.6792	1.2365	1.2012
213111 Drilling oil and gas wells	1.1595	0.2735	5.3968	0.7451	1.1575	1.1587
21311A Other support activities for mining	1.1351	0.2841	4.8825	0.7592	1.1178	1.1687
2211A0 Electric power generation, transmission, and distribution*	1.1593	0.1703	1.9630	0.6600	1.3051	1.7825
221200 Natural gas distribution	1.1493	0.1675	2.0302	0.5031	1.2839	1.5281
221300 Water, sewage and other systems	1.1944	0.2237	3.8632	0.7833	1.2651	1.3142
23030A Maintenance and repair	1.2773	0.3267	6.8915	0.7007	1.2250	1.3111
2332C0 Nonresidential structures	1.2300	0.4360	8.5302	0.7052	1.1183	1.1311
233293 Highways and streets	1.2451	0.2808	5.2847	0.6390	1.2146	1.2456
2334B0 Residential structures	1.3522	0.3182	6.7932	0.6377	1.3270	1.4837
321100 Sawmills and wood preservation	1.7523	0.3314	8.4003	0.6052	2.5660	3.2405
321200 Veneer, plywood, and engineered wood product manufacturing	1.6571	0.2781	6.3199	0.5420	2.0609	2.3292
321910 Millwork	1.5228	0.3046	6.7910	0.5456	1.5882	1.6782
3219A0 All other wood product manufacturing	1.4579	0.2698	6.3466	0.5224	1.5298	1.5205
327100 Clay product and refractory manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327200 Glass and glass product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327310 Cement manufacturing	1.2850	0.1773	2.5639	0.6522	1.4311	1.6096
327320 Ready-mix concrete manufacturing	1.5390	0.2382	4.3530	0.5680	1.6728	1.7162
327330 Concrete pipe, brick, and block manufacturing	1.3519	0.2331	4.6726	0.6408	1.4244	1.4276
327390 Other concrete product manufacturing	1.3180	0.2522	5.3895	0.5648	1.3265	1.3135
327400 Lime and gypsum product manufacturing	1.2902	0.1787	2.8976	0.5158	1.4427	1.5558
327910 Abrasive product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327991 Cut stone and stone product manufacturing	1.2563	0.2927	6.9349	0.5964	1.2258	1.2029
327992 Ground or treated mineral and earth manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

327993 Mineral wool manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327999 Miscellaneous nonmetallic mineral products	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331110 Iron and steel mills and ferroalloy manufacturing	1.2591	0.1765	2.5478	0.3628	1.4249	1.6127
331200 Steel product manufacturing from purchased steel	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33131A Alumina refining and primary aluminum production	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331314 Secondary smelting and alloying of aluminum	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33131B Aluminum product manufacturing from purchased aluminum	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33141A Primary smelting and refining of nonferrous metal (except aluminum)	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331420 Copper rolling, drawing, extruding, and alloying	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331490 Nonferrous metal (except copper and aluminum) rolling, drawing, extruding, and alloying	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331510 Ferrous metal foundries	1.2556	0.2491	4.4721	0.5371	1.2824	1.3124
331520 Nonferrous metal foundries	1.1971	0.2185	4.2077	0.5007	1.2586	1.2645
33211A All other forging, stamping, and sintering	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332114 Custom roll forming	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33211B Crown and closure manufacturing and metal stamping	1.2882	0.2215	4.0542	0.4953	1.3171	1.3300
332200 Cutlery and handtool manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332310 Plate work and fabricated structural product manufacturing	1.2681	0.2321	4.3881	0.4550	1.3034	1.3226
332320 Ornamental and architectural metal products manufacturing	1.2866	0.2423	4.6171	0.4665	1.3144	1.3199
332410 Power boiler and heat exchanger manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332420 Metal tank (heavy gauge) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332430 Metal can, box, and other metal container (light gauge) manufacturing	1.1614	0.1549	2.8063	0.3154	1.2501	1.2614
332500 Hardware manufacturing	1.2709	0.1965	3.6901	0.5198	1.3598	1.3917
332600 Spring and wire product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332710 Machine shops	1.2666	0.3334	6.3132	0.6073	1.2066	1.2237
332720 Turned product and screw, nut, and bolt manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332800 Coating, engraving, heat treating and allied activities	1.2686	0.2297	4.6556	0.5588	1.2646	1.2509
33291A Valve and fitting (except plumbing) manufacturing	1.2114	0.1980	3.2928	0.5366	1.2815	1.3398
332913 Plumbing fixture fitting and trim manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332991 Ball and roller bearing manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33299A Ammunition, arms, ordnance, and accessories manufacturing	1.2457	0.2688	5.8910	0.6241	1.2323	1.2100
332996 Fabricated pipe and pipe fitting manufacturing	1.1716	0.2087	4.1070	0.4999	1.2020	1.1988
33299B Other fabricated metal manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333111 Farm machinery and equipment manufacturing	1.2417	0.1697	2.8893	0.4871	1.3700	1.4210
333112 Lawn and garden equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333120 Construction machinery manufacturing	1.3069	0.1890	3.7371	0.4590	1.4709	1.4230
333130 Mining and oil and gas field machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3332A0 Industrial machinery (except semiconductor machinery) manufacturing	1.2753	0.2676	4.2777	0.5145	1.2923	1.3652
333295 Semiconductor machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33331B All other commercial and service industry machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333314 Optical instrument and lens manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333315 Photographic and photocopying equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

33341A Air purification and ventilation equipment manufacturing	1.1815	0.2299	3.9694	0.5387	1.1823	1.1950
333414 Heating equipment (except warm air furnaces) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333415 Air conditioning, refrigeration, and warm air heating equipment manufacturing	1.2045	0.1746	3.1997	0.4370	1.3003	1.3064
333511 Industrial mold manufacturing	1.2213	0.3843	6.6541	0.6426	1.1410	1.1541
33351A Metal cutting and forming machine tool manufacturing	1.2184	0.2932	4.7480	0.5859	1.1965	1.2394
333514 Special tool, die, jig, and fixture manufacturing	1.2648	0.3463	5.9336	0.6211	1.2123	1.2378
33351B Cutting and machine tool accessory, rolling mill, and other metalworking machinery manufacturing	1.1993	0.2737	4.5723	0.5348	1.1888	1.2183
333611 Turbine and turbine generator set units manufacturing	1.2652	0.2062	3.4744	0.4828	1.3575	1.3949
333612 Speed changer, industrial high-speed drive, and gear manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333613 Mechanical power transmission equipment manufacturing	1.2406	0.2101	3.9338	0.5517	1.3048	1.3178
333618 Other engine equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33391A Pump and pumping equipment manufacturing	1.2420	0.1737	2.8081	0.5603	1.4017	1.5382
333912 Air and gas compressor manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333920 Material handling equipment manufacturing	1.2453	0.1739	2.6107	0.4967	1.4035	1.5533
333991 Power-driven handtool manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33399A Other general purpose machinery manufacturing	1.2312	0.2075	3.0245	0.4871	1.2774	1.3919
333993 Packaging machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333994 Industrial process furnace and oven manufacturing	1.2086	0.2922	4.3484	0.5677	1.1905	1.2355
33399B Fluid power process machinery	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334111 Electronic computer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334112 Computer storage device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33411A Computer terminals and other computer peripheral equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334210 Telephone apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334220 Broadcast and wireless communications equipment	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334290 Other communications equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334300 Audio and video equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33441A Other electronic component manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334413 Semiconductor and related device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334418 Printed circuit assembly (electronic assembly) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334510 Electromedical and electrotherapeutic apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334511 Search, detection, and navigation instruments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334512 Automatic environmental control manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334513 Industrial process variable instruments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334514 Totalizing fluid meter and counting device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334515 Electricity and signal testing instruments manufacturing	1.1626	0.2913	4.0993	0.5885	1.1369	1.2074
334516 Analytical laboratory instrument manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334517 Irradiation apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33451A Watch, clock, and other measuring and controlling device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334610 Manufacturing and reproducing magnetic and optical media	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

335110 Electric lamp bulb and part manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335120 Lighting fixture manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335210 Small electrical appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335221 Household cooking appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335222 Household refrigerator and home freezer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335224 Household laundry equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335228 Other major household appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335311 Power, distribution, and specialty transformer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335312 Motor and generator manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335313 Switchgear and switchboard apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335314 Relay and industrial control manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335911 Storage battery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335912 Primary battery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335920 Communication and energy wire and cable manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335930 Wiring device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335991 Carbon and graphite product manufacturing	1.2131	0.1677	3.1044	0.5031	1.3206	1.2981
335999 All other miscellaneous electrical equipment and component manufacturing	1.1936	0.2124	4.0186	0.4997	1.2493	1.2513
336111 Automobile manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336112 Light truck and utility vehicle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336120 Heavy duty truck manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336211 Motor vehicle body manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336212 Truck trailer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336213 Motor home manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336214 Travel trailer and camper manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336310 Motor vehicle gasoline engine and engine parts manufacturing	1.3913	0.2016	3.2691	0.4452	1.6121	1.7650
336320 Motor vehicle electrical and electronic equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3363A0 Motor vehicle steering, suspension component (except spring), and brake systems manufacturing	1.3631	0.2033	3.2460	0.4540	1.5398	1.6938
336350 Motor vehicle transmission and power train parts manufacturing	1.3592	0.2121	3.4506	0.4470	1.5134	1.6248
336360 Motor vehicle seating and interior trim manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336370 Motor vehicle metal stamping	1.2315	0.1847	2.9932	0.4408	1.3082	1.3695
336390 Other motor vehicle parts manufacturing	1.4112	0.2188	3.8628	0.4469	1.5120	1.5525
336411 Aircraft manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336412 Aircraft engine and engine parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336413 Other aircraft parts and auxiliary equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336414 Guided missile and space vehicle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33641A Propulsion units and parts for space vehicles and guided missiles	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336500 Railroad rolling stock manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336611 Ship building and repairing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336612 Boat building	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336991 Motorcycle, bicycle, and parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336992 Military armored vehicle, tank, and tank component manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336999 All other transportation equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

337110 Wood kitchen cabinet and countertop manufacturing	1.4128	0.3333	7.7828	0.5540	1.3172	1.3128
337121 Upholstered household furniture manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
337122 Nonupholstered wood household furniture manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33712A Other household nonupholstered furniture	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
337127 Institutional furniture manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33721A Office furniture and custom architectural woodwork and millwork manufacturing	1.2998	0.2156	4.1514	0.5878	1.3671	1.4459
337215 Showcase, partition, shelving, and locker manufacturing	1.2813	0.3071	6.2365	0.4983	1.2147	1.2195
337900 Other furniture related product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339112 Surgical and medical instrument manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339113 Surgical appliance and supplies manufacturing	1.1854	0.2082	3.1718	0.6341	1.2217	1.3283
339114 Dental equipment and supplies manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339115 Ophthalmic goods manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339116 Dental laboratories	1.1055	0.3579	9.1701	0.6201	1.0777	1.0613
339910 Jewelry and silverware manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339920 Sporting and athletic goods manufacturing	1.2598	0.2165	4.2313	0.5279	1.2962	1.3078
339930 Doll, toy, and game manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339940 Office supplies (except paper) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339950 Sign manufacturing	1.2617	0.2709	6.2522	0.5273	1.2025	1.1703
339990 All other miscellaneous manufacturing	1.2879	0.2462	4.7040	0.5136	1.3076	1.3635
311111 Dog and cat food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311119 Other animal food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311210 Flour milling and malt manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311221 Wet corn milling	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31122A Soybean and other oilseed processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311225 Fats and oils refining and blending	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311230 Breakfast cereal manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311300 Sugar and confectionery product manufacturing	1.4506	0.1637	4.4312	0.4942	1.9279	1.9991
311410 Frozen food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311420 Fruit and vegetable canning, pickling, and drying	1.3568	0.1448	3.4871	0.3303	1.7052	1.6806
31151A Fluid milk and butter manufacturing	1.7934	0.2351	7.1017	0.4983	2.7695	4.6517
311513 Cheese manufacturing	2.0411	0.2689	8.4299	0.4959	3.1673	4.7313
311514 Dry, condensed, and evaporated dairy product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311520 Ice cream and frozen dessert manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31161A Animal (except poultry) slaughtering, rendering, and processing	1.5053	0.1662	4.6263	0.3459	1.9579	2.2548
311615 Poultry processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311700 Seafood product preparation and packaging	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311810 Bread and bakery product manufacturing	1.2651	0.1642	4.9159	0.4667	1.4130	1.3067
3118A0 Cookie, cracker, pasta, and tortilla manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311910 Snack food manufacturing	1.3003	0.1465	3.8811	0.5325	1.7255	1.8853
311920 Coffee and tea manufacturing	1.2966	0.1476	3.4417	0.3777	1.7389	1.8171
311930 Flavoring syrup and concentrate manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311940 Seasoning and dressing manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311990 All other food manufacturing	1.3928	0.1650	4.7723	0.3872	1.9438	2.0521
312110 Soft drink and ice manufacturing	1.2278	0.1269	2.3104	0.3396	1.4941	1.5997
312120 Breweries	1.2223	0.1259	3.0611	0.5269	1.4835	1.4328
312130 Wineries	1.2074	0.1305	3.4786	0.4271	1.5366	1.3566

312140 Distilleries	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
312200 Tobacco product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313100 Fiber, yarn, and thread mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313200 Fabric mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313300 Textile and fabric finishing and fabric coating mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314110 Carpet and rug mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314120 Curtain and linen mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314900 Other textile product mills	1.1570	0.1788	5.1814	0.4611	1.2191	1.1481
315000 Apparel manufacturing	1.1396	0.2422	8.9972	0.5616	1.1530	1.0882
316000 Leather and allied product manufacturing	1.3374	0.1840	3.8296	0.4314	1.4463	1.4603
322110 Pulp mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322120 Paper mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322130 Paperboard mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322210 Paperboard container manufacturing	1.1579	0.1399	2.6247	0.3394	1.3399	1.4037
322220 Paper bag and coated and treated paper manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322230 Stationery product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322291 Sanitary paper product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322299 All other converted paper product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
323110 Printing	1.1975	0.1969	4.7288	0.5589	1.3086	1.3335
323120 Support activities for printing	1.1584	0.2574	5.1963	0.6816	1.1716	1.1933
324110 Petroleum refineries	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324121 Asphalt paving mixture and block manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324122 Asphalt shingle and coating materials manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324190 Other petroleum and coal products manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325110 Petrochemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325120 Industrial gas manufacturing	1.1968	0.1203	1.8788	0.6096	1.4165	1.5126
325130 Synthetic dye and pigment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325180 Other basic inorganic chemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325190 Other basic organic chemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325211 Plastics material and resin manufacturing	1.1948	0.1178	1.5248	0.2844	1.3875	1.6341
3252A0 Synthetic rubber and artificial and synthetic fibers and filaments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325310 Fertilizer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325320 Pesticide and other agricultural chemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325411 Medicinal and botanical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325412 Pharmaceutical preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325413 In-vitro diagnostic substance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325414 Biological product (except diagnostic) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325510 Paint and coating manufacturing	1.2538	0.1244	1.7800	0.4212	1.4657	1.6186
325520 Adhesive manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325610 Soap and cleaning compound manufacturing	1.1848	0.1160	1.7059	0.6098	1.3665	1.5817
325620 Toilet preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325910 Printing ink manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3259A0 All other chemical product and preparation manufacturing	1.2714	0.1273	2.1208	0.4234	1.4998	1.5379
326110 Plastics packaging materials and unlaminated film and sheet manufacturing	1.5169	0.1512	2.4634	0.4804	1.7805	1.8048
326120 Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	1.4981	0.1743	3.0163	0.5040	1.5779	1.5144

326130 Laminated plastics plate, sheet (except packaging), and shape manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326140 Polystyrene foam product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326150 Urethane and other foam product (except polystyrene) manufacturing	1.3514	0.1364	2.5695	0.4390	1.6069	1.5669
326160 Plastics bottle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326190 Other plastics product manufacturing	1.5152	0.1633	3.0614	0.4705	1.8328	1.7777
326210 Tire manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326220 Rubber and plastics hoses and belting manufacturing	1.2825	0.2085	3.8250	0.5058	1.3092	1.3339
326290 Other rubber product manufacturing	1.3073	0.1498	2.7644	0.4778	1.5679	1.6216
420000 Wholesale trade	1.1316	0.2696	4.0712	0.7550	1.1496	1.2311
441000 Motor vehicle and parts dealers	1.1048	0.3940	8.1642	0.8323	1.0664	1.0758
445000 Food and beverage stores	1.1568	0.3603	15.4398	0.7545	1.1094	1.0555
452000 General merchandise stores	1.1223	0.3097	13.8064	0.7110	1.1093	1.0508
4A0000 Other retail	1.1525	0.3316	13.6232	0.7248	1.1219	1.0643
481000 Air transportation	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
482000 Rail transportation	1.1667	0.2388	3.1873	0.6087	1.1994	1.3672
483000 Water transportation	1.2755	0.1990	3.9342	0.4512	1.5421	1.5812
484000 Truck transportation	1.2373	0.3374	7.3792	0.5711	1.2695	1.2482
485A00 Transit and ground passenger transportation*	1.1775	0.4280	22.1941	0.5549	1.1127	1.0430
486000 Pipeline transportation	1.1763	0.2982	3.3682	0.6074	1.1669	1.3525
48A000 Scenic and sightseeing transportation and support activities for transportation	1.3058	0.3917	8.0747	0.6719	1.3327	1.3318
492000 Couriers and messengers	1.2497	0.3821	11.5836	0.6543	1.2308	1.1491
493000 Warehousing and storage	1.1701	0.4141	9.5169	0.6994	1.1138	1.1067
511110 Newspaper publishers	1.2524	0.2896	7.4523	0.6790	1.2623	1.2098
511120 Periodical publishers	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511130 Book publishers	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5111A0 Directory, mailing list, and other publishers	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511200 Software publishers	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
512100 Motion picture and video industries	1.1079	0.1578	5.9121	0.6082	1.2054	1.1302
512200 Sound recording industries	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
515100 Radio and television broadcasting	1.1115	0.4246	6.4698	0.6481	1.0698	1.0929
515200 Cable and other subscription programming	1.0744	0.2139	3.5431	0.6228	1.0748	1.1097
517110 Wired telecommunications carriers	1.1789	0.1485	2.6146	0.7183	1.2598	1.3092
517210 Wireless telecommunications carriers (except satellite)	1.2388	0.1635	3.1070	0.6370	1.3873	1.4462
517A00 Satellite, telecommunications resellers, and all other telecommunications	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
518200 Data processing, hosting, and related services	1.2621	0.2569	4.8223	0.6456	1.3280	1.4609
5191A0 News syndicates, libraries, archives, and all other information services	1.0858	0.2360	5.1126	0.7018	1.0941	1.1077
519130 Internet publishing and broadcasting and Web search portals	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
52A000 Monetary authorities and depository credit intermediation	1.1688	0.2517	4.9212	0.7051	1.2125	1.3107
522A00 Nondepository credit intermediation and related activities	1.2145	0.3524	4.8957	0.6204	1.1872	1.3767
523A00 Securities and commodity contracts intermediation and brokerage	1.1498	0.4354	13.5577	0.5624	1.0932	1.0700
523900 Other financial investment activities	1.2164	0.2990	12.5237	0.4433	1.2330	1.1147
524100 Insurance carriers	1.2123	0.2545	4.1893	0.6867	1.3207	1.4255
524200 Insurance agencies, brokerages, and related activities	1.2875	0.3935	7.5052	0.6668	1.2606	1.2979

525000 Funds, trusts, and other financial vehicles	1.1285	0.1703	8.1441	0.2970	1.2371	1.1268
531000 Real estate	1.1630	0.1621	6.2081	0.8000	1.3032	1.1803
532100 Automotive equipment rental and leasing	1.1551	0.2266	3.6647	0.7608	1.2067	1.3151
532A00 Consumer goods and general rental centers	1.1216	0.3844	7.9412	0.7832	1.0766	1.0845
532400 Commercial and industrial machinery and equipment rental and leasing	1.1201	0.2025	2.4360	0.8180	1.1813	1.3624
533000 Lessors of nonfinancial intangible assets	1.2222	0.1855	2.7827	0.6627	1.4910	1.9492
541100 Legal services	1.0927	0.4093	5.4288	0.8028	1.0592	1.1287
541511 Custom computer programming services	1.1071	0.4741	6.2905	0.7664	1.0716	1.1638
541512 Computer systems design services	1.1482	0.4309	5.8754	0.7231	1.1034	1.2280
54151A Other computer related services, including facilities management	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
541200 Accounting, tax preparation, bookkeeping, and payroll services	1.0842	0.4191	8.4193	0.8437	1.0594	1.0769
541300 Architectural, engineering, and related services	1.1776	0.3543	5.2441	0.6213	1.1543	1.2985
541400 Specialized design services	1.1581	0.3796	10.0305	0.7479	1.1041	1.0998
541610 Management consulting services	1.1742	0.4292	9.1859	0.7159	1.1247	1.1505
5416A0 Environmental and other technical consulting services	1.1395	0.4347	9.8543	0.6924	1.0983	1.1137
541700 Scientific research and development services	1.1809	0.3036	3.5617	0.5572	1.1840	1.4384
541800 Advertising, public relations, and related services	1.1552	0.2454	4.3315	0.6802	1.1761	1.2681
5419A0 Marketing research and all other miscellaneous professional, scientific, and technical services	1.1290	0.3455	6.8479	0.7245	1.0994	1.1237
541920 Photographic services	1.2151	0.3727	13.4442	0.6497	1.1427	1.1010
541940 Veterinary services	1.1802	0.3566	10.7785	0.5897	1.1437	1.1238
550000 Management of companies and enterprises	1.1637	0.4596	4.6752	0.6992	1.0927	1.2198
561100 Office administrative services	1.0754	0.4881	7.7346	0.8330	1.0416	1.0684
561200 Facilities support services	1.2406	0.2451	7.4064	0.6704	1.3032	1.2414
561300 Employment services	1.0708	0.4707	17.3927	0.8329	1.0465	1.0368
561400 Business support services	1.1596	0.3845	10.7338	0.7204	1.1273	1.1094
561500 Travel arrangement and reservation services	1.2087	0.2522	6.5906	0.5932	1.2595	1.2582
561600 Investigation and security services	1.1126	0.4296	17.0637	0.7679	1.0709	1.0440
561700 Services to buildings and dwellings	1.1557	0.2926	12.1157	0.7121	1.1441	1.0821
561900 Other support services	1.2152	0.3419	9.2108	0.6267	1.1829	1.1815
562000 Waste management and remediation services	1.2580	0.2405	4.9775	0.6031	1.3179	1.3494
611100 Elementary and secondary schools	1.1352	0.4388	19.4364	0.7453	1.0803	1.0467
611A00 Junior colleges, colleges, universities, and professional schools	1.1700	0.3936	13.7827	0.7008	1.0943	1.0660
611B00 Other educational services	1.1514	0.4512	24.0268	0.6708	1.0872	1.0396
621100 Offices of physicians	1.1167	0.4512	6.0844	0.6999	1.0705	1.1496
621200 Offices of dentists	1.1345	0.4028	8.7906	0.7117	1.0910	1.0997
621300 Offices of other health practitioners	1.1058	0.3827	10.0379	0.7397	1.0686	1.0657
621400 Outpatient care centers	1.1502	0.3013	6.0855	0.6267	1.1366	1.1649
621500 Medical and diagnostic laboratories	1.1215	0.4038	7.2195	0.6919	1.0846	1.1073
621600 Home health care services	1.1143	0.4811	15.2857	0.7309	1.0595	1.0493
621900 Other ambulatory health care services	1.1741	0.3657	9.5257	0.6533	1.1193	1.0972
622000 Hospitals	1.1446	0.3811	6.7477	0.6396	1.1087	1.1566
623A00 Nursing and community care facilities	1.1431	0.4067	13.9500	0.6884	1.0825	1.0624
623B00 Residential mental retardation, mental health, substance abuse and other facilities	1.1188	0.4633	16.7729	0.7509	1.0590	1.0393
624100 Individual and family services	1.1219	0.4497	18.8922	0.7037	1.0637	1.0378
624A00 Community food, housing, and other relief services, including rehabilitation services	1.2141	0.3813	16.5969	0.6177	1.1406	1.0781



<b>624400 Child day care services</b>	1.1564	0.4155	25.5968	0.7030	1.0797	1.0341
<b>711100 Performing arts companies</b>	1.1160	0.3455	28.1416	0.6181	1.0942	1.0288
<b>711200 Spectator sports</b>	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>711A00 Promoters of performing arts and sports and agents for public figures</b>	1.2004	0.2910	19.2674	0.5786	1.2231	1.1007
<b>711500 Independent artists, writers, and performers</b>	1.0942	0.2629	7.0933	0.6253	1.1157	1.1189
<b>712000 Museums, historical sites, zoos, and parks</b>	1.2341	0.3531	14.2095	0.5954	1.1810	1.1001
<b>713100 Amusement parks and arcades</b>	1.1307	0.2950	15.0508	0.7557	1.1004	1.0449
<b>713200 Gambling industries (except casino hotels)</b>	1.1728	0.1789	6.7959	0.6546	1.3184	1.1758
<b>713900 Other amusement and recreation industries</b>	1.1839	0.3220	21.1594	0.6223	1.1433	1.0494
<b>721000 Accommodation</b>	1.1519	0.2910	8.9540	0.7170	1.1409	1.1108
<b>722110 Full-service restaurants</b>	1.2231	0.3856	19.2611	0.6277	1.1326	1.0588
<b>722211 Limited-service restaurants</b>	1.2169	0.3141	19.2234	0.6544	1.1568	1.0582
<b>722A00 All other food and drinking places</b>	1.2800	0.2216	10.5980	0.4867	1.3161	1.1461
<b>811100 Automotive repair and maintenance</b>	1.2262	0.4589	11.8165	0.6866	1.1099	1.0907
<b>811200 Electronic and precision equipment repair and maintenance</b>	1.1255	0.4938	8.2061	0.7297	1.0668	1.0943
<b>811300 Commercial and industrial machinery and equipment repair and maintenance</b>	1.0990	0.5406	9.0214	0.8154	1.0433	1.0584
<b>811400 Personal and household goods repair and maintenance</b>	1.1294	0.2717	7.5497	0.7361	1.1208	1.1085
<b>812100 Personal care services</b>	1.1175	0.5411	26.3131	0.7144	1.0555	1.0301
<b>812200 Death care services</b>	1.1251	0.4753	14.4329	0.7185	1.0604	1.0414
<b>812300 Dry-cleaning and laundry services</b>	1.1353	0.4692	16.6830	0.7050	1.0738	1.0488
<b>812900 Other personal services</b>	1.1396	0.4016	17.1626	0.6763	1.0877	1.0480
<b>813100 Religious organizations</b>	1.1877	0.1865	5.4431	0.4079	1.3072	1.2631
<b>813A00 Grantmaking, giving, and social advocacy organizations</b>	1.0916	0.4403	11.0509	0.7691	1.0578	1.0618
<b>813B00 Civic, social, professional, and similar organizations</b>	1.0857	0.5620	19.3600	0.8554	1.0363	1.0246
<b>491000 Postal service</b>	1.1101	0.5941	9.0431	0.8377	1.0445	1.0778
<b>S00A00 Other government enterprises</b>	1.3246	0.2735	5.6657	0.5940	1.4134	1.4220
<b>H00000 Households</b>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

## APPENDIX C.

**Table C2. Industry Out-state Multipliers for the North East Region**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
1111C0 Oilseed and grain farming	1.4935	0.2627	9.4083	0.3837	1.8304	1.6033
111200 Vegetable and melon farming	1.3032	0.3344	14.7753	0.8425	1.3252	1.2064
111300 Fruit and tree nut farming	1.3044	0.3927	21.5423	0.8435	1.2800	1.1386
111400 Greenhouse, nursery, and floriculture production	1.5340	0.5281	25.4216	0.8892	1.4153	1.2922
111900 Other crop farming	1.3503	0.3465	13.7787	0.7110	1.3738	1.2609
1121A0 Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	1.4900	0.2535	9.9306	0.5455	1.7233	1.5237
112120 Dairy cattle and milk production	1.4233	0.2798	11.5643	0.5802	1.5814	1.3469
112A00 Animal production, except cattle and poultry and eggs	1.2304	0.2536	10.2445	0.8164	1.3074	1.2080
112300 Poultry and egg production	1.3010	0.2410	7.8908	0.4117	1.4435	1.3361
113000 Forestry and logging	1.6014	0.5156	16.5420	0.8801	1.5442	1.5201
114000 Fishing, hunting and trapping	1.3230	0.3679	19.5493	0.8678	1.3136	1.1375
115000 Support activities for agriculture and forestry	1.4023	0.6965	27.5321	0.9579	1.1920	1.1422
211000 Oil and gas extraction	1.1816	0.2026	3.9244	0.8034	1.2951	1.4218
212100 Coal mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2122A0 Iron, gold, silver, and other metal ore mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212230 Copper, nickel, lead, and zinc mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212310 Stone mining and quarrying	1.2723	0.2059	4.5719	0.7819	1.4540	1.5136
2123A0 Other nonmetallic mineral mining and quarrying	1.2986	0.2310	5.0525	0.7436	1.4279	1.4842
213111 Drilling oil and gas wells	1.3099	0.3158	6.7139	0.8332	1.3367	1.4415
21311A Other support activities for mining	1.2912	0.3280	6.2505	0.8508	1.2908	1.4962
2211A0 Electric power generation, transmission, and distribution*	1.2529	0.1967	2.7831	0.7149	1.5071	2.5273
221200 Natural gas distribution	1.2414	0.1935	2.8369	0.5571	1.4825	2.1354
221300 Water, sewage and other systems	1.3174	0.2584	4.9406	0.8554	1.4609	1.6807
23030A Maintenance and repair	1.4569	0.3773	8.4649	0.8061	1.4146	1.6105
2332C0 Nonresidential structures	1.4696	0.5035	10.6299	0.8458	1.2914	1.4095
233293 Highways and streets	1.3995	0.3243	6.6370	0.7296	1.4025	1.5644
2334B0 Residential structures	1.5271	0.3675	8.3256	0.7403	1.5324	1.8183
321100 Sawmills and wood preservation	1.9344	0.3827	9.9964	0.7121	2.9631	3.8562
321200 Veneer, plywood, and engineered wood product manufacturing	1.8099	0.3211	7.6589	0.6316	2.3799	2.8227
321910 Millwork	1.6902	0.3518	8.2580	0.6438	1.8339	2.0407
3219A0 All other wood product manufacturing	1.6062	0.3115	7.6456	0.6094	1.7666	1.8318
327100 Clay product and refractory manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327200 Glass and glass product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327310 Cement manufacturing	1.3825	0.2047	3.4177	0.7093	1.6526	2.1456
327320 Ready-mix concrete manufacturing	1.6699	0.2751	5.5003	0.6448	1.9317	2.1685
327330 Concrete pipe, brick, and block manufacturing	1.4800	0.2691	5.7949	0.7159	1.6448	1.7705
327390 Other concrete product manufacturing	1.4566	0.2912	6.6038	0.6461	1.5318	1.6094
327400 Lime and gypsum product manufacturing	1.3884	0.2064	3.7584	0.5734	1.6660	2.0179
327910 Abrasive product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327991 Cut stone and stone product manufacturing	1.4172	0.3380	8.3444	0.6908	1.4155	1.4474
327992 Ground or treated mineral and earth manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

327993 Mineral wool manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327999 Miscellaneous nonmetallic mineral products	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331110 Iron and steel mills and ferroalloy manufacturing	1.3561	0.2039	3.3979	0.4197	1.6455	2.1508
331200 Steel product manufacturing from purchased steel	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33131A Alumina refining and primary aluminum production	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331314 Secondary smelting and alloying of aluminum	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33131B Aluminum product manufacturing from purchased aluminum	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33141A Primary smelting and refining of nonferrous metal (except aluminum)	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331420 Copper rolling, drawing, extruding, and alloying	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331490 Nonferrous metal (except copper and aluminum) rolling, drawing, extruding, and alloying	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331510 Ferrous metal foundries	1.3925	0.2877	5.6718	0.6174	1.4809	1.6645
331520 Nonferrous metal foundries	1.3172	0.2523	5.2599	0.5711	1.4534	1.5807
33211A All other forging, stamping, and sintering	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332114 Custom roll forming	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33211B Crown and closure manufacturing and metal stamping	1.4100	0.2558	5.1209	0.5667	1.5209	1.6800
332200 Cutlery and handtool manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332310 Plate work and fabricated structural product manufacturing	1.3957	0.2681	5.5060	0.5299	1.5051	1.6595
332320 Ornamental and architectural metal products manufacturing	1.4198	0.2798	5.7838	0.5446	1.5178	1.6534
332410 Power boiler and heat exchanger manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332420 Metal tank (heavy gauge) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332430 Metal can, box, and other metal container (light gauge) manufacturing	1.2465	0.1788	3.5521	0.3653	1.4436	1.5966
332500 Hardware manufacturing	1.3789	0.2269	4.6365	0.5832	1.5702	1.7486
332600 Spring and wire product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332710 Machine shops	1.4498	0.3850	7.9186	0.7148	1.3934	1.5348
332720 Turned product and screw, nut, and bolt manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332800 Coating, engraving, heat treating and allied activities	1.3948	0.2652	5.7615	0.6329	1.4603	1.5481
33291A Valve and fitting (except plumbing) manufacturing	1.3202	0.2287	4.2464	0.6005	1.4798	1.7279
332913 Plumbing fixture fitting and trim manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332991 Ball and roller bearing manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33299A Ammunition, arms, ordnance, and accessories manufacturing	1.3934	0.3104	7.1856	0.7108	1.4230	1.4759
332996 Fabricated pipe and pipe fitting manufacturing	1.2863	0.2410	5.1120	0.5672	1.3880	1.4922
33299B Other fabricated metal manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333111 Farm machinery and equipment manufacturing	1.3350	0.1960	3.7066	0.5418	1.5820	1.8229
333112 Lawn and garden equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333120 Construction machinery manufacturing	1.4108	0.2182	4.6473	0.5199	1.6985	1.7696
333130 Mining and oil and gas field machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3332A0 Industrial machinery (except semiconductor machinery) manufacturing	1.4224	0.3090	5.5662	0.6008	1.4922	1.7765
333295 Semiconductor machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33331B All other commercial and service industry machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333314 Optical instrument and lens manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333315 Photographic and photocopying equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

33341A Air purification and ventilation equipment manufacturing	1.3078	0.2654	5.0763	0.6128	1.3653	1.5282
333414 Heating equipment (except warm air furnaces) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333415 Air conditioning, refrigeration, and warm air heating equipment manufacturing	1.3004	0.2016	4.0405	0.4933	1.5015	1.6497
333511 Industrial mold manufacturing	1.4325	0.4438	8.5049	0.7665	1.3176	1.4751
33351A Metal cutting and forming machine tool manufacturing	1.3795	0.3386	6.1599	0.6804	1.3817	1.6080
333514 Special tool, die, jig, and fixture manufacturing	1.4551	0.3998	7.6010	0.7327	1.3999	1.5857
33351B Cutting and machine tool accessory, rolling mill, and other metalworking machinery manufacturing	1.3497	0.3161	5.8905	0.6230	1.3728	1.5695
333611 Turbine and turbine generator set units manufacturing	1.3786	0.2381	4.4674	0.5493	1.5676	1.7936
333612 Speed changer, industrial high-speed drive, and gear manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333613 Mechanical power transmission equipment manufacturing	1.3561	0.2426	4.9456	0.6194	1.5067	1.6567
333618 Other engine equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33391A Pump and pumping equipment manufacturing	1.3374	0.2005	3.6443	0.6163	1.6186	1.9962
333912 Air and gas compressor manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333920 Material handling equipment manufacturing	1.3409	0.2008	3.4480	0.5528	1.6207	2.0515
333991 Power-driven handtool manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33399A Other general purpose machinery manufacturing	1.3453	0.2396	4.0238	0.5540	1.4751	1.8518
333993 Packaging machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333994 Industrial process furnace and oven manufacturing	1.3692	0.3374	5.7554	0.6619	1.3747	1.6352
33399B Fluid power process machinery	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334111 Electronic computer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334112 Computer storage device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33411A Computer terminals and other computer peripheral equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334210 Telephone apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334220 Broadcast and wireless communications equipment	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334290 Other communications equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334300 Audio and video equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33441A Other electronic component manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334413 Semiconductor and related device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334418 Printed circuit assembly (electronic assembly) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334510 Electromedical and electrotherapeutic apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334511 Search, detection, and navigation instruments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334512 Automatic environmental control manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334513 Industrial process variable instruments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334514 Totalizing fluid meter and counting device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334515 Electricity and signal testing instruments manufacturing	1.3227	0.3364	5.5022	0.6824	1.3128	1.6206
334516 Analytical laboratory instrument manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334517 Irradiation apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33451A Watch, clock, and other measuring and controlling device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334610 Manufacturing and reproducing magnetic and optical media	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

335110 Electric lamp bulb and part manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335120 Lighting fixture manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335210 Small electrical appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335221 Household cooking appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335222 Household refrigerator and home freezer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335224 Household laundry equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335228 Other major household appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335311 Power, distribution, and specialty transformer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335312 Motor and generator manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335313 Switchgear and switchboard apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335314 Relay and industrial control manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335911 Storage battery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335912 Primary battery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335920 Communication and energy wire and cable manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335930 Wiring device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335991 Carbon and graphite product manufacturing	1.3052	0.1937	3.9121	0.5571	1.5249	1.6358
335999 All other miscellaneous electrical equipment and component manufacturing	1.3103	0.2453	5.0414	0.5682	1.4427	1.5698
336111 Automobile manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336112 Light truck and utility vehicle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336120 Heavy duty truck manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336211 Motor vehicle body manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336212 Truck trailer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336213 Motor home manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336214 Travel trailer and camper manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336310 Motor vehicle gasoline engine and engine parts manufacturing	1.5021	0.2328	4.2400	0.5102	1.8615	2.2892
336320 Motor vehicle electrical and electronic equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3363A0 Motor vehicle steering, suspension component (except spring), and brake systems manufacturing	1.4749	0.2348	4.2252	0.5196	1.7781	2.2047
336350 Motor vehicle transmission and power train parts manufacturing	1.4758	0.2450	4.4721	0.5154	1.7476	2.1058
336360 Motor vehicle seating and interior trim manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336370 Motor vehicle metal stamping	1.3330	0.2133	3.8826	0.5003	1.5106	1.7764
336390 Other motor vehicle parts manufacturing	1.5314	0.2526	4.9164	0.5175	1.7460	1.9759
336411 Aircraft manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336412 Aircraft engine and engine parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336413 Other aircraft parts and auxiliary equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336414 Guided missile and space vehicle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33641A Propulsion units and parts for space vehicles and guided missiles	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336500 Railroad rolling stock manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336611 Ship building and repairing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336612 Boat building	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336991 Motorcycle, bicycle, and parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336992 Military armored vehicle, tank, and tank component manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336999 All other transportation equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

337110 Wood kitchen cabinet and countertop manufacturing	1.5959	0.3849	9.3878	0.6614	1.5210	1.5835
337121 Upholstered household furniture manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
337122 Nonupholstered wood household furniture manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33712A Other household nonupholstered furniture	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
337127 Institutional furniture manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33721A Office furniture and custom architectural woodwork and millwork manufacturing	1.4183	0.2489	5.1895	0.6573	1.5787	1.8074
337215 Showcase, partition, shelving, and locker manufacturing	1.4501	0.3547	7.7155	0.5973	1.4027	1.5088
337900 Other furniture related product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339112 Surgical and medical instrument manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339113 Surgical appliance and supplies manufacturing	1.2998	0.2404	4.1743	0.7012	1.4108	1.7481
339114 Dental equipment and supplies manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339115 Ophthalmic goods manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339116 Dental laboratories	1.3022	0.4132	10.8934	0.7355	1.2445	1.2607
339910 Jewelry and silverware manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339920 Sporting and athletic goods manufacturing	1.3788	0.2501	5.2740	0.5978	1.4968	1.6301
339930 Doll, toy, and game manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339940 Office supplies (except paper) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339950 Sign manufacturing	1.4106	0.3128	7.5566	0.6146	1.3886	1.4145
339990 All other miscellaneous manufacturing	1.4232	0.2843	5.8895	0.5929	1.5099	1.7071
311111 Dog and cat food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311119 Other animal food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311210 Flour milling and malt manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311221 Wet corn milling	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31122A Soybean and other oilseed processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311225 Fats and oils refining and blending	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311230 Breakfast cereal manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311300 Sugar and confectionery product manufacturing	1.5405	0.1890	5.2194	0.5469	2.2262	2.3547
311410 Frozen food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311420 Fruit and vegetable canning, pickling, and drying	1.4363	0.1672	4.1842	0.3770	1.9691	2.0166
31151A Fluid milk and butter manufacturing	1.9226	0.2715	8.2340	0.5741	3.1981	5.3934
311513 Cheese manufacturing	2.1889	0.3105	9.7248	0.5826	3.6575	5.4581
311514 Dry, condensed, and evaporated dairy product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311520 Ice cream and frozen dessert manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31161A Animal (except poultry) slaughtering, rendering, and processing	1.5967	0.1920	5.4268	0.3995	2.2609	2.6449
311615 Poultry processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311700 Seafood product preparation and packaging	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311810 Bread and bakery product manufacturing	1.3554	0.1896	5.7066	0.5196	1.6317	1.5169
3118A0 Cookie, cracker, pasta, and tortilla manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311910 Snack food manufacturing	1.3808	0.1692	4.5865	0.5798	1.9925	2.2280
311920 Coffee and tea manufacturing	1.3777	0.1705	4.1527	0.4253	2.0081	2.1925
311930 Flavoring syrup and concentrate manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311940 Seasoning and dressing manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311990 All other food manufacturing	1.4835	0.1906	5.5670	0.4404	2.2447	2.3939
312110 Soft drink and ice manufacturing	1.2975	0.1465	2.9213	0.3805	1.7254	2.0227
312120 Breweries	1.2915	0.1454	3.6676	0.5675	1.7130	1.7167
312130 Wineries	1.2791	0.1507	4.1068	0.4692	1.7744	1.6016

312140 Distilleries	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
312200 Tobacco product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313100 Fiber, yarn, and thread mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313200 Fabric mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313300 Textile and fabric finishing and fabric coating mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314110 Carpet and rug mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314120 Curtain and linen mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314900 Other textile product mills	1.2553	0.2065	6.0425	0.5188	1.4077	1.3389
315000 Apparel manufacturing	1.2726	0.2796	10.1634	0.6397	1.3315	1.2292
316000 Leather and allied product manufacturing	1.4385	0.2124	4.7155	0.4907	1.6701	1.7981
322110 Pulp mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322120 Paper mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322130 Paperboard mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322210 Paperboard container manufacturing	1.2348	0.1616	3.2985	0.3845	1.5473	1.7641
322220 Paper bag and coated and treated paper manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322230 Stationery product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322291 Sanitary paper product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322299 All other converted paper product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
323110 Printing	1.3057	0.2273	5.6768	0.6224	1.5111	1.6008
323120 Support activities for printing	1.2999	0.2973	6.4359	0.7646	1.3529	1.4780
324110 Petroleum refineries	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324121 Asphalt paving mixture and block manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324122 Asphalt shingle and coating materials manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324190 Other petroleum and coal products manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325110 Petrochemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325120 Industrial gas manufacturing	1.2628	0.1389	2.4579	0.6483	1.6357	1.9788
325130 Synthetic dye and pigment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325180 Other basic inorganic chemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325190 Other basic organic chemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325211 Plastics material and resin manufacturing	1.2595	0.1360	2.0921	0.3224	1.6022	2.2421
3252A0 Synthetic rubber and artificial and synthetic fibers and filaments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325310 Fertilizer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325320 Pesticide and other agricultural chemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325411 Medicinal and botanical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325412 Pharmaceutical preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325413 In-vitro diagnostic substance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325414 Biological product (except diagnostic) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325510 Paint and coating manufacturing	1.3222	0.1437	2.3792	0.4613	1.6925	2.1635
325520 Adhesive manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325610 Soap and cleaning compound manufacturing	1.2486	0.1340	2.2646	0.6472	1.5779	2.0997
325620 Toilet preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325910 Printing ink manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3259A0 All other chemical product and preparation manufacturing	1.3414	0.1470	2.7340	0.4644	1.7319	1.9826
326110 Plastics packaging materials and unlaminated film and sheet manufacturing	1.6000	0.1746	3.1913	0.5292	2.0561	2.3382
326120 Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	1.5939	0.2013	3.8558	0.5602	1.8221	1.9359

326130 Laminated plastics plate, sheet (except packaging), and shape manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326140 Polystyrene foam product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326150 Urethane and other foam product (except polystyrene) manufacturing	1.4263	0.1575	3.2265	0.4830	1.8556	1.9676
326160 Plastics bottle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326190 Other plastics product manufacturing	1.6049	0.1885	3.8475	0.5232	2.1165	2.2341
326210 Tire manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326220 Rubber and plastics hoses and belting manufacturing	1.3971	0.2408	4.8290	0.5730	1.5119	1.6841
326290 Other rubber product manufacturing	1.3897	0.1730	3.4860	0.5261	1.8106	2.0449
420000 Wholesale trade	1.2798	0.3113	5.3695	0.8419	1.3275	1.6237
441000 Motor vehicle and parts dealers	1.3213	0.4550	10.0615	0.9594	1.2314	1.3258
445000 Food and beverage stores	1.3548	0.4160	17.1748	0.8706	1.2811	1.1741
452000 General merchandise stores	1.2925	0.3576	15.2975	0.8108	1.2810	1.1643
4A0000 Other retail	1.3348	0.3829	15.2201	0.8317	1.2955	1.1890
481000 Air transportation	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
482000 Rail transportation	1.2979	0.2757	4.3372	0.6857	1.3851	1.8604
483000 Water transportation	1.3849	0.2298	4.8924	0.5153	1.7807	1.9663
484000 Truck transportation	1.4228	0.3896	9.0039	0.6798	1.4659	1.5231
485A00 Transit and ground passenger transportation*	1.4127	0.4942	24.2549	0.6929	1.2849	1.1398
486000 Pipeline transportation	1.3401	0.3443	4.8041	0.7035	1.3475	1.9291
48A000 Scenic and sightseeing transportation and support activities for transportation	1.5210	0.4523	9.9609	0.7981	1.5389	1.6429
492000 Couriers and messengers	1.4597	0.4412	13.4236	0.7775	1.4213	1.3316
493000 Warehousing and storage	1.3977	0.4782	11.5111	0.8329	1.2861	1.3386
511110 Newspaper publishers	1.4115	0.3344	8.8470	0.7723	1.4576	1.4362
511120 Periodical publishers	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511130 Book publishers	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
5111A0 Directory, mailing list, and other publishers	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511200 Software publishers	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
512100 Motion picture and video industries	1.1946	0.1822	6.6720	0.6590	1.3920	1.2755
512200 Sound recording industries	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
515100 Radio and television broadcasting	1.3449	0.4903	8.5145	0.7850	1.2353	1.4384
515200 Cable and other subscription programming	1.1920	0.2470	4.5731	0.6918	1.2412	1.4323
517110 Wired telecommunications carriers	1.2606	0.1715	3.3298	0.7662	1.4548	1.6674
517210 Wireless telecommunications carriers (except satellite)	1.3287	0.1889	3.8945	0.6897	1.6019	1.8128
517A00 Satellite, telecommunications resellers, and all other telecommunications	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
518200 Data processing, hosting, and related services	1.4033	0.2966	6.0593	0.7284	1.5335	1.8357
5191A0 News syndicates, libraries, archives, and all other information services	1.2156	0.2726	6.2493	0.7779	1.2634	1.3540
519130 Internet publishing and broadcasting and Web search portals	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
52A000 Monetary authorities and depository credit intermediation	1.3071	0.2906	6.1331	0.7862	1.4001	1.6335
522A00 Nondepository credit intermediation and related activities	1.4082	0.4069	6.5927	0.7340	1.3710	1.8539
523A00 Securities and commodity contracts intermediation and brokerage	1.3891	0.5027	15.6542	0.7028	1.2624	1.2355
523900 Other financial investment activities	1.3807	0.3452	13.9634	0.5397	1.4238	1.2428
524100 Insurance carriers	1.3522	0.2939	5.4149	0.7688	1.5250	1.8425
524200 Insurance agencies, brokerages, and related activities	1.5037	0.4544	9.4002	0.7936	1.4557	1.6256



525000 Funds, trusts, and other financial vehicles	1.2221	0.1966	8.9640	0.3519	1.4286	1.2403
531000 Real estate	1.2521	0.1872	6.9887	0.8523	1.5049	1.3288
532100 Automotive equipment rental and leasing	1.2796	0.2616	4.7558	0.8339	1.3934	1.7067
532A00 Consumer goods and general rental centers	1.3328	0.4438	9.7921	0.9071	1.2432	1.3372
532400 Commercial and industrial machinery and equipment rental and leasing	1.2313	0.2338	3.4110	0.8833	1.3641	1.9078
533000 Lessors of nonfinancial intangible assets	1.3241	0.2142	3.6758	0.7225	1.7218	2.5747
541100 Legal services	1.3176	0.4727	7.3999	0.9348	1.2232	1.5386
541511 Custom computer programming services	1.3677	0.5475	8.5735	0.9192	1.2375	1.5862
541512 Computer systems design services	1.3850	0.4976	7.9503	0.8620	1.2742	1.6616
54151A Other computer related services, including facilities management	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
541200 Accounting, tax preparation, bookkeeping, and payroll services	1.3146	0.4840	10.4376	0.9788	1.2234	1.3350
541300 Architectural, engineering, and related services	1.3723	0.4091	6.9502	0.7355	1.3329	1.7210
541400 Specialized design services	1.3667	0.4384	11.8586	0.8702	1.2750	1.3002
541610 Management consulting services	1.4101	0.4956	11.2527	0.8543	1.2988	1.4094
5416A0 Environmental and other technical consulting services	1.3784	0.5020	11.9476	0.8325	1.2682	1.3503
541700 Scientific research and development services	1.3477	0.3505	5.0235	0.6550	1.3672	2.0287
541800 Advertising, public relations, and related services	1.2901	0.2834	5.5132	0.7594	1.3581	1.6141
5419A0 Marketing research and all other miscellaneous professional, scientific, and technical services	1.3189	0.3990	8.5119	0.8359	1.2696	1.3968
541920 Photographic services	1.4200	0.4303	15.2388	0.7698	1.3195	1.2480
541940 Veterinary services	1.3761	0.4117	12.4955	0.7047	1.3206	1.3028
550000 Management of companies and enterprises	1.4163	0.5308	6.8886	0.8473	1.2617	1.7972
561100 Office administrative services	1.3436	0.5636	10.0850	0.9903	1.2028	1.3931
561200 Facilities support services	1.3753	0.2831	8.5869	0.7494	1.5048	1.4393
561300 Employment services	1.3295	0.5436	19.6595	0.9847	1.2085	1.1719
561400 Business support services	1.3709	0.4440	12.5853	0.8444	1.3017	1.3007
561500 Travel arrangement and reservation services	1.3473	0.2912	7.8050	0.6745	1.4544	1.4900
561600 Investigation and security services	1.3487	0.4961	19.1327	0.9064	1.2366	1.1706
561700 Services to buildings and dwellings	1.3165	0.3379	13.5247	0.8065	1.3211	1.2080
561900 Other support services	1.4031	0.3948	10.8573	0.7369	1.3660	1.3927
562000 Waste management and remediation services	1.3902	0.2777	6.1358	0.6806	1.5219	1.6635
611100 Elementary and secondary schools	1.3763	0.5067	21.5493	0.8868	1.2475	1.1605
611A00 Junior colleges, colleges, universities, and professional schools	1.3863	0.4545	15.6782	0.8277	1.2636	1.2126
611B00 Other educational services	1.3994	0.5211	26.1997	0.8163	1.2554	1.1336
621100 Offices of physicians	1.3647	0.5211	8.2574	0.8454	1.2361	1.5602
621200 Offices of dentists	1.3559	0.4651	10.7303	0.8416	1.2598	1.3424
621300 Offices of other health practitioners	1.3161	0.4419	11.8809	0.8631	1.2340	1.2614
621400 Outpatient care centers	1.3158	0.3479	7.5364	0.7238	1.3125	1.4426
621500 Medical and diagnostic laboratories	1.3435	0.4663	9.1639	0.8221	1.2525	1.4055
621600 Home health care services	1.3787	0.5556	17.6026	0.8861	1.2234	1.2083
621900 Other ambulatory health care services	1.3750	0.4222	11.2865	0.7711	1.2925	1.3000
622000 Hospitals	1.3541	0.4401	8.5828	0.7625	1.2803	1.4712
623A00 Nursing and community care facilities	1.3666	0.4696	15.9085	0.8196	1.2501	1.2115
623B00 Residential mental retardation, mental health, substance abuse and other facilities	1.3734	0.5350	19.0041	0.9003	1.2229	1.1775
624100 Individual and family services	1.3691	0.5193	21.0579	0.8487	1.2283	1.1567
624A00 Community food, housing, and other relief services, including rehabilitation services	1.4236	0.4403	18.4329	0.7406	1.3171	1.1974

<b>624400 Child day care services</b>	1.3848	0.4798	27.5978	0.8370	1.2468	1.1149
<b>711100 Performing arts companies</b>	1.3058	0.3990	29.8053	0.7295	1.2636	1.0896
<b>711200 Spectator sports</b>	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>711A00 Promoters of performing arts and sports and agents for public figures</b>	1.3604	0.3361	20.6689	0.6724	1.4124	1.1807
<b>711500 Independent artists, writers, and performers</b>	1.2387	0.3036	8.3594	0.7101	1.2883	1.3186
<b>712000 Museums, historical sites, zoos, and parks</b>	1.4282	0.4077	15.9099	0.7092	1.3638	1.2317
<b>713100 Amusement parks and arcades</b>	1.2929	0.3407	16.4716	0.8509	1.2707	1.1435
<b>713200 Gambling industries (except casino hotels)</b>	1.2711	0.2066	7.6573	0.7123	1.5225	1.3248
<b>713900 Other amusement and recreation industries</b>	1.3608	0.3718	22.7100	0.7261	1.3202	1.1264
<b>721000 Accommodation</b>	1.3118	0.3360	10.3553	0.8108	1.3175	1.2846
<b>722110 Full-service restaurants</b>	1.4351	0.4453	21.1182	0.7521	1.3079	1.1608
<b>722211 Limited-service restaurants</b>	1.3895	0.3627	20.7359	0.7557	1.3358	1.1414
<b>722A00 All other food and drinking places</b>	1.4018	0.2559	11.6650	0.5581	1.5198	1.2615
<b>811100 Automotive repair and maintenance</b>	1.4784	0.5299	14.0264	0.8345	1.2817	1.2947
<b>811200 Electronic and precision equipment repair and maintenance</b>	1.3968	0.5702	10.5839	0.8889	1.2319	1.4114
<b>811300 Commercial and industrial machinery and equipment repair and maintenance</b>	1.3961	0.6242	11.6246	0.9897	1.2048	1.3639
<b>811400 Personal and household goods repair and maintenance</b>	1.2787	0.3138	8.8582	0.8237	1.2943	1.3006
<b>812100 Personal care services</b>	1.4149	0.6248	28.9188	0.8888	1.2188	1.1321
<b>812200 Death care services</b>	1.3863	0.5488	16.7216	0.8718	1.2245	1.2066
<b>812300 Dry-cleaning and laundry services</b>	1.3932	0.5419	18.9427	0.8563	1.2400	1.1908
<b>812900 Other personal services</b>	1.3603	0.4637	19.0965	0.8058	1.2561	1.1661
<b>813100 Religious organizations</b>	1.2901	0.2153	6.3411	0.4680	1.5096	1.4714
<b>813A00 Grantmaking, giving, and social advocacy organizations</b>	1.3336	0.5084	13.1711	0.9110	1.2215	1.2655
<b>813B00 Civic, social, professional, and similar organizations</b>	1.3946	0.6490	22.0665	1.0365	1.1967	1.1678
<b>491000 Postal service</b>	1.4366	0.6861	11.9043	1.0293	1.2061	1.4188
<b>S00A00 Other government enterprises</b>	1.4750	0.3158	6.9828	0.6821	1.6322	1.7526
<b>H00000 Households</b>	0.5496	0.1548	4.8155	0.3224	0.0000	0.0000

## APPENDIX D.

**Table D1. Industry In-state Multipliers for the North West Region**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
1111C0 Oilseed and grain farming	1.4873	0.2855	10.3311	0.4024	2.0484	1.8130
111200 Vegetable and melon farming	1.2068	0.3144	14.1919	0.7927	1.2829	1.1933
111300 Fruit and tree nut farming	1.2160	0.3788	21.1786	0.8021	1.2716	1.1527
111400 Greenhouse, nursery, and floriculture production	1.3539	0.4770	23.7838	0.7881	1.3165	1.2450
111900 Other crop farming	1.2709	0.3357	13.5470	0.6762	1.3704	1.2766
1121A0 Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	1.3675	0.2268	8.9848	0.4886	1.5875	1.4196
112120 Dairy cattle and milk production	1.3138	0.2606	10.8923	0.5290	1.5167	1.3064
112A00 Animal production, except cattle and poultry and eggs	1.1854	0.2357	9.7558	0.7999	1.2511	1.1846
112300 Poultry and egg production	1.2324	0.2213	7.2304	0.3667	1.3650	1.2607
113000 Forestry and logging	1.4476	0.4908	16.2122	0.8086	1.5137	1.5341
114000 Fishing, hunting and trapping	1.1157	0.3056	17.4406	0.7513	1.1234	1.0451
115000 Support activities for agriculture and forestry	1.1006	0.5963	24.1972	0.7829	1.0511	1.0337
211000 Oil and gas extraction	1.1859	0.2134	3.7614	0.8178	1.2361	1.2347
212100 Coal mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2122A0 Iron, gold, silver, and other metal ore mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212230 Copper, nickel, lead, and zinc mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212310 Stone mining and quarrying	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2123A0 Other nonmetallic mineral mining and quarrying	1.2326	0.2347	4.7620	0.7092	1.3146	1.2674
213111 Drilling oil and gas wells	1.1974	0.3166	6.2490	0.7741	1.2138	1.2156
21311A Other support activities for mining	1.1588	0.3242	5.5820	0.7789	1.1557	1.2106
2211A0 Electric power generation, transmission, and distribution*	1.2320	0.2026	2.4862	0.7126	1.4174	2.0608
221200 Natural gas distribution	1.4323	0.2355	3.2389	0.6998	1.6476	2.2253
221300 Water, sewage and other systems	1.2433	0.2626	4.5716	0.8124	1.3552	1.4195
23030A Maintenance and repair	1.2493	0.3592	7.6121	0.6967	1.2254	1.3177
2332C0 Nonresidential structures	1.1963	0.4763	9.3013	0.6994	1.1116	1.1222
233293 Highways and streets	1.2075	0.3054	5.7276	0.6255	1.2018	1.2283
2334B0 Residential structures	1.3362	0.3536	7.6095	0.6412	1.3417	1.5121
321100 Sawmills and wood preservation	1.7295	0.3586	9.1349	0.6153	2.4703	3.1355
321200 Veneer, plywood, and engineered wood product manufacturing	1.4793	0.2783	6.3457	0.4979	1.8353	2.0809
321910 Millwork	1.4019	0.3171	7.0462	0.5120	1.4711	1.5493
3219A0 All other wood product manufacturing	1.3896	0.2916	6.8443	0.5081	1.4713	1.4591
327100 Clay product and refractory manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327200 Glass and glass product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327310 Cement manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327320 Ready-mix concrete manufacturing	1.3179	0.2334	4.3630	0.4553	1.4578	1.5305
327330 Concrete pipe, brick, and block manufacturing	1.2717	0.2498	5.0698	0.6000	1.3582	1.3782
327390 Other concrete product manufacturing	1.3146	0.2904	6.2352	0.5634	1.3592	1.3521
327400 Lime and gypsum product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327910 Abrasive product manufacturing	1.2178	0.1848	3.6003	0.6801	1.3276	1.3290
327991 Cut stone and stone product manufacturing	1.2625	0.3345	7.8986	0.5972	1.2466	1.2191

327992 Ground or treated mineral and earth manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327993 Mineral wool manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327999 Miscellaneous nonmetallic mineral products	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331110 Iron and steel mills and ferroalloy manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331200 Steel product manufacturing from purchased steel	1.2021	0.1890	3.0370	0.3611	1.3503	1.4549
33131A Alumina refining and primary aluminum production	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331314 Secondary smelting and alloying of aluminum	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33131B Aluminum product manufacturing from purchased aluminum	1.3299	0.2130	3.8818	0.3222	1.5297	1.5628
33141A Primary smelting and refining of nonferrous metal (except aluminum)	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331420 Copper rolling, drawing, extruding, and alloying	1.2535	0.1897	3.5853	0.2677	1.3623	1.3570
331490 Nonferrous metal (except copper and aluminum) rolling, drawing, extruding, and alloying	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331510 Ferrous metal foundries	1.2775	0.2869	5.1733	0.5517	1.3142	1.3509
331520 Nonferrous metal foundries	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33211A All other forging, stamping, and sintering	1.2504	0.2384	3.8894	0.4810	1.3327	1.4206
332114 Custom roll forming	1.1614	0.1760	3.2814	0.3136	1.2639	1.2724
33211B Crown and closure manufacturing and metal stamping	1.3018	0.2551	4.7076	0.5079	1.3495	1.3742
332200 Cutlery and handtool manufacturing	1.2631	0.3059	5.2970	0.6114	1.2549	1.3039
332310 Plate work and fabricated structural product manufacturing	1.2469	0.2605	4.9594	0.4554	1.3013	1.3300
332320 Ornamental and architectural metal products manufacturing	1.3075	0.2804	5.3683	0.4791	1.3534	1.3655
332410 Power boiler and heat exchanger manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332420 Metal tank (heavy gauge) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332430 Metal can, box, and other metal container (light gauge) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332500 Hardware manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332600 Spring and wire product manufacturing	1.2874	0.3111	6.2441	0.5309	1.2826	1.2831
332710 Machine shops	1.2968	0.3840	7.2951	0.6262	1.2366	1.2581
332720 Turned product and screw, nut, and bolt manufacturing	1.2871	0.2202	3.9788	0.6109	1.4401	1.4950
332800 Coating, engraving, heat treating and allied activities	1.2247	0.2581	5.3053	0.5540	1.2645	1.2684
33291A Valve and fitting (except plumbing) manufacturing	1.3002	0.2418	4.0588	0.5736	1.3921	1.4695
332913 Plumbing fixture fitting and trim manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332991 Ball and roller bearing manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33299A Ammunition, arms, ordnance, and accessories manufacturing	1.2795	0.3099	6.7470	0.6379	1.2638	1.2330
332996 Fabricated pipe and pipe fitting manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33299B Other fabricated metal manufacturing	1.3225	0.2798	5.1833	0.5244	1.3346	1.3512
333111 Farm machinery and equipment manufacturing	1.2754	0.2040	3.4947	0.5094	1.4648	1.5293
333112 Lawn and garden equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333120 Construction machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333130 Mining and oil and gas field machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3332A0 Industrial machinery (except semiconductor machinery) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333295 Semiconductor machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33331B All other commercial and service industry machinery manufacturing	1.2406	0.3521	5.9555	0.5475	1.1995	1.2287
333314 Optical instrument and lens manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333315 Photographic and photocopying equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

33341A Air purification and ventilation equipment manufacturing	1.2766	0.2771	4.8237	0.5707	1.2684	1.2921
333414 Heating equipment (except warm air furnaces) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333415 Air conditioning, refrigeration, and warm air heating equipment manufacturing	1.3264	0.2213	4.0748	0.4827	1.4665	1.4803
333511 Industrial mold manufacturing	1.2720	0.4442	7.7362	0.6670	1.1735	1.1939
33351A Metal cutting and forming machine tool manufacturing	1.2789	0.3460	5.6653	0.6202	1.2563	1.3159
333514 Special tool, die, jig, and fixture manufacturing	1.3241	0.4036	6.9605	0.6514	1.2573	1.2920
33351B Cutting and machine tool accessory, rolling mill, and other metalworking machinery manufacturing	1.2702	0.3254	5.4841	0.5723	1.2575	1.3002
333611 Turbine and turbine generator set units manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333612 Speed changer, industrial high-speed drive, and gear manufacturing	1.3776	0.3008	4.9523	0.6348	1.3857	1.4612
333613 Mechanical power transmission equipment manufacturing	1.3190	0.2549	4.7785	0.5891	1.4086	1.4243
333618 Other engine equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33391A Pump and pumping equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333912 Air and gas compressor manufacturing	1.3761	0.2224	3.5203	0.5719	1.5846	1.7584
333920 Material handling equipment manufacturing	1.3086	0.2140	3.2675	0.5327	1.5366	1.7299
333991 Power-driven handtool manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33399A Other general purpose machinery manufacturing	1.3172	0.2560	3.8412	0.5296	1.4022	1.5729
333993 Packaging machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333994 Industrial process furnace and oven manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33399B Fluid power process machinery	1.3189	0.2958	4.8051	0.5478	1.3412	1.4187
334111 Electronic computer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334112 Computer storage device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33411A Computer terminals and other computer peripheral equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334210 Telephone apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334220 Broadcast and wireless communications equipment	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334290 Other communications equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334300 Audio and video equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33441A Other electronic component manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334413 Semiconductor and related device manufacturing	1.1596	0.2829	3.1627	0.7303	1.1681	1.3175
334418 Printed circuit assembly (electronic assembly) manufacturing	1.3102	0.2063	4.4516	0.4770	1.4814	1.3625
334510 Electromedical and electrotherapeutic apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334511 Search, detection, and navigation instruments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334512 Automatic environmental control manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334513 Industrial process variable instruments manufacturing	1.2594	0.4464	7.8336	0.6538	1.1615	1.1800
334514 Totalizing fluid meter and counting device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334515 Electricity and signal testing instruments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334516 Analytical laboratory instrument manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334517 Irradiation apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33451A Watch, clock, and other measuring and controlling device manufacturing	1.2441	0.2923	5.1056	0.6495	1.2497	1.2805
334610 Manufacturing and reproducing magnetic and optical media	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

335110 Electric lamp bulb and part manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335120 Lighting fixture manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335210 Small electrical appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335221 Household cooking appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335222 Household refrigerator and home freezer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335224 Household laundry equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335228 Other major household appliance manufacturing	1.2580	0.1939	4.0768	0.5474	1.3927	1.3330
335311 Power, distribution, and specialty transformer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335312 Motor and generator manufacturing	1.2921	0.2233	4.5593	0.4900	1.4051	1.3461
335313 Switchgear and switchboard apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335314 Relay and industrial control manufacturing	1.2601	0.3222	4.5543	0.6201	1.2534	1.3305
335911 Storage battery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335912 Primary battery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335920 Communication and energy wire and cable manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335930 Wiring device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335991 Carbon and graphite product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335999 All other miscellaneous electrical equipment and component manufacturing	1.2610	0.2569	4.8581	0.5349	1.3447	1.3460
336111 Automobile manufacturing	1.3519	0.2091	2.7725	0.3886	1.5014	1.7421
336112 Light truck and utility vehicle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336120 Heavy duty truck manufacturing	1.3522	0.2129	4.1716	0.3339	1.5289	1.4424
336211 Motor vehicle body manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336212 Truck trailer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336213 Motor home manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336214 Travel trailer and camper manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336310 Motor vehicle gasoline engine and engine parts manufacturing	1.3949	0.2298	3.7231	0.4560	1.6348	1.7886
336320 Motor vehicle electrical and electronic equipment manufacturing	1.3075	0.2744	4.7694	0.4505	1.3535	1.4083
3363A0 Motor vehicle steering, suspension component (except spring), and brake systems manufacturing	1.4111	0.2405	3.8739	0.4791	1.6203	1.7986
336350 Motor vehicle transmission and power train parts manufacturing	1.4108	0.2479	4.0525	0.4672	1.5734	1.6979
336360 Motor vehicle seating and interior trim manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336370 Motor vehicle metal stamping	1.2191	0.2089	3.4221	0.4453	1.3164	1.3931
336390 Other motor vehicle parts manufacturing	1.3784	0.2464	4.3759	0.4462	1.5154	1.5649
336411 Aircraft manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336412 Aircraft engine and engine parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336413 Other aircraft parts and auxiliary equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336414 Guided missile and space vehicle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33641A Propulsion units and parts for space vehicles and guided missiles	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336500 Railroad rolling stock manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336611 Ship building and repairing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336612 Boat building	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336991 Motorcycle, bicycle, and parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336992 Military armored vehicle, tank, and tank component manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336999 All other transportation equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

337110 Wood kitchen cabinet and countertop manufacturing	1.3337	0.3659	8.5136	0.5412	1.2868	1.2778
337121 Upholstered household furniture manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
337122 Nonupholstered wood household furniture manufacturing	1.2796	0.3388	8.8395	0.5813	1.2442	1.1987
33712A Other household nonupholstered furniture	1.2991	0.2521	5.5368	0.4768	1.3855	1.3500
337127 Institutional furniture manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33721A Office furniture and custom architectural woodwork and millwork manufacturing	1.3020	0.2502	4.8105	0.6015	1.4118	1.4908
337215 Showcase, partition, shelving, and locker manufacturing	1.2800	0.3513	7.1428	0.5088	1.2361	1.2428
337900 Other furniture related product manufacturing	1.2850	0.2519	5.5709	0.5115	1.3898	1.3398
339112 Surgical and medical instrument manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339113 Surgical appliance and supplies manufacturing	1.2136	0.2455	3.8076	0.6519	1.2821	1.4188
339114 Dental equipment and supplies manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339115 Ophthalmic goods manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339116 Dental laboratories	1.1435	0.4149	10.5555	0.6426	1.1118	1.0870
339910 Jewelry and silverware manufacturing	1.2070	0.2193	5.2254	0.4338	1.3164	1.2839
339920 Sporting and athletic goods manufacturing	1.3386	0.2682	5.2507	0.5737	1.4285	1.4440
339930 Doll, toy, and game manufacturing	1.2985	0.2085	4.6908	0.5035	1.4972	1.4097
339940 Office supplies (except paper) manufacturing	1.3034	0.2665	7.1695	0.5744	1.3438	1.2352
339950 Sign manufacturing	1.3431	0.3286	7.5274	0.5676	1.2979	1.2537
339990 All other miscellaneous manufacturing	1.3021	0.2881	5.5483	0.5332	1.3617	1.4310
311111 Dog and cat food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311119 Other animal food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311210 Flour milling and malt manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311221 Wet corn milling	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31122A Soybean and other oilseed processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311225 Fats and oils refining and blending	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311230 Breakfast cereal manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311300 Sugar and confectionery product manufacturing	1.3396	0.2197	5.7462	0.4636	1.5631	1.5661
311410 Frozen food manufacturing	1.5665	0.2637	6.8092	0.4443	1.8765	2.0597
311420 Fruit and vegetable canning, pickling, and drying	1.4759	0.2463	6.4231	0.3996	1.7529	1.8701
31151A Fluid milk and butter manufacturing	1.7957	0.3046	8.4133	0.5107	2.1676	3.3292
311513 Cheese manufacturing	1.8218	0.3096	8.9838	0.4540	2.2026	3.0461
311514 Dry, condensed, and evaporated dairy product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311520 Ice cream and frozen dessert manufacturing	1.4465	0.2345	6.2163	0.4966	1.6689	1.7282
31161A Animal (except poultry) slaughtering, rendering, and processing	1.4497	0.2284	6.4224	0.3906	1.6252	1.8910
311615 Poultry processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311700 Seafood product preparation and packaging	1.2561	0.2023	4.5056	0.3907	1.4395	1.5827
311810 Bread and bakery product manufacturing	1.3024	0.2615	7.8685	0.4916	1.3595	1.2636
3118A0 Cookie, cracker, pasta, and tortilla manufacturing	1.2800	0.2034	4.1009	0.4679	1.4475	1.5316
311910 Snack food manufacturing	1.3294	0.2216	5.9461	0.5600	1.5768	1.7450
311920 Coffee and tea manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311930 Flavoring syrup and concentrate manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311940 Seasoning and dressing manufacturing	1.3757	0.2287	4.8685	0.4292	1.6274	2.0567
311990 All other food manufacturing	1.4506	0.2483	7.1667	0.4282	1.7671	1.8617
312110 Soft drink and ice manufacturing	1.3718	0.2170	3.9138	0.3860	1.5444	1.6371
312120 Breweries	1.2302	0.1905	4.6169	0.5368	1.3557	1.3055
312130 Wineries	1.3709	0.2371	7.3315	0.5248	1.6872	1.7273

312140 Distilleries	1.2048	0.1820	4.7967	0.7741	1.2950	1.2411
312200 Tobacco product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313100 Fiber, yarn, and thread mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313200 Fabric mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313300 Textile and fabric finishing and fabric coating mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314110 Carpet and rug mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314120 Curtain and linen mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314900 Other textile product mills	1.1943	0.2919	8.5384	0.4871	1.2022	1.1429
315000 Apparel manufacturing	1.1553	0.3909	14.6230	0.5720	1.1245	1.0684
316000 Leather and allied product manufacturing	1.2434	0.2721	5.5481	0.4208	1.2924	1.2781
322110 Pulp mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322120 Paper mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322130 Paperboard mills	1.4723	0.2526	4.3445	0.5825	1.7972	2.3536
322210 Paperboard container manufacturing	1.4601	0.2667	4.8810	0.4630	1.5427	1.5770
322220 Paper bag and coated and treated paper manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322230 Stationery product manufacturing	1.4181	0.2640	5.5681	0.5184	1.4750	1.3929
322291 Sanitary paper product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322299 All other converted paper product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
323110 Printing	1.2214	0.3097	7.3876	0.5752	1.2437	1.2585
323120 Support activities for printing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324110 Petroleum refineries	1.2807	0.1945	2.0610	0.4344	1.3843	1.8778
324121 Asphalt paving mixture and block manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324122 Asphalt shingle and coating materials manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324190 Other petroleum and coal products manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325110 Petrochemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325120 Industrial gas manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325130 Synthetic dye and pigment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325180 Other basic inorganic chemical manufacturing	1.3327	0.2116	2.9445	0.5913	1.5055	1.7295
325190 Other basic organic chemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325211 Plastics material and resin manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3252A0 Synthetic rubber and artificial and synthetic fibers and filaments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325310 Fertilizer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325320 Pesticide and other agricultural chemical manufacturing	1.1221	0.1694	2.2463	0.5830	1.2055	1.3192
325411 Medicinal and botanical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325412 Pharmaceutical preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325413 In-vitro diagnostic substance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325414 Biological product (except diagnostic) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325510 Paint and coating manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325520 Adhesive manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325610 Soap and cleaning compound manufacturing	1.1984	0.1840	2.6504	0.6153	1.3091	1.4846
325620 Toilet preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325910 Printing ink manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3259A0 All other chemical product and preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326110 Plastics packaging materials and unlaminated film and sheet manufacturing	1.2480	0.1938	3.2836	0.4268	1.3790	1.4534
326120 Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	1.1770	0.2246	4.1024	0.4346	1.2281	1.2443



326130 Laminated plastics plate, sheet (except packaging), and shape manufacturing	1.2616	0.2687	4.9360	0.5667	1.2480	1.2424
326140 Polystyrene foam product manufacturing	1.2377	0.2020	3.9101	0.4439	1.3556	1.3908
326150 Urethane and other foam product (except polystyrene) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326160 Plastics bottle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326190 Other plastics product manufacturing	1.3056	0.2164	4.2308	0.4310	1.4675	1.4841
326210 Tire manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326220 Rubber and plastics hoses and belting manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326290 Other rubber product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
420000 Wholesale trade	1.1730	0.3457	5.2891	0.7807	1.1702	1.2695
441000 Motor vehicle and parts dealers	1.1372	0.4392	9.1410	0.8536	1.0900	1.1044
445000 Food and beverage stores	1.1988	0.4043	17.1368	0.7830	1.1414	1.0742
452000 General merchandise stores	1.1608	0.3474	15.3144	0.7376	1.1412	1.0688
4A0000 Other retail	1.2112	0.3779	15.2673	0.7627	1.1722	1.0936
481000 Air transportation	1.1789	0.2263	3.2056	0.5474	1.2704	1.4677
482000 Rail transportation	1.2078	0.2686	3.6430	0.6385	1.2588	1.4581
483000 Water transportation	1.3056	0.2225	4.5226	0.4730	1.6093	1.6961
484000 Truck transportation	1.2776	0.3688	8.1722	0.5982	1.2948	1.2899
485A00 Transit and ground passenger transportation*	1.2520	0.4823	24.3097	0.5992	1.1701	1.0660
486000 Pipeline transportation	1.3034	0.3525	4.2624	0.6946	1.2870	1.5971
48A000 Scenic and sightseeing transportation and support activities for transportation	1.3382	0.4228	8.9456	0.6935	1.3422	1.3767
492000 Couriers and messengers	1.2597	0.3662	11.0966	0.6628	1.2658	1.1812
493000 Warehousing and storage	1.2389	0.4106	9.4896	0.7437	1.1851	1.1842
511110 Newspaper publishers	1.2958	0.3636	9.3612	0.7058	1.2955	1.2424
511120 Periodical publishers	1.3995	0.3113	5.8030	0.6902	1.5383	1.7076
511130 Book publishers	1.1605	0.1898	3.4987	0.8308	1.3160	1.4093
5111A0 Directory, mailing list, and other publishers	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511200 Software publishers	1.1612	0.3110	4.1424	0.7796	1.1786	1.3277
512100 Motion picture and video industries	1.1835	0.2116	7.6800	0.6535	1.3212	1.2002
512200 Sound recording industries	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
515100 Radio and television broadcasting	1.2572	0.5734	8.8149	0.7372	1.1811	1.2174
515200 Cable and other subscription programming	1.1160	0.2726	4.5643	0.6483	1.1199	1.1687
517110 Wired telecommunications carriers	1.1807	0.1858	3.2843	0.7194	1.2883	1.3445
517210 Wireless telecommunications carriers (except satellite)	1.2991	0.2195	4.1353	0.6747	1.5219	1.5736
517A00 Satellite, telecommunications resellers, and all other telecommunications	1.2446	0.4158	6.9212	0.7651	1.1506	1.1881
518200 Data processing, hosting, and related services	1.3031	0.3191	6.0474	0.6738	1.3486	1.4977
5191A0 News syndicates, libraries, archives, and all other information services	1.1235	0.2982	6.4621	0.7247	1.1299	1.1446
519130 Internet publishing and broadcasting and Web search portals	1.2210	0.2930	2.9676	0.7476	1.2952	1.9776
52A000 Monetary authorities and depository credit intermediation	1.2695	0.2887	5.9115	0.7598	1.3634	1.5435
522A00 Nondepository credit intermediation and related activities	1.3262	0.3952	5.8445	0.6832	1.3052	1.6112
523A00 Securities and commodity contracts intermediation and brokerage	1.2337	0.4742	14.6625	0.6095	1.1675	1.1345
523900 Other financial investment activities	1.3561	0.3495	13.9428	0.5169	1.4129	1.2166
524100 Insurance carriers	1.3853	0.3140	5.4081	0.7770	1.5975	1.8040
524200 Insurance agencies, brokerages, and related activities	1.4974	0.4656	9.0532	0.7757	1.4622	1.5348

525000 Funds, trusts, and other financial vehicles	1.3597	0.2426	10.6120	0.4000	1.7280	1.4394
531000 Real estate	1.2136	0.1924	7.2080	0.8314	1.4034	1.2433
532100 Automotive equipment rental and leasing	1.1993	0.2608	4.3032	0.7900	1.2599	1.4010
532A00 Consumer goods and general rental centers	1.1530	0.4320	8.9681	0.8066	1.0976	1.1111
532400 Commercial and industrial machinery and equipment rental and leasing	1.1414	0.2303	2.8384	0.8338	1.2192	1.4402
533000 Lessors of nonfinancial intangible assets	1.2914	0.2245	3.4897	0.7026	1.6376	2.2175
541100 Legal services	1.1329	0.5197	6.9659	0.8278	1.0740	1.1566
541511 Custom computer programming services	1.1457	0.6027	8.0308	0.7904	1.0880	1.1865
541512 Computer systems design services	1.2092	0.5541	7.6203	0.7597	1.1330	1.2718
54151A Other computer related services, including facilities management	1.1690	0.5371	7.0611	0.7937	1.0983	1.2187
541200 Accounting, tax preparation, bookkeeping, and payroll services	1.1165	0.5299	10.6720	0.8634	1.0697	1.0900
541300 Architectural, engineering, and related services	1.2458	0.4633	6.9372	0.6639	1.2053	1.3717
541400 Specialized design services	1.1776	0.4795	12.6702	0.7655	1.1138	1.1094
541610 Management consulting services	1.2407	0.5492	11.7723	0.7555	1.1493	1.1775
5416A0 Environmental and other technical consulting services	1.2031	0.5592	12.6352	0.7291	1.1283	1.1403
541700 Scientific research and development services	1.2622	0.4022	4.9004	0.6084	1.2526	1.5804
541800 Advertising, public relations, and related services	1.2454	0.3308	5.9139	0.7344	1.2661	1.3826
5419A0 Marketing research and all other miscellaneous professional, scientific, and technical services	1.1825	0.4444	8.8330	0.7562	1.1292	1.1575
541920 Photographic services	1.2277	0.4717	17.0041	0.6707	1.1550	1.1121
541940 Veterinary services	1.2284	0.4552	13.7196	0.6221	1.1659	1.1423
550000 Management of companies and enterprises	1.2424	0.4885	5.2867	0.7458	1.1613	1.3793
561100 Office administrative services	1.1062	0.6037	9.6155	0.8517	1.0529	1.0856
561200 Facilities support services	1.2616	0.3048	9.2155	0.6905	1.3243	1.2624
561300 Employment services	1.0973	0.5815	21.3889	0.8484	1.0566	1.0420
561400 Business support services	1.2040	0.4776	13.3270	0.7475	1.1445	1.1257
561500 Travel arrangement and reservation services	1.3210	0.3364	8.6638	0.6577	1.3731	1.3517
561600 Investigation and security services	1.1502	0.5337	21.0502	0.7909	1.0872	1.0526
561700 Services to buildings and dwellings	1.1752	0.3626	14.9342	0.7264	1.1587	1.0901
561900 Other support services	1.3068	0.4399	11.7871	0.6795	1.2439	1.2357
562000 Waste management and remediation services	1.2729	0.2954	6.1316	0.6181	1.3228	1.3586
611100 Elementary and secondary schools	1.1916	0.5325	23.3701	0.7793	1.1013	1.0571
611A00 Junior colleges, colleges, universities, and professional schools	1.2429	0.4829	16.8202	0.7487	1.1275	1.0927
611B00 Other educational services	1.2297	0.5566	29.1658	0.7180	1.1264	1.0599
621100 Offices of physicians	1.1629	0.5359	7.3464	0.7301	1.0969	1.1977
621200 Offices of dentists	1.1718	0.4768	10.4418	0.7363	1.1143	1.1271
621300 Offices of other health practitioners	1.1463	0.4536	11.8925	0.7660	1.0929	1.0895
621400 Outpatient care centers	1.2286	0.3703	7.5765	0.6781	1.2053	1.2513
621500 Medical and diagnostic laboratories	1.1588	0.4791	8.6219	0.7168	1.1103	1.1410
621600 Home health care services	1.1574	0.5682	17.9766	0.7585	1.0796	1.0647
621900 Other ambulatory health care services	1.2234	0.4383	11.3801	0.6875	1.1577	1.1310
622000 Hospitals	1.2044	0.4606	8.2904	0.6773	1.1562	1.2261
623A00 Nursing and community care facilities	1.1935	0.4841	16.5227	0.7249	1.1118	1.0857
623B00 Residential mental retardation, mental health, substance abuse and other facilities	1.1596	0.5457	19.7100	0.7807	1.0762	1.0537
624100 Individual and family services	1.1717	0.5331	22.2254	0.7370	1.0878	1.0534
624A00 Community food, housing, and other relief services, including rehabilitation services	1.2622	0.4550	19.6760	0.6531	1.1745	1.1028

<b>624400 Child day care services</b>	1.2047	0.4928	30.0256	0.7380	1.1047	1.0466
<b>711100 Performing arts companies</b>	1.2077	0.3542	27.2411	0.6739	1.1952	1.0610
<b>711200 Spectator sports</b>	1.0745	0.5396	13.2576	0.8340	1.0424	1.0443
<b>711A00 Promoters of performing arts and sports and agents for public figures</b>	1.3201	0.3160	19.3247	0.6491	1.4148	1.1761
<b>711500 Independent artists, writers, and performers</b>	1.1599	0.2717	7.4338	0.6630	1.2281	1.2492
<b>712000 Museums, historical sites, zoos, and parks</b>	1.3111	0.3611	14.1820	0.6469	1.2866	1.1697
<b>713100 Amusement parks and arcades</b>	1.1674	0.2959	14.5113	0.7833	1.1759	1.0732
<b>713200 Gambling industries (except casino hotels)</b>	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>713900 Other amusement and recreation industries</b>	1.2543	0.3279	20.5172	0.6696	1.2401	1.0841
<b>721000 Accommodation</b>	1.2049	0.3090	9.3463	0.7512	1.2228	1.1703
<b>722110 Full-service restaurants</b>	1.2375	0.3946	19.3789	0.6486	1.1696	1.0752
<b>722211 Limited-service restaurants</b>	1.2526	0.3284	19.4356	0.6840	1.2208	1.0798
<b>722A00 All other food and drinking places</b>	1.3075	0.2379	10.9611	0.5141	1.4260	1.1965
<b>811100 Automotive repair and maintenance</b>	1.2230	0.4818	12.4348	0.6963	1.1297	1.1128
<b>811200 Electronic and precision equipment repair and maintenance</b>	1.1876	0.5280	8.9017	0.7633	1.1060	1.1509
<b>811300 Commercial and industrial machinery and equipment repair and maintenance</b>	1.1287	0.5674	9.5178	0.8318	1.0618	1.0827
<b>811400 Personal and household goods repair and maintenance</b>	1.1480	0.2895	8.0233	0.7513	1.1577	1.1422
<b>812100 Personal care services</b>	1.1823	0.5780	27.7425	0.7561	1.0931	1.0530
<b>812200 Death care services</b>	1.1367	0.4967	15.0306	0.7283	1.0745	1.0515
<b>812300 Dry-cleaning and laundry services</b>	1.2077	0.5074	17.8740	0.7501	1.1256	1.0894
<b>812900 Other personal services</b>	1.2105	0.4371	18.3268	0.7226	1.1479	1.0850
<b>813100 Religious organizations</b>	1.3525	0.2385	7.0691	0.5046	1.6208	1.5904
<b>813A00 Grantmaking, giving, and social advocacy organizations</b>	1.1378	0.4708	11.9574	0.7943	1.0966	1.1139
<b>813B00 Civic, social, professional, and similar organizations</b>	1.1138	0.5911	20.2507	0.8733	1.0567	1.0391
<b>491000 Postal service</b>	1.1420	0.5674	8.7812	0.8577	1.0704	1.1231
<b>S00A00 Other government enterprises</b>	1.4450	0.3375	7.0023	0.6675	1.5732	1.5854
<b>H00000 Households</b>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

## APPENDIX D.

**Table D2. Industry Out-state Multipliers for the North West Region**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
1111C0 Oilseed and grain farming	1.6921	0.3479	12.2539	0.5237	2.4959	2.1504
111200 Vegetable and melon farming	1.4323	0.3830	16.3088	0.9263	1.5632	1.3713
111300 Fruit and tree nut farming	1.4877	0.4616	23.7294	0.9630	1.5494	1.2915
111400 Greenhouse, nursery, and floriculture production	1.6961	0.5812	26.9960	0.9908	1.6041	1.4131
111900 Other crop farming	1.5118	0.4090	15.8075	0.8188	1.6699	1.4896
1121A0 Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	1.5302	0.2763	10.5120	0.5850	1.9344	1.6609
112120 Dairy cattle and milk production	1.5007	0.3176	12.6473	0.6397	1.8481	1.5169
112A00 Animal production, except cattle and poultry and eggs	1.3545	0.2872	11.3429	0.9000	1.5244	1.3773
112300 Poultry and egg production	1.3912	0.2697	8.7207	0.4607	1.6632	1.5206
113000 Forestry and logging	1.7997	0.5981	19.5173	1.0171	1.8444	1.8469
114000 Fishing, hunting and trapping	1.3349	0.3723	19.4981	0.8811	1.3689	1.1683
115000 Support activities for agriculture and forestry	1.5284	0.7266	28.2129	1.0362	1.2807	1.2053
211000 Oil and gas extraction	1.3390	0.2600	5.1984	0.9085	1.5062	1.7064
212100 Coal mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2122A0 Iron, gold, silver, and other metal ore mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212230 Copper, nickel, lead, and zinc mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212310 Stone mining and quarrying	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2123A0 Other nonmetallic mineral mining and quarrying	1.4009	0.2860	6.3426	0.8089	1.6018	1.6880
213111 Drilling oil and gas wells	1.4245	0.3857	8.3806	0.9086	1.4790	1.6303
21311A Other support activities for mining	1.3913	0.3950	7.7648	0.9166	1.4082	1.6840
2211A0 Electric power generation, transmission, and distribution*	1.3773	0.2469	3.8508	0.7987	1.7271	3.1918
221200 Natural gas distribution	1.6013	0.2870	4.8249	0.7999	2.0075	3.3150
221300 Water, sewage and other systems	1.4317	0.3199	6.3397	0.9240	1.6513	1.9685
23030A Maintenance and repair	1.5070	0.4377	10.0310	0.8493	1.4931	1.7364
2332C0 Nonresidential structures	1.5380	0.5804	12.5089	0.9018	1.3545	1.5092
233293 Highways and streets	1.4266	0.3721	7.7840	0.7552	1.4643	1.6693
2334B0 Residential structures	1.5899	0.4309	9.9906	0.7914	1.6349	1.9853
321100 Sawmills and wood preservation	1.9868	0.4369	11.5496	0.7676	3.0100	3.9643
321200 Veneer, plywood, and engineered wood product manufacturing	1.6789	0.3391	8.2197	0.6162	2.2362	2.6955
321910 Millwork	1.6294	0.3864	9.1817	0.6467	1.7925	2.0189
3219A0 All other wood product manufacturing	1.5988	0.3553	8.8078	0.6320	1.7928	1.8776
327100 Clay product and refractory manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327200 Glass and glass product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327310 Cement manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327320 Ready-mix concrete manufacturing	1.4853	0.2843	5.9344	0.5544	1.7764	2.0817
327330 Concrete pipe, brick, and block manufacturing	1.4509	0.3043	6.7517	0.7061	1.6550	1.8355
327390 Other concrete product manufacturing	1.5229	0.3538	8.1905	0.6868	1.6562	1.7761
327400 Lime and gypsum product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327910 Abrasive product manufacturing	1.3504	0.2252	4.8450	0.7586	1.6176	1.7884
327991 Cut stone and stone product manufacturing	1.5025	0.4076	10.1513	0.7394	1.5189	1.5668
327992 Ground or treated mineral and earth manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

327993 Mineral wool manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327999 Miscellaneous nonmetallic mineral products	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331110 Iron and steel mills and ferroalloy manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331200 Steel product manufacturing from purchased steel	1.3377	0.2302	4.3094	0.4414	1.6453	2.0644
33131A Alumina refining and primary aluminum production	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331314 Secondary smelting and alloying of aluminum	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33131B Aluminum product manufacturing from purchased aluminum	1.4827	0.2595	5.3160	0.4127	1.8639	2.1402
33141A Primary smelting and refining of nonferrous metal (except aluminum)	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331420 Copper rolling, drawing, extruding, and alloying	1.3896	0.2311	4.8626	0.3483	1.6600	1.8405
331490 Nonferrous metal (except copper and aluminum) rolling, drawing, extruding, and alloying	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331510 Ferrous metal foundries	1.4834	0.3496	7.1054	0.6736	1.6014	1.8553
331520 Nonferrous metal foundries	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33211A All other forging, stamping, and sintering	1.4214	0.2905	5.4948	0.5823	1.6238	2.0070
332114 Custom roll forming	1.2876	0.2144	4.4664	0.3884	1.5400	1.7319
33211B Crown and closure manufacturing and metal stamping	1.4848	0.3108	6.4253	0.6163	1.6443	1.8756
332200 Cutlery and handtool manufacturing	1.4826	0.3727	7.3570	0.7414	1.5291	1.8110
332310 Plate work and fabricated structural product manufacturing	1.4337	0.3174	6.7134	0.5661	1.5856	1.8004
332320 Ornamental and architectural metal products manufacturing	1.5087	0.3416	7.2562	0.5982	1.6491	1.8457
332410 Power boiler and heat exchanger manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332420 Metal tank (heavy gauge) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332430 Metal can, box, and other metal container (light gauge) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332500 Hardware manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332600 Spring and wire product manufacturing	1.5106	0.3791	8.3389	0.6631	1.5628	1.7135
332710 Machine shops	1.5723	0.4679	9.8807	0.7894	1.5068	1.7041
332720 Turned product and screw, nut, and bolt manufacturing	1.4450	0.2683	5.4618	0.7045	1.7548	2.0522
332800 Coating, engraving, heat treating and allied activities	1.4099	0.3145	7.0431	0.6637	1.5407	1.6839
33291A Valve and fitting (except plumbing) manufacturing	1.4737	0.2946	5.6869	0.6763	1.6963	2.0589
332913 Plumbing fixture fitting and trim manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332991 Ball and roller bearing manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33299A Ammunition, arms, ordnance, and accessories manufacturing	1.5018	0.3776	8.8336	0.7696	1.5400	1.6144
332996 Fabricated pipe and pipe fitting manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33299B Other fabricated metal manufacturing	1.5233	0.3410	7.0676	0.6433	1.6263	1.8424
333111 Farm machinery and equipment manufacturing	1.4217	0.2485	4.8681	0.5961	1.7848	2.1302
333112 Lawn and garden equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333120 Construction machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333130 Mining and oil and gas field machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3332A0 Industrial machinery (except semiconductor machinery) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333295 Semiconductor machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33331B All other commercial and service industry machinery manufacturing	1.4932	0.4290	8.3264	0.6971	1.4616	1.7179
333314 Optical instrument and lens manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333315 Photographic and photocopying equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

33341A Air purification and ventilation equipment manufacturing	1.4754	0.3377	6.6900	0.6885	1.5455	1.7921
333414 Heating equipment (except warm air furnaces) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333415 Air conditioning, refrigeration, and warm air heating equipment manufacturing	1.4852	0.2697	5.5651	0.5767	1.7869	2.0217
333511 Industrial mold manufacturing	1.5907	0.5413	10.7276	0.8558	1.4299	1.6556
33351A Metal cutting and forming machine tool manufacturing	1.5271	0.4216	7.9951	0.7672	1.5308	1.8570
333514 Special tool, die, jig, and fixture manufacturing	1.6137	0.4918	9.6784	0.8229	1.5320	1.7965
33351B Cutting and machine tool accessory, rolling mill, and other metalworking machinery manufacturing	1.5036	0.3965	7.6754	0.7106	1.5323	1.8197
333611 Turbine and turbine generator set units manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333612 Speed changer, industrial high-speed drive, and gear manufacturing	1.5934	0.3666	6.9781	0.7626	1.6884	2.0590
333613 Mechanical power transmission equipment manufacturing	1.5019	0.3106	6.4951	0.6975	1.7164	1.9360
333618 Other engine equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33391A Pump and pumping equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333912 Air and gas compressor manufacturing	1.5356	0.2710	5.0179	0.6664	1.9308	2.5065
333920 Material handling equipment manufacturing	1.4621	0.2607	4.7083	0.6236	1.8724	2.4926
333991 Power-driven handtool manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33399A Other general purpose machinery manufacturing	1.5008	0.3119	5.5651	0.6384	1.7086	2.2788
333993 Packaging machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333994 Industrial process furnace and oven manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33399B Fluid power process machinery	1.5311	0.3605	6.7971	0.6735	1.6343	2.0068
334111 Electronic computer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334112 Computer storage device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33411A Computer terminals and other computer peripheral equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334210 Telephone apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334220 Broadcast and wireless communications equipment	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334290 Other communications equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334300 Audio and video equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33441A Other electronic component manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334413 Semiconductor and related device manufacturing	1.3626	0.3447	5.0677	0.8505	1.4233	2.1110
334418 Printed circuit assembly (electronic assembly) manufacturing	1.4581	0.2513	5.8406	0.5646	1.8051	1.7876
334510 Electromedical and electrotherapeutic apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334511 Search, detection, and navigation instruments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334512 Automatic environmental control manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334513 Industrial process variable instruments manufacturing	1.5797	0.5440	10.8398	0.8435	1.4153	1.6328
334514 Totalizing fluid meter and counting device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334515 Electricity and signal testing instruments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334516 Analytical laboratory instrument manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334517 Irradiation apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33451A Watch, clock, and other measuring and controlling device manufacturing	1.4538	0.3562	7.0741	0.7738	1.5227	1.7742
334610 Manufacturing and reproducing magnetic and optical media	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

335110 Electric lamp bulb and part manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335120 Lighting fixture manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335210 Small electrical appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335221 Household cooking appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335222 Household refrigerator and home freezer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335224 Household laundry equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335228 Other major household appliance manufacturing	1.3971	0.2363	5.3826	0.6298	1.6971	1.7599
335311 Power, distribution, and specialty transformer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335312 Motor and generator manufacturing	1.4524	0.2721	6.0630	0.5849	1.7120	1.7900
335313 Switchgear and switchboard apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335314 Relay and industrial control manufacturing	1.4912	0.3926	6.7238	0.7570	1.5273	1.9643
335911 Storage battery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335912 Primary battery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335920 Communication and energy wire and cable manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335930 Wiring device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335991 Carbon and graphite product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335999 All other miscellaneous electrical equipment and component manufacturing	1.4453	0.3131	6.5882	0.6441	1.6385	1.8253
336111 Automobile manufacturing	1.5018	0.2547	4.1802	0.4775	1.8295	2.6267
336112 Light truck and utility vehicle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336120 Heavy duty truck manufacturing	1.5050	0.2594	5.6051	0.4243	1.8630	1.9380
336211 Motor vehicle body manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336212 Truck trailer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336213 Motor home manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336214 Travel trailer and camper manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336310 Motor vehicle gasoline engine and engine parts manufacturing	1.5597	0.2800	5.2703	0.5536	1.9920	2.5319
336320 Motor vehicle electrical and electronic equipment manufacturing	1.5044	0.3344	6.6175	0.5671	1.6492	1.9540
3363A0 Motor vehicle steering, suspension component (except spring), and brake systems manufacturing	1.5836	0.2930	5.4932	0.5812	1.9743	2.5504
336350 Motor vehicle transmission and power train parts manufacturing	1.5886	0.3020	5.7216	0.5725	1.9172	2.3972
336360 Motor vehicle seating and interior trim manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336370 Motor vehicle metal stamping	1.3689	0.2545	4.8286	0.5340	1.6040	1.9657
336390 Other motor vehicle parts manufacturing	1.5552	0.3003	6.0353	0.5509	1.8465	2.1583
336411 Aircraft manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336412 Aircraft engine and engine parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336413 Other aircraft parts and auxiliary equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336414 Guided missile and space vehicle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33641A Propulsion units and parts for space vehicles and guided missiles	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336500 Railroad rolling stock manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336611 Ship building and repairing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336612 Boat building	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336991 Motorcycle, bicycle, and parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336992 Military armored vehicle, tank, and tank component manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336999 All other transportation equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

337110 Wood kitchen cabinet and countertop manufacturing	1.5962	0.4459	10.9778	0.6967	1.5680	1.6476
337121 Upholstered household furniture manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
337122 Nonupholstered wood household furniture manufacturing	1.5226	0.4128	11.1207	0.7252	1.5161	1.5081
33712A Other household nonupholstered furniture	1.4799	0.3072	7.2344	0.5839	1.6882	1.7639
337127 Institutional furniture manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33721A Office furniture and custom architectural woodwork and millwork manufacturing	1.4815	0.3049	6.4953	0.7078	1.7202	2.0129
337215 Showcase, partition, shelving, and locker manufacturing	1.5320	0.4280	9.5082	0.6580	1.5062	1.6544
337900 Other furniture related product manufacturing	1.4657	0.3069	7.2670	0.6185	1.6935	1.7477
339112 Surgical and medical instrument manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339113 Surgical appliance and supplies manufacturing	1.3898	0.2992	5.4609	0.7563	1.5622	2.0348
339114 Dental equipment and supplies manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339115 Ophthalmic goods manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339116 Dental laboratories	1.4411	0.5056	13.3494	0.8189	1.3547	1.3747
339910 Jewelry and silverware manufacturing	1.3643	0.2672	6.7019	0.5270	1.6040	1.6467
339920 Sporting and athletic goods manufacturing	1.5310	0.3268	7.0569	0.6876	1.7406	1.9407
339930 Doll, toy, and game manufacturing	1.4481	0.2540	6.0946	0.5921	1.8243	1.8315
339940 Office supplies (except paper) manufacturing	1.4946	0.3248	8.9642	0.6876	1.6374	1.5444
339950 Sign manufacturing	1.5788	0.4004	9.7401	0.7072	1.5815	1.6222
339990 All other miscellaneous manufacturing	1.5088	0.3511	7.4886	0.6556	1.6593	1.9314
311111 Dog and cat food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311119 Other animal food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311210 Flour milling and malt manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311221 Wet corn milling	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31122A Soybean and other oilseed processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311225 Fats and oils refining and blending	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311230 Breakfast cereal manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311300 Sugar and confectionery product manufacturing	1.4971	0.2677	7.2254	0.5569	1.9046	1.9693
311410 Frozen food manufacturing	1.7556	0.3213	8.5850	0.5564	2.2865	2.5968
311420 Fruit and vegetable canning, pickling, and drying	1.6526	0.3002	8.0820	0.5042	2.1359	2.3531
31151A Fluid milk and butter manufacturing	2.0142	0.3712	10.4646	0.6402	2.6412	4.1409
311513 Cheese manufacturing	2.0439	0.3772	11.0683	0.5855	2.6839	3.7529
311514 Dry, condensed, and evaporated dairy product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311520 Ice cream and frozen dessert manufacturing	1.6147	0.2858	7.7956	0.5963	2.0335	2.1673
31161A Animal (except poultry) slaughtering, rendering, and processing	1.6135	0.2783	7.9604	0.4876	1.9803	2.3439
311615 Poultry processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311700 Seafood product preparation and packaging	1.4012	0.2465	5.8678	0.4767	1.7540	2.0612
311810 Bread and bakery product manufacturing	1.4900	0.3187	9.6297	0.6027	1.6566	1.5464
3118A0 Cookie, cracker, pasta, and tortilla manufacturing	1.4259	0.2479	5.4707	0.5544	1.7638	2.0432
311910 Snack food manufacturing	1.4884	0.2700	7.4383	0.6542	1.9213	2.1829
311920 Coffee and tea manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311930 Flavoring syrup and concentrate manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311940 Seasoning and dressing manufacturing	1.5397	0.2787	6.4085	0.5263	1.9829	2.7073
311990 All other food manufacturing	1.6288	0.3026	8.8390	0.5337	2.1532	2.2962
312110 Soft drink and ice manufacturing	1.5275	0.2645	5.3753	0.4782	1.8818	2.2484
312120 Breweries	1.3669	0.2322	5.8999	0.6178	1.6519	1.6683
312130 Wineries	1.5410	0.2889	8.9282	0.6255	2.0559	2.1035



312140 Distilleries	1.3353	0.2218	6.0222	0.8514	1.5779	1.5582
312200 Tobacco product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313100 Fiber, yarn, and thread mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313200 Fabric mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313300 Textile and fabric finishing and fabric coating mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314110 Carpet and rug mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314120 Curtain and linen mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314900 Other textile product mills	1.4037	0.3557	10.5041	0.6112	1.4648	1.4060
315000 Apparel manufacturing	1.4357	0.4764	17.2555	0.7381	1.3702	1.2608
316000 Leather and allied product manufacturing	1.4386	0.3316	7.3805	0.5364	1.5748	1.7002
322110 Pulp mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322120 Paper mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322130 Paperboard mills	1.6535	0.3078	6.0454	0.6899	2.1899	3.2750
322210 Paperboard container manufacturing	1.6514	0.3249	6.6768	0.5763	1.8798	2.1572
322220 Paper bag and coated and treated paper manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322230 Stationery product manufacturing	1.6075	0.3217	7.3458	0.6306	1.7973	1.8376
322291 Sanitary paper product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322299 All other converted paper product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
323110 Printing	1.4436	0.3774	9.4732	0.7068	1.5155	1.6138
323120 Support activities for printing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324110 Petroleum refineries	1.4203	0.2371	3.3710	0.5171	1.6868	3.0715
324121 Asphalt paving mixture and block manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324122 Asphalt shingle and coating materials manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324190 Other petroleum and coal products manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325110 Petrochemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325120 Industrial gas manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325130 Synthetic dye and pigment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325180 Other basic inorganic chemical manufacturing	1.4845	0.2578	4.3693	0.6812	1.8345	2.5663
325190 Other basic organic chemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325211 Plastics material and resin manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3252A0 Synthetic rubber and artificial and synthetic fibers and filaments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325310 Fertilizer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325320 Pesticide and other agricultural chemical manufacturing	1.2437	0.2064	3.3871	0.6550	1.4689	1.9892
325411 Medicinal and botanical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325412 Pharmaceutical preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325413 In-vitro diagnostic substance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325414 Biological product (except diagnostic) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325510 Paint and coating manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325520 Adhesive manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325610 Soap and cleaning compound manufacturing	1.3304	0.2242	3.8892	0.6935	1.5951	2.1785
325620 Toilet preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325910 Printing ink manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3259A0 All other chemical product and preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326110 Plastics packaging materials and unlaminated film and sheet manufacturing	1.3871	0.2361	4.5886	0.5091	1.6803	2.0310
326120 Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	1.3381	0.2737	5.6149	0.5301	1.4965	1.7030

326130 Laminated plastics plate, sheet (except packaging), and shape manufacturing	1.4544	0.3274	6.7453	0.6809	1.5206	1.6978
326140 Polystyrene foam product manufacturing	1.3826	0.2461	5.2701	0.5297	1.6518	1.8745
326150 Urethane and other foam product (except polystyrene) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326160 Plastics bottle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326190 Other plastics product manufacturing	1.4608	0.2636	5.6877	0.5229	1.7881	1.9952
326210 Tire manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326220 Rubber and plastics hoses and belting manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326290 Other rubber product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
420000 Wholesale trade	1.4210	0.4213	7.6171	0.9276	1.4258	1.8282
441000 Motor vehicle and parts dealers	1.4523	0.5352	12.0985	1.0402	1.3281	1.4617
445000 Food and beverage stores	1.4888	0.4926	19.8591	0.9547	1.3908	1.2448
452000 General merchandise stores	1.4101	0.4233	17.6539	0.8852	1.3906	1.2320
4A0000 Other retail	1.4823	0.4605	17.8120	0.9233	1.4283	1.2759
481000 Air transportation	1.3413	0.2758	4.7297	0.6436	1.5479	2.1655
482000 Rail transportation	1.4005	0.3273	5.4516	0.7526	1.5339	2.1819
483000 Water transportation	1.4653	0.2712	6.0211	0.5675	1.9609	2.2581
484000 Truck transportation	1.5422	0.4494	10.6556	0.7549	1.5777	1.6819
485A00 Transit and ground passenger transportation*	1.5980	0.5876	27.5572	0.8041	1.4257	1.2084
486000 Pipeline transportation	1.5562	0.4295	6.6357	0.8443	1.5682	2.4864
48A000 Scenic and sightseeing transportation and support activities for transportation	1.6414	0.5151	11.7925	0.8731	1.6354	1.8149
492000 Couriers and messengers	1.5225	0.4462	13.5627	0.8184	1.5424	1.4437
493000 Warehousing and storage	1.5335	0.5004	12.2548	0.9181	1.4440	1.5292
511110 Newspaper publishers	1.5566	0.4430	11.8096	0.8603	1.5785	1.5673
511120 Periodical publishers	1.6228	0.3793	7.8992	0.8224	1.8744	2.3245
511130 Book publishers	1.2966	0.2312	4.7766	0.9114	1.6035	1.9240
5111A0 Directory, mailing list, and other publishers	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
511200 Software publishers	1.3843	0.3790	6.2367	0.9117	1.4361	1.9989
512100 Motion picture and video industries	1.3352	0.2578	9.1046	0.7434	1.6099	1.4229
512200 Sound recording industries	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
515100 Radio and television broadcasting	1.6686	0.6987	12.6763	0.9808	1.4391	1.7506
515200 Cable and other subscription programming	1.3116	0.3322	6.4000	0.7641	1.3645	1.6387
517110 Wired telecommunications carriers	1.3139	0.2264	4.5353	0.7983	1.5697	1.8566
517210 Wireless telecommunications carriers (except satellite)	1.4565	0.2674	5.6131	0.7679	1.8544	2.1359
517A00 Satellite, telecommunications resellers, and all other telecommunications	1.5430	0.5067	9.7214	0.9418	1.4020	1.6687
518200 Data processing, hosting, and related services	1.5321	0.3888	8.1962	0.8093	1.6433	2.0299
5191A0 News syndicates, libraries, archives, and all other information services	1.3374	0.3633	8.4700	0.8514	1.3767	1.5003
519130 Internet publishing and broadcasting and Web search portals	1.4312	0.3570	4.9406	0.8721	1.5782	3.2925
52A000 Monetary authorities and depository credit intermediation	1.4766	0.3518	7.8554	0.8824	1.6613	2.0511
522A00 Nondepository credit intermediation and related activities	1.6096	0.4815	8.5056	0.8511	1.5904	2.3448
523A00 Securities and commodity contracts intermediation and brokerage	1.5739	0.5778	17.8559	0.8110	1.4225	1.3816
523900 Other financial investment activities	1.6068	0.4258	16.2960	0.6653	1.7216	1.4219
524100 Insurance carriers	1.6106	0.3826	7.5228	0.9105	1.9466	2.5094
524200 Insurance agencies, brokerages, and related activities	1.8314	0.5673	12.1884	0.9736	1.7817	2.0664

525000 Funds, trusts, and other financial vehicles	1.5337	0.2956	12.2455	0.5031	2.1055	1.6610
531000 Real estate	1.3516	0.2345	8.5038	0.9131	1.7101	1.4668
532100 Automotive equipment rental and leasing	1.3863	0.3177	6.0591	0.9008	1.5352	1.9726
532A00 Consumer goods and general rental centers	1.4629	0.5263	11.8768	0.9901	1.3374	1.4714
532400 Commercial and industrial machinery and equipment rental and leasing	1.3066	0.2807	4.3896	0.9317	1.4856	2.2273
533000 Lessors of nonfinancial intangible assets	1.4525	0.2736	5.0016	0.7980	1.9954	3.1783
541100 Legal services	1.5057	0.6333	10.4655	1.0487	1.3087	1.7377
541511 Custom computer programming services	1.5781	0.7344	12.0894	1.0465	1.3257	1.7862
541512 Computer systems design services	1.6067	0.6751	11.3512	0.9951	1.3806	1.8945
54151A Other computer related services, including facilities management	1.5543	0.6545	10.6779	1.0219	1.3383	1.8430
541200 Accounting, tax preparation, bookkeeping, and payroll services	1.4967	0.6457	14.2405	1.0886	1.3035	1.4545
541300 Architectural, engineering, and related services	1.5782	0.5645	10.0567	0.8607	1.4687	1.9886
541400 Specialized design services	1.5217	0.5843	15.8994	0.9692	1.3572	1.3921
541610 Management consulting services	1.6347	0.6692	15.4706	0.9889	1.4004	1.5474
5416A0 Environmental and other technical consulting services	1.6043	0.6814	16.4010	0.9667	1.3748	1.4802
541700 Scientific research and development services	1.5507	0.4900	7.6085	0.7793	1.5263	2.4538
541800 Advertising, public relations, and related services	1.4828	0.4031	8.1416	0.8750	1.5427	1.9034
5419A0 Marketing research and all other miscellaneous professional, scientific, and technical services	1.5013	0.5415	11.8257	0.9451	1.3760	1.5497
541920 Photographic services	1.5661	0.5747	20.1802	0.8711	1.4073	1.3198
541940 Veterinary services	1.5549	0.5546	16.7847	0.8155	1.4206	1.3975
550000 Management of companies and enterprises	1.5928	0.5952	8.5761	0.9533	1.4150	2.2375
561100 Office administrative services	1.5393	0.7356	13.6806	1.1082	1.2829	1.5445
561200 Facilities support services	1.4803	0.3714	11.2680	0.8200	1.6136	1.5435
561300 Employment services	1.5145	0.7085	25.3045	1.0955	1.2874	1.2328
561400 Business support services	1.5467	0.5820	16.5433	0.9504	1.3945	1.3974
561500 Travel arrangement and reservation services	1.5623	0.4099	10.9290	0.8006	1.6731	1.7052
561600 Investigation and security services	1.5330	0.6503	24.6440	1.0177	1.3247	1.2323
561700 Services to buildings and dwellings	1.4354	0.4418	17.3758	0.8805	1.4118	1.2684
561900 Other support services	1.6224	0.5361	14.7496	0.8664	1.5157	1.5462
562000 Waste management and remediation services	1.4848	0.3599	8.1208	0.7437	1.6119	1.7993
611100 Elementary and secondary schools	1.5736	0.6488	26.9559	1.0055	1.3419	1.2193
611A00 Junior colleges, colleges, universities, and professional schools	1.5893	0.5884	20.0717	0.9539	1.3738	1.3039
611B00 Other educational services	1.6290	0.6782	32.9140	0.9545	1.3725	1.1961
621100 Offices of physicians	1.5473	0.6530	10.9550	0.9578	1.3366	1.7860
621200 Offices of dentists	1.5139	0.5810	13.6528	0.9389	1.3578	1.4737
621300 Offices of other health practitioners	1.4717	0.5527	14.9472	0.9587	1.3316	1.3693
621400 Outpatient care centers	1.4942	0.4512	10.0699	0.8354	1.4686	1.6631
621500 Medical and diagnostic laboratories	1.5025	0.5837	11.8478	0.9203	1.3529	1.5679
621600 Home health care services	1.5651	0.6924	21.8028	0.9999	1.3155	1.2913
621900 Other ambulatory health care services	1.5378	0.5341	14.3317	0.8738	1.4106	1.4244
622000 Hospitals	1.5348	0.5612	11.3918	0.8730	1.4088	1.6848
623A00 Nursing and community care facilities	1.5408	0.5898	19.7824	0.9306	1.3547	1.2999
623B00 Residential mental retardation, mental health, substance abuse and other facilities	1.5511	0.6650	23.3848	1.0126	1.3113	1.2502
624100 Individual and family services	1.5541	0.6495	25.8149	0.9635	1.3255	1.2235
624A00 Community food, housing, and other relief services, including rehabilitation services	1.5886	0.5544	22.7401	0.8464	1.4311	1.2746

<b>624400 Child day care services</b>	1.5582	0.6004	33.3437	0.9473	1.3461	1.1623
<b>711100 Performing arts companies</b>	1.4618	0.4316	29.6265	0.8244	1.4563	1.1539
<b>711200 Spectator sports</b>	1.4616	0.6576	16.8915	1.0633	1.2701	1.3305
<b>711A00 Promoters of performing arts and sports and agents for public figures</b>	1.5468	0.3851	21.4526	0.7833	1.7240	1.3056
<b>711500 Independent artists, writers, and performers</b>	1.3548	0.3310	9.2632	0.7784	1.4965	1.5567
<b>712000 Museums, historical sites, zoos, and parks</b>	1.5701	0.4400	16.6134	0.8003	1.5677	1.3702
<b>713100 Amusement parks and arcades</b>	1.3796	0.3606	16.5040	0.9090	1.4328	1.2206
<b>713200 Gambling industries (except casino hotels)</b>	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>713900 Other amusement and recreation industries</b>	1.4895	0.3995	22.7249	0.8089	1.5111	1.2007
<b>721000 Accommodation</b>	1.4266	0.3765	11.4269	0.8825	1.4900	1.4308
<b>722110 Full-service restaurants</b>	1.5206	0.4808	22.0358	0.8163	1.4252	1.2226
<b>722211 Limited-service restaurants</b>	1.4882	0.4001	21.6467	0.8236	1.4875	1.2027
<b>722A00 All other food and drinking places</b>	1.4781	0.2898	12.5627	0.6152	1.7376	1.3713
<b>811100 Automotive repair and maintenance</b>	1.5686	0.5870	15.6788	0.9010	1.3765	1.4032
<b>811200 Electronic and precision equipment repair and maintenance</b>	1.5664	0.6433	12.4571	0.9876	1.3476	1.6106
<b>811300 Commercial and industrial machinery and equipment repair and maintenance</b>	1.5358	0.6914	13.3389	1.0729	1.2938	1.5173
<b>811400 Personal and household goods repair and maintenance</b>	1.3556	0.3527	9.9726	0.8743	1.4106	1.4197
<b>812100 Personal care services</b>	1.5970	0.7042	31.6344	1.0016	1.3319	1.2007
<b>812200 Death care services</b>	1.4930	0.6052	18.3754	0.9393	1.3093	1.2856
<b>812300 Dry-cleaning and laundry services</b>	1.5717	0.6182	21.2904	0.9657	1.3716	1.2977
<b>812900 Other personal services</b>	1.5241	0.5326	21.2701	0.9083	1.3987	1.2593
<b>813100 Religious organizations</b>	1.5236	0.2906	8.6748	0.6059	1.9750	1.9517
<b>813A00 Grantmaking, giving, and social advocacy organizations</b>	1.4755	0.5736	15.1275	0.9943	1.3362	1.4092
<b>813B00 Civic, social, professional, and similar organizations</b>	1.5379	0.7203	24.2311	1.1244	1.2876	1.2433
<b>491000 Postal service</b>	1.5491	0.6914	12.6023	1.0988	1.3043	1.6118
<b>S00A00 Other government enterprises</b>	1.6871	0.4112	9.2748	0.8109	1.9169	2.1000
<b>H00000 Households</b>	0.7174	0.2185	6.7338	0.4249	0.0000	0.0000

## APPENDIX E.

**Table E1. Industry In-state Multipliers for the North Central Region**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
1111C0 Oilseed and grain farming	1.4634	0.2612	9.2453	0.3530	1.7601	1.5241
111200 Vegetable and melon farming	1.1850	0.3120	14.2041	0.7663	1.1960	1.1219
111300 Fruit and tree nut farming	1.1664	0.3680	21.1559	0.7586	1.1605	1.0817
111400 Greenhouse, nursery, and floriculture production	1.3425	0.4933	24.7777	0.7704	1.2789	1.2184
111900 Other crop farming	1.2365	0.3266	13.2293	0.6388	1.2527	1.1711
1121A0 Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	1.6952	0.2865	11.4280	0.5856	1.8838	1.6962
112120 Dairy cattle and milk production	1.3513	0.2657	11.3011	0.5110	1.4525	1.2733
112A00 Animal production, except cattle and poultry and eggs	1.1687	0.2404	9.9924	0.7707	1.1989	1.1398
112300 Poultry and egg production	1.2706	0.2318	7.5404	0.3534	1.3430	1.2351
113000 Forestry and logging	1.3707	0.4731	15.3642	0.7453	1.3706	1.3658
114000 Fishing, hunting and trapping	1.0990	0.3169	18.3875	0.7388	1.0947	1.0350
115000 Support activities for agriculture and forestry	1.1716	0.6408	25.8243	0.7987	1.0610	1.0364
211000 Oil and gas extraction	1.1534	0.1997	3.4979	0.7924	1.2148	1.2056
212100 Coal mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2122A0 Iron, gold, silver, and other metal ore mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212230 Copper, nickel, lead, and zinc mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212310 Stone mining and quarrying	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2123A0 Other nonmetallic mineral mining and quarrying	1.2112	0.2195	4.4510	0.6945	1.2910	1.2438
213111 Drilling oil and gas wells	1.1781	0.2963	5.8602	0.7601	1.1928	1.1970
21311A Other support activities for mining	1.1442	0.3058	5.2630	0.7695	1.1449	1.1985
2211A0 Electric power generation, transmission, and distribution*	1.1878	0.1881	2.2581	0.6801	1.3524	1.9241
221200 Natural gas distribution	1.3059	0.2089	2.7092	0.6082	1.5021	1.9134
221300 Water, sewage and other systems	1.2356	0.2534	4.4379	0.8033	1.3443	1.4166
23030A Maintenance and repair	1.2876	0.3781	8.0097	0.7051	1.2345	1.3270
2332C0 Nonresidential structures	1.2491	0.5048	9.8898	0.7148	1.1275	1.1420
233293 Highways and streets	1.2459	0.3219	6.0485	0.6338	1.2125	1.2415
2334B0 Residential structures	1.3820	0.3719	7.9940	0.6498	1.3506	1.5204
321100 Sawmills and wood preservation	1.7405	0.3620	9.1975	0.5971	2.4646	3.1199
321200 Veneer, plywood, and engineered wood product manufacturing	1.6042	0.3036	6.9541	0.5258	1.9785	2.2537
321910 Millwork	1.5007	0.3394	7.5856	0.5345	1.5559	1.6483
3219A0 All other wood product manufacturing	1.4366	0.3024	7.1586	0.5125	1.5080	1.5081
327100 Clay product and refractory manufacturing	1.2711	0.3312	6.5153	0.6341	1.2280	1.2270
327200 Glass and glass product manufacturing	1.3487	0.2802	5.5323	0.5637	1.3854	1.3810
327310 Cement manufacturing	1.2847	0.2013	2.9269	0.6488	1.4291	1.6158
327320 Ready-mix concrete manufacturing	1.3816	0.2442	4.5489	0.4814	1.5077	1.5770
327330 Concrete pipe, brick, and block manufacturing	1.2929	0.2533	5.1302	0.6042	1.3611	1.3783
327390 Other concrete product manufacturing	1.3405	0.2945	6.3207	0.5666	1.3623	1.3545
327400 Lime and gypsum product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327910 Abrasive product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327991 Cut stone and stone product manufacturing	1.2155	0.3275	7.8088	0.5690	1.2062	1.1911
327992 Ground or treated mineral and earth manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

327993 Mineral wool manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327999 Miscellaneous nonmetallic mineral products	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331110 Iron and steel mills and ferroalloy manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331200 Steel product manufacturing from purchased steel	1.2281	0.1927	3.0972	0.3612	1.3606	1.4663
33131A Alumina refining and primary aluminum production	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331314 Secondary smelting and alloying of aluminum	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33131B Aluminum product manufacturing from purchased aluminum	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33141A Primary smelting and refining of nonferrous metal (except aluminum)	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331420 Copper rolling, drawing, extruding, and alloying	1.4377	0.2179	4.1191	0.3048	1.5467	1.5407
331490 Nonferrous metal (except copper and aluminum) rolling, drawing, extruding, and alloying	1.2789	0.2006	3.3534	0.4088	1.4237	1.5155
331510 Ferrous metal foundries	1.2674	0.2858	5.1632	0.5397	1.2935	1.3324
331520 Nonferrous metal foundries	1.2600	0.2593	5.0017	0.5176	1.3132	1.3218
33211A All other forging, stamping, and sintering	1.4024	0.2635	4.3057	0.5239	1.4553	1.5542
332114 Custom roll forming	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33211B Crown and closure manufacturing and metal stamping	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332200 Cutlery and handtool manufacturing	1.2253	0.2982	5.1438	0.5895	1.2091	1.2513
332310 Plate work and fabricated structural product manufacturing	1.2465	0.2607	4.9737	0.4480	1.2873	1.3182
332320 Ornamental and architectural metal products manufacturing	1.2719	0.2757	5.2916	0.4642	1.3151	1.3302
332410 Power boiler and heat exchanger manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332420 Metal tank (heavy gauge) manufacturing	1.2889	0.2269	4.6914	0.5077	1.3781	1.3667
332430 Metal can, box, and other metal container (light gauge) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332500 Hardware manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332600 Spring and wire product manufacturing	1.3291	0.3178	6.3497	0.5333	1.2948	1.2894
332710 Machine shops	1.2645	0.3795	7.2087	0.6071	1.2079	1.2286
332720 Turned product and screw, nut, and bolt manufacturing	1.3048	0.2232	4.0125	0.6071	1.4423	1.4899
332800 Coating, engraving, heat treating and allied activities	1.2054	0.2535	5.1819	0.5382	1.2277	1.2243
33291A Valve and fitting (except plumbing) manufacturing	1.3156	0.2442	4.1191	0.5671	1.3894	1.4738
332913 Plumbing fixture fitting and trim manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332991 Ball and roller bearing manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33299A Ammunition, arms, ordnance, and accessories manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332996 Fabricated pipe and pipe fitting manufacturing	1.2791	0.2580	5.0867	0.5386	1.3065	1.3056
33299B Other fabricated metal manufacturing	1.2438	0.2672	4.9471	0.4942	1.2593	1.2745
333111 Farm machinery and equipment manufacturing	1.2176	0.1904	3.2675	0.4775	1.3512	1.4130
333112 Lawn and garden equipment manufacturing	1.2049	0.1863	4.9530	0.3573	1.3225	1.2060
333120 Construction machinery manufacturing	1.2733	0.2093	4.1834	0.4451	1.4326	1.4008
333130 Mining and oil and gas field machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3332A0 Industrial machinery (except semiconductor machinery) manufacturing	1.2898	0.3072	4.9462	0.5183	1.3044	1.3881
333295 Semiconductor machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33331B All other commercial and service industry machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333314 Optical instrument and lens manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333315 Photographic and photocopying equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

33341A Air purification and ventilation equipment manufacturing	1.2831	0.2776	4.8412	0.5578	1.2555	1.2816
333414 Heating equipment (except warm air furnaces) manufacturing	1.2403	0.2233	4.0768	0.5121	1.3458	1.4050
333415 Air conditioning, refrigeration, and warm air heating equipment manufacturing	1.2571	0.2076	3.8305	0.4447	1.3595	1.3752
333511 Industrial mold manufacturing	1.2343	0.4415	7.6675	0.6488	1.1526	1.1694
33351A Metal cutting and forming machine tool manufacturing	1.1991	0.3303	5.3729	0.5773	1.1854	1.2333
333514 Special tool, die, jig, and fixture manufacturing	1.2840	0.3983	6.8487	0.6292	1.2263	1.2563
33351B Cutting and machine tool accessory, rolling mill, and other metalworking machinery manufacturing	1.2795	0.3245	5.4451	0.5601	1.2393	1.2758
333611 Turbine and turbine generator set units manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333612 Speed changer, industrial high-speed drive, and gear manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333613 Mechanical power transmission equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333618 Other engine equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33391A Pump and pumping equipment manufacturing	1.2281	0.1958	3.1858	0.5550	1.3901	1.5345
333912 Air and gas compressor manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333920 Material handling equipment manufacturing	1.2233	0.1949	2.9338	0.4878	1.3837	1.5350
333991 Power-driven handtool manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33399A Other general purpose machinery manufacturing	1.3018	0.2500	3.7369	0.5077	1.3535	1.5123
333993 Packaging machinery manufacturing	1.1867	0.2716	4.4108	0.5206	1.2183	1.2698
333994 Industrial process furnace and oven manufacturing	1.2039	0.3315	4.9371	0.5647	1.1878	1.2335
33399B Fluid power process machinery	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334111 Electronic computer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334112 Computer storage device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33411A Computer terminals and other computer peripheral equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334210 Telephone apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334220 Broadcast and wireless communications equipment	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334290 Other communications equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334300 Audio and video equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33441A Other electronic component manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334413 Semiconductor and related device manufacturing	1.1302	0.2778	3.0874	0.7114	1.1337	1.2710
334418 Printed circuit assembly (electronic assembly) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334510 Electromedical and electrotherapeutic apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334511 Search, detection, and navigation instruments manufacturing	1.1426	0.2933	3.9108	0.6220	1.1427	1.2303
334512 Automatic environmental control manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334513 Industrial process variable instruments manufacturing	1.2039	0.4374	7.6698	0.6241	1.1247	1.1417
334514 Totalizing fluid meter and counting device manufacturing	1.2418	0.1950	3.8742	0.5138	1.3839	1.3653
334515 Electricity and signal testing instruments manufacturing	1.1783	0.3360	4.7736	0.5947	1.1531	1.2364
334516 Analytical laboratory instrument manufacturing	1.2026	0.2427	3.7713	0.5975	1.2437	1.3348
334517 Irradiation apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33451A Watch, clock, and other measuring and controlling device manufacturing	1.2079	0.2859	4.9919	0.6278	1.2080	1.2373
334610 Manufacturing and reproducing magnetic and optical media	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

335110 Electric lamp bulb and part manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335120 Lighting fixture manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335210 Small electrical appliance manufacturing	1.1972	0.2426	4.1603	0.4870	1.2366	1.2590
335221 Household cooking appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335222 Household refrigerator and home freezer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335224 Household laundry equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335228 Other major household appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335311 Power, distribution, and specialty transformer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335312 Motor and generator manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335313 Switchgear and switchboard apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335314 Relay and industrial control manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335911 Storage battery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335912 Primary battery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335920 Communication and energy wire and cable manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335930 Wiring device manufacturing	1.2058	0.2382	5.2078	0.6201	1.2447	1.2047
335991 Carbon and graphite product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335999 All other miscellaneous electrical equipment and component manufacturing	1.2092	0.2450	4.6387	0.5016	1.2671	1.2701
336111 Automobile manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336112 Light truck and utility vehicle manufacturing	1.4057	0.2171	3.1637	0.3370	1.5411	1.7446
336120 Heavy duty truck manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336211 Motor vehicle body manufacturing	1.3666	0.2306	4.2522	0.4154	1.4925	1.4995
336212 Truck trailer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336213 Motor home manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336214 Travel trailer and camper manufacturing	1.3587	0.2150	4.9573	0.4240	1.5262	1.4216
336310 Motor vehicle gasoline engine and engine parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336320 Motor vehicle electrical and electronic equipment manufacturing	1.2606	0.2633	4.5877	0.4217	1.2832	1.3387
3363A0 Motor vehicle steering, suspension component (except spring), and brake systems manufacturing	1.3698	0.2330	3.7422	0.4556	1.5515	1.7170
336350 Motor vehicle transmission and power train parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336360 Motor vehicle seating and interior trim manufacturing	1.4769	0.2350	4.3916	0.3999	1.6681	1.7357
336370 Motor vehicle metal stamping	1.2198	0.2091	3.4177	0.4381	1.3025	1.3750
336390 Other motor vehicle parts manufacturing	1.3869	0.2473	4.4018	0.4394	1.5027	1.5556
336411 Aircraft manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336412 Aircraft engine and engine parts manufacturing	1.2855	0.2278	3.1256	0.5596	1.3673	1.4874
336413 Other aircraft parts and auxiliary equipment manufacturing	1.1841	0.2261	3.6400	0.6184	1.2346	1.3079
336414 Guided missile and space vehicle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33641A Propulsion units and parts for space vehicles and guided missiles	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336500 Railroad rolling stock manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336611 Ship building and repairing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336612 Boat building	1.2720	0.2181	4.3968	0.4204	1.4403	1.4294
336991 Motorcycle, bicycle, and parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336992 Military armored vehicle, tank, and tank component manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336999 All other transportation equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000



337110 Wood kitchen cabinet and countertop manufacturing	1.3915	0.3773	8.8391	0.5484	1.3112	1.3110
337121 Upholstered household furniture manufacturing	1.2962	0.2748	7.2981	0.4243	1.2926	1.2124
337122 Nonupholstered wood household furniture manufacturing	1.3222	0.3481	9.1205	0.5862	1.2634	1.2223
33712A Other household nonupholstered furniture	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
337127 Institutional furniture manufacturing	1.2928	0.2703	5.7304	0.5124	1.3322	1.3442
33721A Office furniture and custom architectural woodwork and millwork manufacturing	1.3059	0.2491	4.8292	0.5912	1.3891	1.4790
337215 Showcase, partition, shelving, and locker manufacturing	1.2687	0.3507	7.1667	0.4967	1.2197	1.2323
337900 Other furniture related product manufacturing	1.4225	0.2717	6.0177	0.5472	1.4815	1.4302
339112 Surgical and medical instrument manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339113 Surgical appliance and supplies manufacturing	1.2038	0.2428	3.7453	0.6414	1.2530	1.3792
339114 Dental equipment and supplies manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339115 Ophthalmic goods manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339116 Dental laboratories	1.1169	0.4112	10.5237	0.6239	1.0888	1.0710
339910 Jewelry and silverware manufacturing	1.1813	0.2131	5.1165	0.4131	1.2645	1.2424
339920 Sporting and athletic goods manufacturing	1.2921	0.2581	5.0902	0.5455	1.3587	1.3834
339930 Doll, toy, and game manufacturing	1.2276	0.1948	4.5087	0.4662	1.3828	1.3390
339940 Office supplies (except paper) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339950 Sign manufacturing	1.2461	0.3117	7.2192	0.5243	1.2165	1.1882
339990 All other miscellaneous manufacturing	1.2822	0.2835	5.4827	0.5136	1.3241	1.3974
311111 Dog and cat food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311119 Other animal food manufacturing	1.4502	0.2238	5.3992	0.2899	1.6928	1.9420
311210 Flour milling and malt manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311221 Wet corn milling	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31122A Soybean and other oilseed processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311225 Fats and oils refining and blending	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311230 Breakfast cereal manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311300 Sugar and confectionery product manufacturing	1.4708	0.2319	6.3176	0.5028	1.7539	1.8303
311410 Frozen food manufacturing	1.4494	0.2296	6.0142	0.3918	1.7366	1.9338
311420 Fruit and vegetable canning, pickling, and drying	1.3657	0.2158	5.7766	0.3527	1.6322	1.7878
31151A Fluid milk and butter manufacturing	1.9123	0.3150	8.9893	0.5244	2.3829	3.7812
311513 Cheese manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311514 Dry, condensed, and evaporated dairy product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311520 Ice cream and frozen dessert manufacturing	1.4445	0.2227	6.1159	0.4801	1.6841	1.8074
31161A Animal (except poultry) slaughtering, rendering, and processing	1.7679	0.2751	8.4200	0.4737	2.0809	2.6353
311615 Poultry processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311700 Seafood product preparation and packaging	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311810 Bread and bakery product manufacturing	1.2746	0.2415	7.3645	0.4724	1.3344	1.2571
3118A0 Cookie, cracker, pasta, and tortilla manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311910 Snack food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311920 Coffee and tea manufacturing	1.2977	0.2057	4.7966	0.3773	1.5562	1.6262
311930 Flavoring syrup and concentrate manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311940 Seasoning and dressing manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311990 All other food manufacturing	1.4115	0.2303	6.7794	0.4002	1.7422	1.8720
312110 Soft drink and ice manufacturing	1.1924	0.1773	3.2132	0.3283	1.3413	1.4287
312120 Breweries	1.2635	0.1904	4.5772	0.5512	1.4401	1.3758
312130 Wineries	1.3741	0.2300	6.9950	0.5165	1.7398	1.7518

312140 Distilleries	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
312200 Tobacco product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313100 Fiber, yarn, and thread mills	1.6270	0.2643	9.2730	0.4463	1.9988	1.7473
313200 Fabric mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313300 Textile and fabric finishing and fabric coating mills	1.2518	0.2516	6.0273	0.4346	1.2815	1.2476
314110 Carpet and rug mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314120 Curtain and linen mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314900 Other textile product mills	1.2785	0.2886	8.3885	0.4976	1.2632	1.1936
315000 Apparel manufacturing	1.1730	0.3743	14.0827	0.5721	1.1445	1.0938
316000 Leather and allied product manufacturing	1.2392	0.2565	5.2765	0.4051	1.2952	1.2921
322110 Pulp mills	1.4656	0.2426	4.6650	0.5177	1.8350	2.3303
322120 Paper mills	1.3318	0.2110	3.2845	0.5035	1.5960	2.1453
322130 Paperboard mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322210 Paperboard container manufacturing	1.3302	0.2304	4.2167	0.4032	1.4167	1.4482
322220 Paper bag and coated and treated paper manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322230 Stationery product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322291 Sanitary paper product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322299 All other converted paper product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
323110 Printing	1.2445	0.2967	7.0674	0.5780	1.2667	1.2798
323120 Support activities for printing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324110 Petroleum refineries	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324121 Asphalt paving mixture and block manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324122 Asphalt shingle and coating materials manufacturing	1.1771	0.1835	2.9780	0.4676	1.2881	1.3651
324190 Other petroleum and coal products manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325110 Petrochemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325120 Industrial gas manufacturing	1.2258	0.1778	2.7647	0.6244	1.3450	1.4293
325130 Synthetic dye and pigment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325180 Other basic inorganic chemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325190 Other basic organic chemical manufacturing	1.2638	0.1906	2.8793	0.2588	1.4416	1.8566
325211 Plastics material and resin manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3252A0 Synthetic rubber and artificial and synthetic fibers and filaments manufacturing	1.1596	0.1693	3.1712	0.2808	1.2808	1.2862
325310 Fertilizer manufacturing	1.4894	0.2216	3.7423	0.5053	1.6761	1.6773
325320 Pesticide and other agricultural chemical manufacturing	1.1118	0.1589	2.1036	0.5733	1.2017	1.3132
325411 Medicinal and botanical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325412 Pharmaceutical preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325413 In-vitro diagnostic substance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325414 Biological product (except diagnostic) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325510 Paint and coating manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325520 Adhesive manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325610 Soap and cleaning compound manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325620 Toilet preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325910 Printing ink manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3259A0 All other chemical product and preparation manufacturing	1.1676	0.1712	2.8708	0.3944	1.2949	1.3369
326110 Plastics packaging materials and unlaminated film and sheet manufacturing	1.2170	0.1770	3.0049	0.4083	1.3389	1.4138
326120 Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	1.1528	0.2073	3.8072	0.4188	1.2048	1.2275

326130 Laminated plastics plate, sheet (except packaging), and shape manufacturing	1.2825	0.2561	4.7072	0.5676	1.2646	1.2594
326140 Polystyrene foam product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326150 Urethane and other foam product (except polystyrene) manufacturing	1.2425	0.1816	3.5175	0.4070	1.3736	1.3775
326160 Plastics bottle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326190 Other plastics product manufacturing	1.2820	0.2008	3.9610	0.4140	1.4476	1.4770
326210 Tire manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326220 Rubber and plastics hoses and belting manufacturing	1.2647	0.3040	5.6035	0.4920	1.2261	1.2549
326290 Other rubber product manufacturing	1.3381	0.2196	4.0660	0.4858	1.4754	1.5317
420000 Wholesale trade	1.1357	0.3500	5.3128	0.7576	1.1347	1.2213
441000 Motor vehicle and parts dealers	1.1023	0.4328	9.0169	0.8334	1.0709	1.0861
445000 Food and beverage stores	1.1685	0.3998	17.0655	0.7638	1.1254	1.0665
452000 General merchandise stores	1.1496	0.3489	15.3664	0.7283	1.1425	1.0691
4A0000 Other retail	1.1636	0.3687	15.0924	0.7323	1.1401	1.0778
481000 Air transportation	1.1353	0.2190	3.0054	0.5229	1.1955	1.3383
482000 Rail transportation	1.1756	0.2650	3.5055	0.6179	1.2079	1.3645
483000 Water transportation	1.2376	0.2077	4.1681	0.4328	1.4605	1.5202
484000 Truck transportation	1.2419	0.3717	8.2696	0.5770	1.2692	1.2694
485A00 Transit and ground passenger transportation*	1.1976	0.4788	24.6457	0.5663	1.1298	1.0511
486000 Pipeline transportation	1.2295	0.3430	4.0268	0.6472	1.2181	1.4674
48A000 Scenic and sightseeing transportation and support activities for transportation	1.3142	0.4286	9.0597	0.6778	1.3234	1.3560
492000 Couriers and messengers	1.2215	0.3811	11.7110	0.6413	1.2240	1.1584
493000 Warehousing and storage	1.2016	0.4300	9.9637	0.7189	1.1530	1.1553
511110 Newspaper publishers	1.2595	0.3546	9.1826	0.6783	1.2477	1.2036
511120 Periodical publishers	1.3065	0.2888	5.3292	0.6369	1.4092	1.5488
511130 Book publishers	1.1213	0.1807	3.3049	0.8073	1.2374	1.3147
5111A0 Directory, mailing list, and other publishers	1.2057	0.2084	4.4161	0.7101	1.3771	1.4297
511200 Software publishers	1.1002	0.2982	3.9319	0.7417	1.1160	1.2446
512100 Motion picture and video industries	1.1248	0.1992	7.4259	0.6192	1.2285	1.1462
512200 Sound recording industries	1.1438	0.1879	4.4700	0.6129	1.2867	1.2822
515100 Radio and television broadcasting	1.1959	0.5612	8.5995	0.7017	1.1416	1.1729
515200 Cable and other subscription programming	1.0775	0.2670	4.4235	0.6272	1.0833	1.1186
517110 Wired telecommunications carriers	1.1021	0.1717	3.0305	0.6714	1.1762	1.2252
517210 Wireless telecommunications carriers (except satellite)	1.1853	0.1962	3.7458	0.6049	1.3434	1.4077
517A00 Satellite, telecommunications resellers, and all other telecommunications	1.1425	0.4002	6.6450	0.7026	1.0936	1.1265
518200 Data processing, hosting, and related services	1.2710	0.3142	5.9980	0.6488	1.3115	1.4671
5191A0 News syndicates, libraries, archives, and all other information services	1.0862	0.2921	6.3500	0.7023	1.0933	1.1108
519130 Internet publishing and broadcasting and Web search portals	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
52A000 Monetary authorities and depository credit intermediation	1.1690	0.2745	5.4566	0.7057	1.2220	1.3429
522A00 Nondepository credit intermediation and related activities	1.2204	0.3863	5.4644	0.6233	1.2026	1.4199
523A00 Securities and commodity contracts intermediation and brokerage	1.1378	0.4715	14.7507	0.5561	1.0939	1.0757
523900 Other financial investment activities	1.2122	0.3269	13.6896	0.4418	1.2456	1.1258
524100 Insurance carriers	1.2394	0.2865	4.7631	0.7008	1.3736	1.4976
524200 Insurance agencies, brokerages, and related activities	1.3231	0.4404	8.4472	0.6861	1.3035	1.3498

525000 Funds, trusts, and other financial vehicles	1.1042	0.1781	8.6078	0.2862	1.1960	1.1005
531000 Real estate	1.1921	0.2023	7.7294	0.8171	1.3440	1.2144
532100 Automotive equipment rental and leasing	1.1573	0.2704	4.3960	0.7625	1.1902	1.3036
532A00 Consumer goods and general rental centers	1.1224	0.4638	9.6279	0.7837	1.0736	1.0865
532400 Commercial and industrial machinery and equipment rental and leasing	1.1155	0.2411	2.9081	0.8142	1.1624	1.3441
533000 Lessors of nonfinancial intangible assets	1.2177	0.2186	3.3391	0.6586	1.4522	1.9328
541100 Legal services	1.0964	0.4868	6.4936	0.8054	1.0606	1.1368
541511 Custom computer programming services	1.1260	0.5710	7.7363	0.7791	1.0867	1.2052
541512 Computer systems design services	1.1643	0.5163	7.1222	0.7324	1.1132	1.2534
54151A Other computer related services, including facilities management	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
541200 Accounting, tax preparation, bookkeeping, and payroll services	1.0894	0.4976	10.0335	0.8466	1.0591	1.0806
541300 Architectural, engineering, and related services	1.2042	0.4294	6.4634	0.6365	1.1780	1.3476
541400 Specialized design services	1.1518	0.4504	11.9491	0.7467	1.1030	1.1032
541610 Management consulting services	1.1840	0.5103	10.9667	0.7220	1.1260	1.1566
5416A0 Environmental and other technical consulting services	1.1709	0.5237	11.8955	0.7080	1.1141	1.1320
541700 Scientific research and development services	1.2023	0.3659	4.3879	0.5696	1.2018	1.4921
541800 Advertising, public relations, and related services	1.1682	0.2968	5.2670	0.6897	1.1976	1.2984
5419A0 Marketing research and all other miscellaneous professional, scientific, and technical services	1.1251	0.4102	8.1790	0.7239	1.0990	1.1301
541920 Photographic services	1.1724	0.4378	15.9540	0.6373	1.1305	1.1002
541940 Veterinary services	1.1792	0.4213	12.8232	0.5885	1.1377	1.1258
550000 Management of companies and enterprises	1.1624	0.4660	4.8448	0.6979	1.1077	1.2640
561100 Office administrative services	1.0793	0.5847	9.2891	0.8352	1.0423	1.0720
561200 Facilities support services	1.2364	0.2925	8.9600	0.6724	1.2990	1.2547
561300 Employment services	1.0817	0.5663	20.9150	0.8395	1.0519	1.0416
561400 Business support services	1.1619	0.4589	12.8959	0.7221	1.1239	1.1135
561500 Travel arrangement and reservation services	1.2184	0.3040	7.9598	0.5984	1.2684	1.2695
561600 Investigation and security services	1.1146	0.5142	20.4619	0.7694	1.0707	1.0459
561700 Services to buildings and dwellings	1.1537	0.3496	14.5415	0.7105	1.1419	1.0851
561900 Other support services	1.2251	0.4112	11.1076	0.6336	1.1886	1.1903
562000 Waste management and remediation services	1.3064	0.2965	6.1923	0.6282	1.3572	1.4025
611100 Elementary and secondary schools	1.1647	0.5068	22.3016	0.7611	1.0919	1.0510
611A00 Junior colleges, colleges, universities, and professional schools	1.2059	0.4581	15.9759	0.7213	1.1144	1.0813
611B00 Other educational services	1.1630	0.5203	27.6396	0.6777	1.0970	1.0465
621100 Offices of physicians	1.1246	0.5112	6.9688	0.7046	1.0758	1.1682
621200 Offices of dentists	1.1613	0.4636	10.1738	0.7260	1.1141	1.1292
621300 Offices of other health practitioners	1.1199	0.4361	11.4589	0.7478	1.0804	1.0794
621400 Outpatient care centers	1.1609	0.3405	6.9673	0.6323	1.1396	1.1832
621500 Medical and diagnostic laboratories	1.1270	0.4583	8.2528	0.6958	1.0922	1.1230
621600 Home health care services	1.1363	0.5499	17.4513	0.7435	1.0743	1.0628
621900 Other ambulatory health care services	1.1927	0.4176	10.9066	0.6619	1.1341	1.1146
622000 Hospitals	1.1676	0.4383	7.8769	0.6539	1.1313	1.1979
623A00 Nursing and community care facilities	1.1558	0.4635	15.8776	0.6995	1.0946	1.0728
623B00 Residential mental retardation, mental health, substance abuse and other facilities	1.1230	0.5247	19.0110	0.7573	1.0640	1.0451
624100 Individual and family services	1.1382	0.5127	21.4777	0.7143	1.0759	1.0467
624A00 Community food, housing, and other relief services, including rehabilitation services	1.2030	0.4306	18.8331	0.6183	1.1428	1.0854

<b>624400 Child day care services</b>	1.1715	0.4741	29.0564	0.7144	1.0929	1.0415
<b>711100 Performing arts companies</b>	1.1434	0.3793	30.3267	0.6350	1.1271	1.0403
<b>711200 Spectator sports</b>	1.0599	0.6062	14.9032	0.8248	1.0313	1.0340
<b>711A00 Promoters of performing arts and sports and agents for public figures</b>	1.2111	0.3160	20.5952	0.5878	1.2463	1.1040
<b>711500 Independent artists, writers, and performers</b>	1.1162	0.2902	7.9347	0.6373	1.1556	1.1745
<b>712000 Museums, historical sites, zoos, and parks</b>	1.2318	0.3812	15.3786	0.5978	1.1963	1.1172
<b>713100 Amusement parks and arcades</b>	1.1169	0.3176	16.1052	0.7562	1.1114	1.0491
<b>713200 Gambling industries (except casino hotels)</b>	1.1703	0.1939	7.3604	0.6538	1.3406	1.1949
<b>713900 Other amusement and recreation industries</b>	1.1990	0.3506	22.7624	0.6332	1.1682	1.0593
<b>721000 Accommodation</b>	1.1641	0.3166	9.7019	0.7264	1.1685	1.1330
<b>722110 Full-service restaurants</b>	1.1914	0.4106	20.4706	0.6233	1.1351	1.0593
<b>722211 Limited-service restaurants</b>	1.1826	0.3342	20.4192	0.6498	1.1588	1.0581
<b>722A00 All other food and drinking places</b>	1.2311	0.2354	11.2906	0.4761	1.3161	1.1495
<b>811100 Automotive repair and maintenance</b>	1.2047	0.4902	12.6804	0.6802	1.1128	1.0986
<b>811200 Electronic and precision equipment repair and maintenance</b>	1.1207	0.5289	8.8628	0.7271	1.0724	1.1093
<b>811300 Commercial and industrial machinery and equipment repair and maintenance</b>	1.0937	0.5770	9.6683	0.8121	1.0453	1.0647
<b>811400 Personal and household goods repair and maintenance</b>	1.1429	0.2952	8.2116	0.7412	1.1427	1.1316
<b>812100 Personal care services</b>	1.1318	0.5831	28.2643	0.7232	1.0675	1.0385
<b>812200 Death care services</b>	1.1266	0.5097	15.4787	0.7192	1.0673	1.0483
<b>812300 Dry-cleaning and laundry services</b>	1.1578	0.5072	17.9869	0.7171	1.0893	1.0613
<b>812900 Other personal services</b>	1.1533	0.4356	18.5286	0.6873	1.1073	1.0619
<b>813100 Religious organizations</b>	1.2102	0.2063	6.1010	0.4233	1.3576	1.3288
<b>813A00 Grantmaking, giving, and social advocacy organizations</b>	1.0839	0.4697	11.8724	0.7659	1.0591	1.0706
<b>813B00 Civic, social, professional, and similar organizations</b>	1.0968	0.6049	20.8130	0.8616	1.0469	1.0338
<b>491000 Postal service</b>	1.1068	0.5992	9.2019	0.8377	1.0503	1.0935
<b>S00A00 Other government enterprises</b>	1.4031	0.3254	6.7611	0.6366	1.5250	1.5390
<b>H00000 Households</b>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

## APPENDIX E.

**Table E2. Industry Out-state Multipliers for the North Central Region**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
1111C0 Oilseed and grain farming	1.6161	0.3089	10.7680	0.4427	2.0818	1.7751
111200 Vegetable and melon farming	1.3674	0.3690	16.0228	0.8736	1.4146	1.2656
111300 Fruit and tree nut farming	1.3816	0.4353	23.3014	0.8851	1.3726	1.1914
111400 Greenhouse, nursery, and floriculture production	1.6308	0.5835	27.6534	0.9399	1.5127	1.3598
111900 Other crop farming	1.4275	0.3864	15.1335	0.7511	1.4817	1.3396
1121A0 Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	1.8627	0.3388	13.0981	0.6841	2.2281	1.9441
112120 Dairy cattle and milk production	1.5066	0.3143	12.8501	0.6023	1.7181	1.4478
112A00 Animal production, except cattle and poultry and eggs	1.3093	0.2844	11.3940	0.8533	1.4180	1.2997
112300 Poultry and egg production	1.4061	0.2742	8.8917	0.4331	1.5885	1.4564
113000 Forestry and logging	1.6473	0.5596	18.1221	0.9079	1.6211	1.6110
114000 Fishing, hunting and trapping	1.2843	0.3749	20.2351	0.8477	1.2948	1.1390
115000 Support activities for agriculture and forestry	1.5463	0.7580	29.5602	1.0190	1.2550	1.1863
211000 Oil and gas extraction	1.2702	0.2362	4.6623	0.8610	1.4369	1.6069
212100 Coal mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2122A0 Iron, gold, silver, and other metal ore mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212230 Copper, nickel, lead, and zinc mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212310 Stone mining and quarrying	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2123A0 Other nonmetallic mineral mining and quarrying	1.3395	0.2597	5.7308	0.7700	1.5270	1.6015
213111 Drilling oil and gas wells	1.3513	0.3504	7.5873	0.8619	1.4108	1.5498
21311A Other support activities for mining	1.3230	0.3617	7.0459	0.8746	1.3542	1.6045
2211A0 Electric power generation, transmission, and distribution*	1.2977	0.2225	3.3546	0.7448	1.5996	2.8583
221200 Natural gas distribution	1.4280	0.2471	3.9270	0.6800	1.7767	2.7735
221300 Water, sewage and other systems	1.3838	0.2997	5.9150	0.8904	1.5901	1.8880
23030A Maintenance and repair	1.5087	0.4472	10.2141	0.8351	1.4602	1.6922
2332C0 Nonresidential structures	1.5442	0.5971	12.8327	0.8883	1.3337	1.4818
233293 Highways and streets	1.4341	0.3808	7.9253	0.7445	1.4342	1.6267
2334B0 Residential structures	1.5995	0.4399	10.1621	0.7776	1.5975	1.9327
321100 Sawmills and wood preservation	1.9522	0.4282	11.3080	0.7215	2.9151	3.8358
321200 Veneer, plywood, and engineered wood product manufacturing	1.7817	0.3591	8.7238	0.6301	2.3401	2.8272
321910 Millwork	1.6991	0.4014	9.5642	0.6512	1.8403	2.0783
3219A0 All other wood product manufacturing	1.6134	0.3577	8.9216	0.6165	1.7837	1.8795
327100 Clay product and refractory manufacturing	1.4647	0.3917	8.4460	0.7479	1.4525	1.5906
327200 Glass and glass product manufacturing	1.5126	0.3315	7.1660	0.6600	1.6387	1.7889
327310 Cement manufacturing	1.4025	0.2381	4.1007	0.7180	1.6903	2.2637
327320 Ready-mix concrete manufacturing	1.5244	0.2888	5.9726	0.5653	1.7833	2.0705
327330 Concrete pipe, brick, and block manufacturing	1.4409	0.2996	6.6067	0.6912	1.6099	1.7749
327390 Other concrete product manufacturing	1.5126	0.3483	8.0375	0.6678	1.6113	1.7224
327400 Lime and gypsum product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327910 Abrasive product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327991 Cut stone and stone product manufacturing	1.4070	0.3874	9.7183	0.6815	1.4267	1.4823
327992 Ground or treated mineral and earth manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

327993 Mineral wool manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327999 Miscellaneous nonmetallic mineral products	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331110 Iron and steel mills and ferroalloy manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331200 Steel product manufacturing from purchased steel	1.3407	0.2279	4.2203	0.4274	1.6093	1.9980
33131A Alumina refining and primary aluminum production	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331314 Secondary smelting and alloying of aluminum	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33131B Aluminum product manufacturing from purchased aluminum	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33141A Primary smelting and refining of nonferrous metal (except aluminum)	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331420 Copper rolling, drawing, extruding, and alloying	1.5651	0.2577	5.3894	0.3797	1.8294	2.0159
331490 Nonferrous metal (except copper and aluminum) rolling, drawing, extruding, and alloying	1.3962	0.2372	4.5227	0.4778	1.6839	2.0439
331510 Ferrous metal foundries	1.4344	0.3380	6.8291	0.6380	1.5300	1.7623
331520 Nonferrous metal foundries	1.4116	0.3067	6.5131	0.6067	1.5533	1.7212
33211A All other forging, stamping, and sintering	1.5564	0.3116	5.8415	0.6144	1.7213	2.1085
332114 Custom roll forming	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33211B Crown and closure manufacturing and metal stamping	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332200 Cutlery and handtool manufacturing	1.3996	0.3527	6.8824	0.6920	1.4301	1.6742
332310 Plate work and fabricated structural product manufacturing	1.3990	0.3084	6.4937	0.5377	1.5226	1.7210
332320 Ornamental and architectural metal products manufacturing	1.4330	0.3260	6.8986	0.5589	1.5555	1.7341
332410 Power boiler and heat exchanger manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332420 Metal tank (heavy gauge) manufacturing	1.4215	0.2683	6.0140	0.5857	1.6300	1.7519
332430 Metal can, box, and other metal container (light gauge) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332500 Hardware manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332600 Spring and wire product manufacturing	1.5149	0.3759	8.2023	0.6425	1.5315	1.6657
332710 Machine shops	1.4863	0.4489	9.4213	0.7376	1.4287	1.6057
332720 Turned product and screw, nut, and bolt manufacturing	1.4353	0.2640	5.3136	0.6838	1.7060	1.9730
332800 Coating, engraving, heat treating and allied activities	1.3536	0.2999	6.6600	0.6253	1.4521	1.5736
33291A Valve and fitting (except plumbing) manufacturing	1.4584	0.2888	5.5426	0.6510	1.6434	1.9831
332913 Plumbing fixture fitting and trim manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332991 Ball and roller bearing manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33299A Ammunition, arms, ordnance, and accessories manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332996 Fabricated pipe and pipe fitting manufacturing	1.4300	0.3051	6.5906	0.6273	1.5454	1.6916
33299B Other fabricated metal manufacturing	1.4000	0.3160	6.5046	0.5860	1.4895	1.6757
333111 Farm machinery and equipment manufacturing	1.3289	0.2252	4.3773	0.5429	1.5982	1.8930
333112 Lawn and garden equipment manufacturing	1.3139	0.2204	6.0392	0.4213	1.5643	1.4705
333120 Construction machinery manufacturing	1.3957	0.2476	5.4039	0.5170	1.6945	1.8094
333130 Mining and oil and gas field machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3332A0 Industrial machinery (except semiconductor machinery) manufacturing	1.4694	0.3633	6.7368	0.6239	1.5428	1.8906
333295 Semiconductor machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33331B All other commercial and service industry machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333314 Optical instrument and lens manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333315 Photographic and photocopying equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

33341A Air purification and ventilation equipment manufacturing	1.4454	0.3283	6.4594	0.6532	1.4850	1.7100
333414 Heating equipment (except warm air furnaces) manufacturing	1.3709	0.2641	5.3783	0.5888	1.5918	1.8535
333415 Air conditioning, refrigeration, and warm air heating equipment manufacturing	1.3784	0.2456	5.0408	0.5160	1.6080	1.8097
333511 Industrial mold manufacturing	1.4924	0.5222	10.2413	0.8005	1.3632	1.5620
33351A Metal cutting and forming machine tool manufacturing	1.3923	0.3907	7.2987	0.6908	1.4021	1.6754
333514 Special tool, die, jig, and fixture manufacturing	1.5169	0.4712	9.1709	0.7661	1.4505	1.6823
33351B Cutting and machine tool accessory, rolling mill, and other metalworking machinery manufacturing	1.4692	0.3838	7.3370	0.6717	1.4658	1.7191
333611 Turbine and turbine generator set units manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333612 Speed changer, industrial high-speed drive, and gear manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333613 Mechanical power transmission equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333618 Other engine equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33391A Pump and pumping equipment manufacturing	1.3426	0.2316	4.3275	0.6223	1.6441	2.0844
333912 Air and gas compressor manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333920 Material handling equipment manufacturing	1.3373	0.2306	4.0703	0.5548	1.6366	2.1295
333991 Power-driven handtool manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33399A Other general purpose machinery manufacturing	1.4480	0.2957	5.1946	0.5937	1.6009	2.1021
333993 Packaging machinery manufacturing	1.3455	0.3213	5.9943	0.6140	1.4410	1.7256
333994 Industrial process furnace and oven manufacturing	1.3977	0.3921	6.8697	0.6787	1.4049	1.7163
33399B Fluid power process machinery	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334111 Electronic computer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334112 Computer storage device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33411A Computer terminals and other computer peripheral equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334210 Telephone apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334220 Broadcast and wireless communications equipment	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334290 Other communications equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334300 Audio and video equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33441A Other electronic component manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334413 Semiconductor and related device manufacturing	1.2927	0.3286	4.7071	0.8069	1.3409	1.9378
334418 Printed circuit assembly (electronic assembly) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334510 Electromedical and electrotherapeutic apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334511 Search, detection, and navigation instruments manufacturing	1.3140	0.3469	5.6206	0.7228	1.3516	1.7681
334512 Automatic environmental control manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334513 Industrial process variable instruments manufacturing	1.4596	0.5174	10.2199	0.7744	1.3303	1.5213
334514 Totalizing fluid meter and counting device manufacturing	1.3558	0.2306	5.0108	0.5808	1.6368	1.7659
334515 Electricity and signal testing instruments manufacturing	1.3747	0.3974	6.7325	0.7101	1.3639	1.7437
334516 Analytical laboratory instrument manufacturing	1.3445	0.2871	5.1861	0.6809	1.4710	1.8355
334517 Irradiation apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33451A Watch, clock, and other measuring and controlling device manufacturing	1.3751	0.3382	6.6588	0.7261	1.4289	1.6504
334610 Manufacturing and reproducing magnetic and optical media	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000



335110 Electric lamp bulb and part manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335120 Lighting fixture manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335210 Small electrical appliance manufacturing	1.3390	0.2870	5.5746	0.5703	1.4626	1.6871
335221 Household cooking appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335222 Household refrigerator and home freezer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335224 Household laundry equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335228 Other major household appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335311 Power, distribution, and specialty transformer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335312 Motor and generator manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335313 Switchgear and switchboard apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335314 Relay and industrial control manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335911 Storage battery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335912 Primary battery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335920 Communication and energy wire and cable manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335930 Wiring device manufacturing	1.3451	0.2818	6.5965	0.7019	1.4723	1.5260
335991 Carbon and graphite product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335999 All other miscellaneous electrical equipment and component manufacturing	1.3524	0.2898	6.0669	0.5858	1.4987	1.6611
336111 Automobile manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336112 Light truck and utility vehicle manufacturing	1.5326	0.2568	4.4295	0.4116	1.8228	2.4426
336120 Heavy duty truck manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336211 Motor vehicle body manufacturing	1.5015	0.2728	5.5968	0.4947	1.7653	1.9737
336212 Truck trailer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336213 Motor home manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336214 Travel trailer and camper manufacturing	1.4844	0.2543	6.2108	0.4979	1.8052	1.7811
336310 Motor vehicle gasoline engine and engine parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336320 Motor vehicle electrical and electronic equipment manufacturing	1.4146	0.3114	6.1225	0.5121	1.5178	1.7866
3363A0 Motor vehicle steering, suspension component (except spring), and brake systems manufacturing	1.5060	0.2756	5.1005	0.5356	1.8351	2.3403
336350 Motor vehicle transmission and power train parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336360 Motor vehicle seating and interior trim manufacturing	1.6143	0.2780	5.7616	0.4806	1.9730	2.2772
336370 Motor vehicle metal stamping	1.3421	0.2473	4.6368	0.5100	1.5405	1.8654
336390 Other motor vehicle parts manufacturing	1.5314	0.2925	5.8433	0.5243	1.7774	2.0651
336411 Aircraft manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336412 Aircraft engine and engine parts manufacturing	1.4187	0.2695	4.4537	0.6379	1.6173	2.1195
336413 Other aircraft parts and auxiliary equipment manufacturing	1.3163	0.2674	4.9579	0.6961	1.4603	1.7815
336414 Guided missile and space vehicle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33641A Propulsion units and parts for space vehicles and guided missiles	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336500 Railroad rolling stock manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336611 Ship building and repairing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336612 Boat building	1.3996	0.2580	5.6682	0.4953	1.7035	1.8427
336991 Motorcycle, bicycle, and parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336992 Military armored vehicle, tank, and tank component manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336999 All other transportation equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

337110 Wood kitchen cabinet and countertop manufacturing	1.6121	0.4463	11.0387	0.6781	1.5509	1.6373
337121 Upholstered household furniture manufacturing	1.4568	0.3250	8.9000	0.5187	1.5289	1.4785
337122 Nonupholstered wood household furniture manufacturing	1.5257	0.4117	11.1496	0.7058	1.4943	1.4942
33712A Other household nonupholstered furniture	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
337127 Institutional furniture manufacturing	1.4509	0.3197	7.3062	0.6053	1.5757	1.7138
33721A Office furniture and custom architectural woodwork and millwork manufacturing	1.4516	0.2946	6.2815	0.6768	1.6431	1.9238
337215 Showcase, partition, shelving, and locker manufacturing	1.4738	0.4148	9.2113	0.6173	1.4426	1.5839
337900 Other furniture related product manufacturing	1.5814	0.3213	7.6016	0.6405	1.7523	1.8067
339112 Surgical and medical instrument manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339113 Surgical appliance and supplies manufacturing	1.3458	0.2872	5.1608	0.7249	1.4820	1.9004
339114 Dental equipment and supplies manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339115 Ophthalmic goods manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339116 Dental laboratories	1.3573	0.4863	12.9206	0.7652	1.2879	1.3149
339910 Jewelry and silverware manufacturing	1.3059	0.2521	6.3589	0.4863	1.4956	1.5441
339920 Sporting and athletic goods manufacturing	1.4430	0.3053	6.5952	0.6342	1.6071	1.7924
339930 Doll, toy, and game manufacturing	1.3415	0.2304	5.6445	0.5332	1.6356	1.6763
339940 Office supplies (except paper) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
339950 Sign manufacturing	1.4283	0.3686	9.0360	0.6314	1.4389	1.4873
339990 All other miscellaneous manufacturing	1.4480	0.3353	7.1354	0.6110	1.5661	1.8187
311111 Dog and cat food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311119 Other animal food manufacturing	1.5810	0.2647	6.7039	0.3668	2.0022	2.4113
311210 Flour milling and malt manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311221 Wet corn milling	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31122A Soybean and other oilseed processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311225 Fats and oils refining and blending	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311230 Breakfast cereal manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311300 Sugar and confectionery product manufacturing	1.6064	0.2743	7.6693	0.5825	2.0745	2.2219
311410 Frozen food manufacturing	1.5836	0.2716	7.3526	0.4707	2.0540	2.3641
311420 Fruit and vegetable canning, pickling, and drying	1.4919	0.2552	7.0346	0.4268	1.9306	2.1772
31151A Fluid milk and butter manufacturing	2.0965	0.3726	10.8258	0.6326	2.8184	4.5537
311513 Cheese manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311514 Dry, condensed, and evaporated dairy product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311520 Ice cream and frozen dessert manufacturing	1.5747	0.2634	7.4138	0.5566	1.9919	2.1910
31161A Animal (except poultry) slaughtering, rendering, and processing	1.9288	0.3254	10.0238	0.5682	2.4612	3.1373
311615 Poultry processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311700 Seafood product preparation and packaging	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311810 Bread and bakery product manufacturing	1.4158	0.2856	8.7724	0.5554	1.5783	1.4974
3118A0 Cookie, cracker, pasta, and tortilla manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311910 Snack food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311920 Coffee and tea manufacturing	1.4180	0.2433	5.9960	0.4480	1.8406	2.0329
311930 Flavoring syrup and concentrate manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311940 Seasoning and dressing manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311990 All other food manufacturing	1.5461	0.2724	8.1222	0.4794	2.0607	2.2428
312110 Soft drink and ice manufacturing	1.2961	0.2097	4.2470	0.3893	1.5865	1.8883
312120 Breweries	1.3748	0.2252	5.6871	0.6167	1.7033	1.7094
312130 Wineries	1.5086	0.2721	8.3359	0.5955	2.0579	2.0876

312140 Distilleries	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
312200 Tobacco product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313100 Fiber, yarn, and thread mills	1.7815	0.3126	10.8135	0.5371	2.3642	2.0375
313200 Fabric mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313300 Textile and fabric finishing and fabric coating mills	1.3989	0.2976	7.4940	0.5211	1.5158	1.5512
314110 Carpet and rug mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314120 Curtain and linen mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
314900 Other textile product mills	1.4472	0.3413	10.0707	0.5968	1.4941	1.4329
315000 Apparel manufacturing	1.3918	0.4427	16.2647	0.7007	1.3537	1.2632
316000 Leather and allied product manufacturing	1.3892	0.3034	6.7721	0.4933	1.5320	1.6583
322110 Pulp mills	1.6075	0.2870	6.0793	0.6011	2.1704	3.0368
322120 Paper mills	1.4551	0.2496	4.5145	0.5760	1.8877	2.9487
322130 Paperboard mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322210 Paperboard container manufacturing	1.4649	0.2725	5.5597	0.4824	1.6756	1.9094
322220 Paper bag and coated and treated paper manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322230 Stationery product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322291 Sanitary paper product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322299 All other converted paper product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
323110 Printing	1.4179	0.3510	8.7972	0.6800	1.4982	1.5931
323120 Support activities for printing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324110 Petroleum refineries	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324121 Asphalt paving mixture and block manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324122 Asphalt shingle and coating materials manufacturing	1.2844	0.2170	4.0478	0.5306	1.5235	1.8555
324190 Other petroleum and coal products manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325110 Petrochemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325120 Industrial gas manufacturing	1.3297	0.2103	3.8013	0.6856	1.5908	1.9652
325130 Synthetic dye and pigment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325180 Other basic inorganic chemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325190 Other basic organic chemical manufacturing	1.3752	0.2254	3.9904	0.3243	1.7052	2.5730
325211 Plastics material and resin manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3252A0 Synthetic rubber and artificial and synthetic fibers and filaments manufacturing	1.2586	0.2003	4.1584	0.3390	1.5149	1.6865
325310 Fertilizer manufacturing	1.6189	0.2621	5.0341	0.5814	1.9825	2.2563
325320 Pesticide and other agricultural chemical manufacturing	1.2047	0.1879	3.0298	0.6279	1.4214	1.8914
325411 Medicinal and botanical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325412 Pharmaceutical preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325413 In-vitro diagnostic substance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325414 Biological product (except diagnostic) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325510 Paint and coating manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325520 Adhesive manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325610 Soap and cleaning compound manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325620 Toilet preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325910 Printing ink manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3259A0 All other chemical product and preparation manufacturing	1.2676	0.2025	3.8688	0.4533	1.5316	1.8016
326110 Plastics packaging materials and unlaminated film and sheet manufacturing	1.3204	0.2094	4.0368	0.4692	1.5836	1.8993
326120 Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	1.2740	0.2452	5.0155	0.4901	1.4250	1.6171

326130 Laminated plastics plate, sheet (except packaging), and shape manufacturing	1.4322	0.3030	6.2005	0.6557	1.4957	1.6589
326140 Polystyrene foam product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326150 Urethane and other foam product (except polystyrene) manufacturing	1.3486	0.2148	4.5763	0.4694	1.6247	1.7921
326160 Plastics bottle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326190 Other plastics product manufacturing	1.3994	0.2375	5.1315	0.4830	1.7122	1.9135
326210 Tire manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326220 Rubber and plastics hoses and belting manufacturing	1.4424	0.3596	7.3760	0.5965	1.4502	1.6518
326290 Other rubber product manufacturing	1.4665	0.2597	5.3461	0.5612	1.7451	2.0139
420000 Wholesale trade	1.3403	0.4140	7.3534	0.8779	1.3421	1.6904
441000 Motor vehicle and parts dealers	1.3554	0.5120	11.5403	0.9821	1.2667	1.3900
445000 Food and beverage stores	1.4022	0.4729	19.3964	0.9012	1.3312	1.2121
452000 General merchandise stores	1.3536	0.4127	17.4003	0.8482	1.3513	1.2106
4A0000 Other retail	1.3791	0.4361	17.2416	0.8590	1.3485	1.2313
481000 Air transportation	1.2634	0.2590	4.2822	0.5981	1.4140	1.9068
482000 Rail transportation	1.3305	0.3134	5.0502	0.7090	1.4287	1.9658
483000 Water transportation	1.3590	0.2456	5.3787	0.5042	1.7274	1.9618
484000 Truck transportation	1.4592	0.4397	10.4366	0.7047	1.5012	1.6021
485A00 Transit and ground passenger transportation*	1.4775	0.5663	27.4370	0.7308	1.3363	1.1701
486000 Pipeline transportation	1.4300	0.4057	6.0263	0.7650	1.4408	2.1961
48A000 Scenic and sightseeing transportation and support activities for transportation	1.5648	0.5069	11.5583	0.8251	1.5653	1.7300
492000 Couriers and messengers	1.4443	0.4508	13.9328	0.7722	1.4478	1.3781
493000 Warehousing and storage	1.4530	0.5086	12.4705	0.8667	1.3638	1.4460
511110 Newspaper publishers	1.4668	0.4194	11.2496	0.8002	1.4757	1.4745
511120 Periodical publishers	1.4753	0.3415	7.0125	0.7361	1.6668	2.0380
511130 Book publishers	1.2269	0.2137	4.3582	0.8694	1.4636	1.7337
5111A0 Directory, mailing list, and other publishers	1.3275	0.2464	5.6308	0.7817	1.6288	1.8229
511200 Software publishers	1.2746	0.3527	5.6703	0.8442	1.3200	1.7948
512100 Motion picture and video industries	1.2413	0.2356	8.5871	0.6877	1.4530	1.3254
512200 Sound recording industries	1.2536	0.2222	5.5652	0.6775	1.5219	1.5964
515100 Radio and television broadcasting	1.5240	0.6638	11.8712	0.8946	1.3503	1.6192
515200 Cable and other subscription programming	1.2336	0.3158	5.9800	0.7190	1.2813	1.5122
517110 Wired telecommunications carriers	1.2025	0.2031	4.0317	0.7304	1.3912	1.6300
517210 Wireless telecommunications carriers (except satellite)	1.2999	0.2320	4.8894	0.6724	1.5890	1.8375
517A00 Satellite, telecommunications resellers, and all other telecommunications	1.3764	0.4734	8.9781	0.8402	1.2936	1.5221
518200 Data processing, hosting, and related services	1.4547	0.3717	7.8298	0.7568	1.5512	1.9151
5191A0 News syndicates, libraries, archives, and all other information services	1.2570	0.3455	8.0530	0.8027	1.2931	1.4088
519130 Internet publishing and broadcasting and Web search portals	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
52A000 Monetary authorities and depository credit intermediation	1.3295	0.3247	7.0570	0.8001	1.4454	1.7367
522A00 Nondepository credit intermediation and related activities	1.4463	0.4569	7.7164	0.7561	1.4224	2.0050
523A00 Securities and commodity contracts intermediation and brokerage	1.4134	0.5576	17.4991	0.7181	1.2939	1.2762
523900 Other financial investment activities	1.4033	0.3866	15.5952	0.5542	1.4733	1.2825
524100 Insurance carriers	1.4068	0.3388	6.4332	0.7993	1.6247	2.0226
524200 Insurance agencies, brokerages, and related activities	1.5805	0.5209	11.0144	0.8375	1.5417	1.7600

525000 Funds, trusts, and other financial vehicles	1.2083	0.2107	9.6462	0.3474	1.4146	1.2333
531000 Real estate	1.3104	0.2393	8.9087	0.8866	1.5896	1.3997
532100 Automotive equipment rental and leasing	1.3154	0.3199	5.9725	0.8554	1.4077	1.7711
532A00 Consumer goods and general rental centers	1.3936	0.5486	12.3320	0.9431	1.2699	1.3917
532400 Commercial and industrial machinery and equipment rental and leasing	1.2565	0.2852	4.3137	0.8971	1.3749	1.9937
533000 Lessors of nonfinancial intangible assets	1.3455	0.2585	4.6134	0.7337	1.7177	2.6704
541100 Legal services	1.3810	0.5757	9.3312	0.9727	1.2545	1.6336
541511 Custom computer programming services	1.4599	0.6753	11.0649	0.9753	1.2854	1.7238
541512 Computer systems design services	1.4661	0.6106	10.1319	0.9098	1.3167	1.7830
54151A Other computer related services, including facilities management	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
541200 Accounting, tax preparation, bookkeeping, and payroll services	1.3803	0.5885	12.9342	1.0176	1.2526	1.3930
541300 Architectural, engineering, and related services	1.4552	0.5079	8.9666	0.7841	1.3933	1.8695
541400 Specialized design services	1.4151	0.5327	14.5746	0.9015	1.3046	1.3455
541610 Management consulting services	1.4824	0.6036	13.9417	0.8974	1.3319	1.4703
5416A0 Environmental and other technical consulting services	1.4770	0.6194	14.9485	0.8880	1.3177	1.4225
541700 Scientific research and development services	1.4162	0.4328	6.5213	0.6954	1.4215	2.2175
541800 Advertising, public relations, and related services	1.3417	0.3510	6.9972	0.7917	1.4165	1.7249
5419A0 Marketing research and all other miscellaneous professional, scientific, and technical services	1.3649	0.4852	10.5704	0.8648	1.2999	1.4605
541920 Photographic services	1.4284	0.5179	18.5065	0.7878	1.3371	1.2762
541940 Veterinary services	1.4255	0.4983	15.2790	0.7333	1.3457	1.3414
550000 Management of companies and enterprises	1.4349	0.5511	7.5613	0.8580	1.3102	1.9727
561100 Office administrative services	1.4211	0.6915	12.6975	1.0361	1.2329	1.4653
561200 Facilities support services	1.4074	0.3460	10.6652	0.7729	1.5365	1.4934
561300 Employment services	1.4128	0.6699	24.2166	1.0342	1.2442	1.2060
561400 Business support services	1.4302	0.5427	15.5709	0.8798	1.3294	1.3444
561500 Travel arrangement and reservation services	1.3961	0.3596	9.7319	0.7029	1.5002	1.5521
561600 Investigation and security services	1.4152	0.6082	23.4594	0.9461	1.2664	1.1991
561700 Services to buildings and dwellings	1.3580	0.4135	16.5795	0.8307	1.3506	1.2371
561900 Other support services	1.4655	0.4864	13.5049	0.7750	1.4058	1.4472
562000 Waste management and remediation services	1.4797	0.3507	7.9207	0.7301	1.6053	1.7940
611100 Elementary and secondary schools	1.4610	0.5994	25.2559	0.9353	1.2915	1.1902
611A00 Junior colleges, colleges, universities, and professional schools	1.4737	0.5418	18.6462	0.8787	1.3180	1.2620
611B00 Other educational services	1.4672	0.6154	30.6728	0.8565	1.2975	1.1613
621100 Offices of physicians	1.4234	0.6046	9.9488	0.8803	1.2725	1.6677
621200 Offices of dentists	1.4323	0.5484	12.8767	0.8854	1.3178	1.4292
621300 Offices of other health practitioners	1.3748	0.5159	14.0015	0.8977	1.2779	1.3189
621400 Outpatient care centers	1.3600	0.4027	8.9523	0.7493	1.3479	1.5203
621500 Medical and diagnostic laboratories	1.3949	0.5421	10.9245	0.8533	1.2919	1.4866
621600 Home health care services	1.4578	0.6504	20.6570	0.9325	1.2707	1.2580
621900 Other ambulatory health care services	1.4368	0.4939	13.3411	0.8055	1.3414	1.3633
622000 Hospitals	1.4238	0.5184	10.4321	0.8045	1.3381	1.5864
623A00 Nursing and community care facilities	1.4268	0.5482	18.5796	0.8588	1.2947	1.2554
623B00 Residential mental retardation, mental health, substance abuse and other facilities	1.4298	0.6206	22.0700	0.9377	1.2585	1.2132
624100 Individual and family services	1.4380	0.6065	24.4669	0.8905	1.2726	1.1924
624A00 Community food, housing, and other relief services, including rehabilitation services	1.4548	0.5093	21.3433	0.7663	1.3517	1.2301

<b>624400 Child day care services</b>	1.4487	0.5607	31.8202	0.8773	1.2927	1.1405
<b>711100 Performing arts companies</b>	1.3651	0.4486	32.5377	0.7654	1.3332	1.1162
<b>711200 Spectator sports</b>	1.4142	0.7170	18.4369	1.0331	1.2198	1.2791
<b>711A00 Promoters of performing arts and sports and agents for public figures</b>	1.3958	0.3738	22.4376	0.6964	1.4741	1.2027
<b>711500 Independent artists, writers, and performers</b>	1.2859	0.3433	9.6266	0.7371	1.3668	1.4249
<b>712000 Museums, historical sites, zoos, and parks</b>	1.4547	0.4509	17.6008	0.7288	1.4150	1.2786
<b>713100 Amusement parks and arcades</b>	1.3026	0.3756	17.9565	0.8654	1.3145	1.1697
<b>713200 Gambling industries (except casino hotels)</b>	1.2836	0.2293	8.4905	0.7205	1.5857	1.3784
<b>713900 Other amusement and recreation industries</b>	1.4040	0.4147	24.8064	0.7537	1.3817	1.1545
<b>721000 Accommodation</b>	1.3491	0.3744	11.5474	0.8352	1.3821	1.3486
<b>722110 Full-service restaurants</b>	1.4314	0.4856	22.8640	0.7644	1.3426	1.1832
<b>722211 Limited-service restaurants</b>	1.3780	0.3953	22.3673	0.7646	1.3706	1.1591
<b>722A00 All other food and drinking places</b>	1.3687	0.2784	12.6627	0.5570	1.5566	1.2892
<b>811100 Automotive repair and maintenance</b>	1.4913	0.5798	15.5380	0.8487	1.3162	1.3461
<b>811200 Electronic and precision equipment repair and maintenance</b>	1.4299	0.6255	11.9459	0.9089	1.2685	1.4951
<b>811300 Commercial and industrial machinery and equipment repair and maintenance</b>	1.4310	0.6825	13.0323	1.0104	1.2363	1.4351
<b>811400 Personal and household goods repair and maintenance</b>	1.3154	0.3491	9.9323	0.8426	1.3515	1.3687
<b>812100 Personal care services</b>	1.4727	0.6897	31.6635	0.9236	1.2626	1.1634
<b>812200 Death care services</b>	1.4245	0.6029	18.4500	0.8944	1.2624	1.2495
<b>812300 Dry-cleaning and laundry services</b>	1.4543	0.5999	20.9437	0.8914	1.2885	1.2357
<b>812900 Other personal services</b>	1.4079	0.5152	21.0678	0.8370	1.3097	1.2074
<b>813100 Religious organizations</b>	1.3309	0.2441	7.3039	0.4942	1.6058	1.5907
<b>813A00 Grantmaking, giving, and social advocacy organizations</b>	1.3585	0.5555	14.6104	0.9273	1.2527	1.3175
<b>813B00 Civic, social, professional, and similar organizations</b>	1.4504	0.7155	24.3396	1.0695	1.2382	1.2090
<b>491000 Postal service</b>	1.4572	0.7087	12.6951	1.0437	1.2423	1.5087
<b>S00A00 Other government enterprises</b>	1.5933	0.3849	8.6581	0.7485	1.8038	1.9709
<b>H00000 Households</b>	0.5846	0.1828	5.8297	0.3437	0.0000	0.0000

## APPENDIX F.

**Table F1. Industry In-state Multipliers for the South East Region**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
1111C0 Oilseed and grain farming	1.5207	0.2837	8.8449	0.4154	1.8926	1.4436
111200 Vegetable and melon farming	1.1906	0.3164	13.8797	0.7736	1.2010	1.0854
111300 Fruit and tree nut farming	1.1816	0.3702	20.7477	0.7683	1.1558	1.0503
111400 Greenhouse, nursery, and floriculture production	1.3290	0.4863	23.5622	0.7602	1.2482	1.1471
111900 Other crop farming	1.2865	0.3394	12.9512	0.6689	1.2887	1.1351
1121A0 Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	1.3701	0.2443	8.8477	0.4966	1.5906	1.3002
112120 Dairy cattle and milk production	1.4541	0.3064	11.3956	0.5941	1.6584	1.2712
112A00 Animal production, except cattle and poultry and eggs	1.1820	0.2523	9.9033	0.7828	1.2457	1.1184
112300 Poultry and egg production	1.4129	0.2806	8.2260	0.4470	1.6096	1.3340
113000 Forestry and logging	1.1711	0.4015	12.4342	0.6409	1.1517	1.0943
114000 Fishing, hunting and trapping	1.2410	0.3616	19.3219	0.8117	1.2366	1.0768
115000 Support activities for agriculture and forestry	1.1555	0.6581	26.1255	0.8104	1.0787	1.0381
211000 Oil and gas extraction	1.1515	0.2119	3.6284	0.7828	1.2790	1.2412
212100 Coal mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2122A0 Iron, gold, silver, and other metal ore mining	1.3688	0.2339	3.5793	0.7258	1.6626	1.6960
212230 Copper, nickel, lead, and zinc mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212310 Stone mining and quarrying	1.3275	0.2449	4.8305	0.8043	1.6327	1.5099
2123A0 Other nonmetallic mineral mining and quarrying	1.3914	0.2799	5.3985	0.7852	1.6335	1.4973
213111 Drilling oil and gas wells	1.2928	0.3390	6.5702	0.8164	1.3547	1.3319
21311A Other support activities for mining	1.3029	0.3604	6.2339	0.8518	1.3392	1.4089
2211A0 Electric power generation, transmission, and distribution*	1.2759	0.2342	3.0551	0.7267	1.5753	2.4354
221200 Natural gas distribution	1.2223	0.2197	2.9440	0.5473	1.4778	1.9453
221300 Water, sewage and other systems	1.3446	0.3094	5.3990	0.8695	1.5356	1.6123
23030A Maintenance and repair	1.4203	0.4346	8.9552	0.7779	1.3501	1.4117
2332C0 Nonresidential structures	1.3807	0.5690	10.9796	0.7861	1.2093	1.2063
233293 Highways and streets	1.4701	0.3977	7.3484	0.7459	1.4254	1.4351
2334B0 Residential structures	1.5471	0.4397	9.1227	0.7437	1.5192	1.6509
321100 Sawmills and wood preservation	1.3654	0.2646	5.1274	0.4450	1.7228	1.6632
321200 Veneer, plywood, and engineered wood product manufacturing	1.4926	0.2963	5.5850	0.5099	1.8465	1.7308
321910 Millwork	1.4813	0.3658	7.3570	0.5737	1.6037	1.5287
3219A0 All other wood product manufacturing	1.4752	0.3422	7.4203	0.5729	1.6318	1.4949
327100 Clay product and refractory manufacturing	1.4862	0.4160	7.8762	0.7535	1.4752	1.4184
327200 Glass and glass product manufacturing	1.5925	0.3703	6.9852	0.6979	1.7504	1.6675
327310 Cement manufacturing	1.4707	0.2677	4.0554	0.7511	1.8173	2.1409
327320 Ready-mix concrete manufacturing	1.8108	0.3617	6.4412	0.7068	2.1352	2.1353
327330 Concrete pipe, brick, and block manufacturing	1.6369	0.3577	6.8619	0.7827	1.8383	1.7629
327390 Other concrete product manufacturing	1.7283	0.4204	8.4972	0.7700	1.8599	1.7413
327400 Lime and gypsum product manufacturing	1.4732	0.2664	4.2996	0.6086	1.8079	1.9412
327910 Abrasive product manufacturing	1.3834	0.2487	4.6420	0.7684	1.6881	1.6193
327991 Cut stone and stone product manufacturing	1.5240	0.4351	9.7231	0.7409	1.5322	1.4182
327992 Ground or treated mineral and earth manufacturing	1.4453	0.2663	4.1825	0.6768	1.8072	2.1083

327993 Mineral wool manufacturing	1.4862	0.3196	6.0630	0.7298	1.6272	1.5373
327999 Miscellaneous nonmetallic mineral products	1.6822	0.3851	6.7568	0.7629	1.7914	1.7969
331110 Iron and steel mills and ferroalloy manufacturing	1.6077	0.2981	4.5122	0.5238	2.0236	2.4017
331200 Steel product manufacturing from purchased steel	1.7650	0.3221	5.1609	0.5782	2.1754	2.3364
33131A Alumina refining and primary aluminum production	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331314 Secondary smelting and alloying of aluminum	1.6589	0.3263	6.3245	0.5119	2.2148	2.0576
33131B Aluminum product manufacturing from purchased aluminum	1.5370	0.2855	5.1784	0.4268	1.9377	1.9702
33141A Primary smelting and refining of nonferrous metal (except aluminum)	1.1913	0.2013	3.6963	0.3572	1.3665	1.3847
331420 Copper rolling, drawing, extruding, and alloying	1.3983	0.2415	4.4916	0.3433	1.6389	1.6066
331490 Nonferrous metal (except copper and aluminum) rolling, drawing, extruding, and alloying	1.3867	0.2509	4.1874	0.4855	1.7032	1.8096
331510 Ferrous metal foundries	1.5626	0.3867	6.8946	0.6962	1.6739	1.7014
331520 Nonferrous metal foundries	1.5010	0.3464	6.5535	0.6468	1.6780	1.6561
33211A All other forging, stamping, and sintering	1.6813	0.3551	5.9161	0.6586	1.8758	2.0420
332114 Custom roll forming	2.0063	0.3562	6.1497	0.6159	2.4180	2.2536
33211B Crown and closure manufacturing and metal stamping	1.7446	0.3716	6.6249	0.6876	1.8578	1.8275
332200 Cutlery and handtool manufacturing	1.5681	0.4052	6.9359	0.7511	1.5710	1.6135
332310 Plate work and fabricated structural product manufacturing	1.8221	0.4102	7.6114	0.6901	1.9366	1.9290
332320 Ornamental and architectural metal products manufacturing	1.7802	0.4108	7.5905	0.6799	1.8742	1.8246
332410 Power boiler and heat exchanger manufacturing	1.5981	0.3642	5.6392	0.6862	1.6513	1.8365
332420 Metal tank (heavy gauge) manufacturing	1.7343	0.3457	6.7214	0.6955	2.0078	1.8724
332430 Metal can, box, and other metal container (light gauge) manufacturing	1.6985	0.2987	5.3183	0.5116	2.0273	2.0101
332500 Hardware manufacturing	1.6424	0.3370	6.1959	0.6996	1.9604	1.9649
332600 Spring and wire product manufacturing	1.6825	0.4262	8.2163	0.6981	1.6607	1.5955
332710 Machine shops	1.6052	0.4925	9.1896	0.7730	1.4989	1.4978
332720 Turned product and screw, nut, and bolt manufacturing	1.6211	0.3181	5.6071	0.7605	1.9657	1.9910
332800 Coating, engraving, heat treating and allied activities	1.6638	0.3739	7.1955	0.7336	1.7314	1.6257
33291A Valve and fitting (except plumbing) manufacturing	1.6044	0.3372	5.7067	0.7159	1.8350	1.9526
332913 Plumbing fixture fitting and trim manufacturing	1.5195	0.2716	5.3191	0.6534	1.8433	1.7406
332991 Ball and roller bearing manufacturing	1.4602	0.3603	5.6256	0.7203	1.4824	1.5949
33299A Ammunition, arms, ordnance, and accessories manufacturing	1.4209	0.3690	7.7978	0.7057	1.4224	1.3468
332996 Fabricated pipe and pipe fitting manufacturing	1.6529	0.3605	6.8198	0.7013	1.7457	1.6739
33299B Other fabricated metal manufacturing	1.6351	0.3768	6.7843	0.6663	1.6983	1.6713
333111 Farm machinery and equipment manufacturing	1.6710	0.3115	5.2688	0.6795	2.1141	2.1789
333112 Lawn and garden equipment manufacturing	1.8117	0.3361	7.4562	0.6143	2.2810	1.7361
333120 Construction machinery manufacturing	1.7577	0.3355	6.2622	0.6563	2.1958	2.0051
333130 Mining and oil and gas field machinery manufacturing	1.7093	0.4127	7.2102	0.6800	1.7673	1.8852
3332A0 Industrial machinery (except semiconductor machinery) manufacturing	1.6909	0.4342	7.0549	0.7225	1.7634	1.8933
333295 Semiconductor machinery manufacturing	1.5662	0.3277	4.6867	0.6503	1.9908	2.7226
33331B All other commercial and service industry machinery manufacturing	1.4978	0.4451	7.4766	0.6716	1.4332	1.4578
333314 Optical instrument and lens manufacturing	1.5001	0.5146	7.5663	0.7219	1.4022	1.5780
333315 Photographic and photocopying equipment manufacturing	1.3837	0.5045	10.5673	0.7818	1.2669	1.2082



33341A Air purification and ventilation equipment manufacturing	1.4988	0.3555	6.0833	0.6790	1.5374	1.5400
333414 Heating equipment (except warm air furnaces) manufacturing	1.6850	0.3500	6.1854	0.7216	2.0174	2.0384
333415 Air conditioning, refrigeration, and warm air heating equipment manufacturing	1.5234	0.2946	5.2550	0.5906	1.8446	1.8041
333511 Industrial mold manufacturing	1.5458	0.5488	9.4132	0.8005	1.3701	1.3729
33351A Metal cutting and forming machine tool manufacturing	1.5580	0.4444	7.2397	0.7556	1.5249	1.5892
333514 Special tool, die, jig, and fixture manufacturing	1.5935	0.5081	8.6226	0.7881	1.4958	1.5126
33351B Cutting and machine tool accessory, rolling mill, and other metalworking machinery manufacturing	1.5537	0.4268	7.0878	0.7133	1.5587	1.5880
333611 Turbine and turbine generator set units manufacturing	1.6941	0.3535	5.9846	0.6778	1.9568	2.0203
333612 Speed changer, industrial high-speed drive, and gear manufacturing	1.6537	0.3952	6.5407	0.7681	1.7203	1.8238
333613 Mechanical power transmission equipment manufacturing	1.6337	0.3528	6.3942	0.7323	1.8424	1.8012
333618 Other engine equipment manufacturing	1.7535	0.3329	5.0608	0.5869	2.2596	2.7586
33391A Pump and pumping equipment manufacturing	1.5751	0.2960	4.8536	0.7209	2.0091	2.2356
333912 Air and gas compressor manufacturing	1.6205	0.3037	4.8664	0.6892	2.0453	2.2972
333920 Material handling equipment manufacturing	1.6717	0.3186	4.9735	0.6947	2.1623	2.4883
333991 Power-driven handtool manufacturing	1.4477	0.3260	4.7342	0.7234	1.5304	1.6947
33399A Other general purpose machinery manufacturing	1.6202	0.3549	5.4029	0.6746	1.8373	2.0908
333993 Packaging machinery manufacturing	1.5157	0.3812	6.1799	0.6938	1.6349	1.7012
333994 Industrial process furnace and oven manufacturing	1.5515	0.4408	6.6658	0.7320	1.5102	1.5926
33399B Fluid power process machinery	1.6445	0.3989	6.4418	0.6990	1.7090	1.7973
334111 Electronic computer manufacturing	1.2684	0.3765	3.4457	0.6526	1.2517	1.6062
334112 Computer storage device manufacturing	1.2860	0.3863	4.4845	0.6583	1.2917	1.5069
33411A Computer terminals and other computer peripheral equipment manufacturing	1.4316	0.4186	5.7093	0.7101	1.4150	1.5692
334210 Telephone apparatus manufacturing	1.4012	0.3264	4.5469	0.6900	1.5814	1.8542
334220 Broadcast and wireless communications equipment	1.3478	0.2742	4.1144	0.7104	1.6592	1.9813
334290 Other communications equipment manufacturing	1.4825	0.4875	8.4994	0.7879	1.4035	1.4139
334300 Audio and video equipment manufacturing	1.4710	0.3272	5.3497	0.6754	1.6306	1.7169
33441A Other electronic component manufacturing	1.4171	0.4360	8.6795	0.7527	1.3729	1.3333
334413 Semiconductor and related device manufacturing	1.2935	0.3468	4.2294	0.8070	1.3533	1.6650
334418 Printed circuit assembly (electronic assembly) manufacturing	1.5469	0.2949	6.1049	0.6017	2.0017	1.7658
334510 Electromedical and electrotherapeutic apparatus manufacturing	1.4536	0.3239	4.8332	0.7904	1.6084	1.8147
334511 Search, detection, and navigation instruments manufacturing	1.4046	0.3950	5.6811	0.7716	1.4716	1.7090
334512 Automatic environmental control manufacturing	1.4446	0.5235	9.6564	0.7882	1.3185	1.3004
334513 Industrial process variable instruments manufacturing	1.5006	0.5482	9.5603	0.7818	1.3479	1.3609
334514 Totalizing fluid meter and counting device manufacturing	1.5564	0.2939	5.5746	0.6726	1.9945	1.8786
334515 Electricity and signal testing instruments manufacturing	1.4204	0.4273	6.3825	0.7289	1.4022	1.5808
334516 Analytical laboratory instrument manufacturing	1.4876	0.3385	5.3629	0.7463	1.6589	1.8151
334517 Irradiation apparatus manufacturing	1.6500	0.3830	5.7501	0.6764	1.8076	2.0844
33451A Watch, clock, and other measuring and controlling device manufacturing	1.4665	0.3797	6.5832	0.7687	1.5340	1.5604
334610 Manufacturing and reproducing magnetic and optical media	1.5072	0.3657	5.3655	0.7675	1.5739	1.7813

335110 Electric lamp bulb and part manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335120 Lighting fixture manufacturing	1.5411	0.3263	6.7369	0.7249	1.7762	1.5864
335210 Small electrical appliance manufacturing	1.5877	0.3541	5.9290	0.6631	1.7262	1.7159
335221 Household cooking appliance manufacturing	1.7744	0.3312	7.1051	0.6607	2.2477	1.8177
335222 Household refrigerator and home freezer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335224 Household laundry equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335228 Other major household appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335311 Power, distribution, and specialty transformer manufacturing	1.5816	0.3229	5.2063	0.6728	1.7382	1.8376
335312 Motor and generator manufacturing	1.6035	0.3167	6.0747	0.6332	1.8833	1.6949
335313 Switchgear and switchboard apparatus manufacturing	1.5414	0.3086	5.8030	0.6782	1.8489	1.7051
335314 Relay and industrial control manufacturing	1.5316	0.4204	6.1182	0.7617	1.5458	1.6892
335911 Storage battery manufacturing	1.4153	0.2473	4.2523	0.5368	1.6785	1.6989
335912 Primary battery manufacturing	1.6333	0.3083	4.4271	0.6843	1.8700	2.2152
335920 Communication and energy wire and cable manufacturing	1.5818	0.2808	5.4349	0.4743	1.9059	1.7629
335930 Wiring device manufacturing	1.4999	0.3258	6.6580	0.7517	1.6279	1.4729
335991 Carbon and graphite product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335999 All other miscellaneous electrical equipment and component manufacturing	1.5313	0.3576	6.6128	0.6809	1.7686	1.7315
336111 Automobile manufacturing	1.8961	0.3494	5.0017	0.6158	2.3712	2.9701
336112 Light truck and utility vehicle manufacturing	1.9706	0.3646	5.4567	0.5850	2.4744	2.8774
336120 Heavy duty truck manufacturing	1.9309	0.3613	6.6150	0.5757	2.4522	2.1615
336211 Motor vehicle body manufacturing	1.9113	0.3780	6.7017	0.6548	2.3389	2.2600
336212 Truck trailer manufacturing	1.6909	0.3398	6.6010	0.5689	1.9597	1.7550
336213 Motor home manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336214 Travel trailer and camper manufacturing	1.6535	0.3061	6.4513	0.5674	2.0776	1.7692
336310 Motor vehicle gasoline engine and engine parts manufacturing	1.8722	0.3712	5.9556	0.6771	2.4962	2.7038
336320 Motor vehicle electrical and electronic equipment manufacturing	1.6711	0.4058	6.8991	0.6394	1.8914	1.9251
3363A0 Motor vehicle steering, suspension component (except spring), and brake systems manufacturing	1.8321	0.3697	5.9130	0.6767	2.3542	2.5945
336350 Motor vehicle transmission and power train parts manufacturing	1.8460	0.3793	6.1411	0.6702	2.2754	2.4315
336360 Motor vehicle seating and interior trim manufacturing	1.8737	0.3551	6.2667	0.6012	2.4104	2.3685
336370 Motor vehicle metal stamping	1.8234	0.3643	5.7590	0.6925	2.1696	2.2156
336390 Other motor vehicle parts manufacturing	1.8253	0.3762	6.4694	0.6479	2.1864	2.1864
336411 Aircraft manufacturing	1.4104	0.3111	5.1875	0.6673	1.5867	1.5879
336412 Aircraft engine and engine parts manufacturing	1.4156	0.2910	4.2230	0.6398	1.6704	1.9218
336413 Other aircraft parts and auxiliary equipment manufacturing	1.4704	0.3278	5.3777	0.7707	1.7119	1.8478
336414 Guided missile and space vehicle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33641A Propulsion units and parts for space vehicles and guided missiles	1.4096	0.4477	5.0542	0.7401	1.4049	1.6328
336500 Railroad rolling stock manufacturing	1.7607	0.3480	6.5847	0.5367	2.3621	2.1818
336611 Ship building and repairing	1.6291	0.4043	7.7797	0.7184	1.7501	1.7556
336612 Boat building	1.7195	0.3443	6.4494	0.6257	2.1743	2.0050
336991 Motorcycle, bicycle, and parts manufacturing	1.4982	0.3192	5.8581	0.5958	1.7161	1.6458
336992 Military armored vehicle, tank, and tank component manufacturing	1.6495	0.2777	3.3959	0.7157	1.8845	2.3828
336999 All other transportation equipment manufacturing	1.7828	0.3289	5.4783	0.5827	2.2321	2.2328

337110 Wood kitchen cabinet and countertop manufacturing	1.4891	0.4364	9.6801	0.6311	1.4504	1.3730
337121 Upholstered household furniture manufacturing	1.5785	0.3687	8.9273	0.5804	1.6585	1.4182
337122 Nonupholstered wood household furniture manufacturing	1.4433	0.4097	9.9865	0.6760	1.4219	1.2798
33712A Other household nonupholstered furniture	1.6573	0.3568	7.3446	0.6370	1.8532	1.6923
337127 Institutional furniture manufacturing	1.6416	0.3769	7.4474	0.6825	1.7764	1.6705
33721A Office furniture and custom architectural woodwork and millwork manufacturing	1.5065	0.3208	5.9164	0.7047	1.7107	1.7327
337215 Showcase, partition, shelving, and locker manufacturing	1.6952	0.4705	9.0741	0.6838	1.5647	1.4921
337900 Other furniture related product manufacturing	1.6698	0.3600	7.5467	0.6851	1.8775	1.7152
339112 Surgical and medical instrument manufacturing	1.4622	0.3894	6.2096	0.8209	1.5240	1.5994
339113 Surgical appliance and supplies manufacturing	1.4799	0.3435	5.3484	0.7983	1.6954	1.8833
339114 Dental equipment and supplies manufacturing	1.4274	0.3361	6.2928	0.6903	1.6167	1.5917
339115 Ophthalmic goods manufacturing	1.5078	0.4478	10.0584	0.8080	1.5143	1.4104
339116 Dental laboratories	1.4449	0.5403	12.8466	0.8150	1.3682	1.2502
339910 Jewelry and silverware manufacturing	1.3693	0.2888	6.4287	0.5335	1.6387	1.4928
339920 Sporting and athletic goods manufacturing	1.5807	0.3606	6.7306	0.7024	1.8148	1.7493
339930 Doll, toy, and game manufacturing	1.6016	0.3113	6.4173	0.6543	2.1128	1.8225
339940 Office supplies (except paper) manufacturing	1.4812	0.3449	8.4522	0.6768	1.6433	1.3761
339950 Sign manufacturing	1.6609	0.4417	9.3577	0.7269	1.6486	1.4729
339990 All other miscellaneous manufacturing	1.6773	0.4103	7.4261	0.7106	1.8324	1.8100
311111 Dog and cat food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311119 Other animal food manufacturing	1.6487	0.3053	6.3154	0.4166	2.0566	2.0231
311210 Flour milling and malt manufacturing	1.6999	0.3209	6.0727	0.4644	2.1619	2.6233
311221 Wet corn milling	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31122A Soybean and other oilseed processing	1.7563	0.3257	5.9975	0.3647	2.1939	3.1599
311225 Fats and oils refining and blending	1.5564	0.2789	5.0143	0.3115	1.8785	1.9555
311230 Breakfast cereal manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311300 Sugar and confectionery product manufacturing	1.6216	0.3062	7.0230	0.5959	2.0630	1.8121
311410 Frozen food manufacturing	1.5843	0.3021	6.4077	0.4863	2.0349	1.8349
311420 Fruit and vegetable canning, pickling, and drying	1.6767	0.3134	6.6352	0.4871	2.1112	1.8289
31151A Fluid milk and butter manufacturing	1.7739	0.3308	7.5582	0.5207	2.2282	2.8315
311513 Cheese manufacturing	1.6917	0.3156	7.6804	0.4353	2.1261	2.4654
311514 Dry, condensed, and evaporated dairy product manufacturing	1.7564	0.3256	6.5563	0.4804	2.1935	3.0441
311520 Ice cream and frozen dessert manufacturing	1.5589	0.2866	6.5261	0.5616	1.9306	1.7177
31161A Animal (except poultry) slaughtering, rendering, and processing	1.3300	0.2299	5.4757	0.3178	1.5485	1.5264
311615 Poultry processing	1.3212	0.2368	5.1978	0.3383	1.5953	1.4744
311700 Seafood product preparation and packaging	1.3471	0.2533	4.9858	0.4358	1.7064	1.6580
311810 Bread and bakery product manufacturing	1.6154	0.3743	9.6352	0.6518	1.8421	1.4648
3118A0 Cookie, cracker, pasta, and tortilla manufacturing	1.6561	0.3123	5.7889	0.6288	2.1038	2.0469
311910 Snack food manufacturing	1.5606	0.2865	6.2675	0.6514	1.9298	1.7413
311920 Coffee and tea manufacturing	1.5915	0.3107	6.3580	0.5316	2.0929	1.9199
311930 Flavoring syrup and concentrate manufacturing	1.2377	0.2107	3.9254	0.7400	1.4196	1.3976
311940 Seasoning and dressing manufacturing	1.6533	0.3104	5.6710	0.5481	2.0912	2.2681
311990 All other food manufacturing	1.6000	0.3116	7.3891	0.5006	2.0988	1.8172
312110 Soft drink and ice manufacturing	1.7063	0.3209	5.5087	0.5543	2.1617	2.1814
312120 Breweries	1.6781	0.3134	6.5965	0.7289	2.1109	1.7659
312130 Wineries	1.5665	0.3163	7.2975	0.6268	2.1310	1.6277

312140 Distilleries	1.3015	0.2296	5.4785	0.8126	1.5469	1.3420
312200 Tobacco product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313100 Fiber, yarn, and thread mills	1.4308	0.2667	8.6358	0.4148	1.7966	1.4492
313200 Fabric mills	1.5028	0.3114	6.6342	0.5756	1.8094	1.5775
313300 Textile and fabric finishing and fabric coating mills	1.4785	0.3548	7.7584	0.5667	1.6097	1.4303
314110 Carpet and rug mills	1.2974	0.2258	5.1891	0.4015	1.5212	1.3760
314120 Curtain and linen mills	1.3386	0.3492	11.8464	0.5848	1.3825	1.1810
314900 Other textile product mills	1.4294	0.3743	10.1263	0.5961	1.4592	1.2832
315000 Apparel manufacturing	1.4539	0.5138	17.7741	0.7360	1.3992	1.2295
316000 Leather and allied product manufacturing	1.5788	0.3837	7.5062	0.5938	1.7251	1.6371
322110 Pulp mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322120 Paper mills	1.4927	0.2784	3.9247	0.5924	1.8752	2.2831
322130 Paperboard mills	1.5150	0.2844	4.3166	0.6107	1.9157	2.2139
322210 Paperboard container manufacturing	1.4923	0.3141	5.5688	0.5041	1.7201	1.7034
322220 Paper bag and coated and treated paper manufacturing	1.5671	0.3222	5.1682	0.5801	1.7573	1.8087
322230 Stationery product manufacturing	1.4958	0.3202	6.4415	0.5795	1.6939	1.5256
322291 Sanitary paper product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322299 All other converted paper product manufacturing	1.4812	0.3016	5.2762	0.5862	1.7864	1.7824
323110 Printing	1.5338	0.4185	9.4330	0.7296	1.5912	1.5213
323120 Support activities for printing	1.4186	0.5206	10.3668	0.8302	1.3550	1.3616
324110 Petroleum refineries	1.0835	0.1715	1.5490	0.2893	1.1552	1.3362
324121 Asphalt paving mixture and block manufacturing	1.4494	0.2580	3.4729	0.6204	1.7378	1.9700
324122 Asphalt shingle and coating materials manufacturing	1.4811	0.2864	4.4471	0.6104	1.7907	1.8156
324190 Other petroleum and coal products manufacturing	1.2806	0.2184	2.6949	0.6345	1.4710	1.6590
325110 Petrochemical manufacturing	1.3642	0.2260	2.6320	0.3540	1.5225	1.8068
325120 Industrial gas manufacturing	1.3998	0.2505	3.7575	0.7115	1.6872	1.7302
325130 Synthetic dye and pigment manufacturing	1.4994	0.2873	4.2215	0.5842	1.9357	2.1418
325180 Other basic inorganic chemical manufacturing	1.5021	0.2790	3.9915	0.6722	1.8796	2.2195
325190 Other basic organic chemical manufacturing	1.5609	0.2830	4.0408	0.3838	1.9066	2.3205
325211 Plastics material and resin manufacturing	1.5978	0.2877	3.7666	0.4426	1.9381	2.3087
3252A0 Synthetic rubber and artificial and synthetic fibers and filaments manufacturing	1.6322	0.3054	5.1497	0.4746	2.0576	1.8601
325310 Fertilizer manufacturing	1.4879	0.2708	4.5347	0.5396	1.8245	1.8101
325320 Pesticide and other agricultural chemical manufacturing	1.4476	0.2722	3.6451	0.7334	1.8334	2.0266
325411 Medicinal and botanical manufacturing	1.4621	0.3487	4.8902	0.7970	1.6753	1.8433
325412 Pharmaceutical preparation manufacturing	1.4168	0.3407	4.4276	0.8364	1.6912	1.9157
325413 In-vitro diagnostic substance manufacturing	1.4539	0.3795	4.9082	0.8120	1.6430	1.9651
325414 Biological product (except diagnostic) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325510 Paint and coating manufacturing	1.6796	0.3158	4.4718	0.6165	2.1276	2.3257
325520 Adhesive manufacturing	1.6525	0.3156	4.5825	0.5918	2.1264	2.4090
325610 Soap and cleaning compound manufacturing	1.4840	0.2705	3.9070	0.7570	1.8225	2.0719
325620 Toilet preparation manufacturing	1.4964	0.2909	4.8959	0.7775	1.9595	1.8634
325910 Printing ink manufacturing	1.7087	0.3287	5.1689	0.6637	2.2143	2.0560
3259A0 All other chemical product and preparation manufacturing	1.6584	0.3247	5.0747	0.6238	2.1873	2.1047
326110 Plastics packaging materials and unlaminated film and sheet manufacturing	1.7607	0.3161	5.0443	0.6029	2.1293	2.1138
326120 Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	1.7661	0.3628	6.1499	0.6347	1.8781	1.7659

326130 Laminated plastics plate, sheet (except packaging), and shape manufacturing	1.5260	0.3494	6.1776	0.6728	1.5363	1.4720
326140 Polystyrene foam product manufacturing	1.6697	0.3112	5.6033	0.5970	1.9778	1.8868
326150 Urethane and other foam product (except polystyrene) manufacturing	1.6059	0.2914	5.2473	0.5690	1.9633	1.8301
326160 Plastics bottle manufacturing	1.7449	0.3097	4.8701	0.6036	2.0865	2.0378
326190 Other plastics product manufacturing	1.7947	0.3427	6.1306	0.6159	2.2005	2.0360
326210 Tire manufacturing	1.4865	0.3197	5.6905	0.5342	1.6456	1.6605
326220 Rubber and plastics hoses and belting manufacturing	1.5591	0.4219	7.5535	0.6464	1.5153	1.5066
326290 Other rubber product manufacturing	1.6760	0.3334	5.8717	0.6491	1.9955	1.9700
420000 Wholesale trade	1.3667	0.4280	6.7843	0.8968	1.3852	1.5570
441000 Motor vehicle and parts dealers	1.2507	0.4953	10.3282	0.9187	1.1667	1.1844
445000 Food and beverage stores	1.3679	0.4785	19.1705	0.8834	1.2822	1.1406
452000 General merchandise stores	1.4242	0.4557	17.7325	0.8948	1.4208	1.1746
4A0000 Other retail	1.4080	0.4593	17.3832	0.8820	1.3521	1.1819
481000 Air transportation	1.3388	0.2755	4.0340	0.6168	1.5256	1.8223
482000 Rail transportation	1.3764	0.3266	4.5378	0.7219	1.5105	1.7920
483000 Water transportation	1.5662	0.3008	5.9551	0.6005	2.1463	2.2035
484000 Truck transportation	1.5288	0.4466	9.5666	0.7194	1.5472	1.4898
485A00 Transit and ground passenger transportation*	1.4892	0.5602	25.8700	0.7148	1.3410	1.1193
486000 Pipeline transportation	1.3316	0.3802	4.8089	0.6929	1.3699	1.7778
48A000 Scenic and sightseeing transportation and support activities for transportation	1.5223	0.4921	10.3530	0.7936	1.5415	1.5721
492000 Couriers and messengers	1.4617	0.4548	13.1521	0.7687	1.4552	1.2961
493000 Warehousing and storage	1.4449	0.5062	11.7297	0.8684	1.3524	1.3551
511110 Newspaper publishers	1.4803	0.4404	10.8625	0.8104	1.5104	1.3875
511120 Periodical publishers	1.6279	0.4015	7.5745	0.8215	1.9094	2.1454
511130 Book publishers	1.2858	0.2404	4.5059	0.9050	1.6045	1.7469
5111A0 Directory, mailing list, and other publishers	1.4364	0.2882	6.0241	0.8404	1.8562	1.9006
511200 Software publishers	1.3631	0.3925	5.6097	0.9077	1.4315	1.7305
512100 Motion picture and video industries	1.3289	0.2644	9.0864	0.7382	1.5889	1.3668
512200 Sound recording industries	1.4188	0.2831	6.3283	0.7790	1.8892	1.7691
515100 Radio and television broadcasting	1.4274	0.6741	11.1174	0.8564	1.3364	1.4778
515200 Cable and other subscription programming	1.2360	0.3248	5.7218	0.7214	1.2844	1.4101
517110 Wired telecommunications carriers	1.2938	0.2282	4.1600	0.7872	1.5230	1.6391
517210 Wireless telecommunications carriers (except satellite)	1.4590	0.2787	5.4728	0.7697	1.8598	2.0044
517A00 Satellite, telecommunications resellers, and all other telecommunications	1.3814	0.4748	8.0445	0.8475	1.2646	1.3291
518200 Data processing, hosting, and related services	1.5341	0.4167	7.9795	0.8133	1.6951	1.9021
5191A0 News syndicates, libraries, archives, and all other information services	1.2262	0.3452	7.3950	0.7871	1.2591	1.2607
519130 Internet publishing and broadcasting and Web search portals	1.4074	0.3722	4.4722	0.8635	1.5836	2.8686
52A000 Monetary authorities and depository credit intermediation	1.3817	0.3477	7.0297	0.8234	1.5434	1.7251
522A00 Nondepository credit intermediation and related activities	1.5312	0.4919	7.4350	0.8039	1.5270	1.9264
523A00 Securities and commodity contracts intermediation and brokerage	1.4304	0.5720	17.0333	0.7287	1.3234	1.2387
523900 Other financial investment activities	1.7205	0.5044	17.1925	0.7392	1.9167	1.4099
524100 Insurance carriers	1.3671	0.3287	5.6059	0.7765	1.5716	1.7575
524200 Insurance agencies, brokerages, and related activities	1.5148	0.4994	9.7278	0.7972	1.4740	1.5500

525000 Funds, trusts, and other financial vehicles	1.4647	0.2990	12.1782	0.4615	2.0018	1.5525
531000 Real estate	1.3380	0.2530	8.9872	0.9084	1.6693	1.4026
532100 Automotive equipment rental and leasing	1.3430	0.3273	5.4344	0.8700	1.4309	1.6007
532A00 Consumer goods and general rental centers	1.3046	0.5211	10.7622	0.8987	1.1980	1.2064
532400 Commercial and industrial machinery and equipment rental and leasing	1.2784	0.2961	3.8459	0.9147	1.4179	1.7656
533000 Lessors of nonfinancial intangible assets	1.5348	0.3423	5.8571	0.8564	2.2588	3.3675
541100 Legal services	1.2743	0.5811	8.2081	0.9165	1.1704	1.3281
541511 Custom computer programming services	1.3385	0.7008	10.3334	0.9193	1.2328	1.4879
541512 Computer systems design services	1.4109	0.6472	9.4555	0.8833	1.2897	1.5379
54151A Other computer related services, including facilities management	1.3277	0.6144	8.6535	0.8944	1.2245	1.4555
541200 Accounting, tax preparation, bookkeeping, and payroll services	1.2252	0.5829	11.7185	0.9300	1.1466	1.1664
541300 Architectural, engineering, and related services	1.5360	0.5823	9.3321	0.8333	1.4764	1.7983
541400 Specialized design services	1.3616	0.5509	14.2078	0.8697	1.2470	1.2123
541610 Management consulting services	1.4203	0.6317	13.5414	0.8676	1.2883	1.3199
5416A0 Environmental and other technical consulting services	1.4370	0.6605	14.8334	0.8692	1.2987	1.3046
541700 Scientific research and development services	1.5810	0.5297	7.3241	0.7970	1.6079	2.3019
541800 Advertising, public relations, and related services	1.4158	0.3970	7.3250	0.8378	1.4806	1.6689
5419A0 Marketing research and all other miscellaneous professional, scientific, and technical services	1.3483	0.5166	10.3925	0.8609	1.2792	1.3272
541920 Photographic services	1.4992	0.5658	19.2775	0.8234	1.3501	1.2286
541940 Veterinary services	1.4375	0.5318	15.3004	0.7464	1.3275	1.2415
550000 Management of companies and enterprises	1.4133	0.5507	6.5359	0.8515	1.3210	1.7208
561100 Office administrative services	1.2275	0.6889	11.1865	0.9265	1.1206	1.1779
561200 Facilities support services	1.5026	0.4081	11.5781	0.8302	1.6538	1.4793
561300 Employment services	1.2400	0.6802	24.0511	0.9389	1.1528	1.0929
561400 Business support services	1.3903	0.5756	15.5772	0.8593	1.2864	1.2272
561500 Travel arrangement and reservation services	1.5595	0.4418	10.8929	0.8021	1.6820	1.5852
561600 Investigation and security services	1.3210	0.6285	23.6342	0.8910	1.1942	1.1023
561700 Services to buildings and dwellings	1.3708	0.4452	17.0560	0.8332	1.3268	1.1612
561900 Other support services	1.5264	0.5442	14.1553	0.8090	1.4351	1.3840
562000 Waste management and remediation services	1.5810	0.4074	8.2902	0.7807	1.7016	1.7132
611100 Elementary and secondary schools	1.2985	0.5754	24.6565	0.8433	1.1719	1.0985
611A00 Junior colleges, colleges, universities, and professional schools	1.3807	0.5309	18.1088	0.8355	1.2209	1.1587
611B00 Other educational services	1.4174	0.6298	31.1666	0.8325	1.2552	1.1155
621100 Offices of physicians	1.3767	0.6327	9.0788	0.8602	1.2356	1.4121
621200 Offices of dentists	1.4130	0.5777	12.5060	0.8787	1.2881	1.2879
621300 Offices of other health practitioners	1.3104	0.5267	13.5237	0.8650	1.2107	1.1820
621400 Outpatient care centers	1.4489	0.4512	9.3773	0.8153	1.4012	1.4776
621500 Medical and diagnostic laboratories	1.3491	0.5658	10.2926	0.8292	1.2510	1.2996
621600 Home health care services	1.3465	0.6580	20.2618	0.8730	1.1928	1.1449
621900 Other ambulatory health care services	1.4539	0.5262	13.2232	0.8166	1.3260	1.2538
622000 Hospitals	1.4133	0.5517	10.0769	0.8041	1.3212	1.4219
623A00 Nursing and community care facilities	1.3745	0.5636	18.6034	0.8381	1.2350	1.1663
623B00 Residential mental retardation, mental health, substance abuse and other facilities	1.2992	0.6132	21.6344	0.8689	1.1537	1.1035
624100 Individual and family services	1.3495	0.6135	24.5741	0.8479	1.1946	1.1112
624A00 Community food, housing, and other relief services, including rehabilitation services	1.4592	0.5345	21.7745	0.7662	1.3163	1.1644

<b>624400 Child day care services</b>	1.3509	0.5574	32.4000	0.8309	1.1922	1.0775
<b>711100 Performing arts companies</b>	1.4042	0.4785	33.8272	0.7954	1.3610	1.1105
<b>711200 Spectator sports</b>	1.2164	0.7035	17.2541	0.9313	1.1455	1.1456
<b>711A00 Promoters of performing arts and sports and agents for public figures</b>	1.5109	0.4282	24.3023	0.7686	1.6160	1.2467
<b>711500 Independent artists, writers, and performers</b>	1.4073	0.4118	11.0746	0.8183	1.5691	1.5687
<b>712000 Museums, historical sites, zoos, and parks</b>	1.5736	0.4912	18.3896	0.8075	1.4752	1.2784
<b>713100 Amusement parks and arcades</b>	1.2782	0.3814	17.8216	0.8502	1.2773	1.1110
<b>713200 Gambling industries (except casino hotels)</b>	1.4957	0.3137	9.7455	0.8487	2.0760	1.5141
<b>713900 Other amusement and recreation industries</b>	1.4826	0.4475	25.6229	0.8058	1.4267	1.1412
<b>721000 Accommodation</b>	1.3609	0.3944	11.2716	0.8448	1.4026	1.2681
<b>722110 Full-service restaurants</b>	1.4418	0.5050	22.5801	0.7714	1.3451	1.1257
<b>722211 Limited-service restaurants</b>	1.4257	0.4188	22.5579	0.7903	1.3988	1.1261
<b>722A00 All other food and drinking places</b>	1.5403	0.3373	13.3745	0.6505	1.8170	1.3118
<b>811100 Automotive repair and maintenance</b>	1.4762	0.5827	14.5343	0.8198	1.2679	1.2070
<b>811200 Electronic and precision equipment repair and maintenance</b>	1.3336	0.6168	10.5279	0.8492	1.1990	1.2631
<b>811300 Commercial and industrial machinery and equipment repair and maintenance</b>	1.2425	0.6450	10.8555	0.8933	1.1200	1.1459
<b>811400 Personal and household goods repair and maintenance</b>	1.3089	0.3581	9.4805	0.8392	1.3290	1.2524
<b>812100 Personal care services</b>	1.3568	0.6731	31.0045	0.8644	1.1813	1.0920
<b>812200 Death care services</b>	1.3242	0.5871	17.1563	0.8253	1.1784	1.1138
<b>812300 Dry-cleaning and laundry services</b>	1.3592	0.5922	20.1572	0.8381	1.2191	1.1401
<b>812900 Other personal services</b>	1.4145	0.5306	21.0347	0.8449	1.2931	1.1556
<b>813100 Religious organizations</b>	1.6740	0.3454	9.7246	0.6990	2.1785	2.0302
<b>813A00 Grantmaking, giving, and social advocacy organizations</b>	1.3049	0.5640	14.0860	0.8886	1.2191	1.2176
<b>813B00 Civic, social, professional, and similar organizations</b>	1.2054	0.6683	22.6065	0.9272	1.1086	1.0764
<b>491000 Postal service</b>	1.2303	0.6396	9.9882	0.9057	1.1171	1.1826
<b>S00A00 Other government enterprises</b>	1.5979	0.4104	8.4188	0.7454	1.8189	1.8124
<b>H00000 Households</b>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

## APPENDIX F.

**Table F2. Industry Out-state Multipliers for the South East Region**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6 (jobs)
1111C0 Oilseed and grain farming	1.8335	0.3797	11.5727	0.6002	2.5335	1.8888
111200 Vegetable and melon farming	1.5396	0.4236	16.9225	0.9798	1.6077	1.3233
111300 Fruit and tree nut farming	1.5899	0.4956	24.3078	1.0095	1.5471	1.2305
111400 Greenhouse, nursery, and floriculture production	1.8653	0.6509	28.2384	1.0770	1.6709	1.3748
111900 Other crop farming	1.6608	0.4543	16.2151	0.8901	1.7251	1.4211
1121A0 Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	1.6395	0.3271	11.1972	0.6558	2.1292	1.6455
112120 Dairy cattle and milk production	1.7920	0.4102	14.3421	0.7938	2.2200	1.5999
112A00 Animal production, except cattle and poultry and eggs	1.4603	0.3377	12.3296	0.9472	1.6674	1.3924
112300 Poultry and egg production	1.7224	0.3756	10.9243	0.6298	2.1546	1.7716
113000 Forestry and logging	1.6139	0.5375	16.2953	0.9025	1.5416	1.4342
114000 Fishing, hunting and trapping	1.6398	0.4841	22.7995	1.0473	1.6553	1.2706
115000 Support activities for agriculture and forestry	1.8812	0.8809	32.4537	1.2392	1.4440	1.2895
211000 Oil and gas extraction	1.3851	0.2836	5.6659	0.9208	1.7120	1.9382
212100 Coal mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2122A0 Iron, gold, silver, and other metal ore mining	1.6267	0.3131	5.8283	0.8781	2.2255	2.7615
212230 Copper, nickel, lead, and zinc mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212310 Stone mining and quarrying	1.5975	0.3278	7.1853	0.9638	2.1856	2.2460
2123A0 Other nonmetallic mineral mining and quarrying	1.7000	0.3746	8.0899	0.9675	2.1866	2.2438
213111 Drilling oil and gas wells	1.6667	0.4538	9.8304	1.0373	1.8134	1.9929
21311A Other support activities for mining	1.7004	0.4825	9.7001	1.0867	1.7926	2.1924
2211A0 Electric power generation, transmission, and distribution*	1.5341	0.3135	5.3069	0.8792	2.1087	4.2304
221200 Natural gas distribution	1.4645	0.2941	5.0565	0.6905	1.9782	3.3412
221300 Water, sewage and other systems	1.6858	0.4141	8.3739	1.0710	2.0555	2.5007
23030A Maintenance and repair	1.8996	0.5817	13.1343	1.0610	1.8072	2.0705
2332C0 Nonresidential structures	2.0082	0.7617	16.4515	1.1569	1.6188	1.8075
233293 Highways and streets	1.9087	0.5324	11.1733	1.0051	1.9080	2.1821
2334B0 Residential structures	2.0320	0.5885	13.3507	1.0302	2.0336	2.4160
321100 Sawmills and wood preservation	1.6572	0.3542	7.6723	0.6174	2.3062	2.4887
321200 Veneer, plywood, and engineered wood product manufacturing	1.8193	0.3966	8.4340	0.7029	2.4717	2.6137
321910 Millwork	1.8848	0.4897	10.8749	0.8121	2.1467	2.2597
3219A0 All other wood product manufacturing	1.8526	0.4581	10.7110	0.7959	2.1843	2.1579
327100 Clay product and refractory manufacturing	1.9450	0.5569	11.8769	1.0246	1.9746	2.1389
327200 Glass and glass product manufacturing	2.0008	0.4956	10.5457	0.9391	2.3431	2.5174
327310 Cement manufacturing	1.7660	0.3584	6.6301	0.9256	2.4326	3.5001
327320 Ready-mix concrete manufacturing	2.2096	0.4841	9.9190	0.9425	2.8582	3.2883
327330 Concrete pipe, brick, and block manufacturing	2.0314	0.4788	10.3018	1.0157	2.4607	2.6466
327390 Other concrete product manufacturing	2.1920	0.5628	12.5403	1.0440	2.4897	2.5698
327400 Lime and gypsum product manufacturing	1.7670	0.3565	6.8610	0.7822	2.4200	3.0976
327910 Abrasive product manufacturing	1.6577	0.3329	7.0337	0.9305	2.2597	2.4536
327991 Cut stone and stone product manufacturing	2.0039	0.5824	13.9071	1.0244	2.0510	2.0285
327992 Ground or treated mineral and earth manufacturing	1.7390	0.3564	6.7430	0.8503	2.4191	3.3989



327993 Mineral wool manufacturing	1.8387	0.4278	9.1365	0.9381	2.1782	2.3166
327999 Miscellaneous nonmetallic mineral products	2.1070	0.5156	10.4605	1.0138	2.3980	2.7819
331110 Iron and steel mills and ferroalloy manufacturing	1.9365	0.3991	7.3792	0.7181	2.7088	3.9276
331200 Steel product manufacturing from purchased steel	2.1202	0.4312	8.2586	0.7881	2.9120	3.7388
33131A Alumina refining and primary aluminum production	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331314 Secondary smelting and alloying of aluminum	2.0187	0.4368	9.4624	0.7245	2.9648	3.0785
33131B Aluminum product manufacturing from purchased aluminum	1.8518	0.3821	7.9237	0.6128	2.5938	3.0146
33141A Primary smelting and refining of nonferrous metal (except aluminum)	1.4134	0.2695	5.6325	0.4884	1.8293	2.1100
331420 Copper rolling, drawing, extruding, and alloying	1.6646	0.3232	6.8136	0.5006	2.1939	2.4372
331490 Nonferrous metal (except copper and aluminum) rolling, drawing, extruding, and alloying	1.6635	0.3359	6.6005	0.6490	2.2799	2.8524
331510 Ferrous metal foundries	1.9890	0.5176	10.6132	0.9481	2.2407	2.6190
331520 Nonferrous metal foundries	1.8831	0.4637	9.8848	0.8725	2.2461	2.4979
33211A All other forging, stamping, and sintering	2.0729	0.4753	9.3309	0.8899	2.5109	3.2207
332114 Custom roll forming	2.3991	0.4769	9.5755	0.8481	3.2367	3.5090
33211B Crown and closure manufacturing and metal stamping	2.1544	0.4974	10.1983	0.9297	2.4869	2.8133
332200 Cutlery and handtool manufacturing	2.0150	0.5424	10.8326	1.0151	2.1029	2.5200
332310 Plate work and fabricated structural product manufacturing	2.2745	0.5491	11.5560	0.9573	2.5924	2.9287
332320 Ornamental and architectural metal products manufacturing	2.2333	0.5499	11.5411	0.9476	2.5088	2.7743
332410 Power boiler and heat exchanger manufacturing	1.9998	0.4876	9.1417	0.9235	2.2105	2.9771
332420 Metal tank (heavy gauge) manufacturing	2.1155	0.4627	10.0454	0.9207	2.6877	2.7983
332430 Metal can, box, and other metal container (light gauge) manufacturing	2.0279	0.3998	8.1905	0.7062	2.7137	3.0957
332500 Hardware manufacturing	2.0140	0.4511	9.4361	0.9192	2.6242	2.9926
332600 Spring and wire product manufacturing	2.1525	0.5705	12.3150	0.9758	2.2231	2.3915
332710 Machine shops	2.1483	0.6592	13.9255	1.0939	2.0064	2.2696
332720 Turned product and screw, nut, and bolt manufacturing	1.9719	0.4258	8.6659	0.9678	2.6313	3.0771
332800 Coating, engraving, heat treating and allied activities	2.0762	0.5005	10.7912	0.9773	2.3176	2.4381
33291A Valve and fitting (except plumbing) manufacturing	1.9763	0.4514	8.9496	0.9356	2.4563	3.0621
332913 Plumbing fixture fitting and trim manufacturing	1.8190	0.3635	7.9307	0.8303	2.4675	2.5952
332991 Ball and roller bearing manufacturing	1.8575	0.4823	9.0903	0.9551	1.9844	2.5772
33299A Ammunition, arms, ordnance, and accessories manufacturing	1.8279	0.4940	11.3464	0.9461	1.9040	1.9596
332996 Fabricated pipe and pipe fitting manufacturing	2.0504	0.4825	10.2862	0.9362	2.3368	2.5247
33299B Other fabricated metal manufacturing	2.0507	0.5043	10.4074	0.9118	2.2734	2.5639
333111 Farm machinery and equipment manufacturing	2.0145	0.4169	8.2641	0.8825	2.8299	3.4176
333112 Lawn and garden equipment manufacturing	2.1823	0.4499	10.6879	0.8332	3.0534	2.4886
333120 Construction machinery manufacturing	2.1278	0.4492	9.4888	0.8749	2.9393	3.0383
333130 Mining and oil and gas field machinery manufacturing	2.1644	0.5524	11.1787	0.9489	2.3657	2.9228
3332A0 Industrial machinery (except semiconductor machinery) manufacturing	2.1698	0.5813	11.2307	1.0054	2.3605	3.0140
333295 Semiconductor machinery manufacturing	1.9275	0.4386	7.8376	0.8638	2.6648	4.5530
33331B All other commercial and service industry machinery manufacturing	1.9887	0.5958	11.7570	0.9616	1.9184	2.2923
333314 Optical instrument and lens manufacturing	2.0676	0.6888	12.5145	1.0572	1.8770	2.6100
333315 Photographic and photocopying equipment manufacturing	1.9402	0.6754	15.4191	1.1105	1.6958	1.7630

33341A Air purification and ventilation equipment manufacturing	1.8909	0.4758	9.5016	0.9106	2.0579	2.4053
333414 Heating equipment (except warm air furnaces) manufacturing	2.0710	0.4685	9.5509	0.9496	2.7005	3.1475
333415 Air conditioning, refrigeration, and warm air heating equipment manufacturing	1.8483	0.3943	8.0876	0.7825	2.4692	2.7766
333511 Industrial mold manufacturing	2.1511	0.7347	14.6910	1.1581	1.8340	2.1426
33351A Metal cutting and forming machine tool manufacturing	2.0481	0.5948	11.5130	1.0451	2.0413	2.5272
333514 Special tool, die, jig, and fixture manufacturing	2.1539	0.6801	13.5086	1.1192	2.0023	2.3697
33351B Cutting and machine tool accessory, rolling mill, and other metalworking machinery manufacturing	2.0244	0.5714	11.1923	0.9914	2.0865	2.5077
333611 Turbine and turbine generator set units manufacturing	2.0840	0.4732	9.3840	0.9081	2.6194	3.1680
333612 Speed changer, industrial high-speed drive, and gear manufacturing	2.0895	0.5290	10.3410	1.0256	2.3027	2.8835
333613 Mechanical power transmission equipment manufacturing	2.0228	0.4723	9.7870	0.9621	2.4662	2.7569
333618 Other engine equipment manufacturing	2.1206	0.4456	8.2621	0.8038	3.0246	4.5037
33391A Pump and pumping equipment manufacturing	1.9015	0.3962	7.7001	0.9138	2.6894	3.5467
333912 Air and gas compressor manufacturing	1.9555	0.4066	7.7872	0.8871	2.7378	3.6760
333920 Material handling equipment manufacturing	2.0231	0.4264	8.0370	0.9023	2.8944	4.0210
333991 Power-driven handtool manufacturing	1.8073	0.4364	7.8693	0.9359	2.0486	2.8170
33399A Other general purpose machinery manufacturing	2.0116	0.4751	8.8160	0.9059	2.4593	3.4116
333993 Packaging machinery manufacturing	1.9361	0.5102	9.8453	0.9421	2.1884	2.7103
333994 Industrial process furnace and oven manufacturing	2.0375	0.5900	10.9042	1.0192	2.0215	2.6052
33399B Fluid power process machinery	2.0843	0.5339	10.2774	0.9589	2.2877	2.8675
334111 Electronic computer manufacturing	1.6836	0.5040	7.0661	0.8979	1.6755	3.2939
334112 Computer storage device manufacturing	1.7120	0.5171	8.1989	0.9100	1.7291	2.7551
33411A Computer terminals and other computer peripheral equipment manufacturing	1.8932	0.5603	9.7345	0.9828	1.8942	2.6756
334210 Telephone apparatus manufacturing	1.7612	0.4369	7.6852	0.9027	2.1168	3.1340
334220 Broadcast and wireless communications equipment	1.6502	0.3670	6.7509	0.8890	2.2210	3.2509
334290 Other communications equipment manufacturing	2.0202	0.6526	13.1876	1.1056	1.8787	2.1938
334300 Audio and video equipment manufacturing	1.8319	0.4380	8.4964	0.8886	2.1827	2.7269
33441A Other electronic component manufacturing	1.8979	0.5836	12.8720	1.0367	1.8378	1.9773
334413 Semiconductor and related device manufacturing	1.6760	0.4643	7.5645	1.0329	1.8116	2.9779
334418 Printed circuit assembly (electronic assembly) manufacturing	1.8721	0.3948	8.9409	0.7938	2.6794	2.5861
334510 Electromedical and electrotherapeutic apparatus manufacturing	1.8108	0.4336	7.9480	1.0014	2.1530	2.9843
334511 Search, detection, and navigation instruments manufacturing	1.8402	0.5287	9.4793	1.0289	1.9699	2.8516
334512 Automatic environmental control manufacturing	2.0219	0.7007	14.6905	1.1293	1.7650	1.9783
334513 Industrial process variable instruments manufacturing	2.1052	0.7338	14.8320	1.1390	1.8043	2.1114
334514 Totalizing fluid meter and counting device manufacturing	1.8805	0.3934	8.4004	0.8641	2.6699	2.8309
334515 Electricity and signal testing instruments manufacturing	1.8917	0.5720	10.4915	1.0073	1.8770	2.5985
334516 Analytical laboratory instrument manufacturing	1.8609	0.4532	8.6184	0.9668	2.2206	2.9169
334517 Irradiation apparatus manufacturing	2.0724	0.5127	9.4331	0.9259	2.4197	3.4195
33451A Watch, clock, and other measuring and controlling device manufacturing	1.8853	0.5083	10.2346	1.0161	2.0534	2.4258
334610 Manufacturing and reproducing magnetic and optical media	1.9105	0.4895	8.8818	1.0058	2.1068	2.9487

335110 Electric lamp bulb and part manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335120 Lighting fixture manufacturing	1.9010	0.4368	9.8749	0.9375	2.3776	2.3253
335210 Small electrical appliance manufacturing	1.9782	0.4741	9.3345	0.8939	2.3106	2.7014
335221 Household cooking appliance manufacturing	2.1396	0.4433	10.2896	0.8765	3.0088	2.6324
335222 Household refrigerator and home freezer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335224 Household laundry equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335228 Other major household appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335311 Power, distribution, and specialty transformer manufacturing	1.9377	0.4322	8.3114	0.8831	2.3268	2.9336
335312 Motor and generator manufacturing	1.9528	0.4240	9.1205	0.8395	2.5210	2.5447
335313 Switchgear and switchboard apparatus manufacturing	1.8817	0.4131	8.7704	0.8792	2.4749	2.5770
335314 Relay and industrial control manufacturing	1.9953	0.5628	10.1611	1.0357	2.0693	2.8054
335911 Storage battery manufacturing	1.6881	0.3310	6.6303	0.6979	2.2468	2.6490
335912 Primary battery manufacturing	1.9734	0.4127	7.3922	0.8852	2.5032	3.6988
335920 Communication and energy wire and cable manufacturing	1.8915	0.3759	8.1351	0.6572	2.5512	2.6387
335930 Wiring device manufacturing	1.8592	0.4361	9.7910	0.9639	2.1791	2.1659
335991 Carbon and graphite product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335999 All other miscellaneous electrical equipment and component manufacturing	1.9257	0.4787	10.0514	0.9139	2.3674	2.6318
336111 Automobile manufacturing	2.2813	0.4676	8.3611	0.8434	3.1741	4.9651
336112 Light truck and utility vehicle manufacturing	2.3726	0.4880	8.9623	0.8225	3.3122	4.7260
336120 Heavy duty truck manufacturing	2.3293	0.4836	10.0893	0.8111	3.2825	3.2967
336211 Motor vehicle body manufacturing	2.3281	0.5060	10.3365	0.9010	3.1309	3.4857
336212 Truck trailer manufacturing	2.0657	0.4548	9.8684	0.7902	2.6233	2.6237
336213 Motor home manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336214 Travel trailer and camper manufacturing	1.9910	0.4097	9.3948	0.7668	2.7810	2.5764
336310 Motor vehicle gasoline engine and engine parts manufacturing	2.2816	0.4969	9.5256	0.9190	3.3414	4.3246
336320 Motor vehicle electrical and electronic equipment manufacturing	2.1186	0.5432	10.8017	0.9039	2.5319	3.0141
3363A0 Motor vehicle steering, suspension component (except spring), and brake systems manufacturing	2.2398	0.4949	9.4682	0.9176	3.1513	4.1544
336350 Motor vehicle transmission and power train parts manufacturing	2.2643	0.5077	9.7886	0.9174	3.0459	3.8757
336360 Motor vehicle seating and interior trim manufacturing	2.2653	0.4754	9.6817	0.8326	3.2266	3.6592
336370 Motor vehicle metal stamping	2.2252	0.4876	9.2618	0.9298	2.9042	3.5632
336390 Other motor vehicle parts manufacturing	2.2402	0.5036	10.0873	0.8931	2.9268	3.4091
336411 Aircraft manufacturing	1.7535	0.4164	8.1790	0.8700	2.1239	2.5036
336412 Aircraft engine and engine parts manufacturing	1.7366	0.3896	7.0218	0.8295	2.2360	3.1955
336413 Other aircraft parts and auxiliary equipment manufacturing	1.8319	0.4388	8.5299	0.9843	2.2916	2.9310
336414 Guided missile and space vehicle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33641A Propulsion units and parts for space vehicles and guided missiles	1.9034	0.5993	9.3593	1.0318	1.8805	3.0237
336500 Railroad rolling stock manufacturing	2.1445	0.4658	9.9313	0.7634	3.1619	3.2907
336611 Ship building and repairing	2.0750	0.5411	11.6672	0.9818	2.3427	2.6329
336612 Boat building	2.0992	0.4609	9.7605	0.8500	2.9105	3.0344
336991 Motorcycle, bicycle, and parts manufacturing	1.8502	0.4272	8.9272	0.8038	2.2971	2.5080
336992 Military armored vehicle, tank, and tank component manufacturing	1.9557	0.3717	6.0659	0.8966	2.5226	4.2563
336999 All other transportation equipment manufacturing	2.1455	0.4402	8.6407	0.7970	2.9879	3.5216

337110 Wood kitchen cabinet and countertop manufacturing	1.9704	0.5842	13.8771	0.9155	1.9415	1.9683
337121 Upholstered household furniture manufacturing	1.9851	0.4935	12.4727	0.8206	2.2201	1.9814
337122 Nonupholstered wood household furniture manufacturing	1.8951	0.5484	13.9258	0.9429	1.9034	1.7847
33712A Other household nonupholstered furniture	2.0508	0.4776	10.7759	0.8695	2.4808	2.4829
337127 Institutional furniture manufacturing	2.0573	0.5046	11.0721	0.9281	2.3779	2.4836
33721A Office furniture and custom architectural woodwork and millwork manufacturing	1.8603	0.4294	9.0013	0.9137	2.2899	2.6362
337215 Showcase, partition, shelving, and locker manufacturing	2.2141	0.6298	13.5986	0.9903	2.0945	2.2360
337900 Other furniture related product manufacturing	2.0669	0.4820	11.0090	0.9196	2.5133	2.5021
339112 Surgical and medical instrument manufacturing	1.8916	0.5213	9.9542	1.0746	2.0400	2.5639
339113 Surgical appliance and supplies manufacturing	1.8587	0.4599	8.6520	1.0221	2.2694	3.0467
339114 Dental equipment and supplies manufacturing	1.7980	0.4499	9.5245	0.9093	2.1641	2.4092
339115 Ophthalmic goods manufacturing	2.0016	0.5994	14.3647	1.0997	2.0271	2.0143
339116 Dental laboratories	2.0408	0.7232	18.0422	1.1671	1.8315	1.7558
339910 Jewelry and silverware manufacturing	1.6878	0.3866	9.2061	0.7217	2.1936	2.1377
339920 Sporting and athletic goods manufacturing	1.9783	0.4827	10.1979	0.9374	2.4293	2.6504
339930 Doll, toy, and game manufacturing	1.9449	0.4167	9.4107	0.8571	2.8282	2.6726
339940 Office supplies (except paper) manufacturing	1.8615	0.4616	11.7685	0.9015	2.1997	1.9161
339950 Sign manufacturing	2.1480	0.5912	13.6048	1.0147	2.2068	2.1413
339990 All other miscellaneous manufacturing	2.1298	0.5492	11.3714	0.9779	2.4528	2.7716
311111 Dog and cat food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311119 Other animal food manufacturing	1.9854	0.4087	9.2512	0.6155	2.7529	2.9636
311210 Flour milling and malt manufacturing	2.0538	0.4296	9.1588	0.6734	2.8939	3.9564
311221 Wet corn milling	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31122A Soybean and other oilseed processing	2.1155	0.4360	9.1293	0.5768	2.9368	4.8099
311225 Fats and oils refining and blending	1.8640	0.3733	7.6959	0.4932	2.5146	3.0012
311230 Breakfast cereal manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311300 Sugar and confectionery product manufacturing	1.9593	0.4099	9.9679	0.7954	2.7615	2.5720
311410 Frozen food manufacturing	1.9174	0.4044	9.3125	0.6831	2.7239	2.6668
311420 Fruit and vegetable canning, pickling, and drying	2.0223	0.4195	9.6490	0.6913	2.8261	2.6597
31151A Fluid milk and butter manufacturing	2.1387	0.4428	10.7389	0.7362	2.9826	4.0230
311513 Cheese manufacturing	2.0397	0.4225	10.7154	0.6410	2.8460	3.4396
311514 Dry, condensed, and evaporated dairy product manufacturing	2.1155	0.4359	9.6876	0.6925	2.9362	4.4979
311520 Ice cream and frozen dessert manufacturing	1.8749	0.3836	9.2819	0.7483	2.5843	2.4430
31161A Animal (except poultry) slaughtering, rendering, and processing	1.5835	0.3077	7.6862	0.4675	2.0728	2.1425
311615 Poultry processing	1.5824	0.3170	7.4751	0.4926	2.1354	2.1204
311700 Seafood product preparation and packaging	1.6265	0.3391	7.4217	0.6009	2.2842	2.4681
311810 Bread and bakery product manufacturing	2.0283	0.5011	13.2347	0.8956	2.4658	2.0121
3118A0 Cookie, cracker, pasta, and tortilla manufacturing	2.0005	0.4180	8.7920	0.8323	2.8161	3.1088
311910 Snack food manufacturing	1.8765	0.3835	9.0222	0.8380	2.5832	2.5066
311920 Coffee and tea manufacturing	1.9341	0.4159	9.3456	0.7340	2.8015	2.8220
311930 Flavoring syrup and concentrate manufacturing	1.4701	0.2821	5.9520	0.8773	1.9003	2.1192
311940 Seasoning and dressing manufacturing	1.9956	0.4155	8.6563	0.7503	2.7993	3.4620
311990 All other food manufacturing	1.9436	0.4170	10.3851	0.7035	2.8094	2.5541
312110 Soft drink and ice manufacturing	2.0602	0.4295	8.5945	0.7633	2.8937	3.4034
312120 Breweries	2.0237	0.4195	9.6098	0.9331	2.8257	2.5726
312130 Wineries	1.9154	0.4234	10.3395	0.8329	2.8525	2.3062

312140 Distilleries	1.5548	0.3074	7.6867	0.9622	2.0707	1.8829
312200 Tobacco product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313100 Fiber, yarn, and thread mills	1.7249	0.3570	11.2004	0.5886	2.4049	1.8796
313200 Fabric mills	1.8462	0.4168	9.6287	0.7785	2.4220	2.2895
313300 Textile and fabric finishing and fabric coating mills	1.8698	0.4750	11.1705	0.7979	2.1547	2.0594
314110 Carpet and rug mills	1.5464	0.3023	7.3607	0.5486	2.0363	1.9519
314120 Curtain and linen mills	1.7237	0.4675	15.2047	0.8123	1.8506	1.5159
314900 Other textile product mills	1.8421	0.5010	13.7253	0.8399	1.9533	1.7393
315000 Apparel manufacturing	2.0206	0.6878	22.7151	1.0708	1.8730	1.5712
316000 Leather and allied product manufacturing	2.0019	0.5136	11.1957	0.8438	2.3093	2.4417
322110 Pulp mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322120 Paper mills	1.7997	0.3726	6.6016	0.7738	2.5102	3.8403
322130 Paperboard mills	1.8286	0.3807	7.0513	0.7960	2.5644	3.6165
322210 Paperboard container manufacturing	1.8386	0.4204	8.5890	0.7087	2.3025	2.6272
322220 Paper bag and coated and treated paper manufacturing	1.9225	0.4313	8.2669	0.7900	2.3523	2.8931
322230 Stationery product manufacturing	1.8489	0.4287	9.5210	0.7882	2.2675	2.2549
322291 Sanitary paper product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322299 All other converted paper product manufacturing	1.8139	0.4038	8.1769	0.7827	2.3913	2.7623
323110 Printing	1.9953	0.5603	13.4578	1.0023	2.1300	2.1705
323120 Support activities for printing	1.9927	0.6968	15.3728	1.1694	1.8139	2.0191
324110 Petroleum refineries	1.2726	0.2295	3.1981	0.4010	1.5464	2.7587
324121 Asphalt paving mixture and block manufacturing	1.7339	0.3453	5.9536	0.7885	2.3262	3.3773
324122 Asphalt shingle and coating materials manufacturing	1.7969	0.3834	7.2015	0.7971	2.3970	2.9400
324190 Other petroleum and coal products manufacturing	1.5214	0.2923	4.7947	0.7767	1.9691	2.9516
325110 Petrochemical manufacturing	1.6135	0.3025	4.8054	0.5013	2.0381	3.2989
325120 Industrial gas manufacturing	1.6760	0.3353	6.1660	0.8747	2.2585	2.8391
325130 Synthetic dye and pigment manufacturing	1.8163	0.3846	6.9847	0.7714	2.5911	3.5438
325180 Other basic inorganic chemical manufacturing	1.8098	0.3735	6.6746	0.8540	2.5160	3.7114
325190 Other basic organic chemical manufacturing	1.8730	0.3789	6.7624	0.5682	2.5521	3.8835
325211 Plastics material and resin manufacturing	1.9151	0.3851	6.5332	0.6301	2.5944	4.0045
3252A0 Synthetic rubber and artificial and synthetic fibers and filaments manufacturing	1.9691	0.4089	8.0870	0.6736	2.7544	2.9211
325310 Fertilizer manufacturing	1.7866	0.3626	7.1392	0.7161	2.4423	2.8498
325320 Pesticide and other agricultural chemical manufacturing	1.7477	0.3643	6.2622	0.9108	2.4542	3.4816
325411 Medicinal and botanical manufacturing	1.8466	0.4667	8.2430	1.0241	2.2426	3.1071
325412 Pharmaceutical preparation manufacturing	1.7926	0.4561	7.7042	1.0584	2.2638	3.3334
325413 In-vitro diagnostic substance manufacturing	1.8724	0.5080	8.5578	1.0593	2.1993	3.4263
325414 Biological product (except diagnostic) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325510 Paint and coating manufacturing	2.0279	0.4228	7.5090	0.8223	2.8480	3.9052
325520 Adhesive manufacturing	2.0006	0.4225	7.6179	0.7974	2.8463	4.0047
325610 Soap and cleaning compound manufacturing	1.7823	0.3621	6.5086	0.9333	2.4395	3.4515
325620 Toilet preparation manufacturing	1.8172	0.3894	7.6931	0.9670	2.6230	2.9281
325910 Printing ink manufacturing	2.0712	0.4400	8.3297	0.8779	2.9640	3.3132
3259A0 All other chemical product and preparation manufacturing	2.0165	0.4346	8.1971	0.8353	2.9280	3.3997
326110 Plastics packaging materials and unlaminated film and sheet manufacturing	2.1093	0.4231	8.0839	0.8088	2.8503	3.3875
326120 Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	2.1662	0.4856	9.6387	0.8711	2.5141	2.7677

326130 Laminated plastics plate, sheet (except packaging), and shape manufacturing	1.9113	0.4677	9.5375	0.9005	2.0565	2.2726
326140 Polystyrene foam product manufacturing	2.0130	0.4166	8.5964	0.7998	2.6474	2.8947
326150 Urethane and other foam product (except polystyrene) manufacturing	1.9274	0.3901	8.0499	0.7589	2.6281	2.8076
326160 Plastics bottle manufacturing	2.0865	0.4146	7.8487	0.8054	2.7930	3.2840
326190 Other plastics product manufacturing	2.1726	0.4587	9.4260	0.8392	2.9456	3.1304
326210 Tire manufacturing	1.8391	0.4280	8.7650	0.7425	2.2028	2.5576
326220 Rubber and plastics hoses and belting	2.0245	0.5648	11.6109	0.9213	2.0284	2.3158
326290 Other rubber product manufacturing	2.0437	0.4463	9.0782	0.8663	2.6711	3.0458
420000 Wholesale trade	1.8387	0.5729	10.9000	1.1757	1.8542	2.5016
441000 Motor vehicle and parts dealers	1.7970	0.6630	15.0914	1.2414	1.5618	1.7306
445000 Food and beverage stores	1.8955	0.6405	23.7714	1.1951	1.7163	1.4143
452000 General merchandise stores	1.9268	0.6100	22.1148	1.1917	1.9019	1.4649
4A0000 Other retail	1.9144	0.6148	21.7997	1.1812	1.8100	1.4821
481000 Air transportation	1.6427	0.3688	6.6832	0.7963	2.0422	3.0190
482000 Rail transportation	1.7367	0.4372	7.6788	0.9347	2.0220	3.0323
483000 Water transportation	1.8979	0.4027	8.8478	0.7965	2.8730	3.2738
484000 Truck transportation	2.0214	0.5979	13.8617	1.0104	2.0710	2.1587
485A00 Transit and ground passenger transportation*	2.1070	0.7499	31.2571	1.0798	1.7951	1.3523
486000 Pipeline transportation	1.7509	0.5090	8.4653	0.9406	1.8338	3.1296
48A000 Scenic and sightseeing transportation and support activities for transportation	2.0651	0.6587	15.0854	1.1143	2.0635	2.2907
492000 Couriers and messengers	1.9632	0.6088	17.5253	1.0650	1.9480	1.7271
493000 Warehousing and storage	2.0031	0.6776	16.5976	1.1983	1.8104	1.9175
511110 Newspaper publishers	1.9660	0.5896	15.0977	1.0974	2.0218	1.9285
511120 Periodical publishers	2.0706	0.5374	11.4352	1.0830	2.5560	3.2388
511130 Book publishers	1.5509	0.3218	6.8176	1.0616	2.1478	2.6431
5111A0 Directory, mailing list, and other publishers	1.7542	0.3858	8.7953	1.0281	2.4847	2.7750
511200 Software publishers	1.7959	0.5254	9.3838	1.1634	1.9162	2.8948
512100 Motion picture and video industries	1.6204	0.3539	11.6285	0.9105	2.1269	1.7492
512200 Sound recording industries	1.7310	0.3789	9.0502	0.9634	2.5289	2.5301
515100 Radio and television broadcasting	2.1709	0.9024	17.6000	1.2956	1.7889	2.3395
515200 Cable and other subscription programming	1.5943	0.4348	8.8456	0.9331	1.7193	2.1799
517110 Wired telecommunications carriers	1.5455	0.3055	6.3543	0.9359	2.0387	2.5036
517210 Wireless telecommunications carriers (except satellite)	1.7663	0.3730	8.1523	0.9512	2.4896	2.9858
517A00 Satellite, telecommunications resellers, and all other telecommunications	1.9051	0.6356	12.6107	1.1569	1.6928	2.0835
518200 Data processing, hosting, and related services	1.9937	0.5578	11.9868	1.0848	2.2690	2.8574
5191A0 News syndicates, libraries, archives, and all other information services	1.6070	0.4621	10.7149	1.0120	1.6855	1.8267
519130 Internet publishing and broadcasting and Web search portals	1.8179	0.4982	8.0515	1.1061	2.1198	5.1644
52A000 Monetary authorities and depository credit intermediation	1.7652	0.4654	10.3732	1.0500	2.0660	2.5456
522A00 Nondepository credit intermediation and related activities	2.0737	0.6585	12.1652	1.1244	2.0440	3.1520
523A00 Securities and commodity contracts intermediation and brokerage	2.0612	0.7656	22.5336	1.1014	1.7715	1.6386
523900 Other financial investment activities	2.2768	0.6752	22.0430	1.0679	2.5657	1.8077
524100 Insurance carriers	1.7296	0.4400	8.7670	0.9907	2.1038	2.7486
524200 Insurance agencies, brokerages, and related activities	2.0656	0.6685	14.5302	1.1226	1.9731	2.3152

525000 Funds, trusts, and other financial vehicles	1.7944	0.4002	15.0534	0.6563	2.6796	1.9191
531000 Real estate	1.6170	0.3386	11.4199	1.0732	2.2346	1.7822
532100 Automotive equipment rental and leasing	1.7040	0.4382	8.5822	1.0833	1.9155	2.5279
532A00 Consumer goods and general rental centers	1.8792	0.6975	15.7730	1.2382	1.6036	1.7680
532400 Commercial and industrial machinery and equipment rental and leasing	1.6049	0.3963	6.6931	1.1076	1.8980	3.0727
533000 Lessors of nonfinancial intangible assets	1.9123	0.4582	9.1488	1.0795	3.0237	5.2600
541100 Legal services	1.9152	0.7779	13.7964	1.2951	1.5667	2.2324
541511 Custom computer programming services	2.1114	0.9381	17.0727	1.3759	1.6503	2.4582
541512 Computer systems design services	2.1246	0.8663	15.6787	1.3050	1.7264	2.5502
54151A Other computer related services, including facilities management	2.0053	0.8225	14.5622	1.2948	1.6391	2.4494
541200 Accounting, tax preparation, bookkeeping, and payroll services	1.8680	0.7802	17.3235	1.3098	1.5349	1.7244
541300 Architectural, engineering, and related services	2.1781	0.7794	14.9313	1.2126	1.9763	2.8773
541400 Specialized design services	1.9692	0.7375	19.5057	1.2286	1.6693	1.6644
541610 Management consulting services	2.1169	0.8456	19.6160	1.2792	1.7245	1.9120
5416A0 Environmental and other technical consulting services	2.1654	0.8842	21.1850	1.2995	1.7384	1.8633
541700 Scientific research and development services	2.1652	0.7091	12.4180	1.1421	2.1523	3.9029
541800 Advertising, public relations, and related services	1.8536	0.5314	11.1427	1.0964	1.9820	2.5387
5419A0 Marketing research and all other miscellaneous professional, scientific, and technical services	1.9180	0.6915	15.3602	1.1975	1.7123	1.9616
541920 Photographic services	2.1231	0.7574	24.7182	1.1920	1.8073	1.5754
541940 Veterinary services	2.0240	0.7119	20.4144	1.0929	1.7770	1.6564
550000 Management of companies and enterprises	2.0206	0.7371	11.8313	1.2103	1.7683	3.1150
561100 Office administrative services	1.9873	0.9221	17.8110	1.3754	1.5001	1.8755
561200 Facilities support services	1.9527	0.5463	15.5028	1.0961	2.2138	1.9807
561300 Employment services	1.9901	0.9105	30.5924	1.3821	1.5431	1.3901
561400 Business support services	2.0250	0.7705	21.1122	1.2343	1.7220	1.6633
561500 Travel arrangement and reservation services	2.0468	0.5914	15.1416	1.0899	2.2516	2.2034
561600 Investigation and security services	2.0141	0.8413	29.6781	1.3005	1.5985	1.3841
561700 Services to buildings and dwellings	1.8617	0.5959	21.3368	1.1232	1.7760	1.4527
561900 Other support services	2.1266	0.7284	19.3882	1.1635	1.9210	1.8957
562000 Waste management and remediation services	2.0303	0.5453	12.2079	1.0461	2.2778	2.5228
611100 Elementary and secondary schools	1.9331	0.7702	30.1894	1.2181	1.5688	1.3450
611A00 Junior colleges, colleges, universities, and professional schools	1.9662	0.7106	23.2139	1.1814	1.6343	1.4853
611B00 Other educational services	2.1119	0.8430	37.2227	1.2428	1.6802	1.3323
621100 Offices of physicians	2.0745	0.8470	15.1632	1.2725	1.6540	2.3585
621200 Offices of dentists	2.0501	0.7734	18.0617	1.2551	1.7243	1.8601
621300 Offices of other health practitioners	1.8913	0.7051	18.5889	1.2082	1.6206	1.6247
621400 Outpatient care centers	1.9465	0.6040	13.7163	1.1093	1.8757	2.1613
621500 Medical and diagnostic laboratories	1.9730	0.7573	15.7331	1.1978	1.6746	1.9865
621600 Home health care services	2.0722	0.8808	26.5894	1.3017	1.5967	1.5025
621900 Other ambulatory health care services	2.0343	0.7044	18.2834	1.1594	1.7749	1.7336
622000 Hospitals	2.0217	0.7385	15.3819	1.1636	1.7686	2.1704
623A00 Nursing and community care facilities	1.9961	0.7545	24.0234	1.2053	1.6532	1.5061
623B00 Residential mental retardation, mental health, substance abuse and other facilities	1.9755	0.8208	27.5311	1.2684	1.5444	1.4043
624100 Individual and family services	2.0261	0.8213	30.4741	1.2477	1.5990	1.3780
624A00 Community food, housing, and other relief services, including rehabilitation services	2.0487	0.7155	26.9145	1.1144	1.7620	1.4393

<b>624400 Child day care services</b>	1.9656	0.7461	37.7599	1.1941	1.5959	1.2558
<b>711100 Performing arts companies</b>	1.9319	0.6406	38.4289	1.1072	1.8218	1.2616
<b>711200 Spectator sports</b>	1.9923	0.9417	24.0194	1.3897	1.5333	1.5948
<b>711A00 Promoters of performing arts and sports and agents for public figures</b>	1.9831	0.5732	28.4201	1.0476	2.1632	1.4579
<b>711500 Independent artists, writers, and performers</b>	1.8614	0.5512	15.0345	1.0866	2.1004	2.1297
<b>712000 Museums, historical sites, zoos, and parks</b>	2.1152	0.6575	23.1127	1.1275	1.9747	1.6068
<b>713100 Amusement parks and arcades</b>	1.6987	0.5105	21.4889	1.0987	1.7098	1.3396
<b>713200 Gambling industries (except casino hotels)</b>	1.8416	0.4199	12.7620	1.0531	2.7789	1.9828
<b>713900 Other amusement and recreation industries</b>	1.9761	0.5990	29.9260	1.0973	1.9098	1.3328
<b>721000 Accommodation</b>	1.7959	0.5280	15.0647	1.1018	1.8775	1.6949
<b>722110 Full-service restaurants</b>	1.9987	0.6760	27.4362	1.1005	1.8005	1.3678
<b>722211 Limited-service restaurants</b>	1.8875	0.5605	26.5848	1.0632	1.8725	1.3272
<b>722A00 All other food and drinking places</b>	1.9123	0.4515	16.6180	0.8703	2.4322	1.6299
<b>811100 Automotive repair and maintenance</b>	2.1188	0.7800	20.1377	1.1994	1.6973	1.6723
<b>811200 Electronic and precision equipment repair and maintenance</b>	2.0139	0.8257	16.4597	1.2512	1.6050	1.9747
<b>811300 Commercial and industrial machinery and equipment repair and maintenance</b>	1.9538	0.8634	17.0579	1.3135	1.4992	1.8006
<b>811400 Personal and household goods repair and maintenance</b>	1.7039	0.4794	12.9243	1.0725	1.7790	1.7073
<b>812100 Personal care services</b>	2.0991	0.9010	37.4771	1.3029	1.5812	1.3200
<b>812200 Death care services</b>	1.9717	0.7858	22.8016	1.2078	1.5774	1.4803
<b>812300 Dry-cleaning and laundry services</b>	2.0122	0.7927	25.8516	1.2239	1.6319	1.4621
<b>812900 Other personal services</b>	1.9997	0.7103	26.1373	1.1906	1.7309	1.4359
<b>813100 Religious organizations</b>	2.0549	0.4624	13.0461	0.9241	2.9162	2.7237
<b>813A00 Grantmaking, giving, and social advocacy organizations</b>	1.9269	0.7550	19.5095	1.2561	1.6319	1.6864
<b>813B00 Civic, social, professional, and similar organizations</b>	1.9424	0.8946	29.0329	1.3626	1.4840	1.3824
<b>491000 Postal service</b>	1.9357	0.8562	16.1392	1.3224	1.4953	1.9109
<b>S00A00 Other government enterprises</b>	2.0504	0.5493	12.3650	1.0128	2.4347	2.6619
<b>H00000 Households</b>	1.1028	0.3386	9.6163	0.6515	0.0000	0.0000



## APPENDIX G.

**Table G1. Industry In-state Multipliers for the South West Region**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
1111C0 Oilseed and grain farming	1.5861	0.2951	10.4961	0.4397	2.1275	1.8509
111200 Vegetable and melon farming	1.2478	0.3170	14.1877	0.8104	1.3000	1.1987
111300 Fruit and tree nut farming	1.2495	0.3798	21.1172	0.8155	1.2809	1.1550
111400 Greenhouse, nursery, and floriculture production	1.3787	0.4770	23.7180	0.7970	1.3230	1.2476
111900 Other crop farming	1.2889	0.3328	13.3981	0.6794	1.3652	1.2687
1121A0 Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	1.4660	0.2406	9.3064	0.5190	1.6926	1.4776
112120 Dairy cattle and milk production	1.4665	0.2804	11.2661	0.5751	1.6399	1.3578
112A00 Animal production, except cattle and poultry and eggs	1.2467	0.2433	9.9147	0.8176	1.2975	1.2097
112300 Poultry and egg production	1.6880	0.2936	9.2021	0.4954	1.8197	1.6123
113000 Forestry and logging	1.2727	0.4253	14.0041	0.7086	1.3179	1.3316
114000 Fishing, hunting and trapping	1.1447	0.3062	17.3897	0.7615	1.1314	1.0471
115000 Support activities for agriculture and forestry	1.1319	0.5964	24.1394	0.7946	1.0562	1.0363
211000 Oil and gas extraction	1.0814	0.1997	3.5088	0.7423	1.1084	1.1036
212100 Coal mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2122A0 Iron, gold, silver, and other metal ore mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212230 Copper, nickel, lead, and zinc mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212310 Stone mining and quarrying	1.1690	0.2034	4.2211	0.7177	1.2468	1.2132
2123A0 Other nonmetallic mineral mining and quarrying	1.2123	0.2338	4.7664	0.6891	1.2545	1.2155
213111 Drilling oil and gas wells	1.1647	0.3128	6.2279	0.7425	1.1493	1.1609
21311A Other support activities for mining	1.1754	0.3363	5.8077	0.7799	1.1489	1.2069
2211A0 Electric power generation, transmission, and distribution*	1.1584	0.1767	2.1335	0.6606	1.3107	1.8753
221200 Natural gas distribution	1.1301	0.1693	2.1367	0.4918	1.2557	1.5568
221300 Water, sewage and other systems	1.2191	0.2388	4.1648	0.7948	1.3071	1.3714
23030A Maintenance and repair	1.3364	0.3413	7.1685	0.7252	1.2868	1.3715
2332C0 Nonresidential structures	1.3213	0.4559	8.9032	0.7466	1.1759	1.1872
233293 Highways and streets	1.3114	0.2976	5.6048	0.6619	1.2946	1.3285
2334B0 Residential structures	1.4389	0.3400	7.2345	0.6756	1.4260	1.5890
321100 Sawmills and wood preservation	1.2991	0.2140	4.5838	0.3967	1.5780	1.6844
321200 Veneer, plywood, and engineered wood product manufacturing	1.4275	0.2338	4.7706	0.4527	1.6507	1.6748
321910 Millwork	1.4236	0.2944	6.1818	0.5127	1.4620	1.4552
3219A0 All other wood product manufacturing	1.3940	0.2703	6.1558	0.5073	1.4604	1.4049
327100 Clay product and refractory manufacturing	1.3121	0.3180	6.2402	0.6534	1.2772	1.2731
327200 Glass and glass product manufacturing	1.4060	0.2741	5.3943	0.5904	1.4681	1.4587
327310 Cement manufacturing	1.2842	0.1916	2.8731	0.6497	1.4736	1.7182
327320 Ready-mix concrete manufacturing	1.3935	0.2350	4.3970	0.4890	1.5715	1.6513
327330 Concrete pipe, brick, and block manufacturing	1.3716	0.2517	5.0552	0.6386	1.4652	1.4712
327390 Other concrete product manufacturing	1.4464	0.2966	6.3222	0.6140	1.4864	1.4677
327400 Lime and gypsum product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327910 Abrasive product manufacturing	1.1903	0.1720	3.3375	0.6581	1.3222	1.3189
327991 Cut stone and stone product manufacturing	1.3271	0.3289	7.7356	0.6265	1.3119	1.2782
327992 Ground or treated mineral and earth manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

327993 Mineral wool manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327999 Miscellaneous nonmetallic mineral products	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331110 Iron and steel mills and ferroalloy manufacturing	1.3447	0.2047	3.0645	0.4019	1.5738	1.8478
331200 Steel product manufacturing from purchased steel	1.3159	0.1968	3.2002	0.4028	1.5056	1.6412
33131A Alumina refining and primary aluminum production	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331314 Secondary smelting and alloying of aluminum	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33131B Aluminum product manufacturing from purchased aluminum	1.3519	0.2042	3.7390	0.3306	1.5703	1.6115
33141A Primary smelting and refining of nonferrous metal (except aluminum)	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331420 Copper rolling, drawing, extruding, and alloying	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331490 Nonferrous metal (except copper and aluminum) rolling, drawing, extruding, and alloying	1.3354	0.1996	3.3557	0.4432	1.5349	1.6428
331510 Ferrous metal foundries	1.3619	0.2869	5.2104	0.5874	1.4071	1.4565
331520 Nonferrous metal foundries	1.2948	0.2522	4.8891	0.5440	1.3838	1.3996
33211A All other forging, stamping, and sintering	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332114 Custom roll forming	1.2955	0.1872	3.4677	0.3594	1.4395	1.4396
33211B Crown and closure manufacturing and metal stamping	1.4058	0.2564	4.7169	0.5446	1.4520	1.4740
332200 Cutlery and handtool manufacturing	1.3176	0.2951	5.1286	0.6294	1.2962	1.3515
332310 Plate work and fabricated structural product manufacturing	1.3971	0.2735	5.2664	0.5140	1.4629	1.5120
332320 Ornamental and architectural metal products manufacturing	1.4496	0.2876	5.5119	0.5308	1.4864	1.5010
332410 Power boiler and heat exchanger manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332420 Metal tank (heavy gauge) manufacturing	1.3593	0.2265	4.6784	0.5412	1.4901	1.4764
332430 Metal can, box, and other metal container (light gauge) manufacturing	1.5155	0.2197	4.0016	0.4155	1.6891	1.7133
332500 Hardware manufacturing	1.4068	0.2373	4.4942	0.5827	1.5641	1.6146
332600 Spring and wire product manufacturing	1.4148	0.3125	6.2346	0.5725	1.3793	1.3715
332710 Machine shops	1.3917	0.3779	7.1928	0.6627	1.3030	1.3280
332720 Turned product and screw, nut, and bolt manufacturing	1.3434	0.2173	3.9257	0.6340	1.5214	1.5791
332800 Coating, engraving, heat treating and allied activities	1.3802	0.2651	5.3315	0.6060	1.3903	1.3646
33291A Valve and fitting (except plumbing) manufacturing	1.3596	0.2398	4.0829	0.6045	1.4782	1.5825
332913 Plumbing fixture fitting and trim manufacturing	1.3665	0.2028	4.1115	0.5917	1.5596	1.5241
332991 Ball and roller bearing manufacturing	1.3165	0.2870	4.4343	0.6648	1.3375	1.4242
33299A Ammunition, arms, ordnance, and accessories manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332996 Fabricated pipe and pipe fitting manufacturing	1.2997	0.2462	4.8613	0.5580	1.3506	1.3517
33299B Other fabricated metal manufacturing	1.3934	0.2751	5.0950	0.5509	1.4049	1.4219
333111 Farm machinery and equipment manufacturing	1.3990	0.2117	3.6461	0.5563	1.6280	1.7081
333112 Lawn and garden equipment manufacturing	1.4957	0.2257	5.4843	0.4745	1.7356	1.4466
333120 Construction machinery manufacturing	1.4519	0.2286	4.4752	0.5230	1.6949	1.6232
333130 Mining and oil and gas field machinery manufacturing	1.3926	0.2935	5.2093	0.5377	1.4237	1.5429
3332A0 Industrial machinery (except semiconductor machinery) manufacturing	1.4734	0.3205	5.2260	0.6015	1.4745	1.5888
333295 Semiconductor machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33331B All other commercial and service industry machinery manufacturing	1.3008	0.3407	5.7843	0.5687	1.2425	1.2776
333314 Optical instrument and lens manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333315 Photographic and photocopying equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

33341A Air purification and ventilation equipment manufacturing	1.2438	0.2554	4.4233	0.5662	1.2515	1.2685
333414 Heating equipment (except warm air furnaces) manufacturing	1.4013	0.2387	4.3422	0.5837	1.5590	1.6211
333415 Air conditioning, refrigeration, and warm air heating equipment manufacturing	1.4174	0.2255	4.1288	0.5264	1.6000	1.6058
333511 Industrial mold manufacturing	1.3340	0.4281	7.4498	0.6904	1.2108	1.2309
33351A Metal cutting and forming machine tool manufacturing	1.3199	0.3298	5.4012	0.6324	1.2821	1.3431
333514 Special tool, die, jig, and fixture manufacturing	1.3781	0.3879	6.6806	0.6704	1.2937	1.3276
33351B Cutting and machine tool accessory, rolling mill, and other metalworking machinery manufacturing	1.3685	0.3203	5.3895	0.6043	1.3251	1.3679
333611 Turbine and turbine generator set units manufacturing	1.3994	0.2444	4.1951	0.5414	1.5328	1.6044
333612 Speed changer, industrial high-speed drive, and gear manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333613 Mechanical power transmission equipment manufacturing	1.3339	0.2425	4.5450	0.5970	1.4346	1.4503
333618 Other engine equipment manufacturing	1.5020	0.2337	3.5695	0.4661	1.7969	2.2042
33391A Pump and pumping equipment manufacturing	1.3833	0.2117	3.4929	0.6236	1.6281	1.8226
333912 Air and gas compressor manufacturing	1.4367	0.2199	3.5134	0.5961	1.6775	1.8788
333920 Material handling equipment manufacturing	1.3839	0.2131	3.3019	0.5599	1.6383	1.8714
333991 Power-driven handtool manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33399A Other general purpose machinery manufacturing	1.3802	0.2497	3.7656	0.5523	1.4645	1.6508
333993 Packaging machinery manufacturing	1.3554	0.2865	4.6767	0.5987	1.3921	1.4585
333994 Industrial process furnace and oven manufacturing	1.3260	0.3315	5.0067	0.6185	1.2868	1.3551
33399B Fluid power process machinery	1.3661	0.2848	4.6250	0.5650	1.3825	1.4619
334111 Electronic computer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334112 Computer storage device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33411A Computer terminals and other computer peripheral equipment manufacturing	1.2493	0.3168	4.2435	0.6081	1.2131	1.3213
334210 Telephone apparatus manufacturing	1.2840	0.2451	3.3313	0.6135	1.3454	1.5389
334220 Broadcast and wireless communications equipment	1.2609	0.2065	3.0143	0.6515	1.4155	1.6444
334290 Other communications equipment manufacturing	1.2837	0.3701	6.5282	0.6729	1.2070	1.2303
334300 Audio and video equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33441A Other electronic component manufacturing	1.2742	0.3416	6.9532	0.6684	1.2187	1.2100
334413 Semiconductor and related device manufacturing	1.1718	0.2688	3.1264	0.7332	1.1880	1.3943
334418 Printed circuit assembly (electronic assembly) manufacturing	1.4030	0.2152	4.6989	0.5138	1.6543	1.5397
334510 Electromedical and electrotherapeutic apparatus manufacturing	1.2647	0.2335	3.4148	0.6880	1.3133	1.4525
334511 Search, detection, and navigation instruments manufacturing	1.2276	0.2932	4.1037	0.6664	1.2377	1.3985
334512 Automatic environmental control manufacturing	1.2326	0.4035	7.5830	0.6769	1.1512	1.1568
334513 Industrial process variable instruments manufacturing	1.2905	0.4238	7.4703	0.6655	1.1806	1.2047
334514 Totalizing fluid meter and counting device manufacturing	1.3522	0.2055	4.0731	0.5707	1.5802	1.5550
334515 Electricity and signal testing instruments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334516 Analytical laboratory instrument manufacturing	1.3157	0.2469	3.9013	0.6469	1.3706	1.4958
334517 Irradiation apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33451A Watch, clock, and other measuring and controlling device manufacturing	1.2793	0.2809	4.9366	0.6627	1.2856	1.3255
334610 Manufacturing and reproducing magnetic and optical media	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

335110 Electric lamp bulb and part manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335120 Lighting fixture manufacturing	1.3903	0.2423	5.2318	0.6373	1.4938	1.3956
335210 Small electrical appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335221 Household cooking appliance manufacturing	1.5265	0.2381	5.4489	0.5519	1.8310	1.5792
335222 Household refrigerator and home freezer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335224 Household laundry equipment manufacturing	1.3709	0.2455	3.4608	0.4978	1.4845	1.7820
335228 Other major household appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335311 Power, distribution, and specialty transformer manufacturing	1.3173	0.2279	3.6800	0.5653	1.3901	1.4714
335312 Motor and generator manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335313 Switchgear and switchboard apparatus manufacturing	1.3581	0.2234	4.3754	0.5822	1.5161	1.4564
335314 Relay and industrial control manufacturing	1.3581	0.3198	4.6321	0.6604	1.3321	1.4487
335911 Storage battery manufacturing	1.2784	0.1837	3.2252	0.4695	1.4127	1.4597
335912 Primary battery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335920 Communication and energy wire and cable manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335930 Wiring device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335991 Carbon and graphite product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335999 All other miscellaneous electrical equipment and component manufacturing	1.3400	0.2574	4.8872	0.5674	1.4423	1.4496
336111 Automobile manufacturing	1.6625	0.2488	3.5328	0.4996	1.9134	2.3766
336112 Light truck and utility vehicle manufacturing	1.7191	0.2582	3.8753	0.4612	1.9851	2.3149
336120 Heavy duty truck manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336211 Motor vehicle body manufacturing	1.4440	0.2318	4.2419	0.4585	1.6248	1.6205
336212 Truck trailer manufacturing	1.5436	0.2553	5.2002	0.4765	1.6681	1.5662
336213 Motor home manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336214 Travel trailer and camper manufacturing	1.4583	0.2191	4.9067	0.4677	1.6849	1.5243
336310 Motor vehicle gasoline engine and engine parts manufacturing	1.5924	0.2553	4.2252	0.5392	1.9449	2.1730
336320 Motor vehicle electrical and electronic equipment manufacturing	1.3829	0.2768	4.8547	0.4879	1.4614	1.5346
3363A0 Motor vehicle steering, suspension component (except spring), and brake systems manufacturing	1.5683	0.2571	4.1967	0.5457	1.8545	2.0860
336350 Motor vehicle transmission and power train parts manufacturing	1.6143	0.2728	4.5360	0.5522	1.8536	2.0346
336360 Motor vehicle seating and interior trim manufacturing	1.6911	0.2598	4.7668	0.4964	1.9974	2.0409
336370 Motor vehicle metal stamping	1.3292	0.2164	3.5410	0.4879	1.4603	1.5432
336390 Other motor vehicle parts manufacturing	1.5556	0.2645	4.7068	0.5176	1.7416	1.8020
336411 Aircraft manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336412 Aircraft engine and engine parts manufacturing	1.2941	0.2158	3.0628	0.5669	1.4030	1.5790
336413 Other aircraft parts and auxiliary equipment manufacturing	1.2862	0.2333	3.8630	0.6657	1.3802	1.5037
336414 Guided missile and space vehicle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33641A Propulsion units and parts for space vehicles and guided missiles	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336500 Railroad rolling stock manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336611 Ship building and repairing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336612 Boat building	1.4783	0.2386	4.7444	0.4981	1.7068	1.6709
336991 Motorcycle, bicycle, and parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336992 Military armored vehicle, tank, and tank component manufacturing	1.3570	0.1903	2.1839	0.5952	1.4636	1.7359
336999 All other transportation equipment manufacturing	1.4768	0.2190	3.7558	0.4452	1.6842	1.7340

337110 Wood kitchen cabinet and countertop manufacturing	1.4676	0.3614	8.2507	0.5840	1.3607	1.3257
337121 Upholstered household furniture manufacturing	1.4137	0.2773	7.1213	0.4813	1.4129	1.2815
337122 Nonupholstered wood household furniture manufacturing	1.3714	0.3292	8.3829	0.6128	1.2943	1.2170
33712A Other household nonupholstered furniture	1.3904	0.2496	5.4349	0.5095	1.4688	1.4186
337127 Institutional furniture manufacturing	1.4090	0.2704	5.6003	0.5613	1.4434	1.4231
33721A Office furniture and custom architectural woodwork and millwork manufacturing	1.3926	0.2467	4.6824	0.6324	1.4905	1.5535
337215 Showcase, partition, shelving, and locker manufacturing	1.4006	0.3477	6.9907	0.5510	1.3099	1.3022
337900 Other furniture related product manufacturing	1.4615	0.2609	5.6909	0.5719	1.5414	1.4652
339112 Surgical and medical instrument manufacturing	1.2067	0.2735	4.3773	0.6780	1.2125	1.2772
339113 Surgical appliance and supplies manufacturing	1.2444	0.2347	3.6357	0.6621	1.3119	1.4503
339114 Dental equipment and supplies manufacturing	1.2334	0.2376	4.5804	0.5781	1.2948	1.3125
339115 Ophthalmic goods manufacturing	1.2519	0.3200	7.6715	0.6643	1.2260	1.2186
339116 Dental laboratories	1.2184	0.4041	10.1810	0.6778	1.1593	1.1224
339910 Jewelry and silverware manufacturing	1.2209	0.2090	4.9122	0.4419	1.3436	1.2921
339920 Sporting and athletic goods manufacturing	1.3950	0.2593	5.0377	0.5931	1.4788	1.4832
339930 Doll, toy, and game manufacturing	1.3616	0.2051	4.5570	0.5281	1.5774	1.4661
339940 Office supplies (except paper) manufacturing	1.3134	0.2493	6.6168	0.5754	1.3456	1.2204
339950 Sign manufacturing	1.4195	0.3191	7.1889	0.5950	1.3492	1.2818
339990 All other miscellaneous manufacturing	1.4009	0.2874	5.4981	0.5684	1.4539	1.5181
311111 Dog and cat food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311119 Other animal food manufacturing	1.7489	0.2683	6.6488	0.4155	2.2099	2.6040
311210 Flour milling and malt manufacturing	1.9796	0.3160	7.6832	0.4981	2.6029	4.0577
311221 Wet corn milling	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31122A Soybean and other oilseed processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311225 Fats and oils refining and blending	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311230 Breakfast cereal manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311300 Sugar and confectionery product manufacturing	1.3671	0.1990	4.9780	0.4685	1.6391	1.5704
311410 Frozen food manufacturing	1.8549	0.2873	7.4811	0.5354	2.3665	2.6192
311420 Fruit and vegetable canning, pickling, and drying	1.6341	0.2469	6.3571	0.4567	2.0338	2.1423
31151A Fluid milk and butter manufacturing	2.0536	0.3244	8.9721	0.5950	2.6719	4.1093
311513 Cheese manufacturing	2.2785	0.3611	10.4241	0.5883	2.9743	4.0909
311514 Dry, condensed, and evaporated dairy product manufacturing	2.0532	0.3191	7.8981	0.5501	2.6279	4.4832
311520 Ice cream and frozen dessert manufacturing	1.7549	0.2600	6.8167	0.5980	2.1417	2.1935
31161A Animal (except poultry) slaughtering, rendering, and processing	1.7712	0.2586	7.3235	0.4874	2.1296	2.4958
311615 Poultry processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311700 Seafood product preparation and packaging	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311810 Bread and bakery product manufacturing	1.4346	0.2555	7.4539	0.5333	1.5370	1.3854
3118A0 Cookie, cracker, pasta, and tortilla manufacturing	1.4899	0.2162	4.4843	0.5319	1.7809	1.9385
311910 Snack food manufacturing	1.4788	0.2196	5.6078	0.6097	1.8083	1.9048
311920 Coffee and tea manufacturing	1.3792	0.2048	4.4656	0.4134	1.6866	1.6486
311930 Flavoring syrup and concentrate manufacturing	1.1581	0.1551	3.0983	0.6992	1.2775	1.3487
311940 Seasoning and dressing manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311990 All other food manufacturing	1.6094	0.2538	7.2303	0.4839	2.0906	2.1740
312110 Soft drink and ice manufacturing	1.5582	0.2217	3.9807	0.4572	1.8259	1.9272
312120 Breweries	1.4618	0.2116	4.9027	0.6215	1.7424	1.6046
312130 Wineries	1.5226	0.2466	7.2490	0.5900	2.0313	1.9768

312140 Distilleries	1.2567	0.1728	4.3879	0.7834	1.4232	1.3141
312200 Tobacco product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313100 Fiber, yarn, and thread mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313200 Fabric mills	1.2792	0.2021	4.7297	0.4657	1.4355	1.3750
313300 Textile and fabric finishing and fabric coating mills	1.2692	0.2395	5.5631	0.4544	1.3282	1.2539
314110 Carpet and rug mills	1.2219	0.1667	3.9791	0.3550	1.3730	1.2900
314120 Curtain and linen mills	1.2267	0.2578	9.2506	0.5163	1.2477	1.1275
314900 Other textile product mills	1.2683	0.2684	7.7208	0.5112	1.2793	1.1962
315000 Apparel manufacturing	1.1930	0.3515	12.9616	0.5896	1.1702	1.0961
316000 Leather and allied product manufacturing	1.5667	0.2920	6.1467	0.5288	1.6050	1.6389
322110 Pulp mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322120 Paper mills	1.3576	0.1967	2.8302	0.5125	1.6198	2.0128
322130 Paperboard mills	1.3678	0.2022	3.1833	0.5266	1.6651	1.9960
322210 Paperboard container manufacturing	1.5796	0.2541	4.5510	0.5059	1.7012	1.7019
322220 Paper bag and coated and treated paper manufacturing	1.4528	0.2330	3.8126	0.5132	1.5534	1.6313
322230 Stationery product manufacturing	1.5307	0.2510	5.1498	0.5609	1.6233	1.4911
322291 Sanitary paper product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322299 All other converted paper product manufacturing	1.4322	0.2223	3.9543	0.5330	1.6097	1.6331
323110 Printing	1.3361	0.2949	6.9529	0.6203	1.3705	1.3710
323120 Support activities for printing	1.2367	0.3761	7.6624	0.7215	1.1968	1.2304
324110 Petroleum refineries	1.0481	0.1334	1.1722	0.2726	1.0983	1.2362
324121 Asphalt paving mixture and block manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324122 Asphalt shingle and coating materials manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324190 Other petroleum and coal products manufacturing	1.1407	0.1493	1.8346	0.5720	1.2299	1.3808
325110 Petrochemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325120 Industrial gas manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325130 Synthetic dye and pigment manufacturing	1.2435	0.1765	2.6390	0.4531	1.4533	1.6369
325180 Other basic inorganic chemical manufacturing	1.2745	0.1805	2.5595	0.5561	1.4870	1.7399
325190 Other basic organic chemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325211 Plastics material and resin manufacturing	1.1839	0.1622	2.0893	0.2937	1.3360	1.5657
3252A0 Synthetic rubber and artificial and synthetic fibers and filaments manufacturing	1.2200	0.1703	3.1487	0.3112	1.4027	1.3905
325310 Fertilizer manufacturing	1.2989	0.1831	3.1564	0.4353	1.5080	1.5404
325320 Pesticide and other agricultural chemical manufacturing	1.1906	0.1632	2.1880	0.6156	1.3444	1.4872
325411 Medicinal and botanical manufacturing	1.3132	0.2394	3.3238	0.7105	1.4065	1.5317
325412 Pharmaceutical preparation manufacturing	1.2164	0.2164	2.7410	0.7155	1.3132	1.4500
325413 In-vitro diagnostic substance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325414 Biological product (except diagnostic) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325510 Paint and coating manufacturing	1.3090	0.1824	2.6252	0.4606	1.5024	1.6692
325520 Adhesive manufacturing	1.3049	0.1850	2.7367	0.4341	1.5232	1.7589
325610 Soap and cleaning compound manufacturing	1.3684	0.1882	2.7452	0.6958	1.5496	1.7798
325620 Toilet preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325910 Printing ink manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3259A0 All other chemical product and preparation manufacturing	1.3057	0.1848	3.0667	0.4532	1.5223	1.5550
326110 Plastics packaging materials and unlaminated film and sheet manufacturing	1.2885	0.1777	3.0311	0.4408	1.4636	1.5529
326120 Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	1.2203	0.2052	3.7705	0.4510	1.2985	1.3237

326130 Laminated plastics plate, sheet (except packaging), and shape manufacturing	1.3182	0.2449	4.4997	0.5865	1.3167	1.3108
326140 Polystyrene foam product manufacturing	1.2768	0.1865	3.6533	0.4563	1.4492	1.5040
326150 Urethane and other foam product (except polystyrene) manufacturing	1.3643	0.1909	3.6427	0.4612	1.5719	1.5532
326160 Plastics bottle manufacturing	1.2623	0.1725	2.8935	0.4442	1.4206	1.4802
326190 Other plastics product manufacturing	1.3888	0.2062	4.0171	0.4614	1.6187	1.6310
326210 Tire manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326220 Rubber and plastics hoses and belting manufacturing	1.3365	0.2972	5.4529	0.5359	1.3052	1.3297
326290 Other rubber product manufacturing	1.3902	0.2163	3.9578	0.5189	1.5825	1.6234
420000 Wholesale trade	1.1682	0.3121	4.8110	0.7765	1.1755	1.2848
441000 Motor vehicle and parts dealers	1.1334	0.4079	8.5055	0.8478	1.0859	1.1025
445000 Food and beverage stores	1.2027	0.3778	16.0219	0.7788	1.1444	1.0775
452000 General merchandise stores	1.1669	0.3270	14.2827	0.7378	1.1522	1.0694
4A0000 Other retail	1.1949	0.3491	14.1944	0.7503	1.1618	1.0908
481000 Air transportation	1.1404	0.2032	2.8540	0.5194	1.2149	1.3920
482000 Rail transportation	1.1666	0.2420	3.1861	0.6137	1.2083	1.3585
483000 Water transportation	1.2962	0.2036	4.0839	0.4607	1.5682	1.6316
484000 Truck transportation	1.2535	0.3386	7.4690	0.5788	1.2662	1.2559
485A00 Transit and ground passenger transportation*	1.2391	0.4481	22.7374	0.5878	1.1581	1.0622
486000 Pipeline transportation	1.2290	0.3150	3.7636	0.6330	1.2253	1.5023
48A000 Scenic and sightseeing transportation and support activities for transportation	1.2866	0.3808	8.0036	0.6613	1.2880	1.3122
492000 Couriers and messengers	1.2496	0.3283	9.9860	0.6538	1.2643	1.1844
493000 Warehousing and storage	1.2155	0.3664	8.5267	0.7270	1.1781	1.1856
511110 Newspaper publishers	1.2979	0.3512	9.0644	0.6990	1.2700	1.2207
511120 Periodical publishers	1.3517	0.2884	5.3874	0.6590	1.4460	1.6088
511130 Book publishers	1.1638	0.1845	3.4184	0.8312	1.2982	1.3973
5111A0 Directory, mailing list, and other publishers	1.2622	0.2129	4.5329	0.7362	1.4457	1.5079
511200 Software publishers	1.1353	0.2995	4.0618	0.7637	1.1516	1.3211
512100 Motion picture and video industries	1.1358	0.1934	7.2468	0.6248	1.2254	1.1493
512200 Sound recording industries	1.1998	0.1917	4.5751	0.6435	1.3487	1.3485
515100 Radio and television broadcasting	1.1274	0.5141	7.8991	0.6587	1.0744	1.1070
515200 Cable and other subscription programming	1.0979	0.2627	4.3897	0.6359	1.0953	1.1406
517110 Wired telecommunications carriers	1.1443	0.1745	3.1147	0.6963	1.2279	1.2939
517210 Wireless telecommunications carriers (except satellite)	1.2427	0.2013	3.9348	0.6380	1.4165	1.5194
517A00 Satellite, telecommunications resellers, and all other telecommunications	1.1793	0.3957	6.6183	0.7261	1.1111	1.1529
518200 Data processing, hosting, and related services	1.2918	0.3118	6.0060	0.6623	1.3370	1.5094
5191A0 News syndicates, libraries, archives, and all other information services	1.1101	0.2891	6.2859	0.7160	1.1116	1.1299
519130 Internet publishing and broadcasting and Web search portals	1.1883	0.2764	2.8084	0.7287	1.2399	1.8992
52A000 Monetary authorities and depository credit intermediation	1.2040	0.2515	5.1096	0.7249	1.2843	1.4425
522A00 Nondepository credit intermediation and related activities	1.2455	0.3461	5.0145	0.6386	1.2360	1.4947
523A00 Securities and commodity contracts intermediation and brokerage	1.1833	0.4270	13.3352	0.5822	1.1367	1.1156
523900 Other financial investment activities	1.2602	0.3028	12.4101	0.4697	1.3238	1.1708
524100 Insurance carriers	1.2062	0.2404	4.0098	0.6835	1.3225	1.4462
524200 Insurance agencies, brokerages, and related activities	1.2873	0.3744	7.2458	0.6679	1.2714	1.3282

525000 Funds, trusts, and other financial vehicles	1.1828	0.1789	8.2998	0.3219	1.3783	1.2173
531000 Real estate	1.2157	0.2039	7.8109	0.8336	1.3925	1.2618
532100 Automotive equipment rental and leasing	1.1914	0.2699	4.3952	0.7816	1.2213	1.3401
532A00 Consumer goods and general rental centers	1.1577	0.4582	9.4990	0.8047	1.0903	1.1022
532400 Commercial and industrial machinery and equipment rental and leasing	1.1608	0.2446	2.9979	0.8413	1.2127	1.4246
533000 Lessors of nonfinancial intangible assets	1.2448	0.2195	3.4919	0.6759	1.4995	2.0781
541100 Legal services	1.1201	0.4506	6.1198	0.8198	1.0778	1.1759
541511 Custom computer programming services	1.1652	0.5409	7.7814	0.8087	1.1300	1.3305
541512 Computer systems design services	1.2065	0.4862	6.9288	0.7588	1.1507	1.3383
54151A Other computer related services, including facilities management	1.1577	0.4715	6.4488	0.7901	1.1158	1.2881
541200 Accounting, tax preparation, bookkeeping, and payroll services	1.1001	0.4570	9.2417	0.8534	1.0676	1.0924
541300 Architectural, engineering, and related services	1.2587	0.4107	6.4105	0.6692	1.2365	1.4670
541400 Specialized design services	1.2170	0.4258	11.2580	0.7787	1.1446	1.1408
541610 Management consulting services	1.2075	0.4733	10.2539	0.7364	1.1461	1.1869
5416A0 Environmental and other technical consulting services	1.2193	0.4947	11.3478	0.7370	1.1551	1.1852
541700 Scientific research and development services	1.2846	0.3573	4.5405	0.6140	1.2880	1.6946
541800 Advertising, public relations, and related services	1.2168	0.2825	5.1524	0.7152	1.2513	1.3940
5419A0 Marketing research and all other miscellaneous professional, scientific, and technical services	1.1736	0.3870	7.8145	0.7499	1.1380	1.1851
541920 Photographic services	1.2834	0.4237	15.1925	0.6901	1.2008	1.1499
541940 Veterinary services	1.3041	0.4096	12.1035	0.6614	1.2142	1.1663
550000 Management of companies and enterprises	1.1829	0.4034	4.3324	0.7098	1.1331	1.3355
561100 Office administrative services	1.1015	0.5799	9.2829	0.8486	1.0522	1.0902
561200 Facilities support services	1.3030	0.3048	9.2695	0.7099	1.3775	1.3209
561300 Employment services	1.1049	0.5646	20.7831	0.8552	1.0673	1.0533
561400 Business support services	1.1914	0.4559	12.8131	0.7390	1.1365	1.1259
561500 Travel arrangement and reservation services	1.2484	0.3037	7.9891	0.6165	1.2896	1.2967
561600 Investigation and security services	1.1534	0.5141	20.3026	0.7908	1.0894	1.0561
561700 Services to buildings and dwellings	1.2242	0.3563	14.5377	0.7467	1.1844	1.1040
561900 Other support services	1.2921	0.4175	11.2783	0.6684	1.2281	1.2300
562000 Waste management and remediation services	1.3580	0.3025	6.3209	0.6538	1.4091	1.4569
611100 Elementary and secondary schools	1.1825	0.4710	20.6690	0.7686	1.1017	1.0575
611A00 Junior colleges, colleges, universities, and professional schools	1.2422	0.4296	14.9605	0.7379	1.1346	1.0993
611B00 Other educational services	1.2019	0.4892	25.7461	0.7010	1.1199	1.0583
621100 Offices of physicians	1.1725	0.5225	7.2125	0.7346	1.0992	1.2086
621200 Offices of dentists	1.1951	0.4673	10.2339	0.7455	1.1225	1.1354
621300 Offices of other health practitioners	1.1664	0.4455	11.6686	0.7764	1.1032	1.0987
621400 Outpatient care centers	1.1964	0.3485	7.2102	0.6569	1.1659	1.2240
621500 Medical and diagnostic laboratories	1.1765	0.4692	8.4884	0.7258	1.1178	1.1546
621600 Home health care services	1.1887	0.5625	17.7985	0.7752	1.0984	1.0835
621900 Other ambulatory health care services	1.2494	0.4267	11.0944	0.6937	1.1584	1.1333
622000 Hospitals	1.2218	0.4496	8.1631	0.6838	1.1600	1.2409
623A00 Nursing and community care facilities	1.2116	0.4738	16.1832	0.7275	1.1185	1.0930
623B00 Residential mental retardation, mental health, substance abuse and other facilities	1.1737	0.5328	19.2603	0.7804	1.0799	1.0584
624100 Individual and family services	1.1799	0.5206	21.7199	0.7370	1.0921	1.0581
624A00 Community food, housing, and other relief services, including rehabilitation services	1.2795	0.4411	19.0576	0.6510	1.1703	1.0979



<b>624400 Child day care services</b>	1.2351	0.4831	29.2891	0.7417	1.1132	1.0494
<b>711100 Performing arts companies</b>	1.1601	0.3159	24.8248	0.6452	1.1607	1.0530
<b>711200 Spectator sports</b>	1.0668	0.4929	12.1267	0.8274	1.0369	1.0403
<b>711A00 Promoters of performing arts and sports and agents for public figures</b>	1.2112	0.2639	16.8861	0.5904	1.2869	1.1192
<b>711500 Independent artists, writers, and performers</b>	1.1409	0.2457	6.7254	0.6522	1.2096	1.2309
<b>712000 Museums, historical sites, zoos, and parks</b>	1.2809	0.3256	12.9305	0.6250	1.2637	1.1615
<b>713100 Amusement parks and arcades</b>	1.1881	0.2740	13.4586	0.7851	1.1857	1.0841
<b>713200 Gambling industries (except casino hotels)</b>	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>713900 Other amusement and recreation industries</b>	1.2606	0.3032	18.9322	0.6644	1.2491	1.0895
<b>721000 Accommodation</b>	1.2155	0.3054	9.3047	0.7494	1.2120	1.1685
<b>722110 Full-service restaurants</b>	1.3205	0.4056	19.5800	0.6734	1.2057	1.0895
<b>722211 Limited-service restaurants</b>	1.3130	0.3339	19.5501	0.6984	1.2449	1.0893
<b>722A00 All other food and drinking places</b>	1.4299	0.2557	11.3693	0.5535	1.5372	1.2446
<b>811100 Automotive repair and maintenance</b>	1.3045	0.4887	12.5029	0.7240	1.1550	1.1277
<b>811200 Electronic and precision equipment repair and maintenance</b>	1.1901	0.5229	8.8541	0.7618	1.1039	1.1537
<b>811300 Commercial and industrial machinery and equipment repair and maintenance</b>	1.1449	0.5645	9.4809	0.8371	1.0646	1.0870
<b>811400 Personal and household goods repair and maintenance</b>	1.1816	0.2915	8.0386	0.7623	1.1749	1.1533
<b>812100 Personal care services</b>	1.1680	0.5682	27.3820	0.7450	1.0830	1.0475
<b>812200 Death care services</b>	1.2477	0.5140	15.3464	0.7733	1.1207	1.0821
<b>812300 Dry-cleaning and laundry services</b>	1.2015	0.4982	17.5634	0.7414	1.1140	1.0789
<b>812900 Other personal services</b>	1.2033	0.4292	18.1040	0.7150	1.1361	1.0802
<b>813100 Religious organizations</b>	1.2731	0.2109	6.3090	0.4586	1.4451	1.4306
<b>813A00 Grantmaking, giving, and social advocacy organizations</b>	1.1109	0.4570	11.5538	0.7796	1.0730	1.0847
<b>813B00 Civic, social, professional, and similar organizations</b>	1.1072	0.5821	20.0156	0.8669	1.0487	1.0351
<b>491000 Postal service</b>	1.1330	0.5085	7.9052	0.8497	1.0687	1.1265
<b>S00A00 Other government enterprises</b>	1.4067	0.3010	6.3053	0.6357	1.5280	1.5545
<b>H00000 Households</b>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

## APPENDIX G.

**Table G2. Industry Out-state Multipliers for the South West Region**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
1111C0 Oilseed and grain farming	1.7868	0.3515	12.2431	0.5548	2.5342	2.1590
111200 Vegetable and melon farming	1.4633	0.3776	16.0641	0.9341	1.5485	1.3573
111300 Fruit and tree nut farming	1.5077	0.4523	23.3651	0.9637	1.5258	1.2779
111400 Greenhouse, nursery, and floriculture production	1.7030	0.5682	26.5417	0.9832	1.5759	1.3961
111900 Other crop farming	1.5152	0.3964	15.3680	0.8093	1.6261	1.4552
1121A0 Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	1.6296	0.2866	10.7307	0.6129	2.0162	1.7038
112120 Dairy cattle and milk production	1.6572	0.3340	12.9260	0.6845	1.9534	1.5579
112A00 Animal production, except cattle and poultry and eggs	1.4121	0.2898	11.3546	0.9125	1.5456	1.3854
112300 Poultry and egg production	1.8876	0.3497	10.9401	0.6100	2.1676	1.9168
113000 Forestry and logging	1.5618	0.5066	16.5213	0.8746	1.5698	1.5710
114000 Fishing, hunting and trapping	1.3529	0.3648	19.2024	0.8810	1.3477	1.1562
115000 Support activities for agriculture and forestry	1.5374	0.7103	27.6694	1.0273	1.2581	1.1878
211000 Oil and gas extraction	1.2172	0.2379	4.6909	0.8202	1.3202	1.4754
212100 Coal mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2122A0 Iron, gold, silver, and other metal ore mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212230 Copper, nickel, lead, and zinc mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212310 Stone mining and quarrying	1.3073	0.2423	5.4249	0.7971	1.4851	1.5592
2123A0 Other nonmetallic mineral mining and quarrying	1.3712	0.2785	6.1502	0.7803	1.4943	1.5684
213111 Drilling oil and gas wells	1.3773	0.3726	8.0794	0.8646	1.3689	1.5060
21311A Other support activities for mining	1.4041	0.4006	7.7985	0.9111	1.3685	1.6206
2211A0 Electric power generation, transmission, and distribution*	1.2786	0.2105	3.1794	0.7296	1.5613	2.7946
221200 Natural gas distribution	1.2452	0.2016	3.1387	0.5579	1.4958	2.2869
221300 Water, sewage and other systems	1.3814	0.2845	5.5783	0.8880	1.5569	1.8369
23030A Maintenance and repair	1.5684	0.4065	9.1887	0.8584	1.5328	1.7581
2332C0 Nonresidential structures	1.6313	0.5430	11.6016	0.9245	1.4007	1.5471
233293 Highways and streets	1.5138	0.3545	7.3667	0.7781	1.5421	1.7462
2334B0 Residential structures	1.6701	0.4050	9.2472	0.8083	1.6986	2.0311
321100 Sawmills and wood preservation	1.4446	0.2549	5.8503	0.4802	1.8797	2.1498
321200 Veneer, plywood, and engineered wood product manufacturing	1.5864	0.2785	6.1546	0.5440	1.9663	2.1607
321910 Millwork	1.6238	0.3507	7.9244	0.6276	1.7414	1.8654
3219A0 All other wood product manufacturing	1.5778	0.3220	7.7561	0.6128	1.7396	1.7701
327100 Clay product and refractory manufacturing	1.5283	0.3787	8.1223	0.7775	1.5213	1.6570
327200 Glass and glass product manufacturing	1.5924	0.3265	7.0169	0.6974	1.7487	1.8975
327310 Cement manufacturing	1.4145	0.2283	4.0075	0.7245	1.7553	2.3966
327320 Ready-mix concrete manufacturing	1.5533	0.2799	5.7878	0.5807	1.8719	2.1736
327330 Concrete pipe, brick, and block manufacturing	1.5427	0.2998	6.5450	0.7368	1.7453	1.9048
327390 Other concrete product manufacturing	1.6481	0.3533	8.0779	0.7298	1.7706	1.8753
327400 Lime and gypsum product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327910 Abrasive product manufacturing	1.3072	0.2048	4.3553	0.7252	1.5750	1.7211
327991 Cut stone and stone product manufacturing	1.5507	0.3917	9.6822	0.7548	1.5626	1.5998
327992 Ground or treated mineral and earth manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

327993 Mineral wool manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327999 Miscellaneous nonmetallic mineral products	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331110 Iron and steel mills and ferroalloy manufacturing	1.4838	0.2438	4.2761	0.4817	1.8746	2.5783
331200 Steel product manufacturing from purchased steel	1.4497	0.2344	4.3651	0.4796	1.7934	2.2387
33131A Alumina refining and primary aluminum production	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331314 Secondary smelting and alloying of aluminum	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33131B Aluminum product manufacturing from purchased aluminum	1.4908	0.2433	4.9479	0.4103	1.8705	2.1325
33141A Primary smelting and refining of nonferrous metal (except aluminum)	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331420 Copper rolling, drawing, extruding, and alloying	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331490 Nonferrous metal (except copper and aluminum) rolling, drawing, extruding, and alloying	1.4711	0.2378	4.5373	0.5211	1.8283	2.2213
331510 Ferrous metal foundries	1.5570	0.3418	6.9088	0.6994	1.6760	1.9313
331520 Nonferrous metal foundries	1.4663	0.3004	6.3818	0.6424	1.6483	1.8269
33211A All other forging, stamping, and sintering	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332114 Custom roll forming	1.4228	0.2230	4.5759	0.4325	1.7146	1.8996
33211B Crown and closure manufacturing and metal stamping	1.5801	0.3054	6.2344	0.6446	1.7295	1.9483
332200 Cutlery and handtool manufacturing	1.5182	0.3515	6.8755	0.7446	1.5439	1.8119
332310 Plate work and fabricated structural product manufacturing	1.5831	0.3258	6.8855	0.6207	1.7425	1.9768
332320 Ornamental and architectural metal products manufacturing	1.6451	0.3426	7.2144	0.6430	1.7705	1.9646
332410 Power boiler and heat exchanger manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332420 Metal tank (heavy gauge) manufacturing	1.5132	0.2697	6.0188	0.6295	1.7750	1.8994
332430 Metal can, box, and other metal container (light gauge) manufacturing	1.6648	0.2617	5.3019	0.5012	2.0119	2.2701
332500 Hardware manufacturing	1.5681	0.2827	5.8990	0.6753	1.8631	2.1193
332600 Spring and wire product manufacturing	1.6272	0.3722	8.0843	0.6944	1.6430	1.7784
332710 Machine shops	1.6487	0.4502	9.4299	0.8101	1.5521	1.7411
332720 Turned product and screw, nut, and bolt manufacturing	1.4912	0.2589	5.2122	0.7188	1.8123	2.0966
332800 Coating, engraving, heat treating and allied activities	1.5604	0.3157	6.9004	0.7095	1.6561	1.7662
33291A Valve and fitting (except plumbing) manufacturing	1.5226	0.2856	5.5023	0.6981	1.7608	2.1327
332913 Plumbing fixture fitting and trim manufacturing	1.5044	0.2416	5.3121	0.6709	1.8577	1.9692
332991 Ball and roller bearing manufacturing	1.5116	0.3418	6.1329	0.7768	1.5932	1.9697
33299A Ammunition, arms, ordnance, and accessories manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332996 Fabricated pipe and pipe fitting manufacturing	1.4671	0.2932	6.3185	0.6540	1.6088	1.7568
33299B Other fabricated metal manufacturing	1.5805	0.3277	6.7236	0.6583	1.6735	1.8764
333111 Farm machinery and equipment manufacturing	1.5430	0.2522	4.8994	0.6390	1.9392	2.2952
333112 Lawn and garden equipment manufacturing	1.6491	0.2689	6.8205	0.5626	2.0674	1.7991
333120 Construction machinery manufacturing	1.6073	0.2723	5.8285	0.6122	2.0189	2.1141
333130 Mining and oil and gas field machinery manufacturing	1.5922	0.3495	6.9463	0.6522	1.6958	2.0574
3332A0 Industrial machinery (except semiconductor machinery) manufacturing	1.6913	0.3818	7.1233	0.7266	1.7564	2.1656
333295 Semiconductor machinery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33331B All other commercial and service industry machinery manufacturing	1.5325	0.4058	7.8008	0.7017	1.4801	1.7230
333314 Optical instrument and lens manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333315 Photographic and photocopying equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

33341A Air purification and ventilation equipment manufacturing	1.4175	0.3043	5.9353	0.6659	1.4908	1.7021
333414 Heating equipment (except warm air furnaces) manufacturing	1.5636	0.2844	5.7554	0.6769	1.8570	2.1487
333415 Air conditioning, refrigeration, and warm air heating equipment manufacturing	1.5708	0.2687	5.4638	0.6144	1.9058	2.1250
333511 Industrial mold manufacturing	1.6251	0.5100	9.9841	0.8575	1.4422	1.6496
33351A Metal cutting and forming machine tool manufacturing	1.5442	0.3929	7.3534	0.7612	1.5272	1.8285
333514 Special tool, die, jig, and fixture manufacturing	1.6419	0.4621	8.9768	0.8218	1.5410	1.7839
33351B Cutting and machine tool accessory, rolling mill, and other metalworking machinery manufacturing	1.5863	0.3815	7.2854	0.7293	1.5783	1.8492
333611 Turbine and turbine generator set units manufacturing	1.5656	0.2912	5.6420	0.6368	1.8258	2.1577
333612 Speed changer, industrial high-speed drive, and gear manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333613 Mechanical power transmission equipment manufacturing	1.4988	0.2889	5.9805	0.6916	1.7089	1.9084
333618 Other engine equipment manufacturing	1.6609	0.2784	4.9528	0.5573	2.1403	3.0584
33391A Pump and pumping equipment manufacturing	1.5273	0.2522	4.7463	0.7062	1.9393	2.4766
333912 Air and gas compressor manufacturing	1.5862	0.2619	4.8151	0.6819	1.9982	2.5749
333920 Material handling equipment manufacturing	1.5287	0.2538	4.5631	0.6431	1.9515	2.5863
333991 Power-driven handtool manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33399A Other general purpose machinery manufacturing	1.5500	0.2975	5.2439	0.6498	1.7444	2.2989
333993 Packaging machinery manufacturing	1.5502	0.3413	6.3727	0.7105	1.6582	1.9873
333994 Industrial process furnace and oven manufacturing	1.5514	0.3949	6.9691	0.7479	1.5328	1.8862
33399B Fluid power process machinery	1.5598	0.3393	6.3109	0.6761	1.6467	1.9947
334111 Electronic computer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334112 Computer storage device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33411A Computer terminals and other computer peripheral equipment manufacturing	1.4646	0.3773	6.1185	0.7317	1.4450	1.9051
334210 Telephone apparatus manufacturing	1.4506	0.2920	4.7821	0.7091	1.6026	2.2091
334220 Broadcast and wireless communications equipment	1.4013	0.2459	4.2365	0.7321	1.6861	2.3111
334290 Other communications equipment manufacturing	1.5353	0.4409	8.7189	0.8174	1.4377	1.6431
334300 Audio and video equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33441A Other electronic component manufacturing	1.5065	0.4069	8.9754	0.8017	1.4516	1.5619
334413 Semiconductor and related device manufacturing	1.3546	0.3201	4.7172	0.8381	1.4151	2.1037
334418 Printed circuit assembly (electronic assembly) manufacturing	1.5493	0.2563	5.9725	0.5978	1.9706	1.9570
334510 Electromedical and electrotherapeutic apparatus manufacturing	1.4234	0.2781	4.7968	0.7792	1.5644	2.0403
334511 Search, detection, and navigation instruments manufacturing	1.4270	0.3493	5.8394	0.7808	1.4743	1.9900
334512 Automatic environmental control manufacturing	1.5069	0.4806	9.9712	0.8343	1.3712	1.5212
334513 Industrial process variable instruments manufacturing	1.5786	0.5049	9.9791	0.8309	1.4062	1.6092
334514 Totalizing fluid meter and counting device manufacturing	1.4919	0.2448	5.2896	0.6509	1.8823	2.0194
334515 Electricity and signal testing instruments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334516 Analytical laboratory instrument manufacturing	1.4836	0.2941	5.3627	0.7432	1.6326	2.0561
334517 Irradiation apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33451A Watch, clock, and other measuring and controlling device manufacturing	1.4703	0.3346	6.5994	0.7723	1.5313	1.7720
334610 Manufacturing and reproducing magnetic and optical media	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

335110 Electric lamp bulb and part manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335120 Lighting fixture manufacturing	1.5551	0.2886	6.6658	0.7318	1.7794	1.7782
335210 Small electrical appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335221 Household cooking appliance manufacturing	1.6884	0.2837	6.8584	0.6448	2.1810	1.9877
335222 Household refrigerator and home freezer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335224 Household laundry equipment manufacturing	1.5378	0.2924	4.9138	0.5936	1.7682	2.5302
335228 Other major household appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335311 Power, distribution, and specialty transformer manufacturing	1.4723	0.2715	5.0293	0.6543	1.6558	2.0109
335312 Motor and generator manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335313 Switchgear and switchboard apparatus manufacturing	1.5099	0.2661	5.6975	0.6694	1.8059	1.8965
335314 Relay and industrial control manufacturing	1.5756	0.3809	6.5251	0.7852	1.5867	2.0408
335911 Storage battery manufacturing	1.4033	0.2189	4.3128	0.5412	1.6828	1.9519
335912 Primary battery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335920 Communication and energy wire and cable manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335930 Wiring device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335991 Carbon and graphite product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335999 All other miscellaneous electrical equipment and component manufacturing	1.5151	0.3066	6.4108	0.6678	1.7180	1.9015
336111 Automobile manufacturing	1.8316	0.2964	5.0058	0.5967	2.2791	3.3675
336112 Light truck and utility vehicle manufacturing	1.8946	0.3075	5.4035	0.5620	2.3646	3.2278
336120 Heavy duty truck manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336211 Motor vehicle body manufacturing	1.6016	0.2761	5.6140	0.5490	1.9354	2.1446
336212 Truck trailer manufacturing	1.7172	0.3041	6.7114	0.5762	1.9869	2.0213
336213 Motor home manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336214 Travel trailer and camper manufacturing	1.6073	0.2610	6.2038	0.5532	2.0070	1.9273
336310 Motor vehicle gasoline engine and engine parts manufacturing	1.7660	0.3041	5.7366	0.6388	2.3167	2.9503
336320 Motor vehicle electrical and electronic equipment manufacturing	1.5711	0.3297	6.4931	0.5959	1.7407	2.0525
3363A0 Motor vehicle steering, suspension component (except spring), and brake systems manufacturing	1.7431	0.3062	5.7185	0.6460	2.2090	2.8424
336350 Motor vehicle transmission and power train parts manufacturing	1.7997	0.3249	6.1506	0.6586	2.2079	2.7587
336360 Motor vehicle seating and interior trim manufacturing	1.8677	0.3094	6.3045	0.5977	2.3792	2.6993
336370 Motor vehicle metal stamping	1.4764	0.2578	4.8220	0.5724	1.7394	2.1015
336390 Other motor vehicle parts manufacturing	1.7355	0.3151	6.2727	0.6208	2.0745	2.4015
336411 Aircraft manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336412 Aircraft engine and engine parts manufacturing	1.4408	0.2570	4.3401	0.6511	1.6712	2.2375
336413 Other aircraft parts and auxiliary equipment manufacturing	1.4448	0.2779	5.2438	0.7568	1.6440	2.0412
336414 Guided missile and space vehicle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33641A Propulsion units and parts for space vehicles and guided missiles	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336500 Railroad rolling stock manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336611 Ship building and repairing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336612 Boat building	1.6405	0.2842	6.1567	0.5912	2.0330	2.1683
336991 Motorcycle, bicycle, and parts manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336992 Military armored vehicle, tank, and tank component manufacturing	1.4865	0.2267	3.3106	0.6695	1.7433	2.6315
336999 All other transportation equipment manufacturing	1.6258	0.2609	5.0524	0.5307	2.0062	2.3327

337110 Wood kitchen cabinet and countertop manufacturing	1.7134	0.4305	10.3901	0.7251	1.6208	1.6695
337121 Upholstered household furniture manufacturing	1.6022	0.3303	8.7625	0.5895	1.6829	1.5769
337122 Nonupholstered wood household furniture manufacturing	1.5952	0.3921	10.3313	0.7413	1.5417	1.4999
33712A Other household nonupholstered furniture	1.5602	0.2974	6.9126	0.6069	1.7496	1.8043
337127 Institutional furniture manufacturing	1.5928	0.3220	7.2007	0.6669	1.7193	1.8297
33721A Office furniture and custom architectural woodwork and millwork manufacturing	1.5604	0.2939	6.1430	0.7287	1.7755	2.0380
337215 Showcase, partition, shelving, and locker manufacturing	1.6370	0.4142	9.0488	0.6867	1.5603	1.6856
337900 Other furniture related product manufacturing	1.6389	0.3108	7.2353	0.6737	1.8360	1.8629
339112 Surgical and medical instrument manufacturing	1.3926	0.3258	5.9962	0.7848	1.4443	1.7495
339113 Surgical appliance and supplies manufacturing	1.4040	0.2795	5.0248	0.7536	1.5627	2.0044
339114 Dental equipment and supplies manufacturing	1.3950	0.2830	5.9868	0.6709	1.5423	1.7155
339115 Ophthalmic goods manufacturing	1.4695	0.3812	9.5658	0.7892	1.4603	1.5195
339116 Dental laboratories	1.4931	0.4814	12.5731	0.8355	1.3809	1.3861
339910 Jewelry and silverware manufacturing	1.3631	0.2490	6.1496	0.5234	1.6005	1.6176
339920 Sporting and athletic goods manufacturing	1.5714	0.3089	6.5728	0.6943	1.7614	1.9352
339930 Doll, toy, and game manufacturing	1.5011	0.2444	5.7713	0.6082	1.8789	1.8568
339940 Office supplies (except paper) manufacturing	1.4829	0.2969	8.0924	0.6726	1.6028	1.4926
339950 Sign manufacturing	1.6364	0.3800	9.0774	0.7195	1.6071	1.6185
339990 All other miscellaneous manufacturing	1.5963	0.3423	7.1990	0.6805	1.7318	1.9877
311111 Dog and cat food manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311119 Other animal food manufacturing	1.9314	0.3196	8.2371	0.5202	2.6323	3.2260
311210 Flour milling and malt manufacturing	2.1945	0.3765	9.5540	0.6215	3.1005	5.0457
311221 Wet corn milling	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31122A Soybean and other oilseed processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311225 Fats and oils refining and blending	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311230 Breakfast cereal manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311300 Sugar and confectionery product manufacturing	1.5024	0.2371	6.1561	0.5462	1.9524	1.9420
311410 Frozen food manufacturing	2.0503	0.3423	9.1819	0.6476	2.8188	3.2146
311420 Fruit and vegetable canning, pickling, and drying	1.8020	0.2941	7.8188	0.5531	2.4226	2.6349
31151A Fluid milk and butter manufacturing	2.2741	0.3864	10.8924	0.7216	3.1826	4.9888
311513 Cheese manufacturing	2.5240	0.4302	12.5617	0.7292	3.5428	4.9298
311514 Dry, condensed, and evaporated dairy product manufacturing	2.2701	0.3801	9.7868	0.6747	3.1302	5.5553
311520 Ice cream and frozen dessert manufacturing	1.9317	0.3098	8.3560	0.6995	2.5511	2.6888
31161A Animal (except poultry) slaughtering, rendering, and processing	1.9470	0.3080	8.8541	0.5884	2.5367	3.0174
311615 Poultry processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311700 Seafood product preparation and packaging	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311810 Bread and bakery product manufacturing	1.6083	0.3043	8.9661	0.6330	1.8308	1.6665
3118A0 Cookie, cracker, pasta, and tortilla manufacturing	1.6369	0.2576	5.7643	0.6163	2.1213	2.4918
311910 Snack food manufacturing	1.6280	0.2615	6.9074	0.6954	2.1539	2.3462
311920 Coffee and tea manufacturing	1.5185	0.2439	5.6778	0.4933	2.0090	2.0961
311930 Flavoring syrup and concentrate manufacturing	1.2635	0.1848	4.0165	0.7598	1.5217	1.7484
311940 Seasoning and dressing manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311990 All other food manufacturing	1.7819	0.3024	8.7329	0.5829	2.4902	2.6258
312110 Soft drink and ice manufacturing	1.7090	0.2641	5.2930	0.5438	2.1750	2.5626
312120 Breweries	1.6057	0.2520	6.1550	0.7040	2.0755	2.0145
312130 Wineries	1.6903	0.2938	8.7090	0.6863	2.4196	2.3749

312140 Distilleries	1.3742	0.2058	5.4108	0.8509	1.6952	1.6204
312200 Tobacco product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313100 Fiber, yarn, and thread mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313200 Fabric mills	1.4166	0.2407	5.9259	0.5446	1.7099	1.7227
313300 Textile and fabric finishing and fabric coating mills	1.4320	0.2853	6.9807	0.5478	1.5821	1.5734
314110 Carpet and rug mills	1.3353	0.1986	4.9660	0.4200	1.6355	1.6099
314120 Curtain and linen mills	1.4020	0.3071	10.7766	0.6169	1.4863	1.3135
314900 Other textile product mills	1.4508	0.3197	9.3094	0.6159	1.5238	1.4423
315000 Apparel manufacturing	1.4320	0.4187	15.0420	0.7268	1.3939	1.2721
316000 Leather and allied product manufacturing	1.7652	0.3478	7.8749	0.6427	1.9118	2.0997
322110 Pulp mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322120 Paper mills	1.4913	0.2343	3.9944	0.5892	1.9295	2.8408
322130 Paperboard mills	1.5052	0.2408	4.3800	0.6055	1.9834	2.7464
322210 Paperboard container manufacturing	1.7524	0.3026	6.0549	0.6050	2.0263	2.2642
322220 Paper bag and coated and treated paper manufacturing	1.6112	0.2775	5.1917	0.6041	1.8503	2.2213
322230 Stationery product manufacturing	1.7014	0.2990	6.6357	0.6589	1.9336	1.9213
322291 Sanitary paper product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322299 All other converted paper product manufacturing	1.5834	0.2648	5.2702	0.6197	1.9174	2.1766
323110 Printing	1.5366	0.3512	8.6983	0.7353	1.6324	1.7151
323120 Support activities for printing	1.4924	0.4480	9.8886	0.8683	1.4256	1.5878
324110 Petroleum refineries	1.1388	0.1589	1.9616	0.3247	1.3083	2.0687
324121 Asphalt paving mixture and block manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324122 Asphalt shingle and coating materials manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
324190 Other petroleum and coal products manufacturing	1.2423	0.1779	2.7186	0.6302	1.4650	2.0460
325110 Petrochemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325120 Industrial gas manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325130 Synthetic dye and pigment manufacturing	1.3634	0.2102	3.6835	0.5220	1.7311	2.2848
325180 Other basic inorganic chemical manufacturing	1.3972	0.2151	3.6282	0.6265	1.7712	2.4665
325190 Other basic organic chemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325211 Plastics material and resin manufacturing	1.2942	0.1932	3.0495	0.3570	1.5914	2.2852
3252A0 Synthetic rubber and artificial and synthetic fibers and filaments manufacturing	1.3358	0.2029	4.1569	0.3777	1.6709	1.8357
325310 Fertilizer manufacturing	1.4234	0.2181	4.2402	0.5068	1.7963	2.0693
325320 Pesticide and other agricultural chemical manufacturing	1.3016	0.1944	3.1543	0.6793	1.6014	2.1440
325411 Medicinal and botanical manufacturing	1.4760	0.2852	4.7410	0.8039	1.6754	2.1848
325412 Pharmaceutical preparation manufacturing	1.3636	0.2578	4.0220	0.7999	1.5642	2.1276
325413 In-vitro diagnostic substance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325414 Biological product (except diagnostic) manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325510 Paint and coating manufacturing	1.4331	0.2173	3.7050	0.5318	1.7896	2.3558
325520 Adhesive manufacturing	1.4307	0.2203	3.8315	0.5063	1.8144	2.4625
325610 Soap and cleaning compound manufacturing	1.4964	0.2241	3.8590	0.7692	1.8459	2.5019
325620 Toilet preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325910 Printing ink manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
3259A0 All other chemical product and preparation manufacturing	1.4313	0.2202	4.1607	0.5253	1.8132	2.1097
326110 Plastics packaging materials and unlaminated film and sheet manufacturing	1.4093	0.2117	4.0830	0.5102	1.7433	2.0917
326120 Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	1.3598	0.2444	4.9850	0.5311	1.5467	1.7500

326130 Laminated plastics plate, sheet (except packaging), and shape manufacturing	1.4847	0.2918	5.9495	0.6821	1.5684	1.7332
326140 Polystyrene foam product manufacturing	1.4036	0.2222	4.7575	0.5291	1.7263	1.9586
326150 Urethane and other foam product (except polystyrene) manufacturing	1.4941	0.2273	4.7724	0.5357	1.8724	2.0350
326160 Plastics bottle manufacturing	1.3796	0.2055	3.9146	0.5115	1.6922	2.0025
326190 Other plastics product manufacturing	1.5290	0.2456	5.2376	0.5418	1.9281	2.1266
326210 Tire manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
326220 Rubber and plastics hoses and belting manufacturing	1.5386	0.3541	7.2124	0.6519	1.5546	1.7587
326290 Other rubber product manufacturing	1.5373	0.2576	5.2381	0.6033	1.8850	2.1485
420000 Wholesale trade	1.3804	0.3718	6.6586	0.8983	1.4001	1.7782
441000 Motor vehicle and parts dealers	1.4107	0.4858	10.9197	1.0069	1.2935	1.4154
445000 Food and beverage stores	1.4596	0.4500	18.2582	0.9263	1.3631	1.2279
452000 General merchandise stores	1.3892	0.3895	16.2180	0.8654	1.3725	1.2143
4A0000 Other retail	1.4323	0.4158	16.2609	0.8865	1.3839	1.2496
481000 Air transportation	1.2786	0.2420	4.0567	0.5987	1.4471	1.9786
482000 Rail transportation	1.3312	0.2883	4.6185	0.7081	1.4393	1.9693
483000 Water transportation	1.4346	0.2425	5.2888	0.5402	1.8680	2.1130
484000 Truck transportation	1.4837	0.4033	9.4730	0.7110	1.5083	1.5929
485A00 Transit and ground passenger transportation*	1.5438	0.5337	25.3897	0.7627	1.3795	1.1861
486000 Pipeline transportation	1.4431	0.3752	5.6281	0.7559	1.4595	2.2466
48A000 Scenic and sightseeing transportation and support activities for transportation	1.5455	0.4536	10.2577	0.8099	1.5341	1.6818
492000 Couriers and messengers	1.4728	0.3910	11.9291	0.7819	1.5059	1.4149
493000 Warehousing and storage	1.4646	0.4364	10.6954	0.8700	1.4033	1.4871
511110 Newspaper publishers	1.5368	0.4184	11.1435	0.8360	1.5127	1.5007
511120 Periodical publishers	1.5478	0.3435	7.0943	0.7715	1.7223	2.1185
511130 Book publishers	1.2892	0.2198	4.5105	0.9032	1.5464	1.8436
5111A0 Directory, mailing list, and other publishers	1.4070	0.2536	5.7930	0.8192	1.7221	1.9270
511200 Software publishers	1.3389	0.3567	5.8345	0.8805	1.3718	1.8976
512100 Motion picture and video industries	1.2673	0.2303	8.3914	0.7003	1.4596	1.3308
512200 Sound recording industries	1.3301	0.2283	5.7096	0.7183	1.6065	1.6829
515100 Radio and television broadcasting	1.4769	0.6123	10.9419	0.8593	1.2798	1.5335
515200 Cable and other subscription programming	1.2765	0.3130	5.9450	0.7384	1.3047	1.5447
517110 Wired telecommunications carriers	1.2630	0.2078	4.1476	0.7644	1.4626	1.7229
517210 Wireless telecommunications carriers (except satellite)	1.3795	0.2398	5.1263	0.7166	1.6873	1.9795
517A00 Satellite, telecommunications resellers, and all other telecommunications	1.4484	0.4713	8.9606	0.8805	1.3235	1.5609
518200 Data processing, hosting, and related services	1.5038	0.3714	7.8514	0.7840	1.5926	1.9732
5191A0 News syndicates, libraries, archives, and all other information services	1.3067	0.3443	7.9970	0.8288	1.3240	1.4374
519130 Internet publishing and broadcasting and Web search portals	1.3762	0.3292	4.4445	0.8365	1.4769	3.0057
52A000 Monetary authorities and depository credit intermediation	1.3750	0.2996	6.5983	0.8231	1.5298	1.8628
522A00 Nondepository credit intermediation and related activities	1.4808	0.4123	7.0632	0.7737	1.4723	2.1054
523A00 Securities and commodity contracts intermediation and brokerage	1.4736	0.5087	15.8629	0.7488	1.3539	1.3271
523900 Other financial investment activities	1.4661	0.3607	14.2025	0.5879	1.5768	1.3399
524100 Insurance carriers	1.3697	0.2864	5.4329	0.7773	1.5753	1.9595
524200 Insurance agencies, brokerages, and related activities	1.5419	0.4460	9.4621	0.8141	1.5145	1.7345



525000 Funds, trusts, and other financial vehicles	1.3045	0.2132	9.3590	0.3917	1.6418	1.3726
531000 Real estate	1.3543	0.2428	9.0176	0.9131	1.6587	1.4567
532100 Automotive equipment rental and leasing	1.3749	0.3215	5.9929	0.8869	1.4548	1.8273
532A00 Consumer goods and general rental centers	1.4692	0.5457	12.2109	0.9835	1.2987	1.4168
532400 Commercial and industrial machinery and equipment rental and leasing	1.3271	0.2914	4.4460	0.9368	1.4445	2.1128
533000 Lessors of nonfinancial intangible assets	1.3940	0.2615	4.7913	0.7615	1.7861	2.8515
541100 Legal services	1.4265	0.5368	8.7873	0.9957	1.2838	1.6885
541511 Custom computer programming services	1.5329	0.6443	10.9833	1.0198	1.3460	1.8780
541512 Computer systems design services	1.5371	0.5792	9.8069	0.9485	1.3707	1.8942
54151A Other computer related services, including facilities management	1.4783	0.5616	9.2397	0.9741	1.3291	1.8456
541200 Accounting, tax preparation, bookkeeping, and payroll services	1.4108	0.5443	11.9468	1.0317	1.2717	1.4122
541300 Architectural, engineering, and related services	1.5379	0.4892	8.8412	0.8295	1.4729	2.0232
541400 Specialized design services	1.5065	0.5072	13.7784	0.9449	1.3633	1.3961
541610 Management consulting services	1.5293	0.5637	13.0552	0.9211	1.3652	1.5112
5416A0 Environmental and other technical consulting services	1.5556	0.5893	14.2761	0.9301	1.3759	1.4911
541700 Scientific research and development services	1.5275	0.4256	6.6556	0.7534	1.5342	2.4840
541800 Advertising, public relations, and related services	1.4089	0.3365	6.8248	0.8255	1.4905	1.8465
5419A0 Marketing research and all other miscellaneous professional, scientific, and technical services	1.4367	0.4610	10.1053	0.9009	1.3555	1.5325
541920 Photographic services	1.5715	0.5047	17.7008	0.8555	1.4303	1.3397
541940 Veterinary services	1.5826	0.4879	14.5282	0.8212	1.4463	1.3999
550000 Management of companies and enterprises	1.4571	0.4805	6.7203	0.8672	1.3497	2.0717
561100 Office administrative services	1.4958	0.6908	12.7157	1.0749	1.2534	1.4934
561200 Facilities support services	1.5102	0.3630	11.0736	0.8288	1.6408	1.5780
561300 Employment services	1.4887	0.6726	24.1252	1.0756	1.2713	1.2227
561400 Business support services	1.5014	0.5431	15.5120	0.9170	1.3538	1.3630
561500 Travel arrangement and reservation services	1.4549	0.3618	9.7868	0.7350	1.5362	1.5885
561600 Investigation and security services	1.5029	0.6123	23.3455	0.9914	1.2977	1.2144
561700 Services to buildings and dwellings	1.4665	0.4244	16.6467	0.8857	1.4108	1.2641
561900 Other support services	1.5760	0.4973	13.7497	0.8313	1.4628	1.4995
562000 Waste management and remediation services	1.5637	0.3603	8.1113	0.7719	1.6784	1.8696
611100 Elementary and secondary schools	1.5027	0.5610	23.4567	0.9524	1.3123	1.2002
611A00 Junior colleges, colleges, universities, and professional schools	1.5343	0.5117	17.5033	0.9055	1.3515	1.2862
611B00 Other educational services	1.5345	0.5828	28.6420	0.8920	1.3339	1.1774
621100 Offices of physicians	1.5277	0.6224	10.3052	0.9385	1.3094	1.7268
621200 Offices of dentists	1.5128	0.5566	13.0000	0.9279	1.3371	1.4423
621300 Offices of other health practitioners	1.4693	0.5307	14.3056	0.9503	1.3141	1.3470
621400 Outpatient care centers	1.4333	0.4151	9.2730	0.7929	1.3888	1.5742
621500 Medical and diagnostic laboratories	1.4955	0.5589	11.2659	0.9089	1.3315	1.5324
621600 Home health care services	1.5711	0.6700	21.1278	0.9947	1.3084	1.2862
621900 Other ambulatory health care services	1.5395	0.5083	13.6203	0.8603	1.3799	1.3914
622000 Hospitals	1.5275	0.5355	10.8242	0.8593	1.3817	1.6455
623A00 Nursing and community care facilities	1.5338	0.5644	18.9878	0.9124	1.3324	1.2825
623B00 Residential mental retardation, mental health, substance abuse and other facilities	1.5359	0.6346	22.4138	0.9883	1.2863	1.2317
624100 Individual and family services	1.5339	0.6202	24.8017	0.9402	1.3008	1.2082
624A00 Community food, housing, and other relief services, including rehabilitation services	1.5794	0.5254	21.6687	0.8231	1.3940	1.2484

<b>624400 Child day care services</b>	1.5635	0.5754	32.1486	0.9302	1.3260	1.1519
<b>711100 Performing arts companies</b>	1.3749	0.3762	26.6944	0.7684	1.3826	1.1323
<b>711200 Spectator sports</b>	1.4019	0.5871	15.0441	1.0197	1.2351	1.2906
<b>711A00 Promoters of performing arts and sports and agents for public figures</b>	1.3906	0.3144	18.4483	0.6934	1.5329	1.2228
<b>711500 Independent artists, writers, and performers</b>	1.3080	0.2926	8.1796	0.7480	1.4408	1.4971
<b>712000 Museums, historical sites, zoos, and parks</b>	1.5023	0.3879	14.8580	0.7521	1.5053	1.3346
<b>713100 Amusement parks and arcades</b>	1.3744	0.3264	15.0804	0.8920	1.4123	1.2147
<b>713200 Gambling industries (except casino hotels)</b>	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
<b>713900 Other amusement and recreation industries</b>	1.4668	0.3612	20.7269	0.7827	1.4878	1.1928
<b>721000 Accommodation</b>	1.4231	0.3637	11.1123	0.8686	1.4436	1.3955
<b>722110 Full-service restaurants</b>	1.5963	0.4831	21.9806	0.8317	1.4362	1.2231
<b>722211 Limited-service restaurants</b>	1.5400	0.3977	21.5266	0.8287	1.4829	1.1995
<b>722A00 All other food and drinking places</b>	1.6037	0.3045	12.8826	0.6533	1.8311	1.4103
<b>811100 Automotive repair and maintenance</b>	1.6367	0.5821	15.3958	0.9147	1.3758	1.3887
<b>811200 Electronic and precision equipment repair and maintenance</b>	1.5456	0.6228	11.9492	0.9658	1.3149	1.5570
<b>811300 Commercial and industrial machinery and equipment repair and maintenance</b>	1.5287	0.6724	12.8225	1.0574	1.2682	1.4701
<b>811400 Personal and household goods repair and maintenance</b>	1.3798	0.3472	9.7639	0.8760	1.3994	1.4009
<b>812100 Personal care services</b>	1.5543	0.6768	30.7453	0.9668	1.2901	1.1761
<b>812200 Death care services</b>	1.5972	0.6123	18.3892	0.9739	1.3349	1.2966
<b>812300 Dry-cleaning and laundry services</b>	1.5403	0.5934	20.5124	0.9359	1.3270	1.2601
<b>812900 Other personal services</b>	1.4951	0.5113	20.6447	0.8825	1.3532	1.2318
<b>813100 Religious organizations</b>	1.4165	0.2513	7.5576	0.5409	1.7213	1.7137
<b>813A00 Grantmaking, giving, and social advocacy organizations</b>	1.4217	0.5444	14.2591	0.9579	1.2781	1.3387
<b>813B00 Civic, social, professional, and similar organizations</b>	1.5029	0.6933	23.4609	1.0941	1.2492	1.2133
<b>491000 Postal service</b>	1.4788	0.6057	10.9150	1.0482	1.2730	1.5554
<b>S00A00 Other government enterprises</b>	1.6114	0.3586	8.0872	0.7532	1.8201	1.9938
<b>H00000 Households</b>	0.6799	0.1912	5.9193	0.3903	0.0000	0.0000

## APPENDIX H.

**Table H1. Industry In-state Multipliers for the South Central Region**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
1111C0 Oilseed and grain farming	1.6513	0.3096	10.3661	0.4686	2.1421	1.7544
111200 Vegetable and melon farming	1.2374	0.3219	14.2766	0.8008	1.2670	1.1577
111300 Fruit and tree nut farming	1.2421	0.3836	21.2557	0.8067	1.2418	1.1157
111400 Greenhouse, nursery, and floriculture production	1.4137	0.5009	24.5863	0.8131	1.3332	1.2412
111900 Other crop farming	1.3211	0.3444	13.4719	0.6939	1.3559	1.2243
1121A0 Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	1.4986	0.2556	9.5742	0.5410	1.7257	1.4589
112120 Dairy cattle and milk production	1.5385	0.3054	11.7075	0.6154	1.7143	1.3542
112A00 Animal production, except cattle and poultry and eggs	1.2743	0.2592	10.3159	0.8332	1.3269	1.2080
112300 Poultry and egg production	1.6647	0.3062	9.2114	0.5120	1.8212	1.5490
113000 Forestry and logging	1.2838	0.4324	13.8765	0.7085	1.2860	1.2664
114000 Fishing, hunting and trapping	1.1925	0.3322	18.3722	0.7906	1.1781	1.0617
115000 Support activities for agriculture and forestry	1.2003	0.6356	25.3866	0.8247	1.0804	1.0460
211000 Oil and gas extraction	1.1161	0.1811	3.1458	0.7624	1.1928	1.1741
212100 Coal mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2122A0 Iron, gold, silver, and other metal ore mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212230 Copper, nickel, lead, and zinc mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212310 Stone mining and quarrying	1.2280	0.1955	3.9845	0.7537	1.4226	1.3590
2123A0 Other nonmetallic mineral mining and quarrying	1.2824	0.2241	4.4638	0.7299	1.4275	1.3509
213111 Drilling oil and gas wells	1.2200	0.2872	5.6429	0.7758	1.2522	1.2482
21311A Other support activities for mining	1.2171	0.3038	5.2884	0.8057	1.2316	1.3042
2211A0 Electric power generation, transmission, and distribution*	1.2032	0.1819	2.3308	0.6893	1.4453	2.1945
221200 Natural gas distribution	1.1872	0.1761	2.3385	0.5279	1.3988	1.8250
221300 Water, sewage and other systems	1.2651	0.2428	4.2690	0.8247	1.4233	1.5057
23030A Maintenance and repair	1.4102	0.3686	7.6680	0.7623	1.3402	1.4148
2332C0 Nonresidential structures	1.3867	0.4855	9.4304	0.7792	1.2076	1.2127
233293 Highways and streets	1.3673	0.3199	5.9853	0.6919	1.3418	1.3681
2334B0 Residential structures	1.5374	0.3718	7.8100	0.7240	1.5039	1.6542
321100 Sawmills and wood preservation	1.5064	0.2598	5.4839	0.4915	1.9494	2.0498
321200 Veneer, plywood, and engineered wood product manufacturing	1.6642	0.2826	5.6237	0.5521	2.0299	2.0083
321910 Millwork	1.6156	0.3354	6.9367	0.5994	1.6944	1.6610
3219A0 All other wood product manufacturing	1.5818	0.3089	6.8321	0.5921	1.6975	1.5861
327100 Clay product and refractory manufacturing	1.3758	0.3328	6.4355	0.6916	1.3600	1.3355
327200 Glass and glass product manufacturing	1.5040	0.2969	5.7256	0.6435	1.6177	1.5750
327310 Cement manufacturing	1.3357	0.2031	3.0578	0.6804	1.5888	1.8601
327320 Ready-mix concrete manufacturing	1.4784	0.2517	4.6100	0.5316	1.7122	1.7611
327330 Concrete pipe, brick, and block manufacturing	1.4360	0.2681	5.2916	0.6761	1.5878	1.5666
327390 Other concrete product manufacturing	1.5396	0.3202	6.6768	0.6655	1.6321	1.5767
327400 Lime and gypsum product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327910 Abrasive product manufacturing	1.3308	0.1995	3.7915	0.7354	1.5607	1.5241
327991 Cut stone and stone product manufacturing	1.3983	0.3445	7.8929	0.6673	1.3978	1.3266
327992 Ground or treated mineral and earth manufacturing	1.3272	0.2030	3.1715	0.6107	1.5879	1.8422

327993 Mineral wool manufacturing	1.4426	0.2627	5.0771	0.6966	1.5413	1.4834
327999 Miscellaneous nonmetallic mineral products	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331110 Iron and steel mills and ferroalloy manufacturing	1.5217	0.2385	3.6012	0.4776	1.8655	2.2088
331200 Steel product manufacturing from purchased steel	1.6478	0.2534	4.0727	0.5205	1.9722	2.1247
33131A Alumina refining and primary aluminum production	1.6435	0.2442	4.8604	0.6053	1.9097	1.7583
331314 Secondary smelting and alloying of aluminum	1.6697	0.2759	5.4110	0.4935	2.1577	2.0286
33131B Aluminum product manufacturing from purchased aluminum	1.8204	0.2837	5.2494	0.5030	2.2188	2.3014
33141A Primary smelting and refining of nonferrous metal (except aluminum)	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331420 Copper rolling, drawing, extruding, and alloying	1.4573	0.2144	3.9977	0.3515	1.6769	1.6478
331490 Nonferrous metal (except copper and aluminum) rolling, drawing, extruding, and alloying	1.4342	0.2199	3.6910	0.4899	1.7198	1.8381
331510 Ferrous metal foundries	1.4883	0.3136	5.6323	0.6499	1.5645	1.6016
331520 Nonferrous metal foundries	1.5493	0.2978	5.7086	0.6435	1.6620	1.6624
33211A All other forging, stamping, and sintering	1.7134	0.3038	5.0655	0.6504	1.8491	2.0148
332114 Custom roll forming	1.9009	0.2856	4.9759	0.5626	2.2338	2.1012
33211B Crown and closure manufacturing and metal stamping	1.6914	0.3062	5.5152	0.6491	1.7641	1.7532
332200 Cutlery and handtool manufacturing	1.5222	0.3338	5.7565	0.7127	1.4912	1.5431
332310 Plate work and fabricated structural product manufacturing	1.7037	0.3266	6.1048	0.6259	1.7769	1.7829
332320 Ornamental and architectural metal products manufacturing	1.7360	0.3387	6.3249	0.6392	1.7807	1.7520
332410 Power boiler and heat exchanger manufacturing	1.5659	0.3036	4.7104	0.6571	1.5863	1.7677
332420 Metal tank (heavy gauge) manufacturing	1.6221	0.2725	5.3713	0.6352	1.8239	1.7242
332430 Metal can, box, and other metal container (light gauge) manufacturing	1.8219	0.2725	4.9503	0.5309	2.1311	2.1560
332500 Hardware manufacturing	1.6074	0.2768	5.1418	0.6660	1.8557	1.8791
332600 Spring and wire product manufacturing	1.5497	0.3390	6.6373	0.6324	1.5221	1.4853
332710 Machine shops	1.5471	0.4074	7.6743	0.7299	1.4287	1.4413
332720 Turned product and screw, nut, and bolt manufacturing	1.5569	0.2572	4.5758	0.7192	1.8313	1.8723
332800 Coating, engraving, heat treating and allied activities	1.5006	0.2900	5.7365	0.6563	1.5471	1.4935
33291A Valve and fitting (except plumbing) manufacturing	1.5722	0.2794	4.7485	0.6877	1.7517	1.8722
332913 Plumbing fixture fitting and trim manufacturing	1.5795	0.2404	4.7522	0.6655	1.8800	1.7920
332991 Ball and roller bearing manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33299A Ammunition, arms, ordnance, and accessories manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332996 Fabricated pipe and pipe fitting manufacturing	1.5807	0.2940	5.6132	0.6598	1.6404	1.5876
33299B Other fabricated metal manufacturing	1.6387	0.3188	5.7932	0.6454	1.6558	1.6446
333111 Farm machinery and equipment manufacturing	1.5702	0.2453	4.1894	0.6267	1.9187	1.9964
333112 Lawn and garden equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333120 Construction machinery manufacturing	1.6278	0.2626	5.0006	0.5968	1.9804	1.8451
333130 Mining and oil and gas field machinery manufacturing	1.6069	0.3323	5.8363	0.6239	1.6398	1.7584
3332A0 Industrial machinery (except semiconductor machinery) manufacturing	1.5767	0.3455	5.6403	0.6550	1.6170	1.7443
333295 Semiconductor machinery manufacturing	1.5210	0.2633	3.7365	0.6084	1.8435	2.5013
33331B All other commercial and service industry machinery manufacturing	1.4393	0.3683	6.2455	0.6345	1.3666	1.4032
333314 Optical instrument and lens manufacturing	1.4166	0.4191	6.1238	0.6665	1.3161	1.4717
333315 Photographic and photocopying equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

33341A Air purification and ventilation equipment manufacturing	1.4808	0.2980	5.1625	0.6574	1.4854	1.5060
333414 Heating equipment (except warm air furnaces) manufacturing	1.5891	0.2800	5.0400	0.6680	1.8596	1.9140
333415 Air conditioning, refrigeration, and warm air heating equipment manufacturing	1.6543	0.2710	4.8938	0.6250	1.9554	1.9361
333511 Industrial mold manufacturing	1.5076	0.4598	7.9494	0.7660	1.3227	1.3360
33351A Metal cutting and forming machine tool manufacturing	1.4554	0.3575	5.8686	0.6965	1.4139	1.4844
333514 Special tool, die, jig, and fixture manufacturing	1.5300	0.4183	7.1606	0.7414	1.4192	1.4475
33351B Cutting and machine tool accessory, rolling mill, and other metalworking machinery manufacturing	1.5215	0.3514	5.8863	0.6760	1.4787	1.5198
333611 Turbine and turbine generator set units manufacturing	1.6704	0.2951	5.0267	0.6545	1.8826	1.9555
333612 Speed changer, industrial high-speed drive, and gear manufacturing	1.5746	0.3204	5.3242	0.7208	1.6073	1.7108
333613 Mechanical power transmission equipment manufacturing	1.5510	0.2828	5.1966	0.6831	1.7016	1.6868
333618 Other engine equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33391A Pump and pumping equipment manufacturing	1.5227	0.2408	3.9880	0.6876	1.8832	2.1168
333912 Air and gas compressor manufacturing	1.5310	0.2418	3.8992	0.6412	1.8763	2.1210
333920 Material handling equipment manufacturing	1.5743	0.2509	3.9250	0.6406	1.9624	2.2629
333991 Power-driven handtool manufacturing	1.4835	0.2825	4.1433	0.7240	1.5282	1.7091
33399A Other general purpose machinery manufacturing	1.5470	0.2846	4.3461	0.6249	1.6976	1.9381
333993 Packaging machinery manufacturing	1.4916	0.3165	5.1774	0.6659	1.5642	1.6424
333994 Industrial process furnace and oven manufacturing	1.4829	0.3602	5.4698	0.6865	1.4223	1.5059
33399B Fluid power process machinery	1.5621	0.3232	5.2579	0.6481	1.5958	1.6905
334111 Electronic computer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334112 Computer storage device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33411A Computer terminals and other computer peripheral equipment manufacturing	1.3575	0.3399	4.6156	0.6619	1.3242	1.4619
334210 Telephone apparatus manufacturing	1.2782	0.2494	3.3688	0.6202	1.3923	1.5830
334220 Broadcast and wireless communications equipment	1.2577	0.2120	3.1160	0.6564	1.4785	1.7291
334290 Other communications equipment manufacturing	1.3670	0.3895	6.8248	0.7182	1.2920	1.3083
334300 Audio and video equipment manufacturing	1.3958	0.2612	4.2401	0.6304	1.5000	1.5681
33441A Other electronic component manufacturing	1.3313	0.3524	7.0780	0.6985	1.2787	1.2529
334413 Semiconductor and related device manufacturing	1.2361	0.2828	3.3680	0.7689	1.2715	1.5279
334418 Printed circuit assembly (electronic assembly) manufacturing	1.3292	0.2045	4.3533	0.4921	1.5996	1.4510
334510 Electromedical and electrotherapeutic apparatus manufacturing	1.3498	0.2529	3.7343	0.7283	1.4472	1.6157
334511 Search, detection, and navigation instruments manufacturing	1.2764	0.3064	4.3016	0.6972	1.3154	1.4912
334512 Automatic environmental control manufacturing	1.3555	0.4273	7.9505	0.7336	1.2403	1.2338
334513 Industrial process variable instruments manufacturing	1.3818	0.4426	7.7632	0.7117	1.2540	1.2735
334514 Totalizing fluid meter and counting device manufacturing	1.4653	0.2283	4.3908	0.6167	1.7854	1.7051
334515 Electricity and signal testing instruments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334516 Analytical laboratory instrument manufacturing	1.3930	0.2665	4.2235	0.6876	1.5050	1.6472
334517 Irradiation apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33451A Watch, clock, and other measuring and controlling device manufacturing	1.3487	0.2972	5.1927	0.6992	1.3837	1.4183
334610 Manufacturing and reproducing magnetic and optical media	1.4410	0.2943	4.2925	0.7169	1.4599	1.6422

335110 Electric lamp bulb and part manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335120 Lighting fixture manufacturing	1.5036	0.2685	5.6481	0.6927	1.6838	1.5326
335210 Small electrical appliance manufacturing	1.5942	0.3023	5.1365	0.6513	1.6978	1.7130
335221 Household cooking appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335222 Household refrigerator and home freezer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335224 Household laundry equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335228 Other major household appliance manufacturing	1.6156	0.2514	4.9853	0.6921	1.9664	1.7751
335311 Power, distribution, and specialty transformer manufacturing	1.5007	0.2610	4.2564	0.6261	1.6193	1.7312
335312 Motor and generator manufacturing	1.5165	0.2528	4.9708	0.5882	1.7321	1.5982
335313 Switchgear and switchboard apparatus manufacturing	1.4805	0.2479	4.7452	0.6366	1.7117	1.6067
335314 Relay and industrial control manufacturing	1.4054	0.3304	4.7794	0.6902	1.4000	1.5206
335911 Storage battery manufacturing	1.4123	0.2087	3.6107	0.5240	1.6322	1.6623
335912 Primary battery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335920 Communication and energy wire and cable manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335930 Wiring device manufacturing	1.4818	0.2727	5.6480	0.7328	1.5702	1.4398
335991 Carbon and graphite product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335999 All other miscellaneous electrical equipment and component manufacturing	1.4013	0.2722	5.0962	0.6027	1.5516	1.5376
336111 Automobile manufacturing	1.8117	0.2805	4.0355	0.5697	2.1936	2.7615
336112 Light truck and utility vehicle manufacturing	1.8850	0.2931	4.4270	0.5379	2.2928	2.6901
336120 Heavy duty truck manufacturing	1.6779	0.2632	4.9934	0.4732	2.0585	1.8802
336211 Motor vehicle body manufacturing	1.7582	0.2914	5.2575	0.5799	2.0781	2.0431
336212 Truck trailer manufacturing	1.7713	0.2992	5.9318	0.5712	1.9886	1.8173
336213 Motor home manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336214 Travel trailer and camper manufacturing	1.7238	0.2686	5.7645	0.5754	2.1009	1.8216
336310 Motor vehicle gasoline engine and engine parts manufacturing	1.7939	0.2981	4.8887	0.6308	2.3100	2.5576
336320 Motor vehicle electrical and electronic equipment manufacturing	1.5480	0.3119	5.3681	0.5598	1.6754	1.7261
3363A0 Motor vehicle steering, suspension component (except spring), and brake systems manufacturing	1.7832	0.3006	4.8811	0.6363	2.2055	2.4680
336350 Motor vehicle transmission and power train parts manufacturing	1.8129	0.3120	5.1398	0.6368	2.1569	2.3451
336360 Motor vehicle seating and interior trim manufacturing	1.8462	0.2945	5.2855	0.5687	2.3035	2.3020
336370 Motor vehicle metal stamping	1.7089	0.2847	4.5652	0.6276	1.9538	2.0239
336390 Other motor vehicle parts manufacturing	1.7746	0.3080	5.3892	0.6079	2.0629	2.0988
336411 Aircraft manufacturing	1.3737	0.2535	4.2540	0.6400	1.4900	1.5006
336412 Aircraft engine and engine parts manufacturing	1.4016	0.2419	3.4755	0.6241	1.5997	1.8226
336413 Other aircraft parts and auxiliary equipment manufacturing	1.4066	0.2610	4.3029	0.7259	1.5709	1.7038
336414 Guided missile and space vehicle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33641A Propulsion units and parts for space vehicles and guided missiles	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336500 Railroad rolling stock manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336611 Ship building and repairing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336612 Boat building	1.6728	0.2813	5.3880	0.5876	2.0466	1.9302
336991 Motorcycle, bicycle, and parts manufacturing	1.5613	0.2762	5.1369	0.5932	1.7111	1.6630
336992 Military armored vehicle, tank, and tank component manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336999 All other transportation equipment manufacturing	1.6726	0.2589	4.3784	0.5267	2.0247	2.0563

337110 Wood kitchen cabinet and countertop manufacturing	1.5746	0.3873	8.7134	0.6385	1.4831	1.4242
337121 Upholstered household furniture manufacturing	1.5494	0.3081	7.5912	0.5485	1.5970	1.3896
337122 Nonupholstered wood household furniture manufacturing	1.4921	0.3571	8.8369	0.6731	1.4281	1.3050
33712A Other household nonupholstered furniture	1.6561	0.2997	6.2602	0.6121	1.7937	1.6622
337127 Institutional furniture manufacturing	1.5788	0.3067	6.1999	0.6348	1.6654	1.6026
33721A Office furniture and custom architectural woodwork and millwork manufacturing	1.5397	0.2790	5.2462	0.6989	1.7142	1.7705
337215 Showcase, partition, shelving, and locker manufacturing	1.6484	0.3926	7.6932	0.6467	1.5047	1.4577
337900 Other furniture related product manufacturing	1.6185	0.2956	6.2734	0.6462	1.7761	1.6430
339112 Surgical and medical instrument manufacturing	1.4096	0.3184	5.0930	0.7824	1.4359	1.5116
339113 Surgical appliance and supplies manufacturing	1.4026	0.2725	4.2576	0.7463	1.5495	1.7277
339114 Dental equipment and supplies manufacturing	1.3363	0.2641	5.0362	0.6332	1.4642	1.4680
339115 Ophthalmic goods manufacturing	1.4123	0.3574	8.2363	0.7462	1.3929	1.3309
339116 Dental laboratories	1.2739	0.4217	10.3848	0.7171	1.2306	1.1646
339910 Jewelry and silverware manufacturing	1.3559	0.2394	5.4492	0.5109	1.5650	1.4581
339920 Sporting and athletic goods manufacturing	1.4944	0.2851	5.4185	0.6421	1.6536	1.6228
339930 Doll, toy, and game manufacturing	1.5097	0.2416	5.1086	0.5941	1.8899	1.6719
339940 Office supplies (except paper) manufacturing	1.4468	0.2820	7.1505	0.6413	1.5487	1.3415
339950 Sign manufacturing	1.5966	0.3587	7.7897	0.6746	1.5430	1.4129
339990 All other miscellaneous manufacturing	1.5880	0.3284	6.1467	0.6500	1.6901	1.7264
311111 Dog and cat food manufacturing	1.5615	0.2454	4.2746	0.5354	1.8323	2.3054
311119 Other animal food manufacturing	1.8308	0.3043	7.1776	0.4497	2.2719	2.5485
311210 Flour milling and malt manufacturing	2.0652	0.3543	8.1145	0.5521	2.6452	3.8852
311221 Wet corn milling	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31122A Soybean and other oilseed processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311225 Fats and oils refining and blending	1.6336	0.2592	4.9822	0.3176	1.9350	2.1535
311230 Breakfast cereal manufacturing	1.4289	0.2236	3.6750	0.6400	1.6693	1.9495
311300 Sugar and confectionery product manufacturing	1.4497	0.2346	5.5255	0.5111	1.7515	1.5803
311410 Frozen food manufacturing	1.7677	0.2973	6.9992	0.5291	2.2201	2.2216
311420 Fruit and vegetable canning, pickling, and drying	1.6227	0.2650	6.0749	0.4590	1.9788	1.8560
31151A Fluid milk and butter manufacturing	2.1745	0.3721	9.8218	0.6570	2.7786	4.0783
311513 Cheese manufacturing	2.0486	0.3515	9.6980	0.5600	2.6245	3.4504
311514 Dry, condensed, and evaporated dairy product manufacturing	2.1228	0.3588	8.4751	0.5959	2.6793	4.3614
311520 Ice cream and frozen dessert manufacturing	1.7557	0.2855	7.0252	0.6084	2.1314	2.0494
31161A Animal (except poultry) slaughtering, rendering, and processing	1.6496	0.2615	7.1368	0.4611	1.9527	2.2050
311615 Poultry processing	1.8318	0.2965	7.2706	0.4758	2.2141	2.2859
311700 Seafood product preparation and packaging	1.3648	0.2207	4.6560	0.4394	1.6481	1.7162
311810 Bread and bakery product manufacturing	1.6317	0.3210	8.7656	0.6177	1.7508	1.4771
3118A0 Cookie, cracker, pasta, and tortilla manufacturing	1.7396	0.2834	5.6288	0.6249	2.1159	2.2060
311910 Snack food manufacturing	1.4759	0.2377	5.5393	0.6049	1.7745	1.7058
311920 Coffee and tea manufacturing	1.4543	0.2414	5.0573	0.4601	1.8023	1.6926
311930 Flavoring syrup and concentrate manufacturing	1.2006	0.1793	3.4188	0.7221	1.3390	1.3492
311940 Seasoning and dressing manufacturing	1.6148	0.2623	4.9956	0.5057	1.9585	2.2145
311990 All other food manufacturing	1.7035	0.2929	7.6980	0.5268	2.1873	2.0984
312110 Soft drink and ice manufacturing	1.5215	0.2431	4.2906	0.4577	1.8152	1.8832
312120 Breweries	1.5589	0.2513	5.6417	0.6712	1.8766	1.6740
312130 Wineries	1.5118	0.2612	6.6024	0.5885	1.9501	1.6322

312140 Distilleries	1.2572	0.1931	4.7850	0.7864	1.4417	1.2991
312200 Tobacco product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313100 Fiber, yarn, and thread mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313200 Fabric mills	1.4545	0.2554	5.6300	0.5352	1.6451	1.4838
313300 Textile and fabric finishing and fabric coating mills	1.3714	0.2857	6.4383	0.5053	1.4365	1.3156
314110 Carpet and rug mills	1.3774	0.2100	4.8050	0.4118	1.5682	1.4122
314120 Curtain and linen mills	1.3148	0.3013	10.4605	0.5611	1.3220	1.1559
314900 Other textile product mills	1.3764	0.3163	8.8011	0.5611	1.3671	1.2362
315000 Apparel manufacturing	1.2818	0.4079	14.5955	0.6426	1.2311	1.1190
316000 Leather and allied product manufacturing	1.5449	0.3232	6.4873	0.5602	1.6105	1.5682
322110 Pulp mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322120 Paper mills	1.4573	0.2349	3.3884	0.5637	1.7542	2.1847
322130 Paperboard mills	1.4795	0.2419	3.8047	0.5821	1.8061	2.1628
322210 Paperboard container manufacturing	1.5670	0.2821	5.0387	0.5174	1.7124	1.7082
322220 Paper bag and coated and treated paper manufacturing	1.5483	0.2749	4.4465	0.5548	1.6617	1.7248
322230 Stationery product manufacturing	1.5650	0.2871	5.8258	0.5898	1.6833	1.5293
322291 Sanitary paper product manufacturing	1.3680	0.2597	5.4754	0.6158	1.4202	1.3248
322299 All other converted paper product manufacturing	1.4804	0.2577	4.5486	0.5678	1.6914	1.7032
323110 Printing	1.4232	0.3453	7.9730	0.6693	1.4548	1.4253
323120 Support activities for printing	1.3221	0.4357	8.7662	0.7705	1.2571	1.2761
324110 Petroleum refineries	1.0748	0.1516	1.3624	0.2881	1.1321	1.3026
324121 Asphalt paving mixture and block manufacturing	1.2382	0.1897	2.5777	0.5369	1.4164	1.6207
324122 Asphalt shingle and coating materials manufacturing	1.2676	0.2103	3.3688	0.5209	1.4574	1.5244
324190 Other petroleum and coal products manufacturing	1.2283	0.1814	2.2417	0.6079	1.3547	1.5295
325110 Petrochemical manufacturing	1.3775	0.2006	2.3083	0.3456	1.4976	1.7564
325120 Industrial gas manufacturing	1.2966	0.1977	3.0048	0.6608	1.4760	1.5335
325130 Synthetic dye and pigment manufacturing	1.3530	0.2173	3.2007	0.5079	1.6226	1.7999
325180 Other basic inorganic chemical manufacturing	1.3797	0.2169	3.0654	0.6073	1.6198	1.8892
325190 Other basic organic chemical manufacturing	1.5572	0.2440	3.5858	0.3575	1.8218	2.2824
325211 Plastics material and resin manufacturing	1.5017	0.2308	2.9798	0.3933	1.7234	2.0244
3252A0 Synthetic rubber and artificial and synthetic fibers and filaments manufacturing	1.5253	0.2405	4.1435	0.4131	1.7954	1.6589
325310 Fertilizer manufacturing	1.4362	0.2238	3.8085	0.4972	1.6708	1.6850
325320 Pesticide and other agricultural chemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325411 Medicinal and botanical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325412 Pharmaceutical preparation manufacturing	1.3104	0.2647	3.3693	0.7765	1.4560	1.6158
325413 In-vitro diagnostic substance manufacturing	1.3786	0.3039	3.8036	0.7714	1.4581	1.6879
325414 Biological product (except diagnostic) manufacturing	1.3039	0.2052	2.3017	0.8422	1.5320	1.9194
325510 Paint and coating manufacturing	1.4828	0.2346	3.3075	0.5242	1.7513	1.9066
325520 Adhesive manufacturing	1.4835	0.2380	3.4439	0.5048	1.7770	2.0067
325610 Soap and cleaning compound manufacturing	1.4487	0.2256	3.2560	0.7390	1.6842	1.9138
325620 Toilet preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325910 Printing ink manufacturing	1.3850	0.2225	3.6309	0.5211	1.6610	1.6007
3259A0 All other chemical product and preparation manufacturing	1.5401	0.2503	3.9903	0.5502	1.8689	1.8343
326110 Plastics packaging materials and unlaminated film and sheet manufacturing	1.7449	0.2690	4.3063	0.5774	2.0083	2.0001
326120 Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	1.7126	0.3050	5.1938	0.5973	1.7503	1.6530



326130 Laminated plastics plate, sheet (except packaging), and shape manufacturing	1.5384	0.3068	5.4546	0.6602	1.4950	1.4406
326140 Polystyrene foam product manufacturing	1.6443	0.2640	4.7818	0.5670	1.8593	1.7847
326150 Urethane and other foam product (except polystyrene) manufacturing	1.6253	0.2542	4.6298	0.5598	1.8978	1.7898
326160 Plastics bottle manufacturing	1.7237	0.2633	4.1528	0.5787	1.9657	1.9259
326190 Other plastics product manufacturing	1.7699	0.2894	5.2508	0.5839	2.0597	1.9328
326210 Tire manufacturing	1.4798	0.2774	5.0301	0.5159	1.5825	1.6268
326220 Rubber and plastics hoses and belting manufacturing	1.5035	0.3573	6.4521	0.6059	1.4223	1.4264
326290 Other rubber product manufacturing	1.6106	0.2752	4.9076	0.6061	1.8254	1.8250
420000 Wholesale trade	1.2752	0.3436	5.4144	0.8407	1.2911	1.4429
441000 Motor vehicle and parts dealers	1.1972	0.4239	8.8512	0.8858	1.1297	1.1483
445000 Food and beverage stores	1.3051	0.4049	16.6049	0.8405	1.2276	1.1177
452000 General merchandise stores	1.3113	0.3682	15.0837	0.8255	1.2987	1.1304
4A0000 Other retail	1.3050	0.3785	14.8291	0.8182	1.2607	1.1406
481000 Air transportation	1.2084	0.2190	3.1973	0.5627	1.3479	1.6050
482000 Rail transportation	1.2557	0.2610	3.6069	0.6635	1.3413	1.5828
483000 Water transportation	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
484000 Truck transportation	1.4106	0.3740	8.2302	0.6713	1.4395	1.4243
485A00 Transit and ground passenger transportation*	1.3410	0.4675	22.7353	0.6490	1.2435	1.0930
486000 Pipeline transportation	1.2803	0.3233	4.0001	0.6634	1.2944	1.6433
48A000 Scenic and sightseeing transportation and support activities for transportation	1.4494	0.4194	8.9258	0.7549	1.4598	1.5061
492000 Couriers and messengers	1.3899	0.3684	10.8490	0.7351	1.4143	1.2828
493000 Warehousing and storage	1.3579	0.4064	9.4711	0.8152	1.3029	1.3128
511110 Newspaper publishers	1.3854	0.3649	9.2382	0.7542	1.3985	1.3187
511120 Periodical publishers	1.4657	0.3136	5.9657	0.7259	1.6667	1.8882
511130 Book publishers	1.2333	0.1999	3.7712	0.8723	1.4909	1.6338
5111A0 Directory, mailing list, and other publishers	1.3589	0.2326	4.9366	0.7918	1.6741	1.7405
511200 Software publishers	1.2145	0.3090	4.3364	0.8134	1.2596	1.4949
512100 Motion picture and video industries	1.2227	0.2079	7.4542	0.6759	1.3966	1.2530
512200 Sound recording industries	1.2611	0.2082	4.8494	0.6827	1.5526	1.5150
515100 Radio and television broadcasting	1.2160	0.5202	8.1136	0.7137	1.1525	1.2052
515200 Cable and other subscription programming	1.1425	0.2612	4.4485	0.6620	1.1541	1.2251
517110 Wired telecommunications carriers	1.1701	0.1760	3.1823	0.7124	1.3125	1.4012
517210 Wireless telecommunications carriers (except satellite)	1.2919	0.2083	4.1139	0.6687	1.5539	1.6837
517A00 Satellite, telecommunications resellers, and all other telecommunications	1.2207	0.3891	6.5537	0.7509	1.1581	1.2100
518200 Data processing, hosting, and related services	1.3923	0.3292	6.4115	0.7211	1.4965	1.7079
5191A0 News syndicates, libraries, archives, and all other information services	1.1593	0.2898	6.2762	0.7460	1.1810	1.1957
519130 Internet publishing and broadcasting and Web search portals	1.2726	0.2919	3.2685	0.7802	1.3878	2.3428
52A000 Monetary authorities and depository credit intermediation	1.2874	0.2869	5.8430	0.7725	1.3976	1.5735
522A00 Nondepository credit intermediation and related activities	1.3765	0.3991	5.9262	0.7153	1.3596	1.6850
523A00 Securities and commodity contracts intermediation and brokerage	1.3021	0.4812	14.7328	0.6524	1.2218	1.1757
523900 Other financial investment activities	1.4843	0.3813	14.3172	0.5977	1.5901	1.2884
524100 Insurance carriers	1.3633	0.2951	5.0557	0.7701	1.5482	1.7393
524200 Insurance agencies, brokerages, and related activities	1.5036	0.4489	8.7569	0.7856	1.4541	1.5311

525000 Funds, trusts, and other financial vehicles	1.3343	0.2317	9.9787	0.3969	1.7026	1.3960
531000 Real estate	1.2740	0.2089	7.7088	0.8687	1.5244	1.3303
532100 Automotive equipment rental and leasing	1.2808	0.2782	4.6109	0.8343	1.3446	1.5018
532A00 Consumer goods and general rental centers	1.2455	0.4532	9.3855	0.8582	1.1522	1.1633
532400 Commercial and industrial machinery and equipment rental and leasing	1.2303	0.2511	3.2054	0.8837	1.3297	1.6271
533000 Lessors of nonfinancial intangible assets	1.3775	0.2531	4.2265	0.7587	1.8471	2.6869
541100 Legal services	1.1922	0.4981	6.8762	0.8647	1.1162	1.2382
541511 Custom computer programming services	1.2337	0.5961	8.6571	0.8533	1.1670	1.3871
541512 Computer systems design services	1.2755	0.5381	7.7454	0.8021	1.1933	1.4020
54151A Other computer related services, including facilities management	1.2136	0.5191	7.1848	0.8259	1.1512	1.3449
541200 Accounting, tax preparation, bookkeeping, and payroll services	1.1577	0.5030	10.1541	0.8886	1.1011	1.1248
541300 Architectural, engineering, and related services	1.3830	0.4717	7.4662	0.7416	1.3310	1.6011
541400 Specialized design services	1.2919	0.4721	12.3241	0.8231	1.1891	1.1702
541610 Management consulting services	1.3080	0.5328	11.5177	0.7985	1.2091	1.2493
5416A0 Environmental and other technical consulting services	1.3130	0.5525	12.5613	0.7943	1.2090	1.2295
541700 Scientific research and development services	1.3831	0.4124	5.5014	0.6802	1.3932	1.9241
541800 Advertising, public relations, and related services	1.3022	0.3233	5.9174	0.7671	1.3419	1.5003
5419A0 Marketing research and all other miscellaneous professional, scientific, and technical services	1.2491	0.4338	8.7488	0.7980	1.1954	1.2433
541920 Photographic services	1.3905	0.4769	16.6136	0.7545	1.2664	1.1783
541940 Veterinary services	1.4180	0.4659	13.4559	0.7331	1.2942	1.2150
550000 Management of companies and enterprises	1.2720	0.4282	4.8919	0.7656	1.2197	1.5291
561100 Office administrative services	1.1573	0.5946	9.6014	0.8832	1.0830	1.1320
561200 Facilities support services	1.3648	0.3232	9.5746	0.7471	1.4665	1.3697
561300 Employment services	1.1616	0.5817	21.0517	0.8905	1.1038	1.0711
561400 Business support services	1.2807	0.4814	13.3301	0.7926	1.2046	1.1758
561500 Travel arrangement and reservation services	1.3737	0.3408	8.7441	0.6909	1.4529	1.4247
561600 Investigation and security services	1.2199	0.5319	20.5886	0.8315	1.1314	1.0751
561700 Services to buildings and dwellings	1.3230	0.3809	14.9629	0.8030	1.2711	1.1406
561900 Other support services	1.4134	0.4516	11.9798	0.7390	1.3335	1.3115
562000 Waste management and remediation services	1.4581	0.3280	6.7593	0.7113	1.5338	1.5640
611100 Elementary and secondary schools	1.2257	0.5213	22.7717	0.7988	1.1238	1.0737
611A00 Junior colleges, colleges, universities, and professional schools	1.2908	0.4747	16.5108	0.7751	1.1553	1.1181
611B00 Other educational services	1.3185	0.5611	28.7700	0.7712	1.1836	1.0898
621100 Offices of physicians	1.3121	0.5474	7.7509	0.8182	1.1832	1.3342
621200 Offices of dentists	1.3279	0.4948	10.7890	0.8278	1.2211	1.2297
621300 Offices of other health practitioners	1.2650	0.4594	11.8577	0.8372	1.1686	1.1470
621400 Outpatient care centers	1.3817	0.3839	7.9072	0.7711	1.3194	1.3789
621500 Medical and diagnostic laboratories	1.3127	0.4928	8.9190	0.8073	1.2061	1.2463
621600 Home health care services	1.2855	0.5745	17.8868	0.8332	1.1525	1.1186
621900 Other ambulatory health care services	1.4001	0.4557	11.5693	0.7796	1.2708	1.2141
622000 Hospitals	1.3808	0.4823	8.7949	0.7800	1.2783	1.3734
623A00 Nursing and community care facilities	1.3103	0.4891	16.3715	0.7938	1.1861	1.1359
623B00 Residential mental retardation, mental health, substance abuse and other facilities	1.2449	0.5383	19.1936	0.8295	1.1208	1.0835
624100 Individual and family services	1.2735	0.5318	21.6915	0.7979	1.1458	1.0855
624A00 Community food, housing, and other relief services, including rehabilitation services	1.4166	0.4652	19.3164	0.7274	1.2679	1.1432

<b>624400 Child day care services</b>	1.2897	0.4868	28.8848	0.7860	1.1523	1.0632
<b>711100 Performing arts companies</b>	1.2777	0.4065	30.6010	0.7178	1.2370	1.0748
<b>711200 Spectator sports</b>	1.1197	0.6077	14.9226	0.8571	1.0586	1.0601
<b>711A00 Promoters of performing arts and sports and agents for public figures</b>	1.3863	0.3628	21.9766	0.6920	1.4649	1.2062
<b>711500 Independent artists, writers, and performers</b>	1.2469	0.3244	8.7885	0.7176	1.3226	1.3320
<b>712000 Museums, historical sites, zoos, and parks</b>	1.4737	0.4275	16.4118	0.7438	1.3736	1.2207
<b>713100 Amusement parks and arcades</b>	1.2499	0.3400	16.3570	0.8262	1.2185	1.0910
<b>713200 Gambling industries (except casino hotels)</b>	1.3167	0.2312	7.9896	0.7411	1.6374	1.3281
<b>713900 Other amusement and recreation industries</b>	1.3721	0.3824	23.1866	0.7351	1.3044	1.1049
<b>721000 Accommodation</b>	1.2770	0.3359	9.9447	0.7911	1.2839	1.2028
<b>722110 Full-service restaurants</b>	1.3841	0.4413	20.5866	0.7222	1.2635	1.1033
<b>722211 Limited-service restaurants</b>	1.3686	0.3636	20.5378	0.7423	1.3058	1.1022
<b>722A00 All other food and drinking places</b>	1.5078	0.2891	12.0927	0.6092	1.6740	1.2750
<b>811100 Automotive repair and maintenance</b>	1.3732	0.5048	12.7942	0.7668	1.2006	1.1613
<b>811200 Electronic and precision equipment repair and maintenance</b>	1.2377	0.5367	9.1392	0.7952	1.1403	1.1984
<b>811300 Commercial and industrial machinery and equipment repair and maintenance</b>	1.1977	0.5755	9.6895	0.8671	1.0921	1.1179
<b>811400 Personal and household goods repair and maintenance</b>	1.2565	0.3093	8.3389	0.8055	1.2546	1.2039
<b>812100 Personal care services</b>	1.2663	0.5908	27.8366	0.8078	1.1333	1.0716
<b>812200 Death care services</b>	1.2931	0.5240	15.4724	0.8024	1.1497	1.0978
<b>812300 Dry-cleaning and laundry services</b>	1.2788	0.5194	18.0445	0.7922	1.1687	1.1154
<b>812900 Other personal services</b>	1.3098	0.4545	18.6002	0.7798	1.2105	1.1168
<b>813100 Religious organizations</b>	1.4377	0.2513	7.4244	0.5588	1.7321	1.6941
<b>813A00 Grantmaking, giving, and social advocacy organizations</b>	1.1974	0.4833	12.3122	0.8288	1.1417	1.1632
<b>813B00 Civic, social, professional, and similar organizations</b>	1.1426	0.5914	20.2130	0.8907	1.0723	1.0519
<b>491000 Postal service</b>	1.1734	0.5226	8.1790	0.8751	1.0951	1.1619
<b>S00A00 Other government enterprises</b>	1.5067	0.3408	7.0876	0.6926	1.6388	1.6555
<b>H00000 Households</b>	0.0000	0.0000	0.0000	0.0000	0.0000	0.0000

## APPENDIX H.

**Table H2. Industry Out-state Multipliers for the South Central Region**

INDUSTRY	Multiplier					
	Final Demand				Direct Effect	
	Output/1/ (dollars)	Earnings/2/ (dollars)	Employment/3/ (jobs)	Value-added/4/ (dollars)	Earnings/5/ (dollars)	Employment/6/ (jobs)
1111C0 Oilseed and grain farming	1.9401	0.3898	12.6913	0.6362	2.6971	2.1479
111200 Vegetable and melon farming	1.5377	0.4053	16.6942	0.9750	1.5953	1.3537
111300 Fruit and tree nut farming	1.5998	0.4830	24.1366	1.0143	1.5636	1.2670
111400 Greenhouse, nursery, and floriculture production	1.8808	0.6307	28.3479	1.0841	1.6786	1.4311
111900 Other crop farming	1.6423	0.4336	16.0582	0.8803	1.7072	1.4594
1121A0 Beef cattle ranching and farming, including feedlots and dual-purpose ranching and farming	1.7370	0.3219	11.4939	0.6794	2.1728	1.7515
112120 Dairy cattle and milk production	1.8234	0.3846	14.0013	0.7807	2.1584	1.6196
112A00 Animal production, except cattle and poultry and eggs	1.5160	0.3264	12.2625	0.9735	1.6707	1.4360
112300 Poultry and egg production	1.9503	0.3855	11.5109	0.6777	2.2931	1.9356
113000 Forestry and logging	1.6870	0.5444	17.1236	0.9425	1.6192	1.5627
114000 Fishing, hunting and trapping	1.5023	0.4183	20.8673	0.9704	1.4833	1.2059
115000 Support activities for agriculture and forestry	1.7931	0.8003	30.1601	1.1687	1.3603	1.2426
211000 Oil and gas extraction	1.2850	0.2280	4.5058	0.8604	1.5018	1.6818
212100 Coal mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
2122A0 Iron, gold, silver, and other metal ore mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212230 Copper, nickel, lead, and zinc mining	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
212310 Stone mining and quarrying	1.4104	0.2462	5.4531	0.8595	1.7912	1.8599
2123A0 Other nonmetallic mineral mining and quarrying	1.4915	0.2822	6.1471	0.8512	1.7973	1.8603
213111 Drilling oil and gas wells	1.4878	0.3616	7.7998	0.9313	1.5766	1.7253
21311A Other support activities for mining	1.5004	0.3825	7.5701	0.9701	1.5507	1.8668
2211A0 Electric power generation, transmission, and distribution*	1.3729	0.2290	3.6970	0.7877	1.8198	3.4807
221200 Natural gas distribution	1.3513	0.2217	3.6607	0.6232	1.7613	2.8568
221300 Water, sewage and other systems	1.4915	0.3057	6.0923	0.9561	1.7921	2.1488
23030A Maintenance and repair	1.7539	0.4641	10.4361	0.9618	1.6874	1.9255
2332C0 Nonresidential structures	1.8394	0.6112	13.0762	1.0420	1.5204	1.6815
233293 Highways and streets	1.6656	0.4028	8.3878	0.8650	1.6895	1.9173
2334B0 Residential structures	1.8842	0.4682	10.6026	0.9253	1.8935	2.2457
321100 Sawmills and wood preservation	1.7488	0.3272	7.4354	0.6322	2.4545	2.7793
321200 Veneer, plywood, and engineered wood product manufacturing	1.9277	0.3559	7.7464	0.7051	2.5558	2.7664
321910 Millwork	1.9284	0.4223	9.4558	0.7810	2.1334	2.2642
3219A0 All other wood product manufacturing	1.8699	0.3890	9.1521	0.7593	2.1374	2.1247
327100 Clay product and refractory manufacturing	1.6862	0.4191	8.9351	0.8717	1.7124	1.8543
327200 Glass and glass product manufacturing	1.7809	0.3739	7.9557	0.8043	2.0368	2.1885
327310 Cement manufacturing	1.5251	0.2558	4.5833	0.7904	2.0004	2.7881
327320 Ready-mix concrete manufacturing	1.7131	0.3169	6.5000	0.6678	2.1558	2.4831
327330 Concrete pipe, brick, and block manufacturing	1.6861	0.3376	7.3053	0.8212	1.9992	2.1627
327390 Other concrete product manufacturing	1.8382	0.4031	9.0813	0.8388	2.0550	2.1445
327400 Lime and gypsum product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
327910 Abrasive product manufacturing	1.5169	0.2512	5.2901	0.8434	1.9650	2.1265
327991 Cut stone and stone product manufacturing	1.7195	0.4337	10.4799	0.8538	1.7600	1.7614
327992 Ground or treated mineral and earth manufacturing	1.5166	0.2556	4.6961	0.7206	1.9993	2.7278

327993 Mineral wool manufacturing	1.6876	0.3308	7.0501	0.8388	1.9407	2.0599
327999 Miscellaneous nonmetallic mineral products	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331110 Iron and steel mills and ferroalloy manufacturing	1.7442	0.3003	5.3924	0.6067	2.3489	3.3074
331200 Steel product manufacturing from purchased steel	1.8841	0.3191	5.9759	0.6576	2.4831	3.1176
33131A Alumina refining and primary aluminum production	1.8712	0.3074	6.6941	0.7374	2.4045	2.4217
331314 Secondary smelting and alloying of aluminum	1.9270	0.3474	7.4828	0.6428	2.7168	2.8054
33131B Aluminum product manufacturing from purchased aluminum	2.0850	0.3572	7.3799	0.6566	2.7937	3.2355
33141A Primary smelting and refining of nonferrous metal (except aluminum)	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
331420 Copper rolling, drawing, extruding, and alloying	1.6572	0.2700	5.6079	0.4675	2.1114	2.3115
331490 Nonferrous metal (except copper and aluminum) rolling, drawing, extruding, and alloying	1.6393	0.2769	5.3424	0.6089	2.1654	2.6605
331510 Ferrous metal foundries	1.7808	0.3949	7.9878	0.8197	1.9699	2.2714
331520 Nonferrous metal foundries	1.8270	0.3749	7.9448	0.8047	2.0926	2.3135
33211A All other forging, stamping, and sintering	1.9967	0.3825	7.3469	0.8148	2.3282	2.9222
332114 Custom roll forming	2.1673	0.3596	7.1207	0.7172	2.8125	3.0070
33211B Crown and closure manufacturing and metal stamping	1.9770	0.3856	7.8149	0.8148	2.2212	2.4842
332200 Cutlery and handtool manufacturing	1.8335	0.4203	8.2633	0.8933	1.8776	2.2151
332310 Plate work and fabricated structural product manufacturing	2.0083	0.4112	8.5576	0.8026	2.2373	2.4992
332320 Ornamental and architectural metal products manufacturing	2.0519	0.4265	8.8688	0.8225	2.2421	2.4567
332410 Power boiler and heat exchanger manufacturing	1.8491	0.3823	6.9907	0.8215	1.9974	2.6235
332420 Metal tank (heavy gauge) manufacturing	1.8762	0.3431	7.4177	0.7827	2.2965	2.3811
332430 Metal can, box, and other metal container (light gauge) manufacturing	2.0760	0.3431	6.9965	0.6784	2.6833	3.0472
332500 Hardware manufacturing	1.8656	0.3485	7.2205	0.8158	2.3365	2.6387
332600 Spring and wire product manufacturing	1.8658	0.4268	9.1832	0.8159	1.9164	2.0550
332710 Machine shops	1.9270	0.5129	10.7337	0.9504	1.7989	2.0159
332720 Turned product and screw, nut, and bolt manufacturing	1.7967	0.3238	6.5071	0.8584	2.3058	2.6625
332800 Coating, engraving, heat treating and allied activities	1.7710	0.3651	7.9141	0.8132	1.9480	2.0605
33291A Valve and fitting (except plumbing) manufacturing	1.8327	0.3517	6.8465	0.8389	2.2056	2.6994
332913 Plumbing fixture fitting and trim manufacturing	1.8036	0.3026	6.5574	0.7956	2.3671	2.4727
332991 Ball and roller bearing manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33299A Ammunition, arms, ordnance, and accessories manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
332996 Fabricated pipe and pipe fitting manufacturing	1.8548	0.3701	7.8207	0.8189	2.0655	2.2120
33299B Other fabricated metal manufacturing	1.9360	0.4014	8.1872	0.8180	2.0848	2.3242
333111 Farm machinery and equipment manufacturing	1.7990	0.3089	6.0317	0.7595	2.4159	2.8744
333112 Lawn and garden equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
333120 Construction machinery manufacturing	1.8728	0.3307	6.9729	0.7389	2.4936	2.5728
333130 Mining and oil and gas field machinery manufacturing	1.9168	0.4184	8.3318	0.8038	2.0647	2.5103
3332A0 Industrial machinery (except semiconductor machinery) manufacturing	1.8989	0.4351	8.2353	0.8420	2.0359	2.5468
333295 Semiconductor machinery manufacturing	1.7665	0.3315	5.7140	0.7510	2.3212	3.8251
33331B All other commercial and service industry machinery manufacturing	1.7829	0.4638	9.0117	0.8339	1.7207	2.0248
333314 Optical instrument and lens manufacturing	1.8075	0.5277	9.2713	0.8933	1.6571	2.2281
333315 Photographic and photocopying equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000

33341A Air purification and ventilation equipment manufacturing	1.7588	0.3753	7.4008	0.8187	1.8703	2.1589
333414 Heating equipment (except warm air furnaces) manufacturing	1.8502	0.3525	7.1424	0.8196	2.3414	2.7124
333415 Air conditioning, refrigeration, and warm air heating equipment manufacturing	1.9071	0.3412	6.9288	0.7717	2.4621	2.7412
333511 Industrial mold manufacturing	1.9364	0.5789	11.4026	1.0149	1.6654	1.9164
33351A Metal cutting and forming machine tool manufacturing	1.7889	0.4502	8.5537	0.8900	1.7802	2.1636
333514 Special tool, die, jig, and fixture manufacturing	1.9202	0.5267	10.3024	0.9678	1.7869	2.0826
33351B Cutting and machine tool accessory, rolling mill, and other metalworking machinery manufacturing	1.8492	0.4424	8.5253	0.8661	1.8619	2.2011
333611 Turbine and turbine generator set units manufacturing	1.9456	0.3716	7.2432	0.8143	2.3704	2.8178
333612 Speed changer, industrial high-speed drive, and gear manufacturing	1.8735	0.4034	7.7307	0.8942	2.0238	2.4840
333613 Mechanical power transmission equipment manufacturing	1.8147	0.3560	7.3203	0.8362	2.1425	2.3762
333618 Other engine equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33391A Pump and pumping equipment manufacturing	1.7473	0.3032	5.7963	0.8179	2.3712	3.0765
333912 Air and gas compressor manufacturing	1.7565	0.3045	5.7152	0.7721	2.3625	3.1089
333920 Material handling equipment manufacturing	1.8082	0.3159	5.8093	0.7764	2.4709	3.3492
333991 Power-driven handtool manufacturing	1.7469	0.3557	6.2650	0.8768	1.9241	2.5843
33399A Other general purpose machinery manufacturing	1.8124	0.3583	6.4833	0.7789	2.1374	2.8912
333993 Packaging machinery manufacturing	1.7868	0.3985	7.5542	0.8372	1.9695	2.3964
333994 Industrial process furnace and oven manufacturing	1.8189	0.4536	8.1751	0.8815	1.7909	2.2507
33399B Fluid power process machinery	1.8635	0.4069	7.6851	0.8230	2.0092	2.4709
334111 Electronic computer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334112 Computer storage device manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33411A Computer terminals and other computer peripheral equipment manufacturing	1.6745	0.4280	7.1684	0.8458	1.6673	2.2704
334210 Telephone apparatus manufacturing	1.5108	0.3140	5.2415	0.7551	1.7531	2.4631
334220 Broadcast and wireless communications equipment	1.4554	0.2670	4.7082	0.7712	1.8616	2.6127
334290 Other communications equipment manufacturing	1.7302	0.4904	9.7496	0.9290	1.6267	1.8690
334300 Audio and video equipment manufacturing	1.6395	0.3289	6.2019	0.7718	1.8887	2.2937
33441A Other electronic component manufacturing	1.6599	0.4437	9.7243	0.8892	1.6100	1.7213
334413 Semiconductor and related device manufacturing	1.4998	0.3561	5.4917	0.9219	1.6010	2.4913
334418 Printed circuit assembly (electronic assembly) manufacturing	1.5199	0.2575	5.8893	0.6027	2.0141	1.9630
334510 Electromedical and electrotherapeutic apparatus manufacturing	1.5856	0.3184	5.6337	0.8652	1.8221	2.4375
334511 Search, detection, and navigation instruments manufacturing	1.5621	0.3858	6.6026	0.8630	1.6563	2.2888
334512 Automatic environmental control manufacturing	1.7541	0.5381	11.1598	0.9649	1.5617	1.7318
334513 Industrial process variable instruments manufacturing	1.7946	0.5573	11.0871	0.9512	1.5789	1.8187
334514 Totalizing fluid meter and counting device manufacturing	1.6782	0.2874	6.1052	0.7403	2.2480	2.3709
334515 Electricity and signal testing instruments manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
334516 Analytical laboratory instrument manufacturing	1.6416	0.3356	6.2251	0.8318	1.8949	2.4278
334517 Irradiation apparatus manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33451A Watch, clock, and other measuring and controlling device manufacturing	1.6259	0.3742	7.4249	0.8601	1.7423	2.0279
334610 Manufacturing and reproducing magnetic and optical media	1.7155	0.3706	6.5030	0.8762	1.8382	2.4878

335110 Electric lamp bulb and part manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335120 Lighting fixture manufacturing	1.7539	0.3380	7.6641	0.8380	2.1200	2.0797
335210 Small electrical appliance manufacturing	1.8761	0.3806	7.4066	0.8149	2.1377	2.4700
335221 Household cooking appliance manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335222 Household refrigerator and home freezer manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335224 Household laundry equipment manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335228 Other major household appliance manufacturing	1.8500	0.3166	6.8735	0.8282	2.4759	2.4474
335311 Power, distribution, and specialty transformer manufacturing	1.7442	0.3287	6.2168	0.7674	2.0388	2.5286
335312 Motor and generator manufacturing	1.7522	0.3183	6.8693	0.7250	2.1809	2.2086
335313 Switchgear and switchboard apparatus manufacturing	1.7117	0.3121	6.6070	0.7707	2.1551	2.2370
335314 Relay and industrial control manufacturing	1.7135	0.4160	7.2608	0.8690	1.7627	2.3101
335911 Storage battery manufacturing	1.6069	0.2628	5.1779	0.6370	2.0551	2.3838
335912 Primary battery manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335920 Communication and energy wire and cable manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335930 Wiring device manufacturing	1.7362	0.3434	7.6960	0.8804	1.9771	1.9618
335991 Carbon and graphite product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
335999 All other miscellaneous electrical equipment and component manufacturing	1.6551	0.3428	7.1407	0.7500	1.9536	2.1545
336111 Automobile manufacturing	2.0733	0.3531	6.1418	0.7215	2.7620	4.2028
336112 Light truck and utility vehicle manufacturing	2.1584	0.3691	6.6285	0.6965	2.8869	4.0278
336120 Heavy duty truck manufacturing	1.9233	0.3314	6.9700	0.6156	2.5919	2.6244
336211 Motor vehicle body manufacturing	2.0300	0.3669	7.4462	0.7377	2.6166	2.8936
336212 Truck trailer manufacturing	2.0504	0.3767	8.1789	0.7331	2.5039	2.5057
336213 Motor home manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336214 Travel trailer and camper manufacturing	1.9743	0.3382	7.7817	0.7207	2.6452	2.4591
336310 Motor vehicle gasoline engine and engine parts manufacturing	2.0719	0.3754	7.1276	0.7922	2.9085	3.7289
336320 Motor vehicle electrical and electronic equipment manufacturing	1.8389	0.3928	7.7108	0.7286	2.1095	2.4794
3363A0 Motor vehicle steering, suspension component (except spring), and brake systems manufacturing	2.0635	0.3784	7.1384	0.7990	2.7769	3.6093
336350 Motor vehicle transmission and power train parts manufacturing	2.1039	0.3929	7.4830	0.8057	2.7157	3.4142
336360 Motor vehicle seating and interior trim manufacturing	2.1209	0.3708	7.4974	0.7281	2.9004	3.2653
336370 Motor vehicle metal stamping	1.9744	0.3584	6.7031	0.7817	2.4601	2.9717
336390 Other motor vehicle parts manufacturing	2.0618	0.3879	7.7026	0.7747	2.5974	2.9997
336411 Aircraft manufacturing	1.6101	0.3192	6.1578	0.7772	1.8760	2.1721
336412 Aircraft engine and engine parts manufacturing	1.6272	0.3045	5.2919	0.7550	2.0141	2.7751
336413 Other aircraft parts and auxiliary equipment manufacturing	1.6501	0.3287	6.2632	0.8672	1.9779	2.4800
336414 Guided missile and space vehicle manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
33641A Propulsion units and parts for space vehicles and guided missiles	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336500 Railroad rolling stock manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336611 Ship building and repairing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336612 Boat building	1.9351	0.3541	7.5002	0.7398	2.5769	2.6869
336991 Motorcycle, bicycle, and parts manufacturing	1.8189	0.3477	7.2109	0.7426	2.1545	2.3344
336992 Military armored vehicle, tank, and tank component manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
336999 All other transportation equipment manufacturing	1.9140	0.3259	6.3226	0.6669	2.5493	2.9694

337110 Wood kitchen cabinet and countertop manufacturing	1.9358	0.4876	11.6220	0.8481	1.8674	1.8995
337121 Upholstered household furniture manufacturing	1.8368	0.3879	9.9050	0.7153	2.0108	1.8132
337122 Nonupholstered wood household furniture manufacturing	1.8251	0.4496	11.5184	0.8663	1.7982	1.7010
33712A Other household nonupholstered furniture	1.9356	0.3773	8.5109	0.7743	2.2584	2.2598
337127 Institutional furniture manufacturing	1.8648	0.3861	8.5029	0.8008	2.0969	2.1979
33721A Office furniture and custom architectural woodwork and millwork manufacturing	1.7999	0.3512	7.3413	0.8499	2.1584	2.4775
337215 Showcase, partition, shelving, and locker manufacturing	2.0146	0.4944	10.6419	0.8592	1.8945	2.0164
337900 Other furniture related product manufacturing	1.8941	0.3721	8.4931	0.8061	2.2363	2.2244
339112 Surgical and medical instrument manufacturing	1.7066	0.4009	7.4842	0.9548	1.8080	2.2213
339113 Surgical appliance and supplies manufacturing	1.6567	0.3431	6.3040	0.8938	1.9510	2.5580
339114 Dental equipment and supplies manufacturing	1.5826	0.3326	7.0199	0.7762	1.8436	2.0461
339115 Ophthalmic goods manufacturing	1.7456	0.4501	10.9207	0.9397	1.7538	1.7646
339116 Dental laboratories	1.6672	0.5310	13.5518	0.9453	1.5495	1.5197
339910 Jewelry and silverware manufacturing	1.5791	0.3014	7.2468	0.6404	1.9705	1.9391
339920 Sporting and athletic goods manufacturing	1.7603	0.3590	7.5597	0.7964	2.0821	2.2641
339930 Doll, toy, and game manufacturing	1.7350	0.3042	6.9232	0.7248	2.3795	2.2657
339940 Office supplies (except paper) manufacturing	1.7099	0.3551	9.2687	0.7939	1.9500	1.7390
339950 Sign manufacturing	1.9311	0.4517	10.4837	0.8687	1.9428	1.9015
339990 All other miscellaneous manufacturing	1.8942	0.4135	8.6129	0.8277	2.1280	2.4191
311111 Dog and cat food manufacturing	1.7904	0.3090	6.1175	0.6682	2.3070	3.2993
311119 Other animal food manufacturing	2.1145	0.3831	9.4627	0.6144	2.8605	3.3599
311210 Flour milling and malt manufacturing	2.3955	0.4461	10.7751	0.7438	3.3305	5.1590
311221 Wet corn milling	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
31122A Soybean and other oilseed processing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
311225 Fats and oils refining and blending	1.8753	0.3263	6.9285	0.4578	2.4363	2.9948
311230 Breakfast cereal manufacturing	1.6374	0.2815	5.3539	0.7610	2.1018	2.8402
311300 Sugar and confectionery product manufacturing	1.6685	0.2954	7.2872	0.6380	2.2053	2.0841
311410 Frozen food manufacturing	2.0450	0.3744	9.2322	0.6900	2.7953	2.9303
311420 Fruit and vegetable canning, pickling, and drying	1.8698	0.3337	8.0653	0.6024	2.4915	2.4641
31151A Fluid milk and butter manufacturing	2.5216	0.4686	12.6166	0.8584	3.4986	5.2387
311513 Cheese manufacturing	2.3764	0.4426	12.3377	0.7503	3.3045	4.3896
311514 Dry, condensed, and evaporated dairy product manufacturing	2.4574	0.4518	11.1700	0.7901	3.3735	5.7482
311520 Ice cream and frozen dessert manufacturing	2.0219	0.3594	9.1691	0.7629	2.6837	2.6748
31161A Animal (except poultry) slaughtering, rendering, and processing	1.8935	0.3293	9.1009	0.6027	2.4586	2.8118
311615 Poultry processing	2.1084	0.3734	9.4976	0.6363	2.7878	2.9861
311700 Seafood product preparation and packaging	1.5706	0.2779	6.3138	0.5589	2.0752	2.3272
311810 Bread and bakery product manufacturing	1.9311	0.4041	11.1762	0.7914	2.2044	1.8832
3118A0 Cookie, cracker, pasta, and tortilla manufacturing	2.0039	0.3568	7.7570	0.7783	2.6641	3.0400
311910 Snack food manufacturing	1.6975	0.2992	7.3242	0.7335	2.2343	2.2554
311920 Coffee and tea manufacturing	1.6794	0.3039	6.8701	0.5908	2.2693	2.2993
311930 Flavoring syrup and concentrate manufacturing	1.3678	0.2258	4.7656	0.8192	1.6860	1.8807
311940 Seasoning and dressing manufacturing	1.8594	0.3303	6.9656	0.6476	2.4660	3.0878
311990 All other food manufacturing	1.9767	0.3688	9.8981	0.6853	2.7540	2.6981
312110 Soft drink and ice manufacturing	1.7482	0.3061	6.1163	0.5893	2.2855	2.6846
312120 Breweries	1.7933	0.3165	7.5292	0.8072	2.3628	2.2341
312130 Wineries	1.7554	0.3289	8.5639	0.7298	2.4554	2.1172



312140 Distilleries	1.4373	0.2431	6.2351	0.8909	1.8152	1.6928
312200 Tobacco product manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313100 Fiber, yarn, and thread mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
313200 Fabric mills	1.6927	0.3216	7.5484	0.6735	2.0714	1.9894
313300 Textile and fabric finishing and fabric coating mills	1.6378	0.3597	8.5838	0.6599	1.8087	1.7540
314110 Carpet and rug mills	1.5733	0.2645	6.3823	0.5254	1.9746	1.8759
314120 Curtain and linen mills	1.5958	0.3794	12.7233	0.7241	1.6646	1.4059
314900 Other textile product mills	1.6714	0.3983	11.1768	0.7323	1.7213	1.5699
315000 Apparel manufacturing	1.6622	0.5135	17.6586	0.8633	1.5501	1.3539
316000 Leather and allied product manufacturing	1.8462	0.4069	8.9142	0.7351	2.0278	2.1548
322110 Pulp mills	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
322120 Paper mills	1.6764	0.2958	5.1528	0.6908	2.2087	3.3223
322130 Paperboard mills	1.7051	0.3046	5.6212	0.7131	2.2740	3.1955
322210 Paperboard container manufacturing	1.8300	0.3552	7.1573	0.6701	2.1561	2.4265
322220 Paper bag and coated and treated paper manufacturing	1.8047	0.3461	6.5110	0.7036	2.0922	2.5256
322230 Stationery product manufacturing	1.8328	0.3615	7.9821	0.7451	2.1194	2.0953
322291 Sanitary paper product manufacturing	1.6102	0.3270	7.4261	0.7564	1.7882	1.7967
322299 All other converted paper product manufacturing	1.7207	0.3244	6.4837	0.7073	2.1297	2.4277
323110 Printing	1.7452	0.4347	10.5659	0.8561	1.8318	1.8888
323120 Support activities for printing	1.7285	0.5486	12.0386	1.0063	1.5828	1.7525
324110 Petroleum refineries	1.2162	0.1909	2.5011	0.3702	1.4254	2.3912
324121 Asphalt paving mixture and block manufacturing	1.4151	0.2389	4.0024	0.6396	1.7834	2.5165
324122 Asphalt shingle and coating materials manufacturing	1.4637	0.2648	4.9484	0.6347	1.8350	2.2391
324190 Other petroleum and coal products manufacturing	1.3975	0.2285	3.6043	0.7061	1.7058	2.4593
325110 Petrochemical manufacturing	1.5645	0.2525	3.8145	0.4542	1.8856	2.9025
325120 Industrial gas manufacturing	1.4809	0.2489	4.4894	0.7678	1.8585	2.2912
325130 Synthetic dye and pigment manufacturing	1.5556	0.2736	4.8327	0.6255	2.0430	2.7176
325180 Other basic inorganic chemical manufacturing	1.5820	0.2731	4.6946	0.7247	2.0395	2.8933
325190 Other basic organic chemical manufacturing	1.7847	0.3072	5.4182	0.4896	2.2938	3.4488
325211 Plastics material and resin manufacturing	1.7169	0.2906	4.7132	0.5182	2.1699	3.2021
3252A0 Synthetic rubber and artificial and synthetic fibers and filaments manufacturing	1.7495	0.3028	5.9493	0.5432	2.2606	2.3819
325310 Fertilizer manufacturing	1.6449	0.2818	5.4891	0.6184	2.1038	2.4285
325320 Pesticide and other agricultural chemical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325411 Medicinal and botanical manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325412 Pharmaceutical preparation manufacturing	1.5572	0.3332	5.3569	0.9197	1.8332	2.5690
325413 In-vitro diagnostic substance manufacturing	1.6620	0.3826	6.0857	0.9359	1.8358	2.7006
325414 Biological product (except diagnostic) manufacturing	1.4952	0.2583	3.8426	0.9533	1.9289	3.2043
325510 Paint and coating manufacturing	1.7015	0.2953	5.0690	0.6511	2.2050	2.9220
325520 Adhesive manufacturing	1.7055	0.2997	5.2312	0.6336	2.2374	3.0481
325610 Soap and cleaning compound manufacturing	1.6591	0.2840	4.9500	0.8610	2.1206	2.9095
325620 Toilet preparation manufacturing	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
325910 Printing ink manufacturing	1.5924	0.2801	5.3016	0.6415	2.0914	2.3373
3259A0 All other chemical product and preparation manufacturing	1.7735	0.3152	5.8700	0.6857	2.3531	2.6984
326110 Plastics packaging materials and unlaminated film and sheet manufacturing	1.9957	0.3387	6.3263	0.7230	2.5287	2.9383
326120 Plastics pipe, pipe fitting, and unlaminated profile shape manufacturing	1.9971	0.3841	7.4847	0.7624	2.2038	2.3821

326130 Laminated plastics plate, sheet (except packaging), and shape manufacturing	1.8245	0.3862	7.7584	0.8262	1.8824	2.0491
326140 Polystyrene foam product manufacturing	1.8905	0.3324	6.7644	0.7099	2.3411	2.5247
326150 Urethane and other foam product (except polystyrene) manufacturing	1.8624	0.3200	6.5386	0.6974	2.3895	2.5277
326160 Plastics bottle manufacturing	1.9692	0.3315	6.1299	0.7212	2.4750	2.8428
326190 Other plastics product manufacturing	2.0398	0.3644	7.4243	0.7405	2.5934	2.7329
326210 Tire manufacturing	1.7385	0.3493	7.1134	0.6661	1.9926	2.3006
326220 Rubber and plastics hoses and belting manufacturing	1.8367	0.4499	9.1354	0.7993	1.7908	2.0196
326290 Other rubber product manufacturing	1.8673	0.3465	6.9743	0.7550	2.2983	2.5935
420000 Wholesale trade	1.5956	0.4326	7.9945	1.0266	1.6256	2.1305
441000 Motor vehicle and parts dealers	1.5925	0.5338	12.0348	1.1152	1.4224	1.5614
445000 Food and beverage stores	1.6827	0.5098	19.6458	1.0596	1.5456	1.3224
452000 General merchandise stores	1.6547	0.4636	17.8490	1.0248	1.6352	1.3376
4A0000 Other retail	1.6580	0.4766	17.6717	1.0231	1.5873	1.3592
481000 Air transportation	1.4127	0.2758	4.8423	0.6812	1.6972	2.4307
482000 Rail transportation	1.4991	0.3286	5.5671	0.8048	1.6888	2.4430
483000 Water transportation	1.0000	0.0000	0.0000	0.0000	0.0000	0.0000
484000 Truck transportation	1.7594	0.4709	11.0386	0.8737	1.8124	1.9103
485A00 Transit and ground passenger transportation*	1.7770	0.5886	26.2461	0.9020	1.5657	1.2618
486000 Pipeline transportation	1.5818	0.4071	6.4282	0.8384	1.6298	2.6408
48A000 Scenic and sightseeing transportation and support activities for transportation	1.8405	0.5280	12.0753	0.9819	1.8380	2.0375
492000 Couriers and messengers	1.7334	0.4638	13.6155	0.9345	1.7807	1.6099
493000 Warehousing and storage	1.7369	0.5118	12.5235	1.0352	1.6404	1.7359
511110 Newspaper publishers	1.7258	0.4595	11.9788	0.9517	1.7609	1.7099
511120 Periodical publishers	1.7582	0.3948	8.3208	0.8956	2.0986	2.6336
511130 Book publishers	1.4198	0.2517	5.2725	0.9805	1.8773	2.2842
5111A0 Directory, mailing list, and other publishers	1.5758	0.2928	6.6834	0.9177	2.1079	2.3564
511200 Software publishers	1.5027	0.3891	6.6573	0.9806	1.5860	2.2950
512100 Motion picture and video industries	1.4166	0.2618	9.0158	0.7884	1.7584	1.5155
512200 Sound recording industries	1.4553	0.2621	6.4127	0.7954	1.9549	2.0034
515100 Radio and television broadcasting	1.7012	0.6550	12.0206	0.9953	1.4511	1.7856
515200 Cable and other subscription programming	1.3861	0.3289	6.4100	0.8034	1.4531	1.7653
517110 Wired telecommunications carriers	1.3342	0.2216	4.5039	0.8076	1.6526	1.9830
517210 Wireless telecommunications carriers (except satellite)	1.4862	0.2623	5.6785	0.7814	1.9565	2.3241
517A00 Satellite, telecommunications resellers, and all other telecommunications	1.5837	0.4900	9.4762	0.9615	1.4582	1.7496
518200 Data processing, hosting, and related services	1.6993	0.4145	8.8840	0.8992	1.8842	2.3665
5191A0 News syndicates, libraries, archives, and all other information services	1.4295	0.3648	8.4524	0.9028	1.4870	1.6103
519130 Internet publishing and broadcasting and Web search portals	1.5448	0.3675	5.4606	0.9382	1.7474	3.9140
52A000 Monetary authorities and depository credit intermediation	1.5549	0.3612	7.9977	0.9278	1.7597	2.1538
522A00 Nondepository credit intermediation and related activities	1.7487	0.5025	8.9236	0.9313	1.7119	2.5372
523A00 Securities and commodity contracts intermediation and brokerage	1.7508	0.6059	18.3467	0.9128	1.5383	1.4641
523900 Other financial investment activities	1.8399	0.4801	17.1810	0.8041	2.0021	1.5461
524100 Insurance carriers	1.6384	0.3715	7.2717	0.9298	1.9493	2.5017
524200 Insurance agencies, brokerages, and related activities	1.9223	0.5653	12.1284	1.0286	1.8308	2.1207

525000 Funds, trusts, and other financial vehicles	1.5505	0.2918	11.7191	0.5224	2.1437	1.6395
531000 Real estate	1.4688	0.2630	9.2778	0.9818	1.9194	1.6010
532100 Automotive equipment rental and leasing	1.5402	0.3503	6.7000	0.9848	1.6930	2.1822
532A00 Consumer goods and general rental centers	1.6682	0.5707	12.7892	1.1035	1.4507	1.5852
532400 Commercial and industrial machinery and equipment rental and leasing	1.4645	0.3162	5.0913	1.0196	1.6743	2.5844
533000 Lessors of nonfinancial intangible assets	1.6136	0.3187	6.1276	0.8957	2.3256	3.8955
541100 Legal services	1.6566	0.6271	10.6166	1.1342	1.4055	1.9117
541511 Custom computer programming services	1.7897	0.7506	13.1340	1.1760	1.4693	2.1045
541512 Computer systems design services	1.7773	0.6775	11.7863	1.0933	1.5025	2.1334
54151A Other computer related services, including facilities management	1.6977	0.6536	11.0832	1.1069	1.4495	2.0746
541200 Accounting, tax preparation, bookkeeping, and payroll services	1.6268	0.6333	13.9315	1.1608	1.3864	1.5432
541300 Architectural, engineering, and related services	1.8229	0.5939	11.0086	0.9969	1.6758	2.3608
541400 Specialized design services	1.7321	0.5944	15.8693	1.0786	1.4972	1.5069
541610 Management consulting services	1.8048	0.6708	15.5187	1.0868	1.5224	1.6833
5416A0 Environmental and other technical consulting services	1.8282	0.6957	16.7108	1.0933	1.5222	1.6356
541700 Scientific research and development services	1.7678	0.5193	8.5988	0.9034	1.7541	3.0075
541800 Advertising, public relations, and related services	1.6037	0.4071	8.3454	0.9421	1.6895	2.1160
5419A0 Marketing research and all other miscellaneous professional, scientific, and technical services	1.6537	0.5462	12.0068	1.0328	1.5051	1.7063
541920 Photographic services	1.8353	0.6005	20.1951	1.0126	1.5945	1.4324
541940 Veterinary services	1.8525	0.5866	16.9549	0.9853	1.6295	1.5310
550000 Management of companies and enterprises	1.6714	0.5392	8.1080	0.9973	1.5357	2.5344
561100 Office administrative services	1.7118	0.7487	14.0670	1.2051	1.3636	1.6585
561200 Facilities support services	1.6662	0.4070	12.0019	0.9221	1.8464	1.7169
561300 Employment services	1.7041	0.7325	25.4205	1.2054	1.3898	1.2933
561400 Business support services	1.7296	0.6061	16.9454	1.0531	1.5167	1.4947
561500 Travel arrangement and reservation services	1.6915	0.4292	11.3038	0.8754	1.8293	1.8418
561600 Investigation and security services	1.7159	0.6697	24.5829	1.1194	1.4246	1.2837
561700 Services to buildings and dwellings	1.6782	0.4796	17.8234	1.0092	1.6004	1.3587
561900 Other support services	1.8346	0.5686	15.3714	0.9834	1.6790	1.6828
562000 Waste management and remediation services	1.7640	0.4130	9.2225	0.8888	1.9312	2.1339
611100 Elementary and secondary schools	1.7118	0.6564	26.6868	1.0809	1.4150	1.2583
611A00 Junior colleges, colleges, universities, and professional schools	1.7334	0.5976	20.0755	1.0320	1.4546	1.3594
611B00 Other educational services	1.8417	0.7065	32.9840	1.0749	1.4903	1.2495
621100 Offices of physicians	1.8227	0.6893	11.8622	1.1144	1.4897	2.0420
621200 Offices of dentists	1.7894	0.6231	14.5053	1.0956	1.5375	1.6532
621300 Offices of other health practitioners	1.6934	0.5784	15.3079	1.0859	1.4714	1.4807
621400 Outpatient care centers	1.7397	0.4834	10.7903	0.9789	1.6613	1.8817
621500 Medical and diagnostic laboratories	1.7723	0.6205	12.6202	1.0740	1.5186	1.7635
621600 Home health care services	1.8213	0.7233	22.2011	1.1441	1.4511	1.3884
621900 Other ambulatory health care services	1.8250	0.5738	14.9915	1.0262	1.6001	1.5732
622000 Hospitals	1.8306	0.6072	12.4167	1.0410	1.6095	1.9390
623A00 Nursing and community care facilities	1.7665	0.6158	20.0446	1.0586	1.4935	1.3908
623B00 Residential mental retardation, mental health, substance abuse and other facilities	1.7468	0.6777	23.2360	1.1208	1.4112	1.3117
624100 Individual and family services	1.7694	0.6695	25.6851	1.0857	1.4427	1.2854
624A00 Community food, housing, and other relief services, including rehabilitation services	1.8505	0.5858	22.8102	0.9792	1.5964	1.3500

<b>624400 Child day care services</b>	1.7436	0.6129	32.5404	1.0494	1.4508	1.1977
<b>711100 Performing arts companies</b>	1.6568	0.5118	33.6539	0.9378	1.5575	1.1821
<b>711200 Spectator sports</b>	1.6864	0.7651	19.4862	1.1860	1.3328	1.3843
<b>711A00 Promoters of performing arts and sports and agents for public figures</b>	1.7246	0.4568	24.7012	0.8883	1.8444	1.3557
<b>711500 Independent artists, writers, and performers</b>	1.5494	0.4085	11.2249	0.8932	1.6653	1.7012
<b>712000 Museums, historical sites, zoos, and parks</b>	1.8723	0.5382	19.6219	0.9751	1.7295	1.4595
<b>713100 Amusement parks and arcades</b>	1.5670	0.4281	18.9107	1.0102	1.5342	1.2613
<b>713200 Gambling industries (except casino hotels)</b>	1.5324	0.2911	9.7262	0.8662	2.0616	1.6168
<b>713900 Other amusement and recreation industries</b>	1.7288	0.4815	26.0584	0.9421	1.6424	1.2417
<b>721000 Accommodation</b>	1.5902	0.4229	12.4672	0.9729	1.6166	1.5079
<b>722110 Full-service restaurants</b>	1.7956	0.5556	23.9005	0.9610	1.5909	1.2809
<b>722211 Limited-service restaurants</b>	1.7078	0.4578	23.2687	0.9391	1.6442	1.2488
<b>722A00 All other food and drinking places</b>	1.7774	0.3640	14.2636	0.7657	2.1078	1.5039
<b>811100 Automotive repair and maintenance</b>	1.8440	0.6356	16.5853	1.0400	1.5116	1.5054
<b>811200 Electronic and precision equipment repair and maintenance</b>	1.7382	0.6758	13.1701	1.0857	1.4357	1.7269
<b>811300 Commercial and industrial machinery and equipment repair and maintenance</b>	1.7343	0.7246	14.0113	1.1785	1.3751	1.6165
<b>811400 Personal and household goods repair and maintenance</b>	1.5450	0.3895	10.6619	0.9729	1.5797	1.5393
<b>812100 Personal care services</b>	1.8173	0.7439	32.2738	1.1276	1.4269	1.2424
<b>812200 Death care services</b>	1.7818	0.6598	19.4079	1.0860	1.4476	1.3771
<b>812300 Dry-cleaning and laundry services</b>	1.7632	0.6539	21.9450	1.0733	1.4715	1.3565
<b>812900 Other personal services</b>	1.7337	0.5723	22.0135	1.0257	1.5241	1.3218
<b>813100 Religious organizations</b>	1.6720	0.3164	9.3114	0.6947	2.1809	2.1246
<b>813A00 Grantmaking, giving, and social advocacy organizations</b>	1.6481	0.6085	15.9416	1.0903	1.4376	1.5061
<b>813B00 Civic, social, professional, and similar organizations</b>	1.6942	0.7447	24.6546	1.2108	1.3501	1.2830
<b>491000 Postal service</b>	1.6608	0.6580	12.1040	1.1579	1.3788	1.7195
<b>S00A00 Other government enterprises</b>	1.8245	0.4291	9.6469	0.8770	2.0635	2.2533
<b>H00000 Households</b>	0.9326	0.2591	7.5100	0.5412	0.0000	0.0000

## APPENDIX I.

**Table I1.** Hunting and Fishing License Sales and Estimated Hunting and Fishing Expenditures of Michigan and Non-Michigan Residents

Region	County	LY 2016 Hunting License Sales	Estimated Hunting Expenditures of Michigan Residents	Estimated Hunting Expenditures of Non- Michigan Residents	LY 2016 Fishing License Sales	Estimated Fishing Expenditures of Michigan Residents	Estimated Fishing Expenditures of Non- Michigan Residents
North Central	Antrim	16,874	27745918	9866228	8,161	6346810	3484747
	Charlevoix	17,965	29539850	10504136	6,453	5018498	2755431
	Cheboygan	22,181	36472218	12969231	10,977	8536813	4687179
	Clare	25,780	42390054	15073566	9,250	7193725	3949750
	Crawford	12,719	20913852	7436799	3,694	2872824	1577338
	Emmet	19,036	31300895	11130349	7,494	5828084	3199938
	Gladwin	24,562	40387297	14361401	9,843	7654901	4202961
	Kalkaska	14,851	24419499	8683380	6,965	5416681	2974055
	Lake	11,530	18958779	6741591	3,147	2447422	1343769
	Missaukee	15,998	26305511	9354031	4,344	3378329	1854888
	Montmorency	12,369	20338347	7232154	3,392	2637958	1448384
	Ogemaw	20,606	33882446	12048328	5,945	4623427	2538515
	Osceola	23,693	38958400	13853297	6,350	4938395	2711450
	Oscoda	8,343	13718395	4878152	2,462	1914697	1051274
	Otsego	21,488	35332718	12564034	8,786	6832872	3751622
	Roscommon	18,574	30541228	10860218	7,118	5535669	3039386
	Wexford	26,054	42840592	15233774	9,751	7583353	4163677
North East	Alcona	11,712	19258042	6848006	2,952	2295770	1260504
	Alpena	23,831	39185313	13933986	9,028	7021076	3854956
	Arenac	15,872	26098330	9280358	4,702	3656745	2007754
	Bay	57,135	93947081	33406835	23,061	17934540	9847047
	Iosco	18,135	29819381	10603535	6,683	5197369	2853641
	Presque Isle	14,659	24103794	8571117	5,032	3913386	2148664
North West	Benzie	14,151	23268489	8274090	5,601	4355898	2391627
	Grand						
	Traverse	44,204	72684637	25846079	22,413	17430590	9570351
	Leelanau	12,606	20728046	7370728	4,378	3404771	1869406
	Manistee	21,090	34678287	12331323	7,184	5586997	3067568
	Mason	23,991	39448401	14027538	7,765	6038841	3315655
South Central	Oceana	22,796	37483463	13328821	6,040	4697308	2579080
	Barry	33,337	54816029	19492144	16,807	13070804	7176589
	Branch	20,092	33037276	11747792	8,962	6969747	3826774
	Calhoun	38,745	63708404	22654202	20,379	15848748	8701833
	Clinton	42,351	69637749	24762630	14,900	11587730	6362300
	Eaton	40,451	66513579	23651700	18,380	14294126	7848260
	Gratiot	26,995	44387879	15783977	8,057	6265929	3440339
	Hillsdale	22,293	36656380	13034717	7,042	5476563	3006934
	Ingham	51,579	84811350	30158241	28,181	21916364	12033287
	Ionia	36,218	59553257	21176665	14,319	11135886	6114213
	Isabella	33,587	55227104	19638319	10,283	7997089	4390841
	Jackson	49,426	81271172	28899382	21,903	17033963	9352581
	Kalamazoo	47,143	77517235	27564512	34,024	26460465	14528248
	Kent	139,697	229703777	81680836	81,290	63219233	34710830
	Lenawee	34,523	56766169	20185598	15,219	11835816	6498513

	Mecosta	26,918	44261267	15738955	8,938	6951083	3816526
	Midland	46,674	76746058	27290288	20,590	16012843	8791930
	Montcalm	47,094	77436664	27535862	13,536	10526947	5779872
	Newaygo	41,694	68557444	24378482	15,011	11674055	6409697
	Saginaw	74,219	122038302	43395849	33,190	25811863	14172130
	Shiawassee	37,486	61638230	21918064	15,588	12122788	6656076
	St. Joseph	23,174	38105008	13549838	10,825	8418603	4622275
South East	Genesee	110,522	181731325	64622213	56,280	43768956	24031560
	Huron	23,469	38590077	13722324	6,049	4704307	2582923
	Lapeer	53,209	87491559	31111302	17,671	13742737	7545517
	Livingston	69,769	114721167	40793934	27,736	21570287	11843272
	Macomb	144,061	236879502	84232467	97,678	75964181	41708506
	Monroe	51,051	83943159	29849520	21,515	16732216	9186905
	Oakland	170,392	280175566	99628202	98,269	76423801	41960863
	Sanilac	27,515	45242915	16088021	6,918	5380129	2953986
	St. Clair	69,679	114573180	40741311	35,665	27736671	15228955
	Tuscola	41,659	68499894	24358017	12,671	9854237	5410517
	Washtenaw	43,541	71594466	25458423	23,712	18440822	10125024
	Wayne	143,534	236012956	83924330	123,371	95945627	52679417
South West	Allegan	52,435	86218871	30658745	21,947	17068182	9371369
	Berrien	31,389	51612933	18353148	17,742	13797953	7575834
	Cass	18,524	30459013	10830983	8,212	6386472	3506524
	Muskegon	72,647	119453462	42476701	36,837	28648135	15729399
	Ottawa	91,619	150649122	53569629	42,035	32690620	17948945
	Vanburen	29,265	48120440	17111246	16,302	12678065	6960954
Upper Peninsula	Alger	7,234	11894866	4229720	3,040	2364208	1298080
	Baraga	5,890	9684927	3443883	2,061	1602840	880047
	Chippewa	17,447	28688102	10201261	10,462	8136297	4467274
	Delta	27,432	45106438	16039490	9,782	7607461	4176914
	Dickenson	21,271	34975905	12437154	11,380	8850226	4859260
	Gogebic	8,448	13891046	4939546	5,299	4121032	2262673
	Houghton	17,661	29039982	10326387	9,045	7034297	3862215
	Iron	11,192	18403006	6543962	6,380	4961726	2724260
	Keweenaw	1,432	2354638	837290	739	574720	315553
	Luce	5,223	8588179	3053888	3,228	2510416	1378356
	Mackinac	7,325	12044498	4282928	4,132	3213456	1764364
	Marquette	39,325	64662098	22993328	19,593	15237476	8366211
	Menominee	23,151	38067189	13536390	9,280	7217056	3962560
	Ontonagon	7,330	12052719	4285851	3,249	2526747	1387323
	Schoolcraft	6,832	11233858	3994670	2,489	1935695	1062803