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# **The Economic Impact of the Recycling Industry in South Carolina**

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June 23, 2006

This study was supported by the S.C. Department of Health and Environmental Control and the S.C. Department of Commerce.

# **THE ECONOMIC IMPACT OF RECYCLING**

## **SUMMARY OF RESULTS**

**2005**

### **RECYCLING INDUSTRY ECONOMIC IMPACTS**

**37,440 JOBS**

**\$1.5 BILLION IN PERSONAL INCOME**

**\$6.5 BILLION ECONOMIC IMPACT**

**\$69 MILLION STATE TAX REVENUE**

**PROJECTED 12% ANNUAL GROWTH IN NEXT FIVE YEARS**

**ESTIMATED TOTAL ECONOMIC IMPACT IN FIVE YEARS =OVER \$11 BILLION**

### **MUNICIPAL SOLID WASTE**

**1000 TONS RECYCLED MSW = 1.68 JOBS**

**\$236,000 ECONOMIC IMPACT**

**\$79,000 PERSONAL INCOME**

**\$3687 STATE TAX REVENUE**

## **The Economic Impact of the Recycling Industry in South Carolina**

That recycling is beneficial for the environment is probably an uncontested proposition. What is becoming increasingly more obvious is that recycling contributes to the economic health of a state's economy. In order to better understand the economic potential of recycling to the state of South Carolina, the S.C. Department of Health and Environmental Control in conjunction with the S.C. Department of Commerce commissioned this study to measure the economic impact of recycling.

In terms of economic development, local and state governments and the public at large often think in terms of a factory, a facility, producing one identifiable product. An automotive plant, such as BMW, has a location, an identifiable product, and entry points into the facility that make it easy to quantify economic impacts. In other words, we can easily count the workers entering and leaving the plant; we can easily see the materials being delivered; and finally we can easily see the product rolling off the assembly line. Car manufacturing is categorized in the Standard Industrial Classification (SIC) system as 371, Motor Vehicle and Motor Vehicle Equipment, and in the newer North American Industrial Industry Classification System (NAICS) as 336111, Automobile Manufacturing. Recycling, however, is not so easily identified. There is no one category that captures the variety of activities that fall under recycling. Researchers have been confronted with similar problems in analyzing other amorphous industries, such as "tourism" and "retirement." Much like recycling, there is no well defined category for tourism. The economic activities associated with tourism, like recycling, are diffuse and spread across the entire region. No one wears a uniform that identifies him as an employee in the recycling industry. Analysts cannot plant themselves at a well defined location, such as a steel mill, and count workers as they enter to determine the jobs impact. Further, supply chain links are not

easily identified. The most common method to deal with these problems is to combine survey data with an impact model. This is the method we used in this research.

As the following table indicates, researchers have identified a number of industrial classifications that fall under recycling.<sup>1</sup>

Recycling Activities and Associated SIC and IMPLAN Sector Codes<sup>2</sup>

Firm Type	SIC Code	IMPLAN Match
Hauler-Based Collection	SIC 4953 Refuse Systems SIC 4212 Local Trucking without Storage	IMP 446 Sanitary Services and Steam Supply  IMP 435 Motor Freight Transport and Warehousing
Disposal Facility-Based Collection	SIC 4953 Refuse Systems	IMP 446 Sanitary Services and Steam Supply
Recyclable Materials Wholesalers	SIC 5093 Scrap and Waste Material Wholesalers	IMP 447 Wholesale Trade
Materials Recovery Facilities	SIC 4953 Refuse Systems	IMP 446 Sanitary Services and Steam Supply
Construction and Demolition Debris Processors	SIC 4953 Refuse Systems	IMP 446 Sanitary Services and Steam Supply
Beneficiation Facilities	SIC 5093 Scrap and Waste Materials	IMP 447 Wholesale Trade
Deinked Pulp Market Producers	SIC 2611 Pulp Mills	IMP 161 Pulp Mills
Glass Container Manufacturing Plants	SIC 2611 Glass Containers	IMP 231 Glass Containers
Smelting and Refining Mills	SIC 3341 Secondary Smelting and Refining of Nonferrous Metals  SIC 3339 Primary Smelting and Refining of Nonferrous Metals, Except Copper and Aluminum	IMP 263 Secondary Nonferrous Metals  IMP 262 Primary Nonferrous Metals, NEC

The first column provides commonly used descriptions of the type of industries that engage in recycling. The second column provides a match the Standard Industrial Classification (SIC) system. The third column matches the SIC categories with IMPLAN sector codes. IMPLAN, as

<sup>1</sup> Recycling encompasses a wide range of industrial categories which also means the supply chain links for this industry are spread across the entire state and various industries. The complete portfolio of recycling activity could be viewed as a cluster.

<sup>2</sup> Creason, Jared, and Michael Podolsky, "Upstream and Downstream Effects Using State Level Data," Proceedings of the 1998 IMPLAN Users Conference, Washington D.C. 1998, p. 111-120. It should be noted IMPLAN has changed codes since this paper was written. In addition, the North American Industry Classification System (NAICS) has replaced the U.S. Standard Industrial Classification (SIC) system. However, published research and many industries still refer to the SIC system and in practice many firms still identify themselves by SIC code.

we discuss later, is a model used by analysts to assess regional economic impacts. It has the advantage of being calibrated specifically to South Carolina. The important point to observe in this table is the wide range of industries that may be classified as being engaged in recycling activities.

The S.C. Department of Commerce maintains and publishes a directory of businesses that are recycling service providers. At the time of this survey, there were 340 firms listed in the directory. Our survey found that firms ranged in size from 1 employee to 553 employees. Recycling activities ranged from an artist who uses recycled materials in her art work to steel and wood reprocessing to computer recycling. E-waste (electronic waste) is one example of the dynamic and growing nature of the industry.<sup>3</sup> The industry is also crossing borders: state and international. One company with headquarters in Florida has operations in South Carolina and collects electronic waste in South America.

The survey instrument is presented in the next section. Following that we present a summary of the results. The economic impact of recycling is then discussed. Finally, we model the economic potential of recovering recyclable Municipal Solid Waste (MSW). The appendices contain details and data used in the analyses.

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<sup>3</sup> Stock, Kyle, "Trash or Treasure?" *The Post and Courier*, March 6, 2006, p.19E.

# South Carolina Recycling Industry Survey

The recycling industry is an important part of South Carolina's economy. The following survey will help document the economic impact the industry has on the state's economy. Please answer to the best of your ability (best guess). Although answers will be confidential, please skip any question you are uncomfortable with and answer the rest.

**Facility Information**      NAICS code \_\_\_\_\_ or SIC code \_\_\_\_\_

Which category best defines your role as a recycling company (check all that apply):

Hauler _____	Manufacturer _____
Processor _____	Remanufacturer _____
Broker _____	Reuse _____

1. Total number of employees in 2005 \_\_\_\_\_.
2. Total payroll (total annual) 2005 \_\_\_\_\_.
3. Percent of your business engaged in recycling \_\_\_\_\_ %

**Expansion plans:**

1. Do you plan to hire any more employees next year?    Yes                      No
2. How many? \_\_\_\_\_
3. Do you plan to invest in more plant, equipment, or land in the next five years?  
 Yes                      No                      Approximate investment amount \$ \_\_\_\_\_

**Industry Outlook (next five years)**

1. Is recycling a growing industry?    Yes                      No
2. Estimate the growth as a percentage annual rate? \_\_\_\_\_ %

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Thank you for your participation. Please return in the envelope provided.  
 Questions may be directed to Frank Hefner, (843) 953- 8111, or hefnerf@cofc.edu

## Survey Analysis

### Outlook Statistics

Ninety-two percent of the firms responding have an optimistic outlook on the growth of their industry. Only four firms reported that the industry is not growing. However, the recycling industry is not a homogeneous industry; i.e., it is composed of many parts that range from steel, to paper, to old computers, and so forth. One of the firms with a “no-growth” forecast reported that the industry is not growing, but the firm is expanding. This may be explained by the fact that this particular firm reports only ten percent of its employees are engaged in recycling; the rest are engaged in manufacturing unrelated to its recycling efforts. Another respondent reported that its segment of the industry is “mature.” As a consistency check, we noted that this firm also does not report any expansion plans.

Eighty-four percent of the firms responding reported an average annual growth rate of twelve percent in recycling over the next five years.

The investment plans of the respondents match their outlook for the future. In other words, their expectations for the industry match their plans in their own firms. Ninety-one percent of the respondents report expansion plans. The overwhelming majority of the firms anticipate growth in the industry. At the same time, the firms are also actualizing their beliefs with tangible investment plans. The total investment within the next five years by the firms that responded is over \$365,630,000. The average investment per employee is \$90,567.

Only seven percent of the respondents reported no investment plans.<sup>4</sup>

### Firm Size and Characteristics

The firms range in size from 1 employee to 553, with an average of 75 employees per firm. The median is 30 employees per firm.

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<sup>4</sup> 91% report expansion plans, 7% report no investment plans, and the remainder did not respond.

The average salary in the industry is reported to be \$32,229.<sup>5</sup> The median is \$32,222. Although the range was wide, \$69,565 to \$10,000, the fact that the median is close to the average is good indicator that most firms are paying the average. These jobs are thus relatively good jobs in a state where the average salary is reported to be \$31,940 for all occupations in all industries (including professions such as medicine, law, engineering, etc)<sup>6</sup>

Many of the firms surveyed are multi-product firms with recycling as one component of their operations. Previous research often does not capture this fact and attributes the employment impact of the firms to recycling. In our survey we asked what percentage of the firm’s business is engaged in recycling. The range of responses was as wide as possible: 1% to 100% with an average of 71%. For the purpose of determining economic impacts, the percentage of the firm’s business engaged in recycling was applied to the total number of employees to determine the number of employees actually engaged in recycling. The average number of employees actually engaged in recycling activities is 48 with a median value of 14.<sup>7</sup>

We also asked firms to characterize their operations into the following categories:

Category	Number of Responses
Hauler	17
Processor	30
Broker	10
Manufacturer	23
Re-manufacturer	12
Reuse	14

Most of the firms indicated multiple categories, indicating a high degree of multi-product activity. For example, a manufacturer may also engage in hauling and processing. And certainly, many processors have units that engage in hauling.

<sup>5</sup> The average salary reported is the average for the firm. We are assuming the employees engaged in recycling within the firm would on average earn the average salary reported.

<sup>6</sup> Nov. 2004, U.S. Department of Commerce, Bureau of Labor Statistics Occupational and Employment Survey

<sup>7</sup> Previous surveys in South Carolina attributed all employees to recycling, regardless of the percentage of the business engaged in recycling. Our results are more conservative and non-comparable to the previous survey.

A total of 340 businesses was identified as being in the recycling industry in South Carolina.<sup>8</sup> All firms listed were sampled. A total of 61 surveys were returned. 15 survey instruments were returned as undeliverable or having new addresses.<sup>9</sup> Thus, the population of firms in the industry consists of 325 firms. The economic impact analysis uses 325 firms as the base with an average of 48 employees per firm. This implies a total employment of 15,600 in the industry.<sup>10</sup>

### Multiplier Concept

The survey results provide information on what is termed a “**direct impact**.” The direct impact is the initial spending or job generated by the firm engaged in recycling activities. In order to understand the complete economic impact of the recycling industry, we must also consider what are called “ripple effects.” Ripple effects comprise indirect and induced impacts. The concept is fairly straight forward and often analysts refer to the idea of dropping a stone in a pond. The initial splash is the direct impact. The accompanying ripples are the “multiplier effects.”

Consider a recycling facility. The plant hires workers and pays a payroll. The operations of the plant are the direct expenditures. In the process of its operations the firm may purchase goods and services from other companies. Those purchases are termed the “**indirect impacts**.” For example, a recyclable materials processor purchases machinery from machinery manufacturers who in turn purchase raw materials, parts, and services from other industries. Further, the recyclable materials processor provides processed feedstock to other manufacturers

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<sup>8</sup> The S.C. Department of Commerce maintains and publishes a directory of businesses that are recycling service providers.

<sup>9</sup> Surveys were re-sent to those firms with forwarding addresses, however, none of these were returned.

<sup>10</sup> The total was arrived at by multiplying 48 times the population of firms, 325.

who then sell their product. The employees in turn spend their paychecks, which in turn generates additional impacts. These impacts are termed “**induced impacts.**”

As an example, consider a firm engaged in Waste Management and Remediation Services.<sup>11</sup> For every dollar of services produced, a total impact of \$1.59 is generated in the S.C. economy.<sup>12</sup> The additional \$0.59 represents the ripple effects in the economy. In the normal course of operations, the company purchases gasoline to operate its trucks. Included in the \$0.59 is the purchase of gasoline to run its trucks. Also included are the gas station’s purchases of utilities and supplies to run the gas station. These are the extended ripple effects and are called the indirect effects. The gas station and the firm pay wages to their employees. Their employees in turn spend money in South Carolina, such as buying hamburgers for lunch. These purchases are also captured in the multiplier and are termed the induced effects. The \$1.59 includes all impacts: direct, indirect and induced.

There is no one unique multiplier for all industries. For example, the multiplier for textiles is \$1.72. This means that for every \$1 of textile production there is a total of \$1.72 in economic activity in the State.

To determine the multiplier effects, economists utilize a regional economic impact model whose primary purpose is to determine the inter-relationships among the various sectors of an economy. Using these relationships, the ramifications of any economic activity can be traced through the linkages within the various economic sectors. The result is the “multiplier.” Armed with a multiplier the researcher can determine the effects of direct spending on total economic activity, personal income and jobs. For this project, the multipliers developed by IMPLAN were

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<sup>11</sup> IMPLAN sector 460.

<sup>12</sup> This figure is rounded. The precise multiplier for this sector is 1.587970.

used.<sup>13</sup> IMPLAN is a well recognized regional impact model that is used by many researchers.<sup>14</sup> Since our survey was state wide, the multipliers for the state were used. IMPLAN generates three kinds of multipliers:

**Output:** This measures the total economic activity that takes place within the economy. The IMPLAN multiplier for Waste Management and Remediation Services as detailed earlier is 1.59.

**Income:** This is commonly referred to as personal income and includes employee compensation and proprietor's income.<sup>15</sup> The income multiplier relates \$1 of direct income to total income produced in the economy through all of the ripple effects.

**Jobs:** Total jobs measured as full time equivalents. The jobs multiplier is a multiple of \$1,000,000. For example, for every \$1,000,000 of services in the sector "Waste Management and Remediation Services" eleven jobs are generated in the state. Of these eleven jobs (full time equivalents), five work directly in Waste Management and Remediation Services; two work in firms that sell to this industry; and four jobs are generated by the consumer spending through the wages and salaries paid to the five workers in the industry and the two workers in the supplying firms. IMPLAN also calculates a jobs multiplier that translates direct jobs into total jobs. In this example, one job in this sector through the multiplier effect generates an additional 1.2 jobs in the state. Thus the multiplier is 2.2.

### Multiplier Calculation

The previous section described how multiplier analysis is used in determining economic impacts. Where an industry is clearly defined and has an identifiable IMPLAN code, determining

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<sup>13</sup> Minnesota IMPLAN Group, Inc., IMPLAN System (data and software), 1725 Tower Drive West, Suite 140, Stillwater, MN 55082 [www.implan.com](http://www.implan.com)

<sup>14</sup> Research projects conducted at both the University of South Carolina and Clemson also use IMPLAN.

<sup>15</sup> Employee compensation includes wages and salaries as well as benefits such as health and life insurance, retirement and non-cash compensation. IMPLAN refers to this category as labor income.

the appropriate multiplier is relatively straightforward. The problem in this industry is that recycling activities do not fall under one particular industry code. Had every firm in the state responded with an NAICS code, then each firm’s impact could be determined. As is always the case with survey work, inferences must be made from limited information. Of the firms that responded, there were 15 different NAICS categories (this became 14 IMPLAN sectors). Using the employment numbers from these firms, a weighted average multiplier was constructed. In a sense, this assumes that the entire industry is distributed as the identifiable types in our sample. The weights were determined from employment numbers.<sup>16</sup>

A total of 1935 jobs were identified by sector through our survey.<sup>17</sup> These jobs were distributed across the industrial sectors we identified. The table below identifies the distribution of jobs:

**JOBS DISTRIBUTION IN RECYCLING<sup>18</sup>**

IMPLAN	IMPLAN description	Jobs
39	NEW HIGHWAYS AND STREETS	49.50
97	TEXTILE GOODS, N.E.C	666.41
125	PAPERBOARD MILLS	135.00
152	MISCELLANEOUS PLASTICS PRODUCT	205.90
170	PHOTOGRAPHIC EQUIPMENT AND SUP	8.00
189	GLASS AND GLASS PRODUCTS, EXC	3.25
191	CEMENT, HYDRAULIC	8.63
210	ELECTROMETALLURGICAL PRODUCTS	135.63
220	PRIMARY NONFERROUS METALS, N.E	39.13
224	IRON AND STEEL FOUNDRIES	22.50
325	ELECTRIC LAMPS	5.00
390	WHOLESALE TRADE	587.60
460	WASTE MANAGEMENT AND REMEDIATION	68.5

<sup>16</sup> This fixed proportion assumption is common in impact analysis. In fact, the Input-Output methodology assumes fixed proportions.

<sup>17</sup> Twenty-eight firms provided either SIC or NAICS identifiers.

<sup>18</sup> Fractional jobs are due to applying the percentage employment in recycling. For example, one firm reported 330 employees, but only 15% of the business was related to recycling. This results in 49.5 jobs attributable to recycling.

In IMPLAN terminology, these are direct jobs. The IMPLAN model takes these jobs as an input and then calculates the total impact across all sectors in South Carolina. There are twelve identifiable categories listed above. The number of jobs in each category is the input into the IMPLAN model. For example, the 68.5 jobs in category IMPLAN 460 becomes input into the IMPLAN model, and so on for the categories.. The total jobs multiplier effect of these 1935 jobs is 4,684. The jobs multiplier is then calculated to be 2.4.<sup>19</sup> This means that every job in the recycling industry in South Carolina generates a total of 2.4 jobs in the state.<sup>20</sup> The direct impact is 1. The indirect impact, i.e., the ripple effects from supplier firms is 0.6786. The induced impact, i.e., the impact from the spending by the employees of firms, is 0.742. For every job in the industry, an additional 1.4 jobs is created in the state through the spending patterns of supplier firms and employees spending their wages in the State.

Our survey estimated that there are 15,600 direct jobs in the state attributable to recycling activities. This implies a total jobs impact of 37,440 jobs.<sup>21</sup>

The labor income generated by the 1935 identifiable jobs is \$192,364,006. The labor income impact is estimated to be \$99,412 per direct job in the industry. This includes the direct pay to the employee in the industry plus all of the income generated by the indirect and induced impacts. From our survey we estimate that there are a total of 15,600 direct jobs in the industry. The total income impact is \$1.5 billion in 2005.<sup>22</sup>

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<sup>19</sup> The total result, 4684, divided by 1935. For every direct job, we calculate a total of 2.4 in the state.

<sup>20</sup> This was calculated by inputting the direct jobs listed above into IMPLAN. The total result was 4,684. The jobs multiplier is calculated by dividing 4,684 by 1935, which equals 2.4. This jobs multiplier is an average multiplier. In other words, the average jobs creation in the recycling industry is 2.4. Caution must be used here. It is not correct to infer that a particular plant will generate a multiplier of 2.4. (As always, these are full time equivalents, FTE's.)

<sup>21</sup>  $2.4 \times 15,600 = 37,440$ . The multiplier is a multiple of direct jobs.

<sup>22</sup>  $15,600 \times \$99,413 = \$1,550,842,800$ .

The total economic impact in State from the 1935 jobs is \$799,979,192.<sup>23</sup> Thus, the total economic impact per job is \$413,426. This includes the direct spending by the recycling firm (including payroll), plus the indirect spending as the firm buys goods and services within South Carolina, and the induced effects which comprise the impact of all of the payrolls connected to this chain of events. The total impact of the industry in South Carolina is not an insignificant amount: approximately **\$6.5 billion** in 2005.<sup>24</sup>

The recycling industry also contributes a significant tax benefit to the State.

### Tax Impact

#### State Taxes

	FY 99-00	FY 00-01	FY 01-02	FY 02-03	FY 03-04
Sales Tax	\$1,980,792,357	\$2,000,208,478	\$2,026,514,449	\$2,071,062,999	\$2,201,749,634
Ratio	0.0216	0.0204	0.0200	0.0198	0.0203
Income Tax	\$2,653,513,352	\$2,711,669,690	\$2,492,130,280	\$2,483,205,960	\$2,613,714,743
Ratio	0.0289	0.0276	0.0246	0.0237	0.0241
Personal Income	\$91,715,570,000	\$98,270,171,000	\$101,468,025,000	\$104,636,030,000	\$108,463,333,000

Source: S.C. Statistical Abstract

Notes: Personal Income in FY99-00 is income as of 1999, and so on. Income tax includes personal and corporate.

The five year average ratio of Sales Tax to Personal Income is 0.0204. The five year average ratio of Income Tax to Personal Income is 0.0258. The total income impact of recycling is estimated to be \$1.5 billion in 2006 which we estimate will generate \$30,604,726 in sales taxes and \$38,674,883 in income taxes. The total tax impact on the state of South Carolina is over \$69 million.

<sup>23</sup> The total economic output is calculate by IMPLAN given the jobs numbers that were inputted into the model.

<sup>24</sup> Total impact is determined by 15,600 x \$413,426 = \$6,449,445,600.

## Measuring the Potential Value of Recyclable Material in Landfills

### Method:

South Carolina recycled 22.4 percent of the municipal solid waste (MSW) generated in 2004.<sup>25</sup> Although this represents a considerable amount of recycling, the potential for greater recycling clearly exists.

What is the potential value and quantity of recyclable materials? First, we will start with the quantity. As nearly all materials that make up MSW are potentially recyclable, then approximately 100 percent of the MSW generated is recyclable. In 2004, South Carolinians generated 4.3 million tons of MSW<sup>26</sup>, 72.3 percent of which was disposed in landfills<sup>27</sup>, meaning the potential quantity of recyclable material disposed of in landfills is 3.1 million tons.

Estimating the value of these recyclable materials is a more difficult task. Numerous issues have arisen throughout the process, including

- the impact of increased recyclable material on the market price for recyclable materials
- the cost of increased recycling
- the makeup of the 3.1 million tons of MSW disposed of in landfills
- the lack of market data for some recyclables with small/non-existent markets

One issue not addressed in this report is the potential impact on the price of recycled materials if the potential 3.1 million tons of MSW were to be recycled. In a static market analysis, this increased supply of recyclable materials would lower the price of recyclable materials, lowering their overall value. Unfortunately, it is beyond the scope of this report to estimate this impact on the recyclable materials market. It is likely that, because the market for

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<sup>25</sup> South Carolina Solid Waste Management Annual Report Fiscal Year 2004, p.3.

<sup>26</sup> South Carolina Solid Waste Management Annual Report Fiscal Year 2004, p.3.

<sup>27</sup> South Carolina Solid Waste Management Annual Report Fiscal Year 2004, p. 5.

recyclable materials is generally a regional market, and often a national market, that this 3.1 million tons would have a small impact on the price. We will assume there will be no impact on price. We justify this assumption with two arguments. The first argument is that the impact would be small in any event, while the second argument is that the overall demand for recyclable materials is increasing over time, and this increase will tend to raise prices. As we make no correction for potential future increases in demand, assuming prices will stay constant may actually be a very conservative approach to take.

The task of estimating the potential value of recyclable materials can be interpreted several ways. We have chosen to interpret our task as uncovering the market value. This value is estimated independently of the cost of recycling the materials. It is possible that the cost of recycling 100 percent of all MSW could far exceed the market value of the recycled material.

**Process:**

Except where noted, we used data from 2003. Ideally, to estimate the potential value of recyclable material, one would have information on the breakdown of material sent to landfills, and then could simply value that quantity with a market price. For example, if we knew that 1 million tons of aluminum were being sent to landfills each year, we could easily compute the value of that aluminum. Unfortunately, we were unable to find a direct inventory of MSW sent to landfills that broke down the MSW into categories and quantities for recyclable materials.

Lacking direct data about the quantity of recyclable materials, we had to make assumptions about how much of each category of recyclable material was currently being recycled. To do this we used information on the state's recycling rate in 2003 (28.8 percent)<sup>28</sup> and compared it to the EPA's estimate of the national recycling rate (30.6 percent)<sup>29</sup>. We did this

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<sup>28</sup> South Carolina Solid Waste Management Annual Report Fiscal Year 2004, p. 4

<sup>29</sup> Municipal Solid Waste Generation, Recycling and Disposal in the United States: Facts and Figures for 2003, p. 4.

because the only estimates we have for recycling rates for categories of recyclable materials were from the EPA, necessitating a translation to South Carolina data. We then adjusted the national recycling rates for each category to make them proportionate to South Carolina's overall lower recycling rate. We call the resulting proportion the recycling factor. For example, the EPA estimates that 18.8 percent of glass was recycled in 2003. Because South Carolina's recycling rate (recycling factor) is 94.1 percent of the national average, we estimated South Carolina's recycling rate for glass to be 17.7 percent (94.1 percent of 18.8 percent). Unfortunately, we have no way to verify these estimates. So although it is possible that for individual categories of recyclables South Carolina could be higher or lower than the national average (and we have no way to know if the South Carolina and national rates differ), our method assumes that the national recycling rates relates to the South Carolina rate in the same way for every category of recyclable.

We used the estimated recycling rates to calculate the percentage of each material sent to landfills and incinerated. According to SCDHEC<sup>30</sup>, 93 percent of non-recycled MSW goes into landfills. We then assumed that this proportion is constant for all materials, and estimated that 93 percent of non-recycled material is sent to landfills.

Table MSW1 below shows our estimates of South Carolina's recycling rate and the quantity of recyclable materials in landfills for each major category of recyclable material. Table MSW1 also gives information on the price of each category of recyclable material, the value of that material currently being deposited in landfills, and the value of not having to landfill recycled materials. Tables MSW2 –MSW4 break this information down into narrower categories for glass, paper and plastic. From DHEC's data on the quantity of recycled material, we estimated the potential recyclable quantity, and then valued that quantity at market prices.

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<sup>30</sup> South Carolina Solid Waste Management Annual Report Fiscal Year 2004, p.3.

Finally, because the latest price data comes from 2003, we then adjusted the market prices for inflation using the Producer Price Index. The formulas used to calculate the totals in the tables below are presented in an appendix, but a quick example may help explain our calculations. We estimated the recycling rate for steel to be 34.3 percent. In 2003, according to the South Carolina Solid Waste Management Annual Report, 13,357 tons of steel were recycled. If this quantity represents 34.3 percent of the steel produced in South Carolina, then 38,989 tons of recyclable steel were generated. Of those 38,989 tons, we estimate 23,783 tons (93 percent (the landfill rate) of the 65.7 percent (non-recycled rate = 100 percent – 34.3 percent) of the 38,989 tons) went into landfills. At a market price of \$28.50 per ton, the value of steel sent to landfills in South Carolina is \$679,362.80. Adjusting this for inflation, we find a final value of \$773,794.23.

We also calculated one other benefit of increased recycling: space saved in landfills. Every ton of MSW that is recycled instead of landfilled represents a cost savings. In 2004, the cost to landfill one ton of MSW was \$32. Adjusting for inflation, if all of the recyclable material in landfills had been recycled, that would have saved a total of \$30,517,361.18.

As a check on our process, we examined the total estimated weight of the recyclable material and compared that to the actual weight of the non-recycled MSW going into landfills. As Table MSW1 shows, we found that our process estimated a total weight over all six commodity classes of 889,615 tons, approximately 2.2 million tons less than the 3.1 million tons of MSW currently going to landfills. We draw two conclusions from this discrepancy. First, it seems unlikely that our process has significantly over-estimated the potential quantity of recyclable materials. As a result, our estimated value is not likely to be too high, and may be too low. Second, all MSW generated does not fit into one of the six commodity classes, and so our estimate should total less than 3.1 million tons. Unfortunately, these 2.2 million tons represents

material that may be recyclable, but currently lacks established markets to be used to value the material.

**Table MSW1**

Commodity	Amount Recycled (tons)	Price per ton (2003 Dollars)	Estimated SC Recycling Rate	Total Estimated Weight (tons)	Estimated Weight in Landfills (tons)	Value in Landfills (2003 Dollars)	Avoided Cost of Landfilling (2004 Dollars)	Value in Landfills (2006 Dollars)	Avoided Cost of Landfilling (2006 Dollars)
<b>Glass (Total)</b>	9430		17.7%	53277	40778	\$458,355.10	\$1,304,881.84	\$522,066.46	\$1,398,833.34
<b>Steel</b>	13357	\$28.50	34.3%	38988	23837	\$679,362.80	\$762,793.32	\$773,794.23	\$817,714.44
<b>Aluminum</b>	15653	\$856.00	20.1%	77716	57719	\$49,407,442.26	\$1,847,007.19	\$56,275,076.73	\$1,979,991.70
<b>Other or Scrap Metal</b>	97275	\$27.00	62.8%	154896	53588	\$1,446,875.79	\$1,714,815.75	\$1,647,991.52	\$1,838,282.48
<b>Plastic (Total)</b>	16328		4.9%	333224	294714	\$46,638,701.34	\$9,430,839.54	\$53,121,480.82	\$10,109,859.98
<b>Paper (Total)</b>	372526		45.3%	823042	418980	\$17,511,993.14	\$13,407,350.04	\$19,946,160.19	\$14,372,679.24
<b>Total</b>	524569			1481145	889615	\$116,142,730.42	\$28,467,687.67	\$132,286,569.95	\$30,517,361.18

**Table MSW2. Glass**

Commodity	Amount Recycled (tons)	Price per ton (2003 Dollars)	Estimated SC Recycling Rate	Total Estimated Weight (tons)	Estimated Weight in Landfills (tons)	Value in Landfills (2003 Dollars)	Avoided Cost of Landfilling (2004 Dollars)	Value in Landfills (2006 Dollars)	Avoided Cost of Landfilling (2006 Dollars)
Brown Glass	2152	\$13.75	17.7%	12158	9306	\$127,954.18	\$297,784.28	\$145,739.81	\$319,224.74
Clear Glass	2713	\$19.75	17.7%	15328	11732	\$231,700.20	\$375,412.98	\$263,906.53	\$402,442.72
Green Glass	1339	\$5.00	17.7%	7565	5790	\$28,950.77	\$185,284.92	\$32,974.93	\$198,625.43
Mixed Glass	3226	\$5.00	17.7%	18226	13950	\$69,749.95	\$446,399.66	\$79,445.19	\$478,540.44
<b>Glass (Total)</b>	9430		17.7%	53277	40778	\$458,355.10	\$1,304,881.84	\$522,066.46	\$1,398,833.34

**Table MSW3. Plastic**

Commodity	Amount Recycled (tons)	Price per ton (2003 Dollars)	Estimated SC Recycling Rate	Total Estimated Weight (tons)	Estimated Weight in Landfills (tons)	Value in Landfills (2003 Dollars)	Avoided Cost of Landfilling (2004 Dollars)	Value in Landfills (2006 Dollars)	Avoided Cost of Landfilling (2006 Dollars)
PET	2144	\$220.00	4.9%	43755	38698	\$8,513,631.48	\$1,238,346.40	\$9,697,026.25	\$1,327,507.34
HDPE*	3418	\$240.00	4.9%	69755	61694	\$14,806,441.18	\$1,974,192.16	\$16,864,536.50	\$2,116,333.99
Other	10766	\$120.00	4.9%	219714	194322	\$23,318,628.69	\$6,218,300.98	\$26,559,918.07	\$6,666,018.65
<b>Plastic (Total)</b>	16328		4.9%	333224	294714	\$46,638,701.34	\$9,430,839.54	\$53,121,480.82	\$10,109,859.98

**Table MSW4. Paper**

Commodity	Amount Recycled (tons)	Price per ton (2003 Dollars)	Estimated SC Recycling Rate	Total Estimated Weight (tons)	Estimated Weight in Landfills (tons)	Value in Landfills (2003 Dollars)	Avoided Cost of Landfilling (2004 Dollars)	Value in Landfills (2006 Dollars)	Avoided Cost of Landfilling (2006 Dollars)
Cardboard	245398	\$51.00	45.3%	542171	275999	\$14,075,945.47	\$8,831,965.78	\$16,032,501.89	\$9,467,867.32
Office Paper	16173	\$53.00	45.3%	35732	18190	\$964,057.28	\$582,072.32	\$1,098,061.24	\$623,981.52
Magazines	2235	\$40.00	45.3%	4938	2514	\$100,548.11	\$80,438.49	\$114,524.29	\$86,230.06
Newspaper	56227	\$37.50	45.3%	124225	63238	\$2,371,442.29	\$2,023,630.76	\$2,701,072.77	\$2,169,332.17
<b>Paper (Total)</b>	372526		45.3%	823042	418980	\$17,511,993.14	\$13,407,350.04	\$19,946,160.19	\$14,372,679.24

### Potential Economic Impact of Landfill

The relevant number for use in IMPLAN is the “Value in Landfills,” \$132,286,570. This is the input used in the appropriate IMPLAN category.<sup>31</sup> The total economic potential of \$132 million in recyclable materials in landfills is \$210 million in economic output, \$71 million in personal income, and 1494 jobs. In Table MSW1, the estimated weight in landfills in S.C. is 889,615. On average, for every 1000 tons recycled from landfills represents 1.68 additional jobs in the state, a total impact of \$236,000, and generates \$79,800 in personal income.<sup>32</sup> Every additional 1000 tons recycled generates \$3687 in additional tax revenues to the state.

### Industry Potential

The survey results indicate that the industry anticipates a 12% annual growth rate for the next 5 years. This implies that within five years the total impact could be as high as \$11.46 billion.

Recycling is increasingly viewed as a viable and growing economic activity. In 2005, the national recycling rate for paper hit an all time high at 51.5%.<sup>33</sup> This represents a large increase from the 33% rate in 1990. Our survey indicates that the industry is optimistic about continued growth. As resource prices increase and as demand for resources increase, we expect that the economic impact recycling will continue to grow.

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<sup>31</sup> MSW in IMPLAN is closest to IMP 460, Waste management and remediation services.

<sup>32</sup> The per 1000 ton impacts were calculated by dividing the total potential impact of \$132,286,570 by 889.615 (the tonnage in 1000's.)

<sup>33</sup> Carlton, Jim, “U.S. Paper Recycling Hits Record as Fiber Needs Grow,” *Wall Street Journal*, April 12, 2006, p. A9. The article indicates that per capita, 346 pounds of paper were recycled in 2005.

**APPENDIX**  
**IMPLAN**  
**TECHNICAL DETAILS**

## Appendix

### The Input-Output Model

In this section a brief description is presented of how regional input-output models are used to estimate economic impacts. Much of the material presented here is found in a more complete exposition written by Hefner. (1997).<sup>34</sup>

The primary purpose of a regional economic impact model is to determine the inter-relationships among the various sectors of an economy. Using these relationships, the ramifications of any economic activity can be traced through the linkages within the various economic sectors. The result is what is often called a “multiplier.” Armed with a multiplier the researcher can determine the effects of an industry on total economic activity, personal income and jobs.

There are a number of models available. The theoretical background and data for most models is an input-output model (I-O). Three I-O models that are frequently used the following:

1. RIMS (Regional Impact Modeling System),<sup>35</sup> developed and maintained by the U.S. Department of Commerce;
2. IMPLAN (Impact Analysis for Planning),<sup>36</sup> a model initially developed by the U.S. Department of Agriculture Forest Service and now maintained and marketed by a private firm (Minnesota IMPLAN Group, Inc); and
3. REMI (Regional Economic Models, Inc.)<sup>37</sup>.

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<sup>34</sup> Hefner, Frank (1997). “Using Input-Output Models to Measure Local Economic Impacts.” *International Journal of Public Administration*, 20 (8&9): 1469-1487.

<sup>35</sup> Wilbur Smith Associates, a transportation consulting firm located in Columbia, S.C., conducts transportation studies world wide and has used RIMS and REMI in their studies.

<sup>36</sup> The University of South Carolina used IMPLAN to estimate the impacts of the university and of BMW. *The Economic Impact of the University of South Carolina*, Division of Research, The Darla Moore School of Business, University of South Carolina, June 2000. The Division of Research also conducted a study on BMW, *The Economic Impact of BMW on South Carolina*, May 2002.

Imbedded in REMI and IMPLAN is an input-output model using data developed by the U.S. Department of Commerce.<sup>38</sup> In fact, all of the above mentioned models use the same basic approach: the regional multipliers and data are determined using a top-down modeling method from the national input-output tables.<sup>39</sup> For this study, the multipliers developed by IMPLAN were used.<sup>40</sup>

The basis for impact analysis is the input-output (I-O) table. The table is constructed with data on detailed inter-industry flows throughout an economy and information on both final demands and total output. An I-O table is an accounting relationship for an entire economy (national, state, or sub-state), with each industry represented as both a column and a row in a matrix. In simple terms, it is a set of recipes for production in a given economy. The table provides data on industry demands and supplies to all industries. The multipliers that are often used are calculated from the I-O table.

A simple numerical example containing hypothetical data of a two sector economy I-O table is presented in Figure 1.

Figure 1  
Hypothetical Input - Output Table

	Con	Manu	Final Demand	Total Output
Con	200	100	700	1000
Manu	400	500	1100	2000

<sup>37</sup> A study (2003) conducted by the Center for Economic Forecasting at Charleston Southern University used REMI to analyze the economic impact in 2002 of the South Carolina Ports Authority .

<sup>38</sup> RIMS directly uses the Department of Commerce data.

<sup>39</sup> The technique used is referred to as “location quotients.”

<sup>40</sup> Minnesota IMPLAN Group, Stillwater, Minnesota, 2006.

	Con	Manu	Final Demand	Total Output
Con	Z <sub>11</sub>	Z <sub>12</sub>	F <sub>1</sub>	X <sub>1</sub>
Manu	Z <sub>21</sub>	Z <sub>22</sub>	F <sub>2</sub>	X <sub>2</sub>

where Con = construction sector  
 Manu = manufacturing sector  
 Z<sub>ij</sub> = intermediate demand by industry i of products from industry j  
 X<sub>i</sub> = total output of industry i

In this example, the manufacturing sector delivers to final demand \$1100 worth of goods. Final demand is the finished product that is used by a consumer. In addition, this sector provided \$400 of output to the construction sector and \$500 to itself. The total output of manufacturing is the row total, \$2,000. From the column of manufacturing data, it is apparent that to produce the \$1100 of final goods, the manufacturing sector used \$500 worth of its own output and \$100 of output from the construction sector. These demands for goods to be used in the production of goods delivered to final demand are termed intermediate demands.

In Figure 1, the same scheme is used to obtain a general notation. The total output from each sector is the sum of the intermediate demands and the final demands, or

$$X_1 = Z_{11} + Z_{12} + F_1$$

$$X_2 = Z_{21} + Z_{22} + F_2$$

which can be put into a matrix form as  $X = Z + F$ .

Figure 2  
 Direct Coefficients Table

	Con	Manu				
	<u>200</u>	<u>100</u>				
Con	1000	2000	.2	.05	a <sub>11</sub>	a <sub>12</sub>
			=	=		
	<u>400</u>	<u>500</u>				
Manu	1000	2000	.4	.25	a <sub>21</sub>	a <sub>22</sub>

Dividing the inter-industry flows by the total output produces the technical coefficients matrix, A, as seen in Figure 2. This is the set of recipes referred to earlier. An illustrative interpretation of these technical coefficients shows that it takes \$.20 worth of construction output and \$.40 worth of manufacturing output to produce \$1.00 worth of construction output.

Since total output equals the sum of the inter-industry flows and the final demand, one can derive the following equations:  $X = Z + F$ , where  $Z = AX$ . This may be solved as  $X = (I - A)^{-1}F$ .

Figure 3  
Leontief Inverse

$$(I-A)^{-1} = \begin{matrix} 1.2931 & 0.0862 \\ 0.6897 & 1.3793 \end{matrix}$$

The term  $(I-A)^{-1}$  is called the Leontief inverse and provides a powerful tool in I-O analysis. The numerical result of  $(I-A)^{-1}$  in our example is found in Figure 3. To understand what these numbers mean, consider what will happen to this economy should the demand for construction increase by \$100 to \$800, while that of manufacturing remains the same. Obviously, to meet this demand, the construction sector will have to produce an extra \$100 of output. Additionally, from the I-O table one can see that construction uses construction services in its own production process. From the A matrix, we see that to produce \$1 worth of output, it takes \$.20 worth of construction production as an input. Thus, \$20 worth of construction will be needed as an input to increase output by \$100 and, to produce that \$20 worth, an additional amount given by  $(.2 \times \$20)$  will be used as an input. Further, construction will demand  $(0.4 \times \$100)$  from the manufacturing sector. The Leontief inverse is an effective tool for calculating the result of this round-by-round process. From the example in Figure 3, we see that a \$100 increase in the demand for construction output requires a total increase of about \$129 in construction

output and an increase of \$69 in manufacturing output. Thus the  $(I-A)^{-1}$  matrix contains all of the direct and indirect effects of a change in final demand. The total economic impact is given by the column sums of the Leontief inverse. In our example, we find that the total economic impact of a \$1 change in construction demand is \$1.98; that is, the \$1 gets multiplied by \$1.98.

The multiplier derived from this example of the I-O model incorporates both the direct and indirect impacts. By adding to this simple model a row for payments to labor by the firm (wages) and a column of expenditure patterns (the marginal propensity to consume each type of product), the multipliers derived from the Leontief inverse will incorporate the direct, indirect, and induced impacts. The induced impacts are additional expenditures resulting from increased earnings by local residents as a result of the increase in final demand.

IMPLAN modeling software incorporates all of the sectoral impacts described above. More importantly, the model is calibrated for South Carolina.

IMPLAN generates three kinds of multipliers:

1. Output: This measures the total economic activity that takes place within the economy.
2. Income: This is commonly referred to as personal income and includes employee compensation and proprietor's income.<sup>41</sup>
3. Jobs: Total jobs measured as full time equivalents. The jobs multiplier is a multiple of \$1,000,000.

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<sup>41</sup> Employee compensation includes wages and salaries as well as benefits such as health and life insurance, retirement and non-cash compensation. IMPLAN refers to this category as labor income.

# APPENDIX

## TECHNICAL DESCRIPTION

**Estimating the Value of Recyclable Materials Currently Being Disposed of in Landfills**

## Estimating the Value of Recyclable Materials Currently Being Disposed of in Landfills

We define the following variables:

$R_{US}$  = the overall US recycling rate as calculated by the EPA

$R_{SC}$  = the overall SC recycling rate as calculated by DHEC

$r_{i,US}$  = the US recycling rate for material  $i$  as calculated by the EPA

$r_{i,SC}$  = the SC recycling rate for material  $i$

No public agency directly collects data on  $r_{i,SC}$ , so it must be calculated from other observed data.

The ratio  $\frac{R_{SC}}{R_{US}}$  we call the SC recycling factor, and assume that this factor is constant across recyclable materials. Therefore,

$$r_{i,SC} = \frac{R_{SC}}{R_{US}} \cdot r_{i,US} \quad (\text{Equation 1})$$

More definitions:

$rm_i$  = the quantity of material  $i$  recycled in SC (measured in tons)

$tm_i$  = the total quantity of material  $i$  produced in SC (measured in tons)

$lm_i$  = the quantity of material  $i$  deposited in landfills in SC (measured in tons)

$im_i$  = the quantity of material  $i$  incinerated in SC (measured in tons)

$nm_i$  = the quantity of material  $i$  not recycled (measured in tons) =

By the definition of a rate,

$$r_{i,SC} = \frac{rm_i}{tm_i}$$

which can be re-written as:

$$tm_i = \frac{rm_i}{r_{i,SC}} \quad (\text{Equation 2})$$

The total material produced in SC is disposed of in one of three ways: it is recycled, it is deposited in landfills, or it is incinerated. Therefore,

or

(Equation 3)

Re-arranging equation 3 we find:

(Equation 4)

From data produced by DHEC<sup>42</sup>, we know that 93% of non-recycled material is deposited in landfills. Therefore,

(Equation 5)

Substituting equation 2 into equation 4, we find:

$$nm_i = \frac{rm_i}{r_{i,SC}} - rm_i \quad \text{(Equation 6)}$$

Re-arranging equation 6, we find:

$$nm_i = rm_i \left( \frac{1}{r_{i,SC}} - 1 \right) \quad \text{(Equation 7)}$$

Substituting equation 6 into equation 5, we find:

$$lm_i = 0.93rm_i \left( \frac{1}{r_{i,SC}} - 1 \right) \quad \text{(Equation 8)}$$

Finally, substituting equation 1 into equation 8, we find:

$$lm_i = 0.93rm_i \left( \frac{1}{\frac{R_{SC}}{R_{US}} \cdot r_{i,US}} - 1 \right) \quad \text{(Equation 9)}$$

which gives us a calculation for the quantity of material  $i$  being deposited in landfills that can be made from known data (i.e., the quantity of recycled material, the overall US and SC recycling rates and the US recycling rate for material  $i$ ).

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<sup>42</sup> South Carolina Solid Waste Management Annual Report Fiscal Year 2004, p.3.

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# **APPENDIX**

## **IMPLAN Match**

### **North American Industry Classification System (NAICS)**

### **U.S. Standard Industrial Classification (SIC) System**

**This appendix details the types of firms reported in the survey and the match used in evaluating the economic impact**

Industry Match from NAICS to IMPLAN

NAICS	NAICS Description	IMPLAN	IMPLAN description
237310	Highway, Street, and Bridge Construction	39	NEW HIGHWAYS AND STREETS
314999	All Other Miscellaneous Textile Product Mills	97	TEXTILE GOODS, N.E.C
322130	Paperboard Mills	125	PAPERBOARD MILLS
326122	Unlaminated Plastics Profile Shape Manufacturing	152	MISCELLANEOUS PLASTICS PRODUCT
327215	Glass Product Manufacturing Made of Purchased Glass	189	GLASS AND GLASS PRODUCTS, EXC
327310	Cement Manufacturing	191	CEMENT, HYDRAULIC
331112	Electrometallurgical Ferroalloy Product Manufacturing	210	ELECTROMETALLURGICAL PRODUCTS
331511	Iron Foundries	224	IRON AND STEEL FOUNDRIES
331492	Secondary Smelting, Refining, and Alloying of Nonferrous Metal	220	PRIMARY NONFERROUS METALS, N.E
33511	Electric Lamp Bulb and Part Manufacturing	325	ELECTRIC LAMPS
325992	Photographic Film, Paper, Plate, and Chemical Manufacturing	170	PHOTOGRAPHIC EQUIPMENT
562	Waste Management and Remediation Services	460	SANITARY SERVICES
423930	Recyclable Material Merchant Wholesalers	390	WHOLESALE TRADE
423320	Brick, Stone, and Related Construction Material Merchant Wholesalers	390	WHOLESALE TRADE

Industry Match from SIC to IMPLAN

SIC	SIC Description	IMPLAN	IMPLAN description
1611	Highway and Street Construction, Except Elevated Highways	39	NEW HIGHWAYS AND STREETS
2299	Textile Goods, NEC	97	TEXTILE GOODS, N.E.C
2631	Paperboard Mills	125	PAPERBOARD MILLS
3089	Plastics Products, NEC (plastics sausage casings)	152	MISCELLANEOUS PLASTICS PRODUCT
3231	Glass Products Made of Purchased Glass	189	GLASS AND GLASS PRODUCTS, EXC
3241	Cement Manufacturing	191	CEMENT, HYDRAULIC
3313	Electrometallurgical Products, Except Steel	210	ELECTROMETALLURGICAL PRODUCTS
3321	Gray and Ductile Iron Foundries	224	IRON AND STEEL FOUNDRIES
3341	Secondary Smelting and Refining of Nonferrous Metals	220	PRIMARY NONFERROUS METALS, N.E
3641	Electric lamp (bulb) parts-mfg	325	ELECTRIC LAMPS
3861	Photographic Equipment and Supplies	170	PHOTOGRAPHIC EQUIPMENT
4953	Refuse Systems	460	SANITARY SERVICES
5093	Recyclable Materials Wholesalers	390	WHOLESALE TRADE

The survey instrument allowed respondents to identify their firm by SIC or NAICS codes. These tables list all of the industry types from the survey. A total of 28 firms classified themselves using either SIC, NAICS, or both.

# APPENDIX

## IMPLAN

### OUTPUT MULTIPLIERS

#### SOUTH CAROLINA

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Type I multipliers = (Direct + Indirect)/Direct

Type II multipliers = (Direct + Indirect + Induced)/ Direct

Example: Sector 32, Water, Sewage, and Other Systems the multiplier is 1.552944. For every \$1 of water or sewage system services produced, another \$0.159678 is supplied to produce this service (transportation, utilities, chemicals, and so forth). Wages are paid to the employees in Sector 32 and to all of the firms that supply inputs to this sector. As those wages are spent within South Carolina an impact of \$0.393266 is created. The sum of all of these impacts is \$1.552944.

Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects	Type I Multiplier	Type II Multiplier
1 Oilseed farming	1.000000	0.349970	0.088575	1.438545	1.349970	1.438545
2 Grain farming	1.000000	0.317024	0.102809	1.419834	1.317024	1.419834
3 Vegetable and melon farming	1.000000	0.173106	0.144982	1.318088	1.173106	1.318088
4 Tree nut farming	1.000000	0.228153	0.160132	1.388285	1.228153	1.388285
5 Fruit farming	1.000000	0.221175	0.226757	1.447932	1.221175	1.447932
6 Greenhouse and nursery production	1.000000	0.098439	0.251645	1.350084	1.098439	1.350084
7 Tobacco farming	1.000000	0.265870	0.109949	1.375819	1.265870	1.375819
8 Cotton farming	1.000000	0.290010	0.191386	1.481396	1.290010	1.481396
9 Sugarcane and sugar beet farming	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
10 All other crop farming	1.000000	0.251111	0.124533	1.375645	1.251111	1.375645
11 Cattle ranching and farming	1.000000	0.454113	0.131291	1.585404	1.454113	1.585404
12 Poultry and egg production	1.000000	0.229445	0.105387	1.334833	1.229445	1.334833
13 Animal production, except cattle and poultry	1.000000	0.325043	0.156616	1.481659	1.325043	1.481659
14 Logging	1.000000	0.397003	0.244286	1.641290	1.397003	1.641290
15 Forest nurseries, forest products, and timber	1.000000	0.335692	0.270916	1.606609	1.335692	1.606609
16 Fishing	1.000000	0.265277	0.545647	1.810924	1.265277	1.810924
17 Hunting and trapping	1.000000	0.425608	0.283480	1.709088	1.425608	1.709088
18 Agriculture and forestry support activities	1.000000	0.184270	0.728393	1.912663	1.184270	1.912663
19 Oil and gas extraction	1.000000	0.237304	0.142855	1.380159	1.237304	1.380159
20 Coal mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
21 Iron ore mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
22 Copper, nickel, lead, and zinc mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
23 Gold, silver, and other metal ore mining	1.000000	0.159806	0.368505	1.528311	1.159806	1.528311
24 Stone mining and quarrying	1.000000	0.191942	0.312953	1.504895	1.191942	1.504895
25 Sand, gravel, clay, and refractory mining	1.000000	0.145924	0.356804	1.502729	1.145924	1.502729
26 Other nonmetallic mineral mining	1.000000	0.209195	0.317598	1.526792	1.209195	1.526792
27 Drilling oil and gas wells	1.000000	0.441179	0.140667	1.581846	1.441179	1.581846
28 Support activities for oil and gas operations	1.000000	0.411944	0.117479	1.529424	1.411944	1.529424
29 Support activities for other mining	1.000000	0.442144	0.152540	1.594684	1.442144	1.594684
30 Power generation and supply	1.000000	0.120119	0.199624	1.319743	1.120119	1.319743
31 Natural gas distribution	1.000000	0.231315	0.153158	1.384472	1.231315	1.384472
32 Water, sewage and other systems	1.000000	0.159678	0.393266	1.552944	1.159678	1.552944
33 New residential 1-unit structures, nonfarm	1.000000	0.424095	0.340993	1.765088	1.424095	1.765088
34 New multifamily housing structures, nonfarm	1.000000	0.323546	0.392541	1.716087	1.323546	1.716087
35 New residential additions and alterations, no	1.000000	0.404324	0.303852	1.708176	1.404324	1.708176
36 New farm housing units and additions and alte	1.000000	0.452088	0.290165	1.742253	1.452088	1.742253
37 Manufacturing and industrial buildings	1.000000	0.229851	0.450581	1.680432	1.229851	1.680432
38 Commercial and institutional buildings	1.000000	0.332939	0.473048	1.805987	1.332939	1.805987
39 Highway, street, bridge, and tunnel construct	1.000000	0.276211	0.420134	1.696345	1.276211	1.696345
40 Water, sewer, and pipeline construction	1.000000	0.270515	0.388686	1.659201	1.270515	1.659201
41 Other new construction	1.000000	0.306460	0.440622	1.747082	1.306460	1.747082
42 Maintenance and repair of farm and nonfarm re	1.000000	0.402329	0.302673	1.705002	1.402329	1.705002
43 Maintenance and repair of nonresidential buildings	1.000000	0.330156	0.470484	1.800640	1.330156	1.800640
44 Maintenance and repair of highways, streets,	1.000000	0.410546	0.313885	1.724431	1.410546	1.724431
45 Other maintenance and repair construction	1.000000	0.280908	0.453810	1.734718	1.280908	1.734718
46 Dog and cat food manufacturing	1.000000	0.357919	0.164071	1.521990	1.357919	1.521990
47 Other animal food manufacturing	1.000000	0.350531	0.138312	1.488844	1.350531	1.488844
48 Flour milling	1.000000	0.357090	0.181004	1.538095	1.357090	1.538095
49 Rice milling	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
50 Malt manufacturing	1.000000	0.438736	0.174351	1.613087	1.438736	1.613088
51 Wet corn milling	1.000000	0.404385	0.165383	1.569768	1.404385	1.569768
52 Soybean processing	1.000000	0.318261	0.116731	1.434992	1.318261	1.434992
53 Other oilseed processing	1.000000	0.373730	0.176611	1.550341	1.373730	1.550341
54 Fats and oils refining and blending	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
55 Breakfast cereal manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
56 Sugar manufacturing	1.000000	0.309815	0.112848	1.422663	1.309815	1.422663
57 Confectionery manufacturing from cacao beans	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
58 Confectionery manufacturing from purchased chocolate	1.000000	0.321285	0.191226	1.512512	1.321285	1.512512
59 Nonchocolate confectionery manufacturing	1.000000	0.304479	0.201685	1.506164	1.304479	1.506164
60 Frozen food manufacturing	1.000000	0.331476	0.229748	1.561223	1.331476	1.561223
61 Fruit and vegetable canning and drying	1.000000	0.318805	0.197496	1.516301	1.318805	1.516301
62 Fluid milk manufacturing	1.000000	0.529729	0.163711	1.693440	1.529729	1.693440
63 Creamery butter manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
64 Cheese manufacturing	1.000000	0.475723	0.123291	1.599013	1.475723	1.599013
65 Dry, condensed, and evaporated dairy products	1.000000	0.415056	0.147785	1.562841	1.415056	1.562841
66 Ice cream and frozen dessert manufacturing	1.000000	0.472149	0.168247	1.640397	1.472149	1.640396
67 Animal, except poultry, slaughtering	1.000000	0.573532	0.153362	1.726894	1.573532	1.726894

68 Meat processed from carcasses	1.000000	0.583202	0.239676	1.822878	1.583202	1.822878
69 Rendering and meat byproduct processing	1.000000	0.435721	0.230539	1.666260	1.435721	1.666260
70 Poultry processing	1.000000	0.790493	0.258114	2.048607	1.790493	2.048607
71 Seafood product preparation and packaging	1.000000	0.288909	0.226569	1.515478	1.288909	1.515478
72 Frozen cakes and other pastries manufacturing	1.000000	0.379577	0.179014	1.558591	1.379577	1.558591
73 Bread and bakery product, except frozen, manufacturing	1.000000	0.213551	0.311786	1.525336	1.213551	1.525337
74 Cookie and cracker manufacturing	1.000000	0.226952	0.195077	1.422029	1.226952	1.422029
75 Mixes and dough made from purchased flour	1.000000	0.260209	0.186430	1.446639	1.260209	1.446639
76 Dry pasta manufacturing	1.000000	0.199526	0.276764	1.476290	1.199526	1.476290
77 Tortilla manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
78 Roasted nuts and peanut butter manufacturing	1.000000	0.284692	0.113926	1.398618	1.284692	1.398618
79 Other snack food manufacturing	1.000000	0.360051	0.190047	1.550098	1.360051	1.550098
80 Coffee and tea manufacturing	1.000000	0.565703	0.173618	1.739320	1.565703	1.739320
81 Flavoring syrup and concentrate manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
82 Mayonnaise, dressing, and sauce manufacturing	1.000000	0.383268	0.172773	1.556041	1.383268	1.556041
83 Spice and extract manufacturing	1.000000	0.353439	0.191900	1.545339	1.353439	1.545339
84 All other food manufacturing	1.000000	0.432226	0.174464	1.606690	1.432226	1.606690
85 Soft drink and ice manufacturing	1.000000	0.303204	0.229499	1.532704	1.303204	1.532704
86 Breweries	1.000000	0.160838	0.164246	1.325084	1.160838	1.325084
87 Wineries	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
88 Distilleries	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
89 Tobacco stemming and redrying	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
90 Cigarette manufacturing	1.000000	0.168346	0.119413	1.287759	1.168346	1.287759
91 Other tobacco product manufacturing	1.000000	0.245405	0.140228	1.385633	1.245405	1.385633
92 Fiber, yarn, and thread mills	1.000000	0.275889	0.232288	1.508176	1.275889	1.508176
93 Broadwoven fabric mills	1.000000	0.310219	0.333990	1.644210	1.310219	1.644210
94 Narrow fabric mills and schiffli embroidery	1.000000	0.249956	0.345090	1.595045	1.249956	1.595045
95 Nonwoven fabric mills	1.000000	0.315465	0.201520	1.516985	1.315465	1.516985
96 Knit fabric mills	1.000000	0.373402	0.252249	1.625651	1.373402	1.625651
97 Textile and fabric finishing mills	1.000000	0.414383	0.308991	1.723374	1.414383	1.723374
98 Fabric coating mills	1.000000	0.342034	0.294060	1.636094	1.342034	1.636094
99 Carpet and rug mills	1.000000	0.305572	0.215971	1.521543	1.305572	1.521543
100 Curtain and linen mills	1.000000	0.357151	0.275155	1.632306	1.357151	1.632306
101 Textile bag and canvas mills	1.000000	0.340014	0.371110	1.711125	1.340014	1.711125
102 Tire cord and tire fabric mills	1.000000	0.244939	0.192142	1.437081	1.244939	1.437081
103 Other miscellaneous textile product mills	1.000000	0.348265	0.283624	1.631889	1.348265	1.631889
104 Sheer hosiery mills	1.000000	0.202415	0.465758	1.668173	1.202415	1.668173
105 Other hosiery and sock mills	1.000000	0.395875	0.311376	1.707252	1.395875	1.707252
106 Other apparel knitting mills	1.000000	0.282694	0.389787	1.672481	1.282694	1.672481
107 Cut and sew apparel manufacturing	1.000000	0.268288	0.274556	1.542844	1.268288	1.542844
108 Accessories and other apparel manufacturing	1.000000	0.234235	0.345756	1.579991	1.234235	1.579991
109 Leather and hide tanning and finishing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
110 Footwear manufacturing	1.000000	0.298327	0.278462	1.576790	1.298327	1.576790
111 Other leather product manufacturing	1.000000	0.081366	0.352894	1.434260	1.081366	1.434260
112 Sawmills	1.000000	0.673849	0.300453	1.974302	1.673849	1.974302
113 Wood preservation	1.000000	0.838873	0.260832	2.099705	1.838873	2.099705
114 Reconstituted wood product manufacturing	1.000000	0.474012	0.231257	1.705269	1.474012	1.705269
115 Veneer and plywood manufacturing	1.000000	0.743364	0.346062	2.089426	1.743364	2.089427
116 Engineered wood member and truss manufacturing	1.000000	0.480973	0.321189	1.802162	1.480973	1.802162
117 Wood windows and door manufacturing	1.000000	0.487553	0.321110	1.808663	1.487553	1.808663
118 Cut stock, resawing lumber, and planing	1.000000	0.814056	0.238344	2.052400	1.814056	2.052400
119 Other millwork, including flooring	1.000000	0.512250	0.426248	1.938498	1.512250	1.938498
120 Wood container and pallet manufacturing	1.000000	0.538872	0.382026	1.920898	1.538872	1.920898
121 Manufactured home, mobile home, manufacturing	1.000000	0.292241	0.305286	1.597527	1.292241	1.597527
122 Prefabricated wood building manufacturing	1.000000	0.498986	0.324231	1.823218	1.498986	1.823218
123 Miscellaneous wood product manufacturing	1.000000	0.555393	0.286557	1.841949	1.555393	1.841949
124 Pulp mills	1.000000	0.800456	0.223668	2.024124	1.800456	2.024124
125 Paper and paperboard mills	1.000000	0.442733	0.248210	1.690943	1.442733	1.690943
126 Paperboard container manufacturing	1.000000	0.190535	0.278298	1.468833	1.190535	1.468833
127 Flexible packaging foil manufacturing	1.000000	0.608610	0.164273	1.772883	1.608610	1.772883
128 Surface-coated paperboard manufacturing	1.000000	0.366036	0.231661	1.597697	1.366036	1.597697
129 Coated and laminated paper and packaging mate	1.000000	0.283474	0.277413	1.560887	1.283474	1.560887
130 Coated and uncoated paper bag manufacturing	1.000000	0.226815	0.417727	1.644542	1.226815	1.644542
131 Die-cut paper office supplies manufacturing	1.000000	0.260198	0.276033	1.536231	1.260198	1.536231
132 Envelope manufacturing	1.000000	0.280252	0.364947	1.645198	1.280252	1.645198
133 Stationery and related product manufacturing	1.000000	0.238946	0.224686	1.463632	1.238946	1.463632
134 Sanitary paper product manufacturing	1.000000	0.268759	0.292417	1.561177	1.268759	1.561177
135 All other converted paper product manufacturing	1.000000	0.258451	0.267254	1.525705	1.258451	1.525705
136 Manifold business forms printing	1.000000	0.150492	0.298759	1.449251	1.150492	1.449251
137 Books printing	1.000000	0.228433	0.350556	1.578990	1.228433	1.578990

138	Blankbook and looseleaf binder manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
139	Commercial printing	1.000000	0.261474	0.341066	1.602540	1.261474	1.602540
140	Tradebinding and related work	1.000000	0.284979	0.372434	1.657413	1.284979	1.657413
141	Prepress services	1.000000	0.101362	0.610626	1.711988	1.101362	1.711988
142	Petroleum refineries	1.000000	0.260412	0.084992	1.345404	1.260412	1.345404
143	Asphalt paving mixture and block manufacturing	1.000000	0.297128	0.206778	1.503906	1.297128	1.503906
144	Asphalt shingle and coating materials manufacturing	1.000000	0.318608	0.252823	1.571431	1.318608	1.571431
145	Petroleum lubricating oil and grease manufacturing	1.000000	0.325622	0.203197	1.528819	1.325622	1.528819
146	All other petroleum and coal products manufacturing	1.000000	0.291129	0.126347	1.417476	1.291129	1.417476
147	Petrochemical manufacturing	1.000000	0.354989	0.133666	1.488655	1.354989	1.488655
148	Industrial gas manufacturing	1.000000	0.180601	0.391258	1.571858	1.180601	1.571858
149	Synthetic dye and pigment manufacturing	1.000000	0.312377	0.308375	1.620751	1.312377	1.620751
150	Other basic inorganic chemical manufacturing	1.000000	0.333662	0.276036	1.609698	1.333662	1.609698
151	Other basic organic chemical manufacturing	1.000000	0.457347	0.161611	1.618957	1.457347	1.618957
152	Plastics material and resin manufacturing	1.000000	0.373436	0.172597	1.546034	1.373436	1.546034
153	Synthetic rubber manufacturing	1.000000	0.311345	0.229339	1.540684	1.311345	1.540684
154	Cellulosic organic fiber manufacturing	1.000000	0.294382	0.347634	1.642016	1.294382	1.642016
155	Noncellulosic organic fiber manufacturing	1.000000	0.347701	0.307388	1.655089	1.347701	1.655089
156	Nitrogenous fertilizer manufacturing	1.000000	0.279398	0.225996	1.505394	1.279398	1.505394
157	Phosphatic fertilizer manufacturing	1.000000	0.495389	0.236044	1.731433	1.495389	1.731433
158	Fertilizer, mixing only, manufacturing	1.000000	0.366083	0.181208	1.547290	1.366083	1.547290
159	Pesticide and other agricultural chemical man	1.000000	0.311303	0.225719	1.537022	1.311303	1.537022
160	Pharmaceutical and medicine manufacturing	1.000000	0.367688	0.202563	1.570251	1.367688	1.570251
161	Paint and coating manufacturing	1.000000	0.340277	0.224867	1.565145	1.340277	1.565145
162	Adhesive manufacturing	1.000000	0.317460	0.266162	1.583622	1.317460	1.583622
163	Soap and other detergent manufacturing	1.000000	0.403079	0.199755	1.602833	1.403079	1.602833
164	Polish and other sanitation good manufacturing	1.000000	0.294988	0.262909	1.557898	1.294988	1.557898
165	Surface active agent manufacturing	1.000000	0.561947	0.195115	1.757062	1.561947	1.757062
166	Toilet preparation manufacturing	1.000000	0.346983	0.178524	1.525507	1.346983	1.525507
167	Printing ink manufacturing	1.000000	0.348754	0.267888	1.616642	1.348754	1.616642
168	Explosives manufacturing	1.000000	0.297303	0.292212	1.589515	1.297303	1.589515
169	Custom compounding of purchased resins	1.000000	0.338008	0.237747	1.575754	1.338008	1.575754
170	Photographic film and chemical manufacturing	1.000000	0.309299	0.280369	1.589667	1.309299	1.589667
171	Other miscellaneous chemical product manufacturing	1.000000	0.365697	0.279932	1.645629	1.365697	1.645629
172	Plastics packaging materials, film and sheet	1.000000	0.307230	0.220235	1.527465	1.307230	1.527465
173	Plastics pipe, fittings, and profile shapes	1.000000	0.277599	0.264054	1.541654	1.277599	1.541654
174	Laminated plastics plate, sheet, and shapes	1.000000	0.190973	0.461993	1.652966	1.190973	1.652966
175	Plastics bottle manufacturing	1.000000	0.292615	0.246277	1.538892	1.292615	1.538892
176	Resilient floor covering manufacturing	1.000000	0.164519	0.295628	1.460147	1.164519	1.460147
177	Plastics plumbing fixtures and all other plastics	1.000000	0.333716	0.252127	1.585844	1.333716	1.585844
178	Foam product manufacturing	1.000000	0.332251	0.233451	1.565702	1.332251	1.565702
179	Tire manufacturing	1.000000	0.200063	0.317882	1.517945	1.200063	1.517945
180	Rubber and plastics hose and belting manufacturing	1.000000	0.226228	0.294086	1.520314	1.226228	1.520314
181	Other rubber product manufacturing	1.000000	0.263065	0.258054	1.521118	1.263065	1.521118
182	Vitreous china plumbing fixture manufacturing	1.000000	0.193592	0.391896	1.585488	1.193592	1.585488
183	Vitreous china and earthenware articles manufacturing	1.000000	0.190987	0.477875	1.668862	1.190987	1.668862
184	Porcelain electrical supply manufacturing	1.000000	0.293123	0.396667	1.689789	1.293123	1.689789
185	Brick and structural clay tile manufacturing	1.000000	0.308019	0.336107	1.644125	1.308019	1.644125
186	Ceramic wall and floor tile manufacturing	1.000000	0.234809	0.469680	1.704488	1.234809	1.704488
187	Nonclay refractory manufacturing	1.000000	0.222274	0.362794	1.585068	1.222274	1.585068
188	Clay refractory and other structural clay pro	1.000000	0.401836	0.258815	1.660651	1.401836	1.660651
189	Glass container manufacturing	1.000000	0.304729	0.291957	1.596686	1.304729	1.596686
190	Glass and glass products, except glass containers	1.000000	0.331972	0.338904	1.670876	1.331972	1.670876
191	Cement manufacturing	1.000000	0.278094	0.189525	1.467619	1.278094	1.467619
192	Ready-mix concrete manufacturing	1.000000	0.264477	0.300662	1.565138	1.264477	1.565138
193	Concrete block and brick manufacturing	1.000000	0.288683	0.291331	1.580014	1.288683	1.580014
194	Concrete pipe manufacturing	1.000000	0.272561	0.255211	1.527772	1.272561	1.527772
195	Other concrete product manufacturing	1.000000	0.223383	0.333640	1.557023	1.223383	1.557023
196	Lime manufacturing	1.000000	0.360998	0.243446	1.604444	1.360998	1.604444
197	Gypsum product manufacturing	1.000000	0.290002	0.220477	1.510480	1.290002	1.510480
198	Abrasive product manufacturing	1.000000	0.337258	0.211581	1.548840	1.337258	1.548840
199	Cut stone and stone product manufacturing	1.000000	0.312614	0.367974	1.680588	1.312614	1.680588
200	Ground or treated minerals and earths manufacturing	1.000000	0.230266	0.159619	1.389885	1.230266	1.389885
201	Mineral wool manufacturing	1.000000	0.287712	0.295138	1.582851	1.287712	1.582851
202	Miscellaneous nonmetallic mineral products	1.000000	0.199139	0.317032	1.516171	1.199139	1.516171
203	Iron and steel mills	1.000000	0.353194	0.212348	1.565542	1.353194	1.565542
204	Ferroalloy and related product manufacturing	1.000000	0.266499	0.227234	1.493733	1.266499	1.493733
205	Iron, steel pipe and tube from purchased steel	1.000000	0.217394	0.216481	1.433875	1.217394	1.433875
206	Rolled steel shape manufacturing	1.000000	0.219108	0.291693	1.510801	1.219108	1.510801
207	Steel wire drawing	1.000000	0.271764	0.149248	1.421012	1.271764	1.421012

208 Alumina refining	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
209 Primary aluminum production	1.00000	0.352349	0.243895	1.596244	1.352349	1.596244
210 Secondary smelting and alloying of aluminum	1.00000	0.402214	0.166791	1.569005	1.402214	1.569005
211 Aluminum sheet, plate, and foil manufacturing	1.00000	0.209121	0.138166	1.347287	1.209121	1.347287
212 Aluminum extruded product manufacturing	1.00000	0.150896	0.215143	1.366039	1.150896	1.366039
213 Other aluminum rolling and drawing	1.00000	0.128994	0.222859	1.351853	1.128994	1.351853
214 Primary smelting and refining of copper	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
215 Primary nonferrous metal, except copper and a	1.00000	0.246614	0.152408	1.399022	1.246614	1.399022
216 Copper rolling, drawing, and extruding	1.00000	0.205802	0.159987	1.365789	1.205802	1.365789
217 Copper wire, except mechanical, drawing	1.00000	0.256613	0.344871	1.601483	1.256613	1.601483
218 Secondary processing of copper	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
219 Nonferrous metal, except copper and aluminum,	1.00000	0.215099	0.228745	1.443843	1.215099	1.443843
220 Secondary processing of other nonferrous	1.00000	0.362715	0.239239	1.601954	1.362715	1.601954
221 Ferrous metal foundries	1.00000	0.239029	0.404217	1.643246	1.239029	1.643245
222 Aluminum foundries	1.00000	0.252237	0.290169	1.542406	1.252237	1.542406
223 Nonferrous foundries, except aluminum	1.00000	0.237535	0.275900	1.513435	1.237535	1.513435
224 Iron and steel forging	1.00000	0.198824	0.335129	1.533953	1.198824	1.533953
225 Nonferrous forging	1.00000	0.167613	0.243596	1.411209	1.167613	1.411209
226 Custom roll forming	1.00000	0.269209	0.126019	1.395228	1.269209	1.395228
227 All other forging and stamping	1.00000	0.254280	0.290781	1.545061	1.254280	1.545061
228 Cutlery and flatware, except precious, manufacturing	1.00000	0.209447	0.266842	1.476289	1.209447	1.476289
229 Hand and edge tool manufacturing	1.00000	0.265143	0.300183	1.565326	1.265143	1.565325
230 Saw blade and handsaw manufacturing	1.00000	0.265628	0.256282	1.521910	1.265628	1.521910
231 Kitchen utensil, pot, and pan manufacturing	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
232 Prefabricated metal buildings and components	1.00000	0.227094	0.266981	1.494076	1.227094	1.494076
233 Fabricated structural metal manufacturing	1.00000	0.197663	0.240494	1.438156	1.197663	1.438156
234 Plate work manufacturing	1.00000	0.135505	0.446794	1.582299	1.135505	1.582299
235 Metal window and door manufacturing	1.00000	0.222818	0.279062	1.501880	1.222818	1.501880
236 Sheet metal work manufacturing	1.00000	0.189840	0.273218	1.463058	1.189840	1.463058
237 Ornamental and architectural metal work manufacturing	1.00000	0.200708	0.310113	1.510822	1.200708	1.510822
238 Power boiler and heat exchanger manufacturing	1.00000	0.200434	0.310720	1.511155	1.200434	1.511155
239 Metal tank, heavy gauge, manufacturing	1.00000	0.249638	0.260959	1.510598	1.249638	1.510598
240 Metal can, box, and other container manufacturing	1.00000	0.211432	0.207789	1.419220	1.211432	1.419220
241 Hardware manufacturing	1.00000	0.233665	0.205848	1.439513	1.233665	1.439513
242 Spring and wire product manufacturing	1.00000	0.191550	0.319293	1.510843	1.191550	1.510843
243 Machine shops	1.00000	0.254909	0.378348	1.633257	1.254909	1.633257
244 Turned product and screw, nut, and bolt manufacturing	1.00000	0.255072	0.285447	1.540519	1.255072	1.540519
245 Metal heat treating	1.00000	0.323662	0.284707	1.608370	1.323662	1.608370
246 Metal coating and nonprecious engraving	1.00000	0.253111	0.247865	1.500976	1.253111	1.500976
247 Electroplating, anodizing, and coloring metal	1.00000	0.218329	0.480995	1.699324	1.218329	1.699324
248 Metal valve manufacturing	1.00000	0.216572	0.253459	1.470031	1.216572	1.470031
249 Ball and roller bearing manufacturing	1.00000	0.259072	0.358104	1.617176	1.259072	1.617176
250 Small arms manufacturing	1.00000	0.196831	0.311766	1.508597	1.196831	1.508597
251 Other ordnance and accessories manufacturing	1.00000	0.331032	0.228140	1.559172	1.331032	1.559172
252 Fabricated pipe and pipe fitting manufacturing	1.00000	0.172627	0.349983	1.522610	1.172627	1.522610
253 Industrial pattern manufacturing	1.00000	0.190592	0.517934	1.708526	1.190592	1.708526
254 Enameled iron and metal sanitary ware manufacturing	1.00000	0.188260	0.355726	1.543986	1.188260	1.543986
255 Miscellaneous fabricated metal product manufacturing	1.00000	0.242201	0.236640	1.478841	1.242201	1.478842
256 Ammunition manufacturing	1.00000	0.319770	0.246185	1.565955	1.319770	1.565955
257 Farm machinery and equipment manufacturing	1.00000	0.278815	0.229439	1.508254	1.278815	1.508254
258 Lawn and garden equipment manufacturing	1.00000	0.358257	0.181291	1.539548	1.358257	1.539548
259 Construction machinery manufacturing	1.00000	0.310236	0.192235	1.502471	1.310236	1.502471
260 Mining machinery and equipment manufacturing	1.00000	0.219307	0.281752	1.501059	1.219307	1.501059
261 Oil and gas field machinery and equipment	1.00000	0.346582	0.171121	1.517703	1.346582	1.517702
262 Sawmill and woodworking machinery	1.00000	0.325024	0.274420	1.599444	1.325024	1.599444
263 Plastics and rubber industry machinery	1.00000	0.290836	0.276163	1.566999	1.290836	1.566999
264 Paper industry machinery manufacturing	1.00000	0.331096	0.333815	1.664911	1.331096	1.664911
265 Textile machinery manufacturing	1.00000	0.275542	0.343503	1.619045	1.275542	1.619045
266 Printing machinery and equipment manufacturing	1.00000	0.335304	0.271239	1.606543	1.335304	1.606543
267 Food product machinery manufacturing	1.00000	0.340598	0.283975	1.624573	1.340598	1.624573
268 Semiconductor machinery manufacturing	1.00000	0.347853	0.209016	1.556869	1.347853	1.556869
269 All other industrial machinery manufacturing	1.00000	0.324459	0.265502	1.589960	1.324459	1.589960
270 Office machinery manufacturing	1.00000	0.400933	0.181647	1.582580	1.400933	1.582580
271 Optical instrument and lens manufacturing	1.00000	0.335503	0.371160	1.706663	1.335503	1.706663
272 Photographic and photocopying equipment manufacturing	1.00000	0.281472	0.298755	1.580227	1.281472	1.580227
273 Other commercial and service industry machine	1.00000	0.352721	0.269672	1.622393	1.352721	1.622393
274 Automatic vending, commercial laundry and dry	1.00000	0.332869	0.262529	1.595398	1.332869	1.595398
275 Air purification equipment manufacturing	1.00000	0.226831	0.321037	1.547868	1.226831	1.547868
276 Industrial and commercial fan and blower manufacturing	1.00000	0.236127	0.301518	1.537646	1.236127	1.537646
277 Heating equipment, except warm air furnaces	1.00000	0.212885	0.256303	1.469188	1.212885	1.469188

278	AC, refrigeration, and forced air heating	1.000000	0.272089	0.240861	1.512950	1.272089	1.512950
279	Industrial mold manufacturing	1.000000	0.271486	0.434026	1.705512	1.271486	1.705512
280	Metal cutting machine tool manufacturing	1.000000	0.258917	0.376273	1.635190	1.258917	1.635190
281	Metal forming machine tool manufacturing	1.000000	0.238142	0.369130	1.607272	1.238142	1.607272
282	Special tool, die, jig, and fixture manufacturing	1.000000	0.239497	0.508409	1.747907	1.239497	1.747907
283	Cutting tool and machine tool accessory manufacturing	1.000000	0.287652	0.339940	1.627592	1.287652	1.627592
284	Rolling mill and other metalworking machinery	1.000000	0.337025	0.293676	1.630701	1.337025	1.630701
285	Turbine and turbine generator set units manufacturing	1.000000	0.307706	0.172035	1.479741	1.307706	1.479741
286	Other engine equipment manufacturing	1.000000	0.315235	0.191412	1.506647	1.315235	1.506647
287	Speed changers and mechanical power transmissions	1.000000	0.267014	0.338984	1.605998	1.267014	1.605998
288	Pump and pumping equipment manufacturing	1.000000	0.260882	0.250960	1.511842	1.260882	1.511842
289	Air and gas compressor manufacturing	1.000000	0.314891	0.181913	1.496804	1.314891	1.496804
290	Measuring and dispensing pump manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
291	Elevator and moving stairway manufacturing	1.000000	0.313388	0.244407	1.557796	1.313388	1.557796
292	Conveyor and conveying equipment manufacturing	1.000000	0.275278	0.311125	1.586403	1.275278	1.586403
293	Overhead cranes, hoists, and monorail systems	1.000000	0.271031	0.237944	1.508974	1.271031	1.508974
294	Industrial truck, trailer, and stacker manufacturing	1.000000	0.340468	0.292882	1.633350	1.340468	1.633350
295	Power-driven handtool manufacturing	1.000000	0.303265	0.275892	1.579158	1.303265	1.579158
296	Welding and soldering equipment manufacturing	1.000000	0.288053	0.258918	1.546970	1.288053	1.546970
297	Packaging machinery manufacturing	1.000000	0.351299	0.313411	1.664710	1.351299	1.664710
298	Industrial process furnace and oven manufacturing	1.000000	0.198691	0.375074	1.573766	1.198691	1.573766
299	Fluid power cylinder and actuator manufacturing	1.000000	0.251561	0.302410	1.553971	1.251561	1.553971
300	Fluid power pump and motor manufacturing	1.000000	0.255034	0.319800	1.574835	1.255034	1.574835
301	Scales, balances, and miscellaneous general p	1.000000	0.279979	0.255961	1.535940	1.279979	1.535940
302	Electronic computer manufacturing	1.000000	0.318952	0.198733	1.517685	1.318952	1.517685
303	Computer storage device manufacturing	1.000000	0.322124	0.178856	1.500980	1.322124	1.500980
304	Computer terminal manufacturing	1.000000	0.373716	0.240888	1.614604	1.373716	1.614604
305	Other computer peripheral equipment v	1.000000	0.374204	0.273237	1.647441	1.374204	1.647441
306	Telephone apparatus manufacturing	1.000000	0.355992	0.235710	1.591702	1.355992	1.591702
307	Broadcast and wireless communications equipment	1.000000	0.355832	0.212172	1.568004	1.355832	1.568004
308	Other communications equipment manufacturing	1.000000	0.345049	0.350875	1.695924	1.345049	1.695924
309	Audio and video equipment manufacturing	1.000000	0.439955	0.297855	1.737810	1.439955	1.737810
310	Electron tube manufacturing	1.000000	0.374196	0.489397	1.863592	1.374196	1.863592
311	Semiconductors and related device manufacturing	1.000000	0.409803	0.254565	1.664368	1.409803	1.664368
312	All other electronic component manufacturing	1.000000	0.347633	0.313601	1.661235	1.347633	1.661235
313	Electromedical apparatus manufacturing	1.000000	0.431232	0.280338	1.711570	1.431232	1.711570
314	Search, detection, and navigation instruments	1.000000	0.316999	0.353655	1.670654	1.316999	1.670654
315	Automatic environmental control manufacturing	1.000000	0.224602	0.441576	1.666179	1.224602	1.666179
316	Industrial process variable instruments	1.000000	0.258188	0.453295	1.711483	1.258188	1.711483
317	Totalizing fluid meters and counting devices	1.000000	0.378995	0.227804	1.606799	1.378995	1.606799
318	Electricity and signal testing instruments	1.000000	0.309614	0.285480	1.595094	1.309614	1.595094
319	Analytical laboratory instrument manufacturing	1.000000	0.338444	0.348528	1.686972	1.338444	1.686972
320	Irradiation apparatus manufacturing	1.000000	0.435110	0.160038	1.595148	1.435110	1.595148
321	Watch, clock, and other measuring and control	1.000000	0.349278	0.332223	1.681501	1.349278	1.681501
322	Software reproducing	1.000000	0.190014	0.498127	1.688141	1.190014	1.688141
323	Audio and video media reproduction	1.000000	0.357322	0.264327	1.621649	1.357322	1.621649
324	Magnetic and optical recording media manufacturing	1.000000	0.427902	0.236670	1.664573	1.427902	1.664573
325	Electric lamp bulb and part manufacturing	1.000000	0.325668	0.361222	1.686891	1.325668	1.686891
326	Lighting fixture manufacturing	1.000000	0.225605	0.284976	1.510580	1.225605	1.510580
327	Electric housewares and household fan manufacturing	1.000000	0.258629	0.266091	1.524720	1.258629	1.524720
328	Household vacuum cleaner manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
329	Household cooking appliance manufacturing	1.000000	0.275949	0.203848	1.479797	1.275949	1.479797
330	Household refrigerator and home freezer manufacturing	1.000000	0.326790	0.240508	1.567298	1.326790	1.567298
331	Household laundry equipment manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
332	Other major household appliance manufacturing	1.000000	0.339348	0.221865	1.561213	1.339348	1.561213
333	Electric power and specialty transformer manufacturing	1.000000	0.251082	0.311021	1.562103	1.251082	1.562103
334	Motor and generator manufacturing	1.000000	0.216358	0.306281	1.522639	1.216358	1.522639
335	Switchgear and switchboard apparatus manufacturing	1.000000	0.177567	0.287589	1.465156	1.177567	1.465156
336	Relay and industrial control manufacturing	1.000000	0.345072	0.299498	1.644569	1.345072	1.644569
337	Storage battery manufacturing	1.000000	0.245086	0.314045	1.559131	1.245086	1.559131
338	Primary battery manufacturing	1.000000	0.159469	0.245900	1.405369	1.159469	1.405369
339	Fiber optic cable manufacturing	1.000000	0.305660	0.389295	1.694956	1.305660	1.694956
340	Other communication and energy wire manufacturing	1.000000	0.285915	0.122041	1.407956	1.285915	1.407956
341	Wiring device manufacturing	1.000000	0.149312	0.304074	1.453386	1.149312	1.453386
342	Carbon and graphite product manufacturing	1.000000	0.182824	0.247621	1.430445	1.182824	1.430445
343	Miscellaneous electrical equipment manufacturing	1.000000	0.449030	0.278389	1.727419	1.449030	1.727419
344	Automobile and light truck manufacturing	1.000000	0.406909	0.155798	1.562707	1.406909	1.562707
345	Heavy duty truck manufacturing	1.000000	0.409888	0.167970	1.577858	1.409888	1.577858
346	Motor vehicle body manufacturing	1.000000	0.292440	0.261893	1.554333	1.292440	1.554333
347	Truck trailer manufacturing	1.000000	0.323096	0.265736	1.588832	1.323096	1.588832

348 Motor home manufacturing	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
349 Travel trailer and camper manufacturing	1.00000	0.270387	0.265357	1.535744	1.270387	1.535744
350 Motor vehicle parts manufacturing	1.00000	0.301971	0.222585	1.524555	1.301971	1.524555
351 Aircraft manufacturing	1.00000	0.181466	0.456032	1.637498	1.181466	1.637498
352 Aircraft engine and engine parts manufacturing	1.00000	0.189652	0.333269	1.522920	1.189652	1.522920
353 Other aircraft parts and equipment	1.00000	0.194567	0.388902	1.583469	1.194567	1.583469
354 Guided missile and space vehicle manufacturing	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
355 Propulsion units and parts for space vehicles	1.00000	0.374343	0.412335	1.786678	1.374343	1.786678
356 Railroad rolling stock manufacturing	1.00000	0.203526	0.291283	1.494809	1.203526	1.494809
357 Ship building and repairing	1.00000	0.237355	0.481842	1.719197	1.237355	1.719198
358 Boat building	1.00000	0.198684	0.320102	1.518786	1.198684	1.518786
359 Motorcycle, bicycle, and parts manufacturing	1.00000	0.302382	0.264854	1.567236	1.302382	1.567236
360 Military armored vehicles and tank parts manufacturing	0.00000	0.00000	0.00000	0.00000	0.00000	0.00000
361 All other transportation equipment manufacturing	1.00000	0.269473	0.170548	1.440021	1.269473	1.440021
362 Wood kitchen cabinet and countertop manufacturing	1.00000	0.445164	0.390946	1.836110	1.445164	1.836110
363 Upholstered household furniture manufacturing	1.00000	0.455174	0.369505	1.824680	1.455174	1.824680
364 Nonupholstered wood household furniture manufacturing	1.00000	0.520002	0.306191	1.826193	1.520002	1.826193
365 Metal household furniture manufacturing	1.00000	0.350562	0.233187	1.583749	1.350562	1.583749
366 Institutional furniture manufacturing	1.00000	0.356462	0.303661	1.660123	1.356462	1.660123
367 Other household and institutional furniture	1.00000	0.302250	0.368939	1.671189	1.302250	1.671189
368 Wood office furniture manufacturing	1.00000	0.327759	0.434636	1.762395	1.327759	1.762395
369 Custom architectural woodwork and millwork	1.00000	0.585799	0.227994	1.813794	1.585799	1.813794
370 Office furniture, except wood, manufacturing	1.00000	0.370219	0.233717	1.603935	1.370219	1.603935
371 Showcases, partitions, shelving, and lockers	1.00000	0.286473	0.361077	1.647550	1.286473	1.647550
372 Mattress manufacturing	1.00000	0.389844	0.272620	1.662464	1.389844	1.662464
373 Blind and shade manufacturing	1.00000	0.280694	0.282605	1.563299	1.280694	1.563299
374 Laboratory apparatus and furniture manufacturing	1.00000	0.590924	0.299958	1.890882	1.590924	1.890882
375 Surgical and medical instrument manufacturing	1.00000	0.275244	0.396932	1.672176	1.275244	1.672176
376 Surgical appliance and supplies manufacturing	1.00000	0.363663	0.286409	1.650072	1.363663	1.650072
377 Dental equipment and supplies manufacturing	1.00000	0.318899	0.253975	1.572874	1.318899	1.572874
378 Ophthalmic goods manufacturing	1.00000	0.220083	0.423653	1.643736	1.220083	1.643736
379 Dental laboratories	1.00000	0.143649	0.591206	1.734854	1.143649	1.734854
380 Jewelry and silverware manufacturing	1.00000	0.182370	0.233979	1.416349	1.182370	1.416349
381 Sporting and athletic goods manufacturing	1.00000	0.322917	0.334157	1.657074	1.322917	1.657074
382 Doll, toy, and game manufacturing	1.00000	0.236579	0.334612	1.571191	1.236579	1.571191
383 Office supplies, except paper, manufacturing	1.00000	0.205109	0.393066	1.598175	1.205109	1.598175
384 Sign manufacturing	1.00000	0.355032	0.372273	1.727305	1.355032	1.727305
385 Gasket, packing, and sealing device manufacturing	1.00000	0.187898	0.413760	1.601658	1.187898	1.601658
386 Musical instrument manufacturing	1.00000	0.299503	0.402815	1.702318	1.299503	1.702318
387 Broom, brush, and mop manufacturing	1.00000	0.313794	0.307191	1.620985	1.313794	1.620985
388 Burial casket manufacturing	1.00000	0.148373	0.343526	1.491899	1.148373	1.491899
389 Buttons, pins, and all other miscellaneous ma	1.00000	0.311305	0.249781	1.561085	1.311305	1.561085
390 Wholesale trade	1.00000	0.160421	0.368410	1.528831	1.160421	1.528831
391 Air transportation	1.00000	0.454142	0.309997	1.764139	1.454142	1.764139
392 Rail transportation	1.00000	0.219591	0.354928	1.574519	1.219591	1.574519
393 Water transportation	1.00000	0.521266	0.234099	1.755365	1.521266	1.755365
394 Truck transportation	1.00000	0.447625	0.399562	1.847186	1.447625	1.847186
395 Transit and ground passenger transportation	1.00000	0.292148	0.351446	1.643594	1.292148	1.643594
396 Pipeline transportation	1.00000	0.331137	0.250068	1.581205	1.331137	1.581205
397 Scenic and sightseeing transportation and sup	1.00000	0.307158	0.477879	1.785037	1.307158	1.785037
398 Postal service	1.00000	0.122696	0.714071	1.836767	1.122696	1.836767
399 Couriers and messengers	1.00000	0.291663	0.419321	1.710984	1.291663	1.710984
400 Warehousing and storage	1.00000	0.248355	0.478352	1.726708	1.248355	1.726708
401 Motor vehicle and parts dealers	1.00000	0.151444	0.420680	1.572124	1.151444	1.572124
402 Furniture and home furnishings stores	1.00000	0.163198	0.383740	1.546937	1.163198	1.546937
403 Electronics and appliance stores	1.00000	0.140037	0.460236	1.600273	1.140037	1.600273
404 Building material and garden supply stores	1.00000	0.133559	0.384162	1.517721	1.133559	1.517721
405 Food and beverage stores	1.00000	0.151108	0.413863	1.564971	1.151108	1.564971
406 Health and personal care stores	1.00000	0.165746	0.410149	1.575895	1.165746	1.575895
407 Gasoline stations	1.00000	0.168994	0.392052	1.561046	1.168994	1.561046
408 Clothing and clothing accessories stores	1.00000	0.140654	0.364107	1.504760	1.140654	1.504760
409 Sporting goods, hobby, book and music stores	1.00000	0.137165	0.422155	1.559320	1.137165	1.559320
410 General merchandise stores	1.00000	0.133059	0.413598	1.546657	1.133059	1.546657
411 Miscellaneous store retailers	1.00000	0.168162	0.455844	1.624006	1.168162	1.624006
412 Nonstore retailers	1.00000	0.211572	0.322410	1.533982	1.211572	1.533982
413 Newspaper publishers	1.00000	0.209664	0.379026	1.588690	1.209664	1.588690
414 Periodical publishers	1.00000	0.275359	0.292666	1.568025	1.275359	1.568025
415 Book publishers	1.00000	0.276436	0.222448	1.498884	1.276436	1.498884
416 Database, directory, and other publishers	1.00000	0.235003	0.225205	1.460207	1.235003	1.460207
417 Software publishers	1.00000	0.268289	0.298866	1.567155	1.268289	1.567155

418	Motion picture and video industries	1.000000	0.546483	0.245081	1.791563	1.546483	1.791563
419	Sound recording industries	1.000000	0.262238	0.193230	1.455468	1.262238	1.455468
420	Radio and television broadcasting	1.000000	0.493590	0.321651	1.815241	1.493590	1.815241
421	Cable networks and program distribution	1.000000	0.306517	0.117386	1.423903	1.306517	1.423903
422	Telecommunications	1.000000	0.189433	0.274475	1.463908	1.189433	1.463908
423	Information services	1.000000	0.304872	0.364540	1.669412	1.304872	1.669412
424	Data processing services	1.000000	0.273889	0.418086	1.691975	1.273889	1.691975
425	Nondepository credit intermediation and rela	1.000000	0.181153	0.352013	1.533166	1.181153	1.533166
426	Securities, commodity contracts, investments	1.000000	0.371969	0.430089	1.802058	1.371969	1.802058
427	Insurance carriers	1.000000	0.375662	0.314055	1.689717	1.375662	1.689717
428	Insurance agencies, brokerages, and related	1.000000	0.120052	0.398101	1.518153	1.120052	1.518153
429	Funds, trusts, and other financial vehicles	1.000000	0.514462	0.252579	1.767041	1.514462	1.767041
430	Monetary authorities and depository credit in	1.000000	0.232632	0.267183	1.499815	1.232632	1.499815
431	Real estate	1.000000	0.207946	0.173136	1.381082	1.207946	1.381082
432	Automotive equipment rental and leasing	1.000000	0.466402	0.293223	1.759625	1.466402	1.759625
433	Video tape and disc rental	1.000000	0.388628	0.307088	1.695716	1.388628	1.695716
434	Machinery and equipment rental and leasing	1.000000	0.450209	0.240133	1.690343	1.450209	1.690343
435	General and consumer goods rental except vide	1.000000	0.259077	0.541502	1.800579	1.259077	1.800579
436	Lessors of nonfinancial intangible assets	1.000000	0.014410	0.042542	1.056952	1.014410	1.056952
437	Legal services	1.000000	0.150311	0.530662	1.680973	1.150311	1.680973
438	Accounting and bookkeeping services	1.000000	0.117801	0.620323	1.738124	1.117801	1.738124
439	Architectural and engineering services	1.000000	0.155941	0.568551	1.724492	1.155941	1.724492
440	Specialized design services	1.000000	0.249872	0.372324	1.622196	1.249872	1.622196
441	Custom computer programming services	1.000000	0.091341	0.755978	1.847319	1.091341	1.847319
442	Computer systems design services	1.000000	0.158860	0.737940	1.732799	1.158860	1.732799
443	Other computer related services, including fa	1.000000	0.119195	0.543109	1.662304	1.119195	1.662304
444	Management consulting services	1.000000	0.148116	0.562226	1.710342	1.148116	1.710342
445	Environmental and other technical consulting	1.000000	0.132798	0.417505	1.550303	1.132798	1.550303
446	Scientific research and development services	1.000000	0.210194	0.732188	1.942382	1.210194	1.942382
447	Advertising and related services	1.000000	0.198186	0.464411	1.662597	1.198186	1.662597
448	Photographic services	1.000000	0.225339	0.353017	1.578356	1.225339	1.578356
449	Veterinary services	1.000000	0.379718	0.423956	1.803674	1.379718	1.803674
450	All other miscellaneous professional and tech	1.000000	0.126849	0.249374	1.376223	1.126849	1.376223
451	Management of companies and enterprises	1.000000	0.206642	0.421481	1.628123	1.206642	1.628123
452	Office administrative services	1.000000	0.327597	0.339913	1.667509	1.327597	1.667509
453	Facilities support services	1.000000	0.277050	0.374783	1.651833	1.277050	1.651833
454	Employment services	1.000000	0.136309	0.633717	1.770027	1.136309	1.770027
455	Business support services	1.000000	0.209701	0.436287	1.645989	1.209701	1.645989
456	Travel arrangement and reservation services	1.000000	0.373962	0.369462	1.743424	1.373962	1.743424
457	Investigation and security services	1.000000	0.138207	0.578411	1.716618	1.138207	1.716618
458	Services to buildings and dwellings	1.000000	0.289460	0.489124	1.778584	1.289460	1.778584
459	Other support services	1.000000	0.316010	0.280493	1.596503	1.316010	1.596503
460	Waste management and remediation services	1.000000	0.243971	0.343999	1.587970	1.243971	1.587970
461	Elementary and secondary schools	1.000000	0.270266	0.575245	1.845511	1.270266	1.845511
462	Colleges, universities, and junior colleges	1.000000	0.365857	0.455694	1.821550	1.365857	1.821550
463	Other educational services	1.000000	0.269829	0.368487	1.638316	1.269829	1.638316
464	Home health care services	1.000000	0.247345	0.547309	1.794653	1.247345	1.794653
465	Offices of physicians, dentists, and other he	1.000000	0.123989	0.579233	1.703222	1.123989	1.703222
466	Other ambulatory health care services	1.000000	0.385424	0.392531	1.777955	1.385424	1.777955
467	Hospitals	1.000000	0.369718	0.450764	1.820482	1.369718	1.820482
468	Nursing and residential care facilities	1.000000	0.273944	0.506413	1.780356	1.273944	1.780356
469	Child day care services	1.000000	0.286151	0.368147	1.654299	1.286151	1.654299
470	Social assistance, except child day care serv	1.000000	0.290441	0.481471	1.771913	1.290441	1.771913
471	Performing arts companies	1.000000	0.221147	0.455872	1.677019	1.221147	1.677019
472	Spectator sports	1.000000	0.087742	0.630269	1.718010	1.087742	1.718010
473	Independent artists, writers, and performers	1.000000	0.374307	0.303990	1.678297	1.374307	1.678297
474	Promoters of performing arts and sports and a	1.000000	0.213024	0.322861	1.535885	1.213024	1.535885
475	Museums, historical sites, zoos, and parks	1.000000	0.401156	0.541362	1.942518	1.401156	1.942518
476	Fitness and recreational sports centers	1.000000	0.262529	0.478064	1.740593	1.262529	1.740593
477	Bowling centers	1.000000	0.309391	0.352079	1.661470	1.309391	1.661470
478	Other amusement, gambling, and recreation ind	1.000000	0.291389	0.331383	1.622772	1.291389	1.622772
479	Hotels and motels, including casino hotels	1.000000	0.098496	0.340088	1.438584	1.098496	1.438584
480	Other accommodations	1.000000	0.266894	0.355788	1.622682	1.266894	1.622682
481	Food services and drinking places	1.000000	0.377724	0.357244	1.752968	1.377724	1.752968
482	Car washes	1.000000	0.272426	0.497487	1.769913	1.272426	1.769913
483	Automotive repair and maintenance, except car	1.000000	0.345378	0.402389	1.747767	1.345378	1.747767
484	Electronic equipment repair and maintenance	1.000000	0.371881	0.334801	1.706681	1.371881	1.706681
485	Commercial machinery repair and maintenance	1.000000	0.338257	0.346208	1.684465	1.338257	1.684465
486	Household goods repair and maintenance	1.000000	0.362797	0.242330	1.605127	1.362797	1.605127
487	Personal care services	1.000000	0.312549	0.430052	1.742601	1.312549	1.742601

488 Death care services	1.000000	0.278221	0.416110	1.694331	1.278221	1.694331
489 Drycleaning and laundry services	1.000000	0.332546	0.471713	1.804259	1.332546	1.804259
490 Other personal services	1.000000	0.421610	0.240832	1.662442	1.421610	1.662442
491 Religious organizations	1.000000	0.216462	0.618811	1.835273	1.216462	1.835273
492 Grantmaking and giving and social advocacy or	1.000000	0.350596	0.391944	1.742540	1.350596	1.742540
493 Civic, social, professional and similar organ	1.000000	0.341829	0.422574	1.764403	1.341829	1.764403
494 Private households	0.000000	0.000000	1.802147	1.802147	0.000000	1.802147
495 Federal electric utilities	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
496 Other Federal Government enterprises	1.000000	0.123574	0.227785	1.351359	1.123574	1.351359
497 State and local government passenger transit	1.000000	0.475646	0.716762	2.192409	1.475646	2.192409
498 State and local government electric utilities	1.000000	0.104329	0.088013	1.192342	1.104329	1.192342
499 Other State and local government enterprises	1.000000	0.218210	0.193801	1.412011	1.218210	1.412011
500 Noncomparable imports	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
501 Scrap	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
502 Used and secondhand goods	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
503 State & Local Education	0.000000	0.000000	1.802147	1.802147	0.000000	1.802147
504 State & Local Non-Education	0.000000	0.000000	1.802147	1.802147	0.000000	1.802147
505 Federal Military	0.000000	0.000000	1.802147	1.802147	0.000000	1.802147
506 Federal Non-Military	0.000000	0.000000	1.802147	1.802147	0.000000	1.802147
507 Rest of the world adjustment to final uses	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
508 Inventory valuation adjustment	0.000000	0.000000	1.000000	1.000000	0.000000	1.000000
509 Owner-occupied dwellings	1.000000	0.138403	0.036558	1.174961	1.138403	1.174961

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**APPENDIX**

**IMPLAN**

**INCOME MULTIPLIERS**

**SOUTH CAROLINA**

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Type I multipliers = (Direct + Indirect)/Direct

Type II multipliers = (Direct + Indirect + Induced)/ Direct

Example: Sector 32, Water, Sewage, and Other Systems the income multiplier is 1.440850 For every \$1 spent to produce water or sewage system services, \$0.428644 (Direct) is in wages to the employees in that industry. Suppliers to this industry (transportation, utilities, chemicals, and so forth) paid \$0.061623 (Indirect) in wages to their employees. As those wages are spent within South Carolina, the firms that sell to these employees also pay wages amounting to \$0.617612 (Induced) an impact of \$0.393266 is created. The sum of all of these impacts is \$1.440850.

Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects	Type I Multiplier	Type II Multiplier
1 Oilseed farming	0.005800	0.104623	0.028682	0.139105	19.038521	23.983704
2 Grain farming	0.024065	0.104103	0.033291	0.161459	5.325994	6.709400
3 Vegetable and melon farming	0.117010	0.063732	0.046947	0.227690	1.544672	1.945894
4 Tree nut farming	0.103477	0.096152	0.051853	0.251482	1.929210	2.430315
5 Fruit farming	0.191799	0.090888	0.073427	0.356114	1.473871	1.856703
6 Greenhouse and nursery production	0.280322	0.033392	0.081486	0.395200	1.119121	1.409808
7 Tobacco farming	0.047259	0.089810	0.035603	0.172672	2.900383	3.653746
8 Cotton farming	0.110673	0.127920	0.061973	0.300565	2.155839	2.715809
9 Sugarcane and sugar beet farming	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
10 All other crop farming	0.074431	0.080820	0.040326	0.195576	2.085838	2.627626
11 Cattle ranching and farming	0.052384	0.111290	0.042514	0.206188	3.124522	3.936104
12 Poultry and egg production	0.066602	0.064779	0.034126	0.165507	1.972621	2.485002
13 Animal production, except cattle and poultry	0.109401	0.085846	0.050715	0.245961	1.784687	2.248253
14 Logging	0.190869	0.113672	0.079103	0.383644	1.595548	2.009986
15 Forest nurseries, forest products, and timber	0.116233	0.221506	0.087726	0.425465	2.905704	3.660449
16 Fishing	0.587213	0.093019	0.176688	0.856921	1.158408	1.459300
17 Hunting and trapping	0.133402	0.220000	0.091795	0.445196	2.649152	3.337259
18 Agriculture and forestry support activities	0.839497	0.068557	0.235864	1.143917	1.081664	1.362623
19 Oil and gas extraction	0.121108	0.056983	0.046259	0.224350	1.470511	1.852471
20 Coal mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
21 Iron ore mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
22 Copper, nickel, lead, and zinc mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
23 Gold, silver, and other metal ore mining	0.409573	0.049825	0.119327	0.578725	1.121651	1.412995
24 Stone mining and quarrying	0.326422	0.063722	0.101338	0.491483	1.195214	1.505666
25 Sand, gravel, clay, and refractory mining	0.400399	0.044413	0.115538	0.560350	1.110921	1.399478
26 Other nonmetallic mineral mining	0.329998	0.065937	0.102842	0.498777	1.199809	1.511455
27 Drilling oil and gas wells	0.015675	0.159688	0.045550	0.220914	11.187206	14.093039
28 Support activities for oil and gas operations	-0.003588	0.150044	0.038041	0.184498	0.000000	0.000000
29 Support activities for other mining	0.000439	0.189725	0.049394	0.239559	433.037140	545.516846
30 Power generation and supply	0.207698	0.041164	0.064641	0.313503	1.198192	1.509418
31 Natural gas distribution	0.134353	0.056582	0.049595	0.240529	1.421144	1.790281
32 Water, sewage and other systems	0.428644	0.061623	0.127345	0.617612	1.143762	1.440850
33 New residential 1-unit structures, nonfarm	0.268094	0.157007	0.110418	0.535519	1.585642	1.997506
34 New multifamily housing structures, nonfarm	0.363758	0.125605	0.127110	0.616473	1.345297	1.694732
35 New residential additions and alterations, no	0.232334	0.146465	0.098391	0.477190	1.630407	2.053899
36 New farm housing units and additions and alte	0.199816	0.161919	0.093959	0.455694	1.810337	2.280566
37 Manufacturing and industrial buildings	0.476404	0.085315	0.145904	0.707622	1.179080	1.485342
38 Commercial and institutional buildings	0.456253	0.133474	0.153179	0.742907	1.292544	1.628277
39 Highway, street, bridge, and tunnel construct	0.423936	0.099825	0.136045	0.659807	1.235473	1.556382
40 Water, sewer, and pipeline construction	0.378416	0.106141	0.125862	0.610419	1.280488	1.613090
41 Other new construction	0.427454	0.121849	0.142679	0.691982	1.285058	1.618847
42 Maintenance and repair of farm and nonfarm re	0.242652	0.134677	0.098010	0.475338	1.555020	1.958930
43 Maintenance and repair of nonresidential buil	0.463502	0.123028	0.152349	0.738879	1.265431	1.594123
44 Maintenance and repair of highways, streets,	0.236475	0.154832	0.101640	0.492947	1.654750	2.084565
45 Other maintenance and repair construction	0.463301	0.102442	0.146950	0.712694	1.221114	1.538294
46 Dog and cat food manufacturing	0.104176	0.100363	0.053128	0.257668	1.963397	2.473381
47 Other animal food manufacturing	0.070624	0.101804	0.044787	0.217215	2.441500	3.075671
48 Flour milling	0.103483	0.122166	0.058612	0.284261	2.180538	2.746925
49 Rice milling	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
50 Malt manufacturing	0.069926	0.147430	0.056457	0.273813	3.108352	3.915734
51 Wet corn milling	0.082215	0.123961	0.053553	0.259729	2.507765	3.159147
52 Soybean processing	0.047523	0.098000	0.037799	0.183323	3.062160	3.857545
53 Other oilseed processing	0.101712	0.118461	0.057189	0.277362	2.164666	2.726930
54 Fats and oils refining and blending	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
55 Breakfast cereal manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
56 Sugar manufacturing	0.041740	0.098942	0.036542	0.177224	3.370447	4.245908
57 Confectionery manufacturing from cacao beans	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
58 Confectionery manufacturing from purchased ch	0.130930	0.107463	0.061922	0.300315	1.820770	2.293707
59 Nonchocolate confectionery manufacturing	0.151793	0.099638	0.065308	0.316740	1.656407	2.086652
60 Frozen food manufacturing	0.183307	0.103109	0.074395	0.360811	1.562491	1.968342
61 Fruit and vegetable canning and drying	0.145491	0.100718	0.063952	0.310161	1.692261	2.131819
62 Fluid milk manufacturing	0.103029	0.101061	0.053012	0.257103	1.980897	2.495428
63 Creamery butter manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
64 Cheese manufacturing	0.055659	0.098042	0.039923	0.193625	2.761474	3.478756
65 Dry, condensed, and evaporated dairy products	0.084873	0.099364	0.047855	0.232092	2.170729	2.734568
66 Ice cream and frozen dessert manufacturing	0.086055	0.123691	0.054481	0.264227	2.437358	3.070453
67 Animal, except poultry, slaughtering	0.090264	0.100926	0.049661	0.240851	2.118126	2.668301

68	Meat processed from carcasses	0.174949	0.123845	0.077610	0.376404	1.707893	2.151511
69	Rendering and meat byproduct processing	0.185022	0.102381	0.074652	0.362055	1.553342	1.956817
70	Poultry processing	0.179960	0.141819	0.083581	0.405360	1.788060	2.252502
71	Seafood product preparation and packaging	0.181570	0.100883	0.073366	0.355819	1.555618	1.959684
72	Frozen cakes and other pastries manufacturing	0.099091	0.124078	0.057967	0.281136	2.252160	2.837150
73	Bread and bakery product, except frozen, manu	0.320371	0.068318	0.100961	0.489650	1.213245	1.528381
74	Cookie and cracker manufacturing	0.172653	0.070541	0.063169	0.306362	1.408572	1.774443
75	Mixes and dough made from purchased flour	0.153372	0.079042	0.060369	0.292782	1.515361	1.908970
76	Dry pasta manufacturing	0.282213	0.062816	0.089620	0.434650	1.222585	1.540146
77	Tortilla manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
78	Roasted nuts and peanut butter manufacturing	0.051885	0.090142	0.036891	0.178917	2.737353	3.448370
79	Other snack food manufacturing	0.119355	0.117568	0.061540	0.298463	1.985032	2.500637
80	Coffee and tea manufacturing	0.043992	0.172449	0.056220	0.272661	4.919963	6.197904
81	Flavoring syrup and concentrate manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
82	Mayonnaise, dressing, and sauce manufacturing	0.108220	0.107168	0.055946	0.271335	1.990280	2.507247
83	Spice and extract manufacturing	0.121579	0.117654	0.062140	0.301372	1.967713	2.478818
84	All other food manufacturing	0.099489	0.118008	0.056494	0.273991	2.186147	2.753991
85	Soft drink and ice manufacturing	0.198248	0.087859	0.074315	0.360422	1.443178	1.818038
86	Breweries	0.152489	0.052268	0.053185	0.257943	1.342767	1.691546
87	Wineries	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
88	Distilleries	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
89	Tobacco stemming and redrying	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
90	Cigarette manufacturing	0.085373	0.063494	0.038668	0.187535	1.743722	2.196647
91	Other tobacco product manufacturing	0.100352	0.074464	0.045408	0.220224	1.742021	2.194504
92	Fiber, yarn, and thread mills	0.200447	0.089135	0.075218	0.364800	1.444683	1.819934
93	Broadwoven fabric mills	0.320504	0.095866	0.108151	0.524521	1.299110	1.636549
94	Narrow fabric mills and schiffli embroidery	0.350610	0.079598	0.111745	0.541953	1.227027	1.545742
95	Nonwoven fabric mills	0.155211	0.096015	0.065255	0.316481	1.618610	2.039037
96	Knit fabric mills	0.205255	0.109213	0.081682	0.396149	1.532086	1.930040
97	Textile and fabric finishing mills	0.255344	0.129861	0.100056	0.485261	1.508573	1.900419
98	Fabric coating mills	0.259423	0.107169	0.095221	0.461812	1.413105	1.780154
99	Carpet and rug mills	0.175501	0.093740	0.069934	0.339175	1.534129	1.932613
100	Curtain and linen mills	0.232367	0.110656	0.089099	0.432122	1.476213	1.859654
101	Textile bag and canvas mills	0.358955	0.103691	0.120171	0.582817	1.288870	1.623649
102	Tire cord and tire fabric mills	0.164018	0.075516	0.062218	0.301753	1.460413	1.839749
103	Other miscellaneous textile product mills	0.243488	0.110093	0.091841	0.445423	1.452148	1.829338
104	Sheer hosiery mills	0.515717	0.064922	0.150819	0.731458	1.125887	1.418332
105	Other hosiery and sock mills	0.261879	0.126300	0.100828	0.489057	1.482284	1.867301
106	Other apparel knitting mills	0.404500	0.081429	0.126218	0.612147	1.201307	1.513342
107	Cut and sew apparel manufacturing	0.256323	0.085954	0.088905	0.431181	1.335334	1.682182
108	Accessories and other apparel manufacturing	0.355154	0.075884	0.111960	0.542999	1.213666	1.528911
109	Leather and hide tanning and finishing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
110	Footwear manufacturing	0.247786	0.099361	0.090170	0.437317	1.400994	1.764896
111	Other leather product manufacturing	0.415108	0.024829	0.114272	0.554210	1.059814	1.335096
112	Sawmills	0.211731	0.162831	0.097291	0.471853	1.769047	2.228550
113	Wood preservation	0.107159	0.218009	0.084461	0.409628	3.034448	3.822634
114	Reconstituted wood product manufacturing	0.167659	0.120639	0.074884	0.363182	1.719550	2.166197
115	Veneer and plywood manufacturing	0.247722	0.183698	0.112060	0.543479	1.741548	2.193908
116	Engineered wood member and truss manufacturin	0.270790	0.129622	0.104005	0.504417	1.478680	1.862762
117	Wood windows and door manufacturing	0.263053	0.137260	0.103980	0.504293	1.521798	1.917079
118	Cut stock, resawing lumber, and planing	0.082146	0.214987	0.077179	0.374312	3.617131	4.556666
119	Other millwork, including flooring	0.392677	0.138707	0.138025	0.669408	1.353234	1.704731
120	Wood container and pallet manufacturing	0.333198	0.143055	0.123705	0.599959	1.429339	1.800604
121	Manufactured home, mobile home, manufacturing	0.295096	0.085491	0.098856	0.479442	1.289705	1.624701
122	Prefabricated wood building manufacturing	0.263254	0.140951	0.104991	0.509195	1.535419	1.934238
123	Miscellaneous wood product manufacturing	0.202076	0.155161	0.092791	0.450028	1.767832	2.227020
124	Pulp mills	0.073240	0.205598	0.072427	0.351264	3.807189	4.796091
125	Paper and paperboard mills	0.188789	0.120643	0.080374	0.389805	1.639036	2.064769
126	Paperboard container manufacturing	0.282814	0.064127	0.090117	0.437057	1.226745	1.545388
127	Flexible packaging foil manufacturing	0.040886	0.163906	0.053194	0.257986	5.008808	6.309825
128	Surface-coated paperboard manufactuiring	0.170614	0.118187	0.075015	0.363816	1.692713	2.132390
129	Coated and laminated paper and packaging mate	0.253586	0.092252	0.089830	0.435668	1.363789	1.718028
130	Coated and uncoated paper bag manufacturing	0.445879	0.074882	0.135266	0.656027	1.167942	1.471311
131	Die-cut paper office supplies manufacturing	0.253348	0.090769	0.089383	0.433500	1.358279	1.711086
132	Envelope manufacturing	0.362123	0.092840	0.118175	0.573138	1.256376	1.582714
133	Stationery and related product manufacturing	0.196716	0.083390	0.072756	0.352862	1.423911	1.793766
134	Sanitary paper product manufacturing	0.285115	0.079428	0.094689	0.459232	1.278583	1.610691
135	All other converted paper product manufacturi	0.246130	0.087044	0.086541	0.419714	1.353649	1.705254
136	Manifold business forms printing	0.320642	0.051808	0.096742	0.469192	1.161575	1.463290
137	Books printing	0.358079	0.078943	0.113515	0.550538	1.220463	1.537474

138	Blankbook and looseleaf binder manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
139	Commercial printing	0.335871	0.089320	0.110442	0.535633	1.265937	1.594759
140	Tradebinding and related work	0.373105	0.091192	0.120599	0.584896	1.244413	1.567644
141	Prepress services	0.718608	0.042632	0.197729	0.958969	1.059326	1.334482
142	Petroleum refineries	0.036811	0.069144	0.027521	0.133477	2.878342	3.625980
143	Asphalt paving mixture and block manufacturin	0.158542	0.099239	0.066958	0.324739	1.625947	2.048280
144	Asphalt shingle and coating materials manufac	0.209227	0.105956	0.081868	0.397051	1.506416	1.897702
145	Petroleum lubricating oil and grease manufact	0.124836	0.128481	0.065798	0.319115	2.029197	2.556274
146	All other petroleum and coal products manufac	0.049035	0.108476	0.040913	0.198424	3.212221	4.046582
147	Petrochemical manufacturing	0.061653	0.104983	0.043283	0.209918	2.702806	3.404850
148	Industrial gas manufacturing	0.433933	0.053830	0.126695	0.614457	1.124051	1.416019
149	Synthetic dye and pigment manufacturing	0.287839	0.096597	0.099856	0.484292	1.335594	1.682510
150	Other basic inorganic chemical manufacturing	0.239599	0.104522	0.089384	0.433506	1.436239	1.809297
151	Other basic organic chemical manufacturing	0.067297	0.134175	0.052332	0.253804	2.993777	3.771399
152	Plastics material and resin manufacturing	0.114159	0.101010	0.055889	0.271059	1.884818	2.374392
153	Synthetic rubber manufacturing	0.196135	0.089771	0.074263	0.360169	1.457699	1.836331
154	Cellulosic organic fiber manufacturing	0.342423	0.090956	0.112569	0.545948	1.265625	1.594365
155	Noncellulosic organic fiber manufacturing	0.280866	0.102340	0.099536	0.482743	1.364373	1.718764
156	Nitrogenous fertilizer manufacturing	0.202018	0.079721	0.073181	0.354920	1.394620	1.756868
157	Phosphatic fertilizer manufacturing	0.133206	0.161059	0.076434	0.370699	2.209104	2.782911
158	Fertilizer, mixing only, manufacturing	0.113192	0.112712	0.058678	0.284581	1.995761	2.514152
159	Pesticide and other agricultural chemical man	0.190731	0.090662	0.073091	0.354484	1.475342	1.858557
160	Pharmaceutical and medicine manufacturing	0.148264	0.104261	0.065593	0.318118	1.703214	2.145617
161	Paint and coating manufacturing	0.171803	0.108529	0.072815	0.353147	1.631705	2.055534
162	Adhesive manufacturing	0.230454	0.101357	0.086187	0.417998	1.439816	1.813803
163	Soap and other detergent manufacturing	0.134885	0.114140	0.064683	0.313708	1.846204	2.325749
164	Polish and other sanitation good manufacturin	0.239372	0.088385	0.085134	0.412890	1.369236	1.724889
165	Surface active agent manufacturing	0.108160	0.135080	0.063181	0.306422	2.248892	2.833033
166	Toilet preparation manufacturing	0.116024	0.106534	0.057809	0.280367	1.918206	2.416452
167	Printing ink manufacturing	0.217047	0.116918	0.086746	0.420710	1.538676	1.938340
168	Explosives manufacturing	0.264845	0.099443	0.094622	0.458909	1.375475	1.732749
169	Custom compounding of purchased resins	0.195449	0.100938	0.076986	0.373373	1.516443	1.910334
170	Photographic film and chemical manufacturing	0.239795	0.109728	0.090787	0.440310	1.457592	1.836195
171	Other miscellaneous chemical product manufact	0.235902	0.113076	0.090646	0.439624	1.479335	1.863587
172	Plastics packaging materials, film and sheet	0.181516	0.093041	0.071315	0.345872	1.512578	1.905464
173	Plastics pipe, fittings, and profile shapes	0.241347	0.087837	0.085504	0.414689	1.363945	1.718225
174	Laminated plastics plate, sheet, and shapes	0.514753	0.061193	0.149600	0.725545	1.118878	1.409502
175	Plastics bottle manufacturing	0.220330	0.086693	0.079748	0.386771	1.393469	1.755418
176	Resilient floor covering manufacturing	0.317478	0.051067	0.095728	0.464274	1.160852	1.462379
177	Plastics plumbing fixtures and all other plas	0.211492	0.102823	0.081642	0.395958	1.486181	1.872211
178	Foam product manufacturing	0.193852	0.097180	0.075594	0.366626	1.501310	1.891270
179	Tire manufacturing	0.333034	0.063255	0.102934	0.499223	1.189934	1.499016
180	Rubber and plastics hose and belting manufact	0.293180	0.073444	0.095229	0.461852	1.250507	1.575321
181	Other rubber product manufacturing	0.236928	0.084775	0.083561	0.405265	1.357809	1.710495
182	Vitreous china plumbing fixture manufacturing	0.424918	0.063641	0.126901	0.615460	1.149772	1.448421
183	Vitreous china and earthenware articles manuf	0.532396	0.063350	0.154743	0.750488	1.118990	1.409643
184	Porcelain electrical supply manufacturing	0.397219	0.097287	0.128446	0.622953	1.244920	1.568284
185	Brick and structural clay tile manufacturing	0.327329	0.091680	0.108836	0.527845	1.280087	1.612584
186	Ceramic wall and floor tile manufacturing	0.512366	0.073163	0.152089	0.737618	1.142794	1.439630
187	Nonclay refractory manufacturing	0.379789	0.072489	0.117478	0.569756	1.190867	1.500190
188	Clay refractory and other structural clay pro	0.191378	0.131274	0.083808	0.406460	1.685940	2.123857
189	Glass container manufacturing	0.267652	0.096317	0.094540	0.458509	1.359859	1.713078
190	Glass and glass products, except glass contai	0.318029	0.104466	0.109742	0.532237	1.328481	1.673549
191	Cement manufacturing	0.156725	0.079547	0.061371	0.297643	1.507559	1.899141
192	Ready-mix concrete manufacturing	0.286653	0.088168	0.097358	0.472180	1.307577	1.647215
193	Concrete block and brick manufacturing	0.265833	0.097357	0.094337	0.457527	1.366235	1.721109
194	Concrete pipe manufacturing	0.230209	0.087951	0.082641	0.400801	1.382049	1.741031
195	Other concrete product manufacturing	0.341328	0.074605	0.108037	0.523971	1.218574	1.535093
196	Lime manufacturing	0.199492	0.104001	0.078831	0.382324	1.521328	1.916487
197	Gypsum product manufacturing	0.181126	0.093733	0.071394	0.346253	1.517503	1.911669
198	Abrasive product manufacturing	0.152816	0.110953	0.068513	0.332282	1.726055	2.174392
199	Cut stone and stone product manufacturing	0.355506	0.103231	0.119155	0.577892	1.290377	1.625547
200	Ground or treated minerals and earths manufact	0.129808	0.069182	0.051687	0.250677	1.532953	1.931131
201	Mineral wool manufacturing	0.279863	0.088073	0.095570	0.463506	1.314699	1.656186
202	Miscellaneous nonmetallic mineral products	0.331726	0.063504	0.102659	0.497889	1.191434	1.500905
203	Iron and steel mills	0.150331	0.114393	0.068761	0.333486	1.760941	2.218339
204	Ferroalloy and related product manufacturing	0.206667	0.076615	0.073582	0.356864	1.370718	1.726757
205	Iron, steel pipe and tube from purchased stee	0.201623	0.068254	0.070099	0.339976	1.338521	1.686196
206	Rolled steel shape manufacturing	0.294230	0.069410	0.094454	0.458095	1.235905	1.556926
207	Steel wire drawing	0.100152	0.085909	0.048329	0.234390	1.857779	2.340330

208	Alumina refining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
209	Primary aluminum production	0.210075	0.093977	0.078976	0.383029	1.447350	1.823294
210	Secondary smelting and alloying of aluminum	0.069123	0.138807	0.054009	0.261940	3.008102	3.789445
211	Aluminum sheet, plate, and foil manufacturing	0.104696	0.067549	0.044740	0.216985	1.645185	2.072516
212	Aluminum extruded product manufacturing	0.218962	0.049247	0.069666	0.337875	1.224913	1.543080
213	Other aluminum rolling and drawing	0.238320	0.039508	0.072165	0.349993	1.165777	1.468583
214	Primary smelting and refining of copper	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
215	Primary nonferrous metal, except copper and a	0.109845	0.080155	0.049352	0.239353	1.729710	2.178996
216	Copper rolling, drawing, and extruding	0.128814	0.070634	0.051806	0.251254	1.548342	1.950518
217	Copper wire, except mechanical, drawing	0.355293	0.074642	0.111674	0.541608	1.210086	1.524401
218	Secondary processing of copper	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
219	Nonferrous metal, except copper and aluminum,	0.218560	0.066606	0.074071	0.359236	1.304748	1.643651
220	Secondary processing of other nonferrous	0.173751	0.124497	0.077469	0.375717	1.716522	2.162383
221	Ferrous metal foundries	0.423974	0.079944	0.130891	0.634809	1.188558	1.497281
222	Aluminum foundries	0.276819	0.084921	0.093961	0.455701	1.306775	1.646206
223	Nonferrous foundries, except aluminum	0.266154	0.077797	0.088340	0.433292	1.292301	1.627972
224	Iron and steel forging	0.352809	0.064981	0.108519	0.526310	1.184181	1.491767
225	Nonferrous forging	0.252571	0.051109	0.078880	0.382560	1.202357	1.514664
226	Custom roll forming	0.070432	0.086670	0.040807	0.197909	2.230556	2.809934
227	All other forging and stamping	0.279555	0.082948	0.094159	0.456662	1.296715	1.633531
228	Cutlery and flatware, except precious, manufa	0.260152	0.072507	0.086407	0.419066	1.278709	1.610849
229	Hand and edge tool manufacturing	0.282203	0.092021	0.097203	0.471428	1.326079	1.670524
230	Saw blade and handsaw manufacturing	0.233243	0.086252	0.082988	0.402482	1.369793	1.725591
231	Kitchen utensil, pot, and pan manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
232	Prefabricated metal buildings and components	0.258195	0.074639	0.086452	0.419286	1.289080	1.623914
233	Fabricated structural metal manufacturing	0.236627	0.063185	0.077875	0.377687	1.267026	1.596131
234	Plate work manufacturing	0.512662	0.044335	0.144678	0.701675	1.086481	1.368690
235	Metal window and door manufacturing	0.275162	0.072731	0.090364	0.438257	1.264320	1.592723
236	Sheet metal work manufacturing	0.277501	0.063107	0.088472	0.429080	1.227410	1.546225
237	Ornamental and architectural metal work manuf	0.321646	0.064959	0.100419	0.487023	1.201957	1.514161
238	Power boiler and heat exchanger manufacturing	0.320313	0.067048	0.100616	0.487976	1.209319	1.523436
239	Metal tank, heavy gauge, manufacturing	0.242042	0.083284	0.084502	0.409828	1.344089	1.693211
240	Metal can, box, and other container manufactu	0.192568	0.066473	0.067285	0.326325	1.345191	1.694600
241	Hardware manufacturing	0.178550	0.078071	0.066657	0.323278	1.437251	1.810572
242	Spring and wire product manufacturing	0.339025	0.059023	0.103392	0.501439	1.174095	1.479063
243	Machine shops	0.380894	0.090775	0.122514	0.594182	1.238320	1.559969
244	Turned product and screw, nut, and bolt manuf	0.269657	0.086197	0.092432	0.448285	1.319655	1.662431
245	Metal heat treating	0.254292	0.100639	0.092192	0.447124	1.395763	1.758307
246	Metal coating and nonprecious engraving	0.230820	0.078182	0.080262	0.389264	1.338716	1.686442
247	Electroplating, anodizing, and coloring metal	0.533297	0.066337	0.155753	0.755387	1.124389	1.416445
248	Metal valve manufacturing	0.244070	0.071906	0.082073	0.398049	1.294612	1.630882
249	Ball and roller bearing manufacturing	0.350499	0.095933	0.115959	0.562391	1.273703	1.604542
250	Small arms manufacturing	0.297169	0.091496	0.100954	0.489619	1.307894	1.647614
251	Other ordnance and accessories manufacturing	0.125963	0.158449	0.073875	0.358286	2.257906	2.844388
252	Fabricated pipe and pipe fitting manufacturin	0.380541	0.055767	0.113329	0.549637	1.146547	1.444358
253	Industrial pattern manufacturing	0.257667	0.069018	0.167714	0.813399	1.119684	1.410518
254	Enameled iron and metal sanitary ware manufac	0.381518	0.061950	0.115189	0.558657	1.162377	1.464300
255	Miscellaneous fabricated metal product manufa	0.217232	0.077776	0.076627	0.371636	1.358031	1.710775
256	Ammunition manufacturing	0.166140	0.140768	0.079718	0.386626	1.847286	2.327111
257	Farm machinery and equipment manufacturing	0.192154	0.093876	0.074295	0.360326	1.488545	1.875189
258	Lawn and garden equipment manufacturing	0.118942	0.107066	0.058705	0.284712	1.900151	2.393708
259	Construction machinery manufacturing	0.138676	0.100975	0.062248	0.301900	1.728138	2.177015
260	Mining machinery and equipment manufacturing	0.278371	0.072877	0.091235	0.442483	1.261799	1.589546
261	Oil and gas field machinery and equipment	0.101182	0.112147	0.055411	0.268740	2.108374	2.656016
262	Sawmill and woodworking machinery	0.229986	0.112121	0.088861	0.430968	1.487510	1.873885
263	Plastics and rubber industry machinery	0.241112	0.103168	0.089425	0.433705	1.427883	1.798770
264	Paper industry machinery manufacturing	0.302762	0.113390	0.108094	0.524246	1.374518	1.731543
265	Textile machinery manufacturing	0.330795	0.097434	0.111231	0.539460	1.294544	1.630797
266	Printing machinery and equipment manufacturin	0.216548	0.121592	0.087831	0.425972	1.561502	1.967096
267	Food product machinery manufacturing	0.238765	0.115254	0.091955	0.445973	1.482709	1.867836
268	Semiconductor machinery manufacturing	0.143545	0.117026	0.067682	0.328253	1.815257	2.286763
269	All other industrial machinery manufacturing	0.218909	0.112080	0.085973	0.416962	1.511992	1.904726
270	Office machinery manufacturing	0.101935	0.124517	0.058820	0.285271	2.221535	2.798570
271	Optical instrument and lens manufacturing	0.350364	0.112345	0.120187	0.582896	1.320654	1.663688
272	Photographic and photocopying equipment manuf	0.275667	0.096776	0.096741	0.469185	1.351062	1.701995
273	Other commercial and service industry machine	0.226935	0.109253	0.087324	0.423511	1.481427	1.866223
274	Automatic vending, commercial laundry and dry	0.226059	0.101224	0.085011	0.412294	1.447776	1.823830
275	Air purification equipment manufacturing	0.325550	0.074673	0.103956	0.504179	1.229375	1.548701
276	Industrial and commercial fan and blower manu	0.299317	0.076572	0.097636	0.473525	1.255821	1.582016
277	Heating equipment, except warm air furnaces	0.246913	0.072608	0.082995	0.402516	1.294063	1.630191

278	AC, refrigeration, and forced air heating	0.204209	0.096061	0.077994	0.378265	1.470407	1.852340
279	Industrial mold manufacturing	0.446117	0.094964	0.140544	0.681625	1.212867	1.527905
280	Metal cutting machine tool manufacturing	0.371912	0.097170	0.121842	0.590925	1.261273	1.588883
281	Metal forming machine tool manufacturing	0.375114	0.085064	0.119529	0.579707	1.226768	1.545417
282	Special tool, die, jig, and fixture manufactu	0.548838	0.084973	0.164630	0.798440	1.154824	1.454785
283	Cutting tool and machine tool accessory manuf	0.320411	0.103377	0.110077	0.533865	1.322638	1.666188
284	Rolling mill and other metalworking machinery	0.248446	0.117667	0.095096	0.461209	1.473611	1.856375
285	Turbine and turbine generator set units manuf	0.128169	0.086299	0.055707	0.270175	1.673326	2.107966
286	Other engine equipment manufacturing	0.140234	0.098390	0.061982	0.300606	1.701618	2.143607
287	Speed changers and mechanical power transmiss	0.332780	0.089815	0.109768	0.532363	1.269894	1.599744
288	Pump and pumping equipment manufacturing	0.222232	0.090629	0.081264	0.394125	1.407812	1.773486
289	Air and gas compressor manufacturing	0.120455	0.106327	0.058906	0.285688	1.882716	2.371744
290	Measuring and dispensing pump manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
291	Elevator and moving stairway manufacturing	0.198239	0.106453	0.079142	0.383834	1.536996	1.936224
292	Conveyor and conveying equipment manufacturin	0.294181	0.093684	0.100746	0.488611	1.318457	1.660921
293	Overhead cranes, hoists, and monorail systems	0.209224	0.087409	0.077049	0.373683	1.417776	1.786038
294	Industrial truck, trailer, and stacker manufa	0.251045	0.114077	0.094839	0.459961	1.454411	1.832189
295	Power-driven handtool manufacturing	0.240897	0.103045	0.089338	0.433280	1.427754	1.798608
296	Welding and soldering equipment manufacturing	0.226556	0.096225	0.083841	0.406622	1.424728	1.794795
297	Packaging machinery manufacturing	0.275650	0.115065	0.101487	0.492202	1.417430	1.785603
298	Industrial process furnace and oven manufactu	0.402062	0.065526	0.121454	0.589042	1.162975	1.465054
299	Fluid power cylinder and actuator manufacturi	0.285603	0.091397	0.097924	0.474925	1.320015	1.662883
300	Fluid power pump and motor manufacturing	0.305052	0.093628	0.103556	0.502236	1.306925	1.646394
301	Scales, balances, and miscellaneous general p	0.224423	0.094672	0.082884	0.401978	1.421844	1.791162
302	Electronic computer manufacturing	0.148687	0.099064	0.064352	0.312103	1.666254	2.099057
303	Computer storage device manufacturing	0.120218	0.102754	0.057916	0.280887	1.854729	2.336488
304	Computer terminal manufacturing	0.176246	0.124058	0.078003	0.378307	1.703892	2.146471
305	Other computer peripheral equipment manufactu	0.218667	0.121966	0.088478	0.429111	1.557770	1.962394
306	Telephone apparatus manufacturing	0.178340	0.115509	0.076326	0.370175	1.647686	2.075666
307	Broadcast and wireless communications equipme	0.150825	0.113680	0.068704	0.333209	1.753724	2.209246
308	Other communications equipment manufacturing	0.322480	0.114940	0.113618	0.551038	1.356425	1.708751
309	Audio and video equipment manufacturing	0.198849	0.172473	0.096449	0.467771	1.867357	2.352395
310	Electron tube manufacturing	0.478156	0.131953	0.158473	0.768582	1.275962	1.607388
311	Semiconductors and related device manufacturi	0.166426	0.150928	0.082432	0.399786	1.906880	2.402184
312	All other electronic component manufacturing	0.276155	0.114797	0.101548	0.492501	1.415697	1.783419
313	Electromedical apparatus manufacturing	0.207962	0.141522	0.090777	0.440261	1.680517	2.117024
314	Search, detection, and navigation instruments	0.323970	0.116915	0.114518	0.555404	1.360883	1.714366
315	Automatic environmental control manufacturing	0.469376	0.081117	0.142989	0.693482	1.172819	1.477455
316	Industrial process variable instruments	0.472222	0.092880	0.146783	0.711885	1.196687	1.507522
317	Totalizing fluid meters and counting devices	0.157431	0.126561	0.073766	0.357758	1.803911	2.272470
318	Electricity and signal testing instruments	0.244110	0.111785	0.092442	0.448337	1.457931	1.836623
319	Analytical laboratory instrument manufacturin	0.311530	0.122964	0.112858	0.547353	1.394711	1.756982
320	Irradiation apparatus manufacturing	0.053610	0.145902	0.051822	0.251334	3.721536	4.688191
321	Watch, clock, and other measuring and control	0.294853	0.119314	0.107578	0.521745	1.404655	1.769509
322	Software reproducing	0.567046	0.053946	0.161300	0.782293	1.095136	1.379593
323	Audio and video media reproduction	0.207688	0.121836	0.085593	0.415116	1.586627	1.998748
324	Magnetic and optical recording media manufact	0.149856	0.145190	0.076637	0.371683	1.968863	2.480267
325	Electric lamp bulb and part manufacturing	0.345346	0.104974	0.116969	0.567288	1.303967	1.642667
326	Lighting fixture manufacturing	0.276599	0.078667	0.092279	0.447545	1.284406	1.618026
327	Electric housewares and household fan manufac	0.245915	0.085809	0.086164	0.417888	1.348940	1.699322
328	Household vacuum cleaner manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
329	Household cooking appliance manufacturing	0.161159	0.092969	0.066009	0.320137	1.576877	1.986465
330	Household refrigerator and home freezer manuf	0.189959	0.109871	0.077880	0.377710	1.578394	1.988376
331	Household laundry equipment manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
332	Other major household appliance manufacturing	0.170247	0.106342	0.071843	0.348432	1.624631	2.046623
333	Electric power and specialty transformer manu	0.301717	0.086018	0.100713	0.488449	1.285096	1.618895
334	Motor and generator manufacturing	0.308728	0.073097	0.099178	0.481004	1.236770	1.558016
335	Switchgear and switchboard apparatus manufact	0.295731	0.062793	0.093125	0.451649	1.212331	1.527230
336	Relay and industrial control manufacturing	0.253666	0.119704	0.096981	0.470352	1.471896	1.854216
337	Storage battery manufacturing	0.312108	0.079398	0.101692	0.493198	1.254392	1.580215
338	Primary battery manufacturing	0.253208	0.053345	0.079626	0.386179	1.210675	1.525143
339	Fiber optic cable manufacturing	0.384505	0.100811	0.126059	0.611375	1.262183	1.590030
340	Other communication and energy wire manufactu	0.070314	0.081829	0.039519	0.191662	2.163756	2.725783
341	Wiring device manufacturing	0.325807	0.053268	0.098463	0.477538	1.163494	1.465707
342	Carbon and graphite product manufacturing	0.250877	0.057822	0.080183	0.388882	1.230478	1.550089
343	Miscellaneous electrical equipment manufactur	0.206161	0.140893	0.090146	0.437201	1.683412	2.120673
344	Automobile and light truck manufacturing	0.085285	0.108941	0.050450	0.244676	2.277380	2.868921
345	Heavy duty truck manufacturing	0.101675	0.107725	0.054391	0.263791	2.059494	2.594440
346	Motor vehicle body manufacturing	0.237959	0.088531	0.084805	0.411295	1.372043	1.728427
347	Truck trailer manufacturing	0.233471	0.097810	0.086049	0.417331	1.418939	1.787503

348	Motor home manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
349	Travel trailer and camper manufacturing	0.246265	0.084543	0.085926	0.416735	1.343302	1.692220
350	Motor vehicle parts manufacturing	0.180066	0.097420	0.072076	0.349562	1.541024	1.941299
351	Aircraft manufacturing	0.502389	0.066126	0.147669	0.716184	1.131623	1.425557
352	Aircraft engine and engine parts manufacturin	0.346395	0.069076	0.107917	0.523388	1.199413	1.510956
353	Other aircraft parts and equipment	0.412322	0.072504	0.125932	0.610758	1.175843	1.481264
354	Guided missile and space vehicle manufacturin	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
355	Propulsion units and parts for space vehicles	0.381648	0.132392	0.133520	0.647559	1.346896	1.696747
356	Railroad rolling stock manufacturing	0.293994	0.069135	0.094321	0.457450	1.235159	1.555987
357	Ship building and repairing	0.537009	0.063681	0.156027	0.756717	1.118585	1.409133
358	Boat building	0.342636	0.056420	0.103653	0.502710	1.164664	1.467181
359	Motorcycle, bicycle, and parts manufacturing	0.219575	0.110606	0.085763	0.415945	1.503728	1.894315
360	Military armored vehicles and tank parts manu	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
361	All other transportation equipment manufactur	0.130972	0.081642	0.055226	0.267840	1.623354	2.045013
362	Wood kitchen cabinet and countertop manufactu	0.364175	0.123199	0.126594	0.613968	1.338297	1.685915
363	Upholstered household furniture manufacturing	0.324141	0.136505	0.119651	0.580297	1.421128	1.790261
364	Nonupholstered wood household furniture manuf	0.229980	0.151734	0.099149	0.480864	1.659770	2.090888
365	Metal household furniture manufacturing	0.177704	0.113000	0.075509	0.366213	1.635890	2.060806
366	Institutional furniture manufacturing	0.270177	0.108383	0.098330	0.476890	1.401154	1.765099
367	Other household and institutional furniture	0.370930	0.089010	0.119468	0.579408	1.239964	1.562040
368	Wood office furniture manufacturing	0.444705	0.097135	0.140741	0.682581	1.218427	1.534908
369	Custom architectural woodwork and millwork	0.114221	0.170009	0.073828	0.358058	2.488416	3.134773
370	Office furniture, except wood, manufacturing	0.173678	0.117686	0.075681	0.367044	1.677607	2.113359
371	Showcases, partitions, shelving, and lockers	0.362518	0.087620	0.116922	0.567059	1.241697	1.564224
372	Mattress manufacturing	0.225445	0.114418	0.088278	0.428142	1.507522	1.899095
373	Blind and shade manufacturing	0.266968	0.085342	0.091511	0.443822	1.319671	1.662451
374	Laboratory apparatus and furniture manufactur	0.196804	0.177140	0.097131	0.471075	1.900085	2.393625
375	Surgical and medical instrument manufacturing	0.400051	0.094786	0.128532	0.623369	1.236935	1.558225
376	Surgical appliance and supplies manufacturing	0.236637	0.120416	0.092743	0.449795	1.508864	1.900786
377	Dental equipment and supplies manufacturing	0.204237	0.112383	0.082241	0.398860	1.550255	1.952928
378	Ophthalmic goods manufacturing	0.455754	0.072394	0.137185	0.665333	1.158844	1.459850
379	Dental laboratories	0.687411	0.049618	0.191440	0.928470	1.072181	1.350676
380	Jewelry and silverware manufacturing	0.226875	0.064816	0.075766	0.367457	1.285694	1.619645
381	Sporting and athletic goods manufacturing	0.305886	0.110693	0.108205	0.524784	1.361876	1.715618
382	Doll, toy, and game manufacturing	0.341072	0.076074	0.108352	0.525498	1.223045	1.540727
383	Office supplies, except paper, manufacturing	0.426218	0.063799	0.127280	0.617297	1.149686	1.448313
384	Sign manufacturing	0.360249	0.103846	0.120547	0.584643	1.288262	1.622883
385	Gasket, packing, and sealing device manufactu	0.455500	0.060315	0.133981	0.649796	1.132416	1.426557
386	Musical instrument manufacturing	0.400769	0.101402	0.130437	0.632609	1.253019	1.578486
387	Broom, brush, and mop manufacturing	0.285820	0.097141	0.099473	0.482434	1.339866	1.687891
388	Burial casket manufacturing	0.383594	0.044664	0.111238	0.539497	1.116435	1.406425
389	Buttons, pins, and all other miscellaneous ma	0.214007	0.097383	0.080882	0.392272	1.455046	1.832989
390	Wholesale trade	0.400635	0.058645	0.119296	0.578576	1.146379	1.444147
391	Air transportation	0.218220	0.168239	0.100381	0.486840	1.770963	2.230964
392	Rail transportation	0.363550	0.078923	0.114930	0.557403	1.217089	1.533224
393	Water transportation	0.088618	0.203223	0.075804	0.367645	3.293241	4.148647
394	Truck transportation	0.336836	0.161280	0.129384	0.627499	1.478810	1.862925
395	Transit and ground passenger transportation	0.333452	0.104679	0.113803	0.551935	1.313926	1.655214
396	Pipeline transportation	0.173776	0.137972	0.080975	0.392724	1.793962	2.259937
397	Scenic and sightseeing transportation and sup	0.473112	0.122638	0.154744	0.750493	1.259215	1.586292
398	Postal service	0.849870	0.040330	0.231226	1.121426	1.047454	1.319526
399	Couriers and messengers	0.417446	0.105302	0.135782	0.658530	1.252253	1.577521
400	Warehousing and storage	0.526549	0.069791	0.154897	0.751238	1.132544	1.426718
401	Motor vehicle and parts dealers	0.473747	0.050696	0.136222	0.660665	1.107010	1.394552
402	Furniture and home furnishings stores	0.423760	0.054631	0.124260	0.602651	1.128919	1.422151
403	Electronics and appliance stores	0.526877	0.046878	0.149031	0.722785	1.088972	1.371829
404	Building material and garden supply stores	0.434209	0.044709	0.124397	0.603315	1.102966	1.389458
405	Food and beverage stores	0.465360	0.050583	0.134014	0.649958	1.108698	1.396678
406	Health and personal care stores	0.455830	0.055484	0.132812	0.644126	1.121720	1.413082
407	Gasoline stations	0.432182	0.056571	0.126952	0.615705	1.130896	1.424642
408	Clothing and clothing accessories stores	0.406831	0.047084	0.117903	0.571818	1.115734	1.405541
409	Sporting goods, hobby, book and music stores	0.480364	0.045916	0.136699	0.662980	1.095586	1.380161
410	General merchandise stores	0.471071	0.044541	0.133929	0.649541	1.094554	1.378860
411	Miscellaneous store retailers	0.511987	0.056292	0.147609	0.715888	1.109949	1.398254
412	Nonstore retailers	0.331110	0.070824	0.104401	0.506335	1.213898	1.529204
413	Newspaper publishers	0.390381	0.082133	0.122734	0.595248	1.210392	1.524787
414	Periodical publishers	0.263796	0.101058	0.094769	0.459623	1.383090	1.742342
415	Book publishers	0.177189	0.100126	0.072032	0.349347	1.565081	1.971605
416	Database, directory, and other publishers	0.204666	0.076086	0.072924	0.353677	1.371757	1.728066
417	Software publishers	0.276748	0.095835	0.096777	0.469360	1.346289	1.695983

418	Motion picture and video industries	0.170005	0.135526	0.079360	0.384891	1.797193	2.264006
419	Sound recording industries	0.155299	0.085592	0.062571	0.303462	1.551140	1.954043
420	Radio and television broadcasting	0.257327	0.143661	0.104155	0.505143	1.558282	1.963040
421	Cable networks and program distribution	0.067418	0.078922	0.038011	0.184351	2.170643	2.734459
422	Telecommunications	0.277056	0.065120	0.088879	0.431055	1.235045	1.555843
423	Information services	0.347321	0.107135	0.118043	0.572499	1.308462	1.648329
424	Data processing services	0.417720	0.103489	0.135382	0.656591	1.247747	1.571844
425	Nondepository credit intermediation and rela	0.269227	0.069611	0.113987	0.552825	1.188532	1.497249
426	Securities, commodity contracts, investments	0.392792	0.143381	0.139269	0.675441	1.365031	1.719592
427	Insurance carriers	0.248071	0.143447	0.101695	0.493213	1.578250	1.988195
428	Insurance agencies, brokerages, and related	0.449267	0.047027	0.128910	0.625204	1.104674	1.391610
429	Funds, trusts, and other financial vehicles	0.114454	0.200424	0.081788	0.396667	2.751138	3.465735
430	Monetary authorities and depository credit in	0.246096	0.086988	0.086517	0.419602	1.353473	1.705033
431	Real estate	0.152311	0.063529	0.056064	0.271904	1.417101	1.785188
432	Automotive equipment rental and leasing	0.208591	0.156957	0.094950	0.460498	1.752461	2.207655
433	Video tape and disc rental	0.295843	0.086990	0.099439	0.482272	1.294040	1.630162
434	Machinery and equipment rental and leasing	0.144133	0.155230	0.077758	0.377121	2.076988	2.616478
435	General and consumer goods rental except vide	0.584516	0.090550	0.175346	0.850412	1.154914	1.454898
436	Lessors of nonfinancial intangible assets	0.047488	0.005547	0.013776	0.066811	1.116805	1.406890
437	Legal services	0.605873	0.055679	0.171836	0.833387	1.091898	1.375515
438	Accounting and bookkeeping services	0.729786	0.043543	0.200869	0.974198	1.059665	1.334909
439	Architectural and engineering services	0.641779	0.067008	0.184105	0.892891	1.104409	1.391275
440	Specialized design services	0.370308	0.093852	0.120564	0.584723	1.253442	1.579019
441	Custom computer programming services	0.906231	0.036212	0.244796	1.187239	1.039599	1.310084
442	Computer systems design services	0.654032	0.061473	0.185849	0.901354	1.093990	1.378150
443	Other computer related services, including fa	0.632222	0.044848	0.175866	0.852936	1.070938	1.349109
444	Management consulting services	0.646374	0.054528	0.182057	0.882959	1.084360	1.366018
445	Environmental and other technical consulting	0.467837	0.052648	0.135194	0.655678	1.112534	1.401511
446	Scientific research and development services	0.839137	0.073649	0.237093	1.149878	1.087768	1.370311
447	Advertising and related services	0.512053	0.066908	0.150383	0.729343	1.130666	1.424352
448	Photographic services	0.367366	0.072725	0.114312	0.554402	1.197963	1.509129
449	Veterinary services	0.404304	0.124222	0.137283	0.665809	1.307249	1.646802
450	All other miscellaneous professional and tech	0.262517	0.048367	0.080751	0.391634	1.184242	1.491845
451	Management of companies and enterprises	0.456594	0.068846	0.136481	0.661922	1.150782	1.449694
452	Office administrative services	0.290811	0.132943	0.110068	0.533822	1.457144	1.835631
453	Facilities support services	0.361545	0.105680	0.121360	0.588585	1.292301	1.627971
454	Employment services	0.738427	0.051600	0.205206	0.995233	1.069878	1.347775
455	Business support services	0.467253	0.076647	0.141276	0.685175	1.164037	1.466390
456	Travel arrangement and reservation services	0.322709	0.137883	0.119637	0.580229	1.427269	1.797996
457	Investigation and security services	0.667742	0.053336	0.187297	0.908376	1.079876	1.360369
458	Services to buildings and dwellings	0.500739	0.109030	0.158385	0.768154	1.217737	1.534040
459	Other support services	0.238313	0.111364	0.090827	0.440505	1.467303	1.848429
460	Waste management and remediation services	0.350355	0.078493	0.111391	0.540239	1.224039	1.541978
461	Elementary and secondary schools	0.638527	0.078604	0.186272	0.903404	1.123102	1.414824
462	Colleges, universities, and junior colleges	0.470348	0.097744	0.147560	0.715652	1.207813	1.521538
463	Other educational services	0.367948	0.091428	0.119321	0.578697	1.248482	1.572771
464	Home health care services	0.599646	0.082659	0.177226	0.859531	1.137846	1.433398
465	Offices of physicians, dentists, and other he	0.675870	0.046234	0.187564	0.909667	1.068406	1.345920
466	Other ambulatory health care services	0.358135	0.131216	0.127107	0.616458	1.366387	1.721301
467	Hospitals	0.441763	0.120184	0.145964	0.707912	1.272056	1.602468
468	Nursing and residential care facilities	0.546789	0.084533	0.163983	0.795305	1.154599	1.454502
469	Child day care services	0.375630	0.083323	0.119211	0.578164	1.221822	1.539185
470	Social assistance, except child day care serv	0.507867	0.092362	0.155907	0.756136	1.181862	1.488846
471	Performing arts companies	0.498685	0.069630	0.147618	0.715933	1.139627	1.435640
472	Spectator sports	0.747966	0.037762	0.204090	0.989817	1.050486	1.323346
473	Independent artists, writers, and performers	0.255586	0.123384	0.098436	0.477406	1.482747	1.867885
474	Promoters of performing arts and sports and a	0.333689	0.068807	0.104547	0.507043	1.206202	1.519508
475	Museums, historical sites, zoos, and parks	0.545051	0.129841	0.175301	0.850192	1.238218	1.559841
476	Fitness and recreational sports centers	0.522552	0.073428	0.154804	0.750784	1.140518	1.436763
477	Bowling centers	0.346928	0.091994	0.114008	0.552930	1.265166	1.593788
478	Other amusement, gambling, and recreation ind	0.317999	0.095120	0.107306	0.520426	1.299120	1.636562
479	Hotels and motels, including casino hotels	0.392269	0.031704	0.110125	0.534098	1.080822	1.361561
480	Other accommodations	0.365032	0.078513	0.115209	0.558754	1.215085	1.530699
481	Food services and drinking places	0.364475	0.103324	0.121509	0.589308	1.283486	1.616867
482	Car washes	0.536011	0.084184	0.161093	0.781288	1.157058	1.457599
483	Automotive repair and maintenance, except car	0.396986	0.104655	0.130299	0.631940	1.263623	1.591845
484	Electronic equipment repair and maintenance	0.297160	0.120220	0.108413	0.525794	1.404563	1.769393
485	Commercial machinery repair and maintenance	0.323487	0.108115	0.112107	0.543709	1.334218	1.680776
486	Household goods repair and maintenance	0.184446	0.117656	0.078470	0.380571	1.637886	2.063321
487	Personal care services	0.439317	0.096810	0.139257	0.675383	1.220365	1.537350

488 Death care services	0.424906	0.093840	0.134742	0.653488	1.220848	1.537959
489 Drycleaning and laundry services	0.488379	0.099683	0.152747	0.740810	1.204110	1.516873
490 Other personal services	0.174060	0.126174	0.077985	0.378219	1.724884	2.172916
491 Religious organizations	0.715033	0.056411	0.200379	0.971823	1.078892	1.359130
492 Grantmaking and giving and social advocacy or	0.357021	0.131598	0.126917	0.615536	1.368600	1.724089
493 Civic, social, professional and similar organ	0.412938	0.113866	0.136835	0.663640	1.275747	1.607117
494 Private households	1.000000	-1.000000	1.259746	1.259746	0.000000	1.259746
495 Federal electric utilities	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
496 Other Federal Government enterprises	0.242511	0.041458	0.073760	0.357728	1.170951	1.475102
497 State and local government passenger transit	0.713232	0.180323	0.232097	1.125652	1.252825	1.578242
498 State and local government electric utilities	0.075017	0.034706	0.028500	0.138222	1.462638	1.842552
499 Other State and local government enterprises	0.168999	0.072604	0.062755	0.304358	1.429614	1.800951
500 Noncomparable imports	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
501 Scrap	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
502 Used and secondhand goods	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
503 State & Local Education	1.000000	-1.000000	1.259746	1.259746	0.000000	1.259746
504 State & Local Non-Education	1.000000	-1.000000	1.259746	1.259746	0.000000	1.259746
505 Federal Military	1.000000	-1.000000	1.259746	1.259746	0.000000	1.259746
506 Federal Non-Military	1.000000	-1.000000	1.259746	1.259746	0.000000	1.259746
507 Rest of the world adjustment to final uses	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
508 Inventory valuation adjustment	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
509 Owner-occupied dwellings	0.000000	0.045575	0.011838	0.057413	0.000000	0.000000

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# APPENDIX

## IMPLAN

### EMPLOYMENT MULTIPLIERS

#### SOUTH CAROLINA

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The Direct, Indirect, Induced, and Total Effects are per million dollars of output. For example, in Sector 32, Water, Sewage, and Other Systems, \$1,000,000 of services delivered employs 9.614435 (FTE). The supplier firms (transportation, utilities, chemicals, and so forth) employ another 1.643567 (Indirect). The spending by these employees creates additional demand in South Carolina for goods and services. This combined demand employs 4.610040 jobs (Induced).

The Type I and Type II multipliers are related to jobs. For every job in Water and Sewage services a total of 1.650439 jobs are supported in the state (the sum of direct, indirect, and induced).

Type I multipliers =  $(\text{Direct} + \text{Indirect}) / \text{Direct}$

Type II multipliers =  $(\text{Direct} + \text{Indirect} + \text{Induced}) / \text{Direct}$

Description	Direct Effects	Indirect Effects	Induced Effects	Total Effects	Type I Multiplier	Type II Multiplier
1 Oilseed farming	26.715464	3.683649	1.038318	31.437431	1.137884	1.176750
2 Grain farming	40.436352	3.897861	1.205174	45.539387	1.096395	1.126199
3 Vegetable and melon farming	14.661175	2.407740	1.699544	18.768458	1.164226	1.280147
4 Tree nut farming	16.817736	3.863047	1.877139	22.557922	1.229701	1.341317
5 Fruit farming	25.546276	3.556774	2.658145	31.761195	1.139229	1.243281
6 Greenhouse and nursery production	22.085661	1.290855	2.949892	26.326408	1.058448	1.192014
7 Tobacco farming	41.906593	3.150894	1.288874	46.346361	1.075189	1.105944
8 Cotton farming	13.555071	5.255447	2.243509	21.054027	1.387711	1.553221
9 Sugarcane and sugar beet farming	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
10 All other crop farming	13.323692	2.951931	1.459837	17.735460	1.221555	1.331122
11 Cattle ranching and farming	19.510468	5.890419	1.539046	26.939933	1.301911	1.380794
12 Poultry and egg production	4.928721	2.047217	1.235394	8.211333	1.415365	1.666017
13 Animal production, except cattle and poultry	53.957745	4.008003	1.835926	59.801674	1.074280	1.108306
14 Logging	5.036038	3.769327	2.863632	11.668997	1.748471	2.317099
15 Forest nurseries, forest products, and timber	2.675939	10.465449	3.175799	16.317187	4.910944	6.097742
16 Fishing	48.162403	2.359238	6.396311	56.917952	1.048985	1.181792
17 Hunting and trapping	16.236578	11.471563	3.323073	31.031215	1.706526	1.911192
18 Agriculture and forestry support activities	39.933208	2.697823	8.538542	51.169573	1.067558	1.281379
19 Oil and gas extraction	5.393377	1.236897	1.674614	8.304887	1.229336	1.539831
20 Coal mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
21 Iron ore mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
22 Copper, nickel, lead, and zinc mining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
23 Gold, silver, and other metal ore mining	5.022422	1.283782	4.319777	10.625981	1.255610	2.115708
24 Stone mining and quarrying	6.160911	1.802351	3.668573	11.631836	1.292546	1.888006
25 Sand, gravel, clay, and refractory mining	8.245003	1.113986	4.182618	13.541606	1.135110	1.642402
26 Other nonmetallic mineral mining	5.348657	1.656442	3.723021	10.728120	1.309693	2.005760
27 Drilling oil and gas wells	21.758244	4.284113	1.648966	27.691323	1.196896	1.272682
28 Support activities for oil and gas operations	21.181618	3.773888	1.377145	26.332651	1.178168	1.243184
29 Support activities for other mining	9.034610	5.623174	1.788137	16.445921	1.622404	1.820324
30 Power generation and supply	2.544809	1.097400	2.340084	5.982293	1.431231	2.350782
31 Natural gas distribution	2.109073	1.310065	1.795385	5.214522	1.621157	2.472424
32 Water, sewage and other systems	9.614435	1.643567	4.610040	15.868042	1.170948	1.650439
33 New residential 1-unit structures, nonfarm	7.788798	4.986279	3.997273	16.772350	1.640186	2.153394
34 New multifamily housing structures, nonfarm	10.514746	3.846109	4.601538	18.962393	1.365782	1.803410
35 New residential additions and alterations, no	6.929858	4.719587	3.561886	15.211332	1.681051	2.195042
36 New farm housing units and additions and alterations	5.826953	5.197706	3.401439	14.426098	1.892011	2.475753
37 Manufacturing and industrial buildings	13.806949	2.235784	5.281905	21.324637	1.161932	1.544486
38 Commercial and institutional buildings	13.357621	3.825124	5.545278	22.728023	1.286363	1.701502
39 Highway, street, bridge, and tunnel construct	12.192914	2.690728	4.924993	19.808635	1.220680	1.624602
40 Water, sewer, and pipeline construction	10.934798	2.777210	4.556346	18.268355	1.253979	1.670662
41 Other new construction	12.157278	3.260498	5.165161	20.582937	1.268193	1.693055
42 Maintenance and repair of farm and nonfarm repair	7.153089	4.129061	3.548068	14.830219	1.577242	2.073261
43 Maintenance and repair of nonresidential buildings	13.600435	3.895063	5.515219	23.010718	1.286393	1.691910
44 Maintenance and repair of highways, streets,	6.884811	4.234123	3.679505	14.798440	1.614995	2.149433
45 Other maintenance and repair construction	13.013507	3.044854	5.319764	21.378125	1.233976	1.642764
46 Dog and cat food manufacturing	1.728276	2.853794	1.923312	6.505383	2.651237	3.764087
47 Other animal food manufacturing	2.001602	2.906441	1.621359	6.529402	2.452057	3.262088
48 Flour milling	2.269909	3.805677	2.121810	8.197397	2.676577	3.611332
49 Rice milling	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
50 Malt manufacturing	2.778693	4.660532	2.043825	9.483049	2.677239	3.412774
51 Wet corn milling	1.148207	3.781100	1.938692	6.867999	4.293046	5.981497
52 Soybean processing	0.829326	3.594585	1.368374	5.792286	5.334344	6.984327
53 Other oilseed processing	2.254842	3.741393	2.070316	8.066552	2.659271	3.577435
54 Fats and oils refining and blending	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
55 Breakfast cereal manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
56 Sugar manufacturing	2.503947	2.645099	1.322854	6.471900	2.056372	2.584679
57 Confectionery manufacturing from cacao beans	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
58 Confectionery manufacturing from purchased chocolate	7.280642	2.999345	2.241641	12.521628	1.411962	1.719852
59 Nonchocolate confectionery manufacturing	4.854047	2.533669	2.364242	9.751958	1.521970	2.009037
60 Frozen food manufacturing	4.323081	3.123538	2.693205	10.139824	1.722526	2.345508
61 Fruit and vegetable canning and drying	2.908392	2.917200	2.315136	8.140728	2.003028	2.799048
62 Fluid milk manufacturing	2.470067	6.809431	1.919090	11.198588	3.756780	4.533719
63 Creamery butter manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
64 Cheese manufacturing	1.819849	6.088522	1.445271	9.353643	4.345620	5.139791
65 Dry, condensed, and evaporated dairy products	2.129007	4.634187	1.732404	8.495598	3.176690	3.990405
66 Ice cream and frozen dessert manufacturing	3.591335	4.059306	1.972268	9.622909	2.130306	2.679479
67 Animal, except poultry, slaughtering	2.809714	11.014562	1.797784	15.622060	4.920171	5.560017

68 Meat processed from carcasses	4.407478	5.714478	2.809591	12.931547	2.296541	2.934001
69 Rendering and meat byproduct processing	4.313600	3.252859	2.702486	10.268945	1.754094	2.380597
70 Poultry processing	6.644166	5.240304	3.025730	14.910200	1.788708	2.244110
71 Seafood product preparation and packaging	4.941422	3.346530	2.655941	10.943893	1.677240	2.214725
72 Frozen cakes and other pastries manufacturing	2.206510	3.254121	2.098484	7.559115	2.474782	3.425823
73 Bread and bakery product, except frozen, manufacturing	8.241735	1.870212	3.654893	13.766840	1.226920	1.670381
74 Cookie and cracker manufacturing	2.998944	1.808423	2.286779	7.094146	1.603020	2.365548
75 Mixes and dough made from purchased flour	4.018160	2.138683	2.185413	8.342256	1.532254	2.076138
76 Dry pasta manufacturing	4.643745	1.647864	3.244352	9.535962	1.354857	2.053507
77 Tortilla manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
78 Roasted nuts and peanut butter manufacturing	2.929662	2.865495	1.335491	7.130648	1.978097	2.433949
79 Other snack food manufacturing	3.425038	3.237797	2.227819	8.890654	1.945332	2.595783
80 Coffee and tea manufacturing	1.791151	5.515799	2.035221	9.342171	4.079472	5.215736
81 Flavoring syrup and concentrate manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
82 Mayonnaise, dressing, and sauce manufacturing	2.178423	2.646236	2.025322	6.849982	2.214748	3.144468
83 Spice and extract manufacturing	4.812811	4.090557	2.249533	11.152901	1.849931	2.317336
84 All other food manufacturing	3.772983	4.252989	2.045149	10.071120	2.127222	2.669273
85 Soft drink and ice manufacturing	3.361129	2.161141	2.690294	8.212563	1.642981	2.443394
86 Breweries	2.537828	1.363079	1.925363	5.826270	1.537105	2.295770
87 Wineries	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
88 Distilleries	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
89 Tobacco stemming and redrying	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
90 Cigarette manufacturing	1.271627	1.665984	1.399814	4.337425	2.310120	3.410925
91 Other tobacco product manufacturing	4.724979	2.028313	1.643816	8.397109	1.429274	1.777174
92 Fiber, yarn, and thread mills	6.182160	2.434681	2.722978	11.339819	1.393824	1.834281
93 Broadwoven fabric mills	7.836285	2.627660	3.915184	14.379129	1.335320	1.834942
94 Narrow fabric mills and schiffli embroidery	11.244446	2.120471	4.045295	17.410212	1.188579	1.548339
95 Nonwoven fabric mills	3.159798	2.470514	2.362309	7.992620	1.781858	2.529472
96 Knit fabric mills	4.891123	2.908590	2.956978	10.756678	1.594667	2.199227
97 Textile and fabric finishing mills	6.954341	3.222520	3.622133	13.798995	1.463382	1.984227
98 Fabric coating mills	6.664663	2.634935	3.447105	12.746703	1.395359	1.912580
99 Carpet and rug mills	4.378641	2.461941	2.531706	9.372288	1.562262	2.140456
100 Curtain and linen mills	7.507339	2.872543	3.225485	13.605367	1.382631	1.812276
101 Textile bag and canvas mills	13.245731	7.712100	4.350320	20.308151	1.204753	1.533185
102 Tire cord and tire fabric mills	3.761548	1.947018	2.252372	7.960938	1.517611	2.116399
103 Other miscellaneous textile product mills	7.150185	2.945837	3.324766	13.420788	1.411994	1.876985
104 Sheer hosiery mills	11.960487	1.729149	5.459819	19.149456	1.144572	1.601060
105 Other hosiery and sock mills	9.082122	3.404638	3.650092	16.136852	1.374873	1.776771
106 Other apparel knitting mills	11.058094	2.226868	4.569252	17.854214	1.201379	1.614583
107 Cut and sew apparel manufacturing	8.940119	2.339761	3.218465	14.498345	1.261715	1.621717
108 Accessories and other apparel manufacturing	8.915489	2.061363	4.053103	15.029956	1.231211	1.685825
109 Leather and hide tanning and finishing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
110 Footwear manufacturing	15.195983	2.525710	3.264261	20.985954	1.166209	1.381020
111 Other leather product manufacturing	16.635969	0.640621	4.136785	21.413375	1.038508	1.287173
112 Sawmills	5.454976	4.565355	3.522049	13.542380	1.836916	2.482574
113 Wood preservation	3.162082	5.698195	3.057588	11.917864	2.802039	3.768993
114 Reconstituted wood product manufacturing	3.826047	3.141017	2.710896	9.677960	1.820956	2.529493
115 Veneer and plywood manufacturing	6.696501	5.054480	4.056695	15.807676	1.754794	2.360587
116 Engineered wood member and truss manufacturing	9.141503	3.456097	3.765117	16.362717	1.378067	1.789937
117 Wood windows and door manufacturing	7.358375	3.569053	3.764192	14.691621	1.485033	1.996585
118 Cut stock, resawing lumber, and planing	4.201622	5.687721	2.793973	12.683317	2.353696	3.018671
119 Other millwork, including flooring	11.779607	3.633870	4.996665	20.410141	1.308488	1.732667
120 Wood container and pallet manufacturing	14.610075	3.846430	4.478275	22.934780	1.263272	1.569792
121 Manufactured home, mobile home, manufacturing	8.701361	2.273567	3.578702	14.553630	1.261289	1.672570
122 Prefabricated wood building manufacturing	7.421742	3.791872	3.800785	15.014399	1.510914	2.023029
123 Miscellaneous wood product manufacturing	7.422343	4.145547	3.359143	14.927033	1.558523	2.011094
124 Pulp mills	2.342020	5.437256	2.621939	10.401216	3.321609	4.441130
125 Paper and paperboard mills	2.263683	3.022746	2.909625	8.196054	2.335322	3.620672
126 Paperboard container manufacturing	4.436331	1.625338	3.262332	9.324001	1.366370	2.101737
127 Flexible packaging foil manufacturing	1.187973	3.751313	1.925686	6.864971	4.157743	5.778729
128 Surface-coated paperboard manufacturing	2.989082	2.918708	2.715633	8.623422	1.976457	2.884974
129 Coated and laminated paper and packaging mate	4.044290	2.256698	3.251961	9.552948	1.557996	2.362083
130 Coated and uncoated paper bag manufacturing	8.091078	1.837953	4.896785	14.825815	1.227158	1.832366
131 Die-cut paper office supplies manufacturing	4.228207	2.284837	3.235776	9.748820	1.540380	2.305663
132 Envelope manufacturing	5.682505	2.306919	4.278069	12.267494	1.405969	2.158818
133 Stationery and related product manufacturing	3.169034	2.127326	2.633872	7.930231	1.671285	2.502413
134 Sanitary paper product manufacturing	3.683632	1.958496	3.427843	9.069971	1.531675	2.462236
135 All other converted paper product manufacturing	4.569219	2.196688	3.132871	9.898778	1.480758	2.166405
136 Manifold business forms printing	6.553636	1.347392	3.502186	11.403214	1.205595	1.739983
137 Books printing	7.703881	1.938976	4.109377	13.752234	1.251688	1.785105

138	Blankbook and looseleaf binder manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
139	Commercial printing	8.380732	2.210941	3.998125	14.589798	1.263812	1.740874
140	Tradebinding and related work	16.177485	2.405439	4.365838	22.948762	1.148691	1.418562
141	Prepress services	12.831130	0.936934	7.158034	20.926098	1.073020	1.630885
142	Petroleum refineries	0.390955	1.709923	0.996310	3.097188	5.373703	7.922101
143	Asphalt paving mixture and block manufacturing	2.141072	2.467351	2.423947	7.032371	2.152390	3.284509
144	Asphalt shingle and coating materials manufacturing	2.686077	2.513534	2.963705	8.163316	1.935764	3.039123
145	Petroleum lubricating oil and grease manufacturing	1.815046	2.732675	2.381969	6.929691	2.505568	3.817914
146	All other petroleum and coal products manufacturing	7.484898	2.388379	1.481093	11.354370	1.319093	1.516971
147	Petrochemical manufacturing	2.218937	2.404119	1.566895	6.189950	2.083455	2.789602
148	Industrial gas manufacturing	4.285566	1.147561	4.586496	10.019623	1.267773	2.337993
149	Synthetic dye and pigment manufacturing	3.288870	2.139168	3.614903	9.042941	1.650427	2.749559
150	Other basic inorganic chemical manufacturing	2.584007	2.337771	3.235816	8.157595	1.904708	3.156955
151	Other basic organic chemical manufacturing	0.800932	3.051829	1.894473	5.747234	4.810349	7.175685
152	Plastics material and resin manufacturing	1.304169	2.297731	2.023264	5.625165	2.761836	4.313218
153	Synthetic rubber manufacturing	2.522559	2.084099	2.688413	7.195071	1.860288	2.970029
154	Cellulosic organic fiber manufacturing	3.529865	2.146867	4.075119	9.751851	1.608201	2.762670
155	Noncellulosic organic fiber manufacturing	3.769739	2.394230	3.603338	9.767307	1.635118	2.590977
156	Nitrogenous fertilizer manufacturing	3.393613	1.902724	2.649226	7.945563	1.560678	2.341328
157	Phosphatic fertilizer manufacturing	1.978444	4.004951	2.767011	8.750405	3.024294	4.422873
158	Fertilizer, mixing only, manufacturing	3.031363	2.696212	2.124197	7.851773	1.889439	2.590179
159	Pesticide and other agricultural chemical man	3.253492	2.148141	2.645977	8.047609	1.660257	2.473530
160	Pharmaceutical and medicine manufacturing	2.136451	2.458732	2.374528	6.969711	2.150849	3.262285
161	Paint and coating manufacturing	2.554062	2.439060	2.635996	7.629118	1.954973	2.987053
162	Adhesive manufacturing	3.627096	2.409469	3.120067	9.156633	1.664297	2.524508
163	Soap and other detergent manufacturing	1.823857	2.707068	2.341613	6.872538	2.484254	3.768134
164	Polish and other sanitation good manufacturing	4.124301	2.128128	3.081938	9.334367	1.515997	2.263260
165	Surface active agent manufacturing	1.328529	3.048070	2.287222	6.663820	3.294320	5.015941
166	Toilet preparation manufacturing	1.969179	2.657724	2.092741	6.719644	2.349660	3.412409
167	Printing ink manufacturing	3.257406	2.546497	3.140306	8.944210	1.781756	2.745808
168	Explosives manufacturing	10.338262	2.524578	3.425434	16.288274	1.244197	1.575533
169	Custom compounding of purchased resins	3.294199	2.343702	2.786972	8.424873	1.711463	2.557487
170	Photographic film and chemical manufacturing	2.775624	2.425302	3.286606	8.487532	1.873786	3.057882
171	Other miscellaneous chemical product manufacturing	2.797110	2.633723	3.281489	8.171232	1.941587	3.114758
172	Plastics packaging materials, film and sheet	3.123133	2.256501	2.581692	7.961326	1.722512	2.549147
173	Plastics pipe, fittings, and profile shapes	5.996353	2.144752	3.095362	11.236467	1.357676	1.873884
174	Laminated plastics plate, sheet, and shapes	9.908572	1.431556	5.415685	16.755813	1.144477	1.691042
175	Plastics bottle manufacturing	4.424695	2.211868	2.886973	9.523537	1.499892	2.152360
176	Resilient floor covering manufacturing	5.275928	1.223611	3.465478	9.965018	1.231923	1.888771
177	Plastics plumbing fixtures and all other plastics	5.119236	2.490769	2.955547	10.565552	1.486551	2.063893
178	Foam product manufacturing	4.381680	2.338642	2.736611	9.456933	1.533732	2.158289
179	Tire manufacturing	4.939531	1.559069	3.726352	10.224952	1.315631	2.070025
180	Rubber and plastics hose and belting manufacturing	7.260106	1.846209	3.447402	12.553717	1.254295	1.729137
181	Other rubber product manufacturing	5.807877	2.098847	3.025018	10.931742	1.361379	1.882227
182	Vitreous china plumbing fixture manufacturing	8.267990	1.626868	4.593981	14.488840	1.196767	1.752402
183	Vitreous china and earthenware articles manufacturing	16.398657	1.640461	5.601865	23.640983	1.100036	1.441641
184	Porcelain electrical supply manufacturing	7.480801	2.535485	4.649906	14.666192	1.338932	1.960511
185	Brick and structural clay tile manufacturing	7.048143	2.325959	3.939993	13.314095	1.330010	1.889022
186	Ceramic wall and floor tile manufacturing	10.427235	1.873626	5.505795	17.806655	1.179686	1.707706
187	Nonclay refractory manufacturing	6.873233	1.932940	4.252828	13.059000	1.281227	1.899979
188	Clay refractory and other structural clay pro	9.247923	3.502265	3.033942	15.784130	1.378708	1.706776
189	Glass container manufacturing	5.011168	2.403762	3.422450	10.837379	1.479681	2.162646
190	Glass and glass products, except glass containers	5.415460	2.397929	3.972780	11.786169	1.442793	2.176393
191	Cement manufacturing	2.090255	1.911533	2.221698	6.223487	1.914498	2.977381
192	Ready-mix concrete manufacturing	5.442042	2.321600	3.524489	11.288132	1.426605	2.074245
193	Concrete block and brick manufacturing	5.343459	2.635777	3.415114	11.394350	1.493272	2.132392
194	Concrete pipe manufacturing	4.732695	2.392259	2.991696	10.116650	1.505475	2.137609
195	Other concrete product manufacturing	6.743563	2.000388	3.911075	12.655025	1.296637	1.876608
196	Lime manufacturing	4.748744	2.533623	2.853782	10.136150	1.533535	2.134490
197	Gypsum product manufacturing	4.279821	2.490737	2.584535	9.355093	1.581972	2.185861
198	Abrasive product manufacturing	3.970669	2.875923	2.480249	9.326842	1.724292	2.348934
199	Cut stone and stone product manufacturing	10.615974	2.761518	4.313557	17.691050	1.260129	1.666456
200	Ground or treated minerals and earths manufacturing	1.973168	1.809825	1.871126	5.654118	1.917218	2.865503
201	Mineral wool manufacturing	4.032128	2.140481	3.459744	9.632353	1.530856	2.388900
202	Miscellaneous nonmetallic mineral products	6.274385	1.658776	3.716394	11.649555	1.264373	1.856685
203	Iron and steel mills	2.185013	2.661970	2.489242	7.336224	2.218286	3.357521
204	Ferroalloy and related product manufacturing	8.065619	1.723628	2.663739	12.452985	1.213701	1.543959
205	Iron, steel pipe and tube from purchased steel	4.531309	1.662799	2.537683	8.731191	1.366958	1.926991
206	Rolled steel shape manufacturing	6.142709	1.657775	3.419354	11.219838	1.269877	1.826529
207	Steel wire drawing	2.631839	2.095874	1.749555	6.477268	1.796354	2.461119

208 Alumina refining	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
209 Primary aluminum production	2.811651	1.996001	2.859041	7.666693	1.709903	2.726758
210 Secondary smelting and alloying of aluminum	1.822477	3.239071	1.955195	7.016744	2.777290	3.850113
211 Aluminum sheet, plate, and foil manufacturing	1.590629	1.666117	1.619642	4.876388	2.047458	3.065698
212 Aluminum extruded product manufacturing	5.203951	1.208767	2.522004	8.934722	1.232279	1.716911
213 Other aluminum rolling and drawing	9.262479	0.955446	2.612453	12.830379	1.103152	1.385199
214 Primary smelting and refining of copper	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
215 Primary nonferrous metal, except copper and a	5.009258	1.806638	1.786599	8.602495	1.360660	1.717319
216 Copper rolling, drawing, and extruding	2.891368	1.696102	1.875433	6.462903	1.586609	2.235241
217 Copper wire, except mechanical, drawing	6.232429	1.751072	4.042727	12.026228	1.280961	1.929621
218 Secondary processing of copper	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
219 Nonferrous metal, except copper and aluminum,	4.022564	1.595982	2.681446	8.299992	1.396757	2.063359
220 Secondary processing of other nonferrous	3.462732	2.927311	2.804465	9.194508	1.845376	2.655276
221 Ferrous metal foundries	5.902272	2.054902	4.738407	12.695581	1.348154	2.150965
222 Aluminum foundries	6.616220	2.076591	3.401492	12.094304	1.313864	1.827978
223 Nonferrous foundries, except aluminum	6.068354	1.920534	3.234219	11.223107	1.316483	1.849448
224 Iron and steel forging	6.477902	1.561360	3.928531	11.967793	1.241029	1.847480
225 Nonferrous forging	4.706570	1.280076	2.855544	8.842190	1.271976	1.878691
226 Custom roll forming	1.550354	2.180139	1.477254	5.207748	2.406220	3.359070
227 All other forging and stamping	6.964526	2.078388	3.408666	12.451580	1.298425	1.787857
228 Cutlery and flatware, except precious, manufacturing	4.736844	1.807220	3.128036	9.672101	1.381524	2.041887
229 Hand and edge tool manufacturing	7.309084	2.293328	3.518877	13.121289	1.313764	1.795203
230 Saw blade and handsaw manufacturing	5.895998	2.275081	3.004248	11.175327	1.385869	1.895409
231 Kitchen utensil, pot, and pan manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
232 Prefabricated metal buildings and components	6.317896	1.845092	3.129674	11.292662	1.292042	1.787409
233 Fabricated structural metal manufacturing	5.032374	1.590518	2.819172	9.442065	1.316057	1.876264
234 Plate work manufacturing	7.074437	1.112332	5.237514	13.424283	1.157233	1.897576
235 Metal window and door manufacturing	8.673440	1.768145	3.271283	13.712868	1.203857	1.581018
236 Sheet metal work manufacturing	7.025223	1.584311	3.202781	11.812315	1.225518	1.681415
237 Ornamental and architectural metal work manufacturing	7.981375	1.647355	3.635285	13.264015	1.206400	1.661871
238 Power boiler and heat exchanger manufacturing	6.127591	1.649390	3.642403	11.419383	1.269174	1.863601
239 Metal tank, heavy gauge, manufacturing	5.457820	2.050059	3.059080	10.566959	1.375619	1.936114
240 Metal can, box, and other container manufacturing	3.565671	1.640575	2.435793	7.642039	1.460103	2.143226
241 Hardware manufacturing	4.514793	1.989110	2.413045	8.916949	1.440576	1.975051
242 Spring and wire product manufacturing	8.182850	1.521972	3.742899	13.447721	1.185995	1.643403
243 Machine shops	9.299935	2.235887	4.435160	15.970982	1.240420	1.717322
244 Turned product and screw, nut, and bolt manufacturing	5.564415	2.201052	3.346138	11.111606	1.395558	1.996904
245 Metal heat treating	5.875891	2.289798	3.337467	11.503156	1.389694	1.957687
246 Metal coating and nonprecious engraving	5.299622	1.933002	2.905586	10.138210	1.364743	1.913006
247 Electroplating, anodizing, and coloring metal	12.190565	1.606302	5.638435	19.435302	1.131766	1.594290
248 Metal valve manufacturing	6.102180	1.808866	2.971157	10.882204	1.296429	1.783330
249 Ball and roller bearing manufacturing	7.425231	2.263545	4.197854	13.886629	1.304845	1.870195
250 Small arms manufacturing	6.160207	1.859357	3.654663	11.674226	1.301834	1.895103
251 Other ordnance and accessories manufacturing	7.469505	3.094893	2.674356	13.238755	1.414337	1.772374
252 Fabricated pipe and pipe fitting manufacturing	7.796368	1.401328	4.102654	13.300350	1.179741	1.705967
253 Industrial pattern manufacturing	16.461899	1.690220	6.071448	24.223567	1.102675	1.471493
254 Enameled iron and metal sanitary ware manufacturing	11.326870	1.551710	4.169981	17.048561	1.136994	1.505143
255 Miscellaneous fabricated metal product manufacturing	5.159073	1.959645	2.774001	9.892719	1.379844	1.917538
256 Ammunition manufacturing	9.864900	2.991090	2.885892	15.741881	1.303205	1.595747
257 Farm machinery and equipment manufacturing	4.171970	2.295737	2.689580	9.157288	1.550276	2.194955
258 Lawn and garden equipment manufacturing	3.446215	2.589119	2.125179	8.160513	1.751294	2.367964
259 Construction machinery manufacturing	2.838535	2.426487	2.253469	7.518492	1.854838	2.648722
260 Mining machinery and equipment manufacturing	5.231277	1.791969	3.302826	10.326072	1.342549	1.973910
261 Oil and gas field machinery and equipment	6.075202	2.615767	2.005955	10.696925	1.430565	1.760752
262 Sawmill and woodworking machinery	7.421052	2.684618	3.216870	13.322541	1.361757	1.795236
263 Plastics and rubber industry machinery	5.477570	2.433726	3.237303	11.148598	1.444308	2.035318
264 Paper industry machinery manufacturing	5.807766	2.617531	3.913129	12.338426	1.450695	2.124470
265 Textile machinery manufacturing	7.092462	2.304211	4.026692	13.423365	1.324882	1.892624
266 Printing machinery and equipment manufacturing	5.524770	2.802222	3.179580	11.506572	1.507211	2.082724
267 Food product machinery manufacturing	8.043219	2.824977	3.328877	14.197073	1.351225	1.765098
268 Semiconductor machinery manufacturing	2.705808	2.739313	2.450180	7.895301	2.012383	2.917909
269 All other industrial machinery manufacturing	4.185863	2.656707	3.112328	9.954897	1.634686	2.378219
270 Office machinery manufacturing	5.113706	2.926235	2.129349	10.169290	1.572234	1.988634
271 Optical instrument and lens manufacturing	5.505201	2.611413	4.350906	12.467520	1.474354	2.264680
272 Photographic and photocopying equipment manufacturing	4.704093	2.133657	3.502136	10.339886	1.453575	2.198062
273 Other commercial and service industry machine	5.407079	2.541172	3.161215	11.109467	1.469971	2.054615
274 Automatic vending, commercial laundry and dry	6.117625	2.441346	3.077485	11.636455	1.399068	1.902120
275 Air purification equipment manufacturing	9.149334	1.850610	3.763338	14.763282	1.202267	1.613591
276 Industrial and commercial fan and blower manufacturing	7.823864	1.890672	3.534531	13.249067	1.241655	1.693417
277 Heating equipment, except warm air furnaces	6.074145	1.871248	3.004502	10.949894	1.308068	1.802705

278 AC, refrigeration, and forced air heating	4.959072	2.361924	2.823482	10.144479	1.476283	2.045640
279 Industrial mold manufacturing	8.788205	2.314142	5.087851	16.190198	1.263324	1.842265
280 Metal cutting machine tool manufacturing	7.116279	2.304560	4.410841	13.831679	1.323843	1.943667
281 Metal forming machine tool manufacturing	7.791043	2.021230	4.327104	14.139377	1.259430	1.814825
282 Special tool, die, jig, and fixture manufacturing	11.019359	2.017687	5.959800	18.996845	1.183104	1.723952
283 Cutting tool and machine tool accessory manufacturing	6.769705	2.516350	3.984931	13.270985	1.371707	1.960349
284 Rolling mill and other metalworking machinery	4.250411	2.728509	3.442596	10.421516	1.641940	2.451885
285 Turbine and turbine generator set units manufacturing	1.690198	2.040480	2.016671	5.747349	2.207243	3.400400
286 Other engine equipment manufacturing	2.661087	2.402782	2.243813	7.307682	1.902933	2.746127
287 Speed changers and mechanical power transmissions	6.983207	2.176974	3.973720	13.133901	1.311744	1.880784
288 Pump and pumping equipment manufacturing	4.789701	2.214095	2.941869	9.945666	1.462262	2.076469
289 Air and gas compressor manufacturing	7.577978	2.634721	2.132460	12.345159	1.347681	1.629084
290 Measuring and dispensing pump manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
291 Elevator and moving stairway manufacturing	5.546506	2.549817	2.865053	10.961376	1.459716	1.976267
292 Conveyor and conveying equipment manufacturing	6.026752	2.292777	3.647140	11.966668	1.380433	1.985592
293 Overhead cranes, hoists, and monorail systems	6.210732	2.134402	2.789280	11.134413	1.343663	1.792770
294 Industrial truck, trailer, and stacker manufacturing	5.136957	2.696955	3.433289	11.267201	1.525010	2.193361
295 Power-driven handtool manufacturing	4.577040	2.501405	3.234130	10.312575	1.546511	2.253110
296 Welding and soldering equipment manufacturing	3.994226	2.241976	3.035147	9.271349	1.561304	2.321187
297 Packaging machinery manufacturing	4.936830	2.718488	3.673942	11.329260	1.550655	2.294845
298 Industrial process furnace and oven manufacturing	7.980877	1.617489	4.396786	13.905153	1.204982	1.762181
299 Fluid power cylinder and actuator manufacturing	5.804805	2.183363	3.544979	11.533148	1.376130	1.986828
300 Fluid power pump and motor manufacturing	6.150179	2.186531	3.748841	12.085551	1.355523	1.965073
301 Scales, balances, and miscellaneous general p	5.492448	2.340790	3.000487	10.833722	1.426183	1.972476
302 Electronic computer manufacturing	2.5113033	2.190758	2.329631	7.033425	1.871759	2.798779
303 Computer storage device manufacturing	5.361722	2.332185	2.096627	9.790534	1.434969	1.826005
304 Computer terminal manufacturing	8.302243	2.649502	2.823798	13.775543	1.319131	1.659256
305 Other computer peripheral equipment manufacturing	4.026012	2.736362	3.203011	9.965385	1.679671	2.475250
306 Telephone apparatus manufacturing	2.994869	2.640795	2.763097	8.398761	1.881773	2.804383
307 Broadcast and wireless communications equipment	2.944169	2.599416	2.487175	8.030761	1.882903	2.727683
308 Other communications equipment manufacturing	5.848876	2.699753	4.113118	12.661747	1.461585	2.164817
309 Audio and video equipment manufacturing	5.402459	3.569011	3.491586	12.463056	1.660627	2.306923
310 Electron tube manufacturing	6.829618	2.671817	5.736926	15.238360	1.391210	2.231217
311 Semiconductors and related device manufacturing	6.992242	3.443954	2.984123	13.420319	1.492539	1.919316
312 All other electronic component manufacturing	5.817599	2.684075	3.676174	12.177849	1.461372	2.093277
313 Electromedical apparatus manufacturing	3.803569	3.314436	3.286242	10.404247	1.871401	2.735391
314 Search, detection, and navigation instruments	5.101872	2.651202	4.145698	11.898773	1.519653	2.332237
315 Automatic environmental control manufacturing	12.345572	1.932727	5.176355	19.454654	1.156552	1.575841
316 Industrial process variable instruments	10.695345	2.464040	5.313723	18.473108	1.230384	1.727210
317 Totalizing fluid meters and counting devices	3.820219	2.920619	2.670414	9.411252	1.764516	2.463537
318 Electricity and signal testing instruments	5.595851	2.667174	3.346522	11.609548	1.476634	2.074671
319 Analytical laboratory instrument manufacturing	5.433989	3.590021	4.085605	13.109615	1.660660	2.412522
320 Irradiation apparatus manufacturing	3.097715	3.757286	1.876032	8.731032	2.212922	2.818540
321 Watch, clock, and other measuring and control	6.882675	2.822234	3.894465	13.599374	1.410049	1.975885
322 Software reproducing	8.130973	1.327209	5.839268	15.297450	1.163229	1.881380
323 Audio and video media reproduction	6.511274	2.807831	3.098553	12.417659	1.431226	1.907101
324 Magnetic and optical recording media manufacturing	3.110734	4.345343	2.774357	10.230433	2.396887	3.288753
325 Electric lamp bulb and part manufacturing	9.155117	2.397476	4.234409	15.787003	1.261873	1.724391
326 Lighting fixture manufacturing	5.419239	2.003315	3.340612	10.763166	1.369667	1.986103
327 Electric housewares and household fan manufacturing	12.467334	2.139831	3.119242	17.726407	1.171635	1.421828
328 Household vacuum cleaner manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
329 Household cooking appliance manufacturing	4.704874	2.294607	2.389600	9.389080	1.487708	1.995607
330 Household refrigerator and home freezer manufacturing	4.931786	2.594635	2.819343	10.345764	1.526105	2.097772
331 Household laundry equipment manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
332 Other major household appliance manufacturing	4.104273	2.722589	2.600803	9.427665	1.663355	2.297036
333 Electric power and specialty transformer manufacturing	7.410937	2.113302	3.645927	13.170166	1.285160	1.777126
334 Motor and generator manufacturing	6.996885	1.781583	3.590358	12.368826	1.254625	1.767762
335 Switchgear and switchboard apparatus manufacturing	5.899330	1.503286	3.371245	10.773861	1.254823	1.826285
336 Relay and industrial control manufacturing	5.186653	2.822009	3.510846	11.519508	1.544091	2.220991
337 Storage battery manufacturing	5.089302	1.876434	3.681378	10.647113	1.368702	2.092058
338 Primary battery manufacturing	4.329090	1.279684	2.882552	8.491326	1.295601	1.961457
339 Fiber optic cable manufacturing	4.736869	2.182655	4.563490	11.483015	1.460780	2.424178
340 Other communication and energy wire manufacturing	1.103786	1.967498	1.430620	4.501904	2.782499	4.078601
341 Wiring device manufacturing	6.642516	1.308741	3.564491	11.515747	1.197025	1.733642
342 Carbon and graphite product manufacturing	4.003517	1.408015	2.902729	8.314261	1.351695	2.076739
343 Miscellaneous electrical equipment manufacturing	3.843556	3.278151	3.263400	10.385106	1.852895	2.701953
344 Automobile and light truck manufacturing	1.236683	2.820197	1.826333	5.883213	3.280452	4.757253
345 Heavy duty truck manufacturing	2.147551	2.568811	1.969014	6.685376	2.196158	3.113023
346 Motor vehicle body manufacturing	8.073850	2.355303	3.070028	13.499180	1.291720	1.671963
347 Truck trailer manufacturing	8.458111	2.483106	3.115081	14.056297	1.293577	1.661872

348 Motor home manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
349 Travel trailer and camper manufacturing	5.972978	2.078825	3.110635	11.162437	1.348038	1.868823
350 Motor vehicle parts manufacturing	4.095704	2.371319	2.609237	9.076261	1.578977	2.216044
351 Aircraft manufacturing	2.554389	1.228840	5.345809	9.129039	1.481070	3.573864
352 Aircraft engine and engine parts manufacturing	2.292499	1.144003	3.906724	7.343226	1.499020	3.203154
353 Other aircraft parts and equipment	3.121864	1.692156	4.558877	9.372897	1.542034	3.002340
354 Guided missile and space vehicle manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
355 Propulsion units and parts for space vehicles	7.830078	2.326237	4.833575	14.989890	1.297090	1.914399
356 Railroad rolling stock manufacturing	2.290926	1.674908	3.414547	7.380381	1.731105	3.221571
357 Ship building and repairing	5.103813	1.469778	5.648365	12.221957	1.287977	2.394672
358 Boat building	3.683199	1.363715	3.752375	8.799289	1.370253	2.389035
359 Motorcycle, bicycle, and parts manufacturing	4.355130	2.672107	3.104733	10.131969	1.613554	2.326445
360 Military armored vehicles and tank parts manufacturing	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
361 All other transportation equipment manufacturing	1.901033	1.983738	1.999239	5.884009	2.043505	3.095164
362 Wood kitchen cabinet and countertop manufacturing	11.886139	3.303057	4.582838	19.772034	1.277892	1.663453
363 Upholstered household furniture manufacturing	8.382788	3.466533	4.331508	16.180828	1.413530	1.930244
364 Nonupholstered wood household furniture manufacturing	9.051301	3.971963	3.589309	16.612573	1.438828	1.835380
365 Metal household furniture manufacturing	6.587636	2.884494	2.733526	12.205656	1.437865	1.852813
366 Institutional furniture manufacturing	7.655434	2.757857	3.559649	13.972939	1.360248	1.825232
367 Other household and institutional furniture	6.946420	2.358320	4.324870	13.629610	1.339502	1.962106
368 Wood office furniture manufacturing	10.318867	2.517579	5.094992	17.931438	1.243978	1.737733
369 Custom architectural woodwork and millwork	4.060495	4.489265	2.672652	11.222413	2.105596	2.763804
370 Office furniture, except wood, manufacturing	5.086801	2.995666	2.739729	10.822196	1.588910	2.127505
371 Showcases, partitions, shelving, and lockers	8.281123	2.275407	4.232704	14.789234	1.274770	1.785897
372 Mattress manufacturing	7.409473	2.936084	3.195776	13.541333	1.396261	1.827570
373 Blind and shade manufacturing	9.975725	2.156927	3.312819	15.445471	1.216218	1.548306
374 Laboratory apparatus and furniture manufacturing	3.976774	4.063072	3.516242	11.556088	2.021701	2.905895
375 Surgical and medical instrument manufacturing	7.263412	2.249150	4.653012	14.165574	1.309655	1.950264
376 Surgical appliance and supplies manufacturing	5.157886	2.902090	3.357408	11.417384	1.562651	2.213578
377 Dental equipment and supplies manufacturing	9.356964	2.742496	2.977213	15.076672	1.293097	1.611278
378 Ophthalmic goods manufacturing	12.497567	1.854142	4.966247	19.317956	1.148360	1.545737
379 Dental laboratories	15.533080	1.198562	6.930375	23.662017	1.077162	1.523331
380 Jewelry and silverware manufacturing	7.178286	1.611196	2.742806	11.532289	1.224454	1.606552
381 Sporting and athletic goods manufacturing	5.901655	2.826488	3.917142	12.645285	1.478931	2.142668
382 Doll, toy, and game manufacturing	5.034286	2.003147	3.922474	10.959907	1.397901	2.177053
383 Office supplies, except paper, manufacturing	8.087828	1.576450	4.607695	14.271973	1.194916	1.764624
384 Sign manufacturing	8.413454	2.624594	4.363951	15.401999	1.311952	1.830639
385 Gasket, packing, and sealing device manufacturing	8.406918	1.527225	4.850278	14.784420	1.181663	1.758602
386 Musical instrument manufacturing	10.396781	2.450953	4.721981	17.569715	1.235742	1.689919
387 Broom, brush, and mop manufacturing	7.950654	2.486240	3.601029	14.037923	1.312709	1.765631
388 Burial casket manufacturing	7.033541	1.143478	4.026965	12.203984	1.162575	1.735112
389 Buttons, pins, and all other miscellaneous ma	5.997687	2.572383	2.928038	11.498108	1.428896	1.917090
390 Wholesale trade	8.243213	1.745047	4.318666	14.306926	1.211695	1.735601
391 Air transportation	5.899082	5.372056	3.633922	14.905059	1.910660	2.526675
392 Rail transportation	4.639396	1.897720	4.160621	10.697737	1.409045	2.305847
393 Water transportation	2.950525	5.002797	2.744211	10.337533	2.931190	3.990517
394 Truck transportation	9.533385	4.393786	4.683842	18.611013	1.460884	1.952194
395 Transit and ground passenger transportation	22.256601	3.089188	4.119805	29.465594	1.138799	1.323904
396 Pipeline transportation	1.840932	3.739941	2.931406	8.512279	3.031547	4.623896
397 Scenic and sightseeing transportation and sup	9.950188	3.037920	5.601904	18.590012	1.305313	1.868308
398 Postal service	12.436485	1.242719	8.370656	22.049860	1.099925	1.772998
399 Couriers and messengers	15.563764	3.152663	4.915463	23.631890	1.202564	1.518392
400 Warehousing and storage	16.241119	2.164560	5.607459	24.013138	1.133277	1.478540
401 Motor vehicle and parts dealers	11.887042	1.536727	4.931402	18.355171	1.129277	1.544133
402 Furniture and home furnishings stores	16.025078	1.655994	4.498365	22.179437	1.103338	1.384046
403 Electronics and appliance stores	12.859531	1.420979	5.395088	19.675599	1.110500	1.530040
404 Building material and garden supply stores	14.821369	1.355242	4.503323	20.679934	1.091438	1.395278
405 Food and beverage stores	21.625124	1.533308	4.851483	28.009915	1.070904	1.295249
406 Health and personal care stores	18.256746	1.681845	4.807950	24.746541	1.092122	1.355474
407 Gasoline stations	19.689396	1.714811	4.595805	26.000012	1.087093	1.320508
408 Clothing and clothing accessories stores	22.201237	1.427240	4.268219	27.896697	1.064286	1.256538
409 Sporting goods, hobby, book and music stores	29.742222	1.391827	4.948683	36.082732	1.046796	1.213182
410 General merchandise stores	24.203381	1.350157	4.848375	30.401913	1.055784	1.256102
411 Miscellaneous store retailers	30.913265	1.706352	5.343606	37.963223	1.055198	1.228056
412 Nonstore retailers	33.076649	2.146854	3.779435	39.002938	1.064905	1.179168
413 Newspaper publishers	10.376771	1.960134	4.443114	16.780018	1.188896	1.617075
414 Periodical publishers	5.809031	2.365692	3.430766	11.605488	1.407244	1.997835
415 Book publishers	3.965993	2.346942	2.607630	8.920565	1.591767	2.249264
416 Database, directory, and other publishers	3.148995	1.908034	2.639949	7.696978	1.605918	2.444265
417 Software publishers	3.770969	2.924385	3.503442	10.198796	1.775500	2.704556

418 Motion picture and video industries	11.183158	5.626882	2.872945	19.682985	1.503157	1.760056
419 Sound recording industries	3.651314	2.431930	2.265129	8.348374	1.666042	2.286402
420 Radio and television broadcasting	6.098535	5.884938	3.770538	15.754011	1.964976	2.583245
421 Cable networks and program distribution	2.586728	2.697506	1.376050	6.660284	2.042825	2.574791
422 Telecommunications	4.922121	1.570801	3.217523	9.710445	1.319131	1.972817
423 Information services	6.264998	3.501193	4.273300	14.039491	1.558850	2.240941
424 Data processing services	7.312575	3.178793	4.900992	15.392360	1.434702	2.104917
425 Nondepository credit intermediation and rela	7.345155	2.117535	4.126455	13.589145	1.288290	1.850083
426 Securities, commodity contracts, investments	9.992872	3.929244	5.041696	18.963812	1.393205	1.897734
427 Insurance carriers	5.741749	3.652324	3.681487	13.075560	1.636100	2.277278
428 Insurance agencies, brokerages, and related	11.213654	1.305715	4.666712	17.186080	1.116440	1.532603
429 Funds, trusts, and other financial vehicles	3.772482	5.163122	2.960838	11.896441	2.368628	3.153479
430 Monetary authorities and depository credit in	5.594961	2.621666	3.132037	11.348664	1.468576	2.028372
431 Real estate	7.254905	2.061467	2.029575	11.345947	1.284148	1.563900
432 Automotive equipment rental and leasing	7.577838	5.174720	3.437294	16.189851	1.682876	2.136474
433 Video tape and disc rental	20.643465	2.824747	3.599823	27.068036	1.136835	1.311216
434 Machinery and equipment rental and leasing	2.776634	5.063643	2.814947	10.655224	2.823663	3.837461
435 General and consumer goods rental except vide	17.815685	2.980921	6.347727	27.144333	1.167320	1.523620
436 Lessors of nonfinancial intangible assets	0.167746	0.165503	0.498697	0.831946	1.986625	4.959546
437 Legal services	11.123652	1.705412	6.220652	19.049716	1.153314	1.712542
438 Accounting and bookkeeping services	19.643406	1.356121	7.271701	28.271228	1.069037	1.439222
439 Architectural and engineering services	12.752954	1.997327	6.664806	21.415088	1.156617	1.679226
440 Specialized design services	12.355419	2.797603	4.364547	19.517569	1.226427	1.579677
441 Custom computer programming services	12.348717	1.317122	8.861908	22.527746	1.106661	1.824299
442 Computer systems design services	10.952576	2.046871	6.727974	19.727421	1.186885	1.801167
443 Other computer related services, including fa	14.735704	1.373859	6.366565	22.476129	1.093233	1.525284
444 Management consulting services	13.590425	1.960280	6.590666	22.141372	1.144240	1.629189
445 Environmental and other technical consulting	10.148712	1.708791	4.894176	16.751678	1.168375	1.650621
446 Scientific research and development services	16.256010	2.130455	8.583035	26.969500	1.131056	1.659048
447 Advertising and related services	14.464272	2.326807	5.444035	22.235114	1.160866	1.537244
448 Photographic services	20.977137	2.340649	4.138219	27.456004	1.111581	1.308854
449 Veterinary services	17.872374	3.449509	4.969796	26.291678	1.193008	1.471079
450 All other miscellaneous professional and tech	8.631079	1.485545	2.923275	13.039899	1.172116	1.510808
451 Management of companies and enterprises	8.892424	1.786953	4.940786	15.620162	1.200952	1.756570
452 Office administrative services	6.780633	4.317002	3.984607	15.082243	1.636666	2.224312
453 Facilities support services	10.626147	3.476549	4.393374	18.496070	1.327169	1.740619
454 Employment services	42.067932	1.668411	7.428714	51.165057	1.039660	1.216249
455 Business support services	22.199697	2.445244	5.114352	29.759294	1.110148	1.340527
456 Travel arrangement and reservation services	13.320521	3.854995	4.331001	21.506517	1.289403	1.614540
457 Investigation and security services	29.917080	1.709894	6.780391	38.407365	1.057154	1.283794
458 Services to buildings and dwellings	29.840063	4.210768	5.733731	39.784562	1.141111	1.333260
459 Other support services	11.909711	3.535405	3.288058	18.733174	1.296851	1.572933
460 Waste management and remediation services	5.119309	2.138908	4.032506	11.290723	1.417812	2.205517
461 Elementary and secondary schools	36.267483	2.626007	6.743280	45.636770	1.072407	1.258338
462 Colleges, universities, and junior colleges	20.716764	3.521486	5.341843	29.580094	1.169982	1.427834
463 Other educational services	20.119625	2.964209	4.319569	27.403403	1.147329	1.362023
464 Home health care services	24.969652	2.572618	6.415794	33.958065	1.103030	1.359974
465 Offices of physicians, dentists, and other he	10.744994	1.342713	6.790025	18.877733	1.124962	1.756886
466 Other ambulatory health care services	8.505782	3.811309	4.601428	16.918519	1.448084	1.989061
467 Hospitals	10.837394	3.644219	5.284061	19.765675	1.336263	1.823840
468 Nursing and residential care facilities	24.337616	3.180386	5.936396	33.454397	1.130678	1.374596
469 Child day care services	31.585844	2.768110	4.315585	38.669539	1.087638	1.224268
470 Social assistance, except child day care serv	31.158878	2.930458	5.644022	39.733359	1.094049	1.275186
471 Performing arts companies	50.638596	2.786301	5.343941	58.768837	1.055023	1.160554
472 Spectator sports	53.707581	2.043373	7.388288	63.139241	1.038046	1.175611
473 Independent artists, writers, and performers	11.836659	6.718360	3.563502	22.118521	1.567589	1.868646
474 Promoters of performing arts and sports and a	27.917538	3.217213	3.784721	34.919472	1.115240	1.250808
475 Museums, historical sites, zoos, and parks	14.342777	4.565681	6.346089	25.254548	1.318326	1.760785
476 Fitness and recreational sports centers	35.348106	2.303471	5.604079	43.255656	1.065165	1.223705
477 Bowling centers	21.426916	2.689425	4.127231	28.243571	1.125516	1.318135
478 Other amusement, gambling, and recreation ind	14.832165	2.995064	3.884615	21.711843	1.201930	1.463835
479 Hotels and motels, including casino hotels	17.831545	0.955877	3.986665	22.774087	1.053606	1.277180
480 Other accommodations	14.878903	2.404399	4.170710	21.454012	1.161598	1.441908
481 Food services and drinking places	26.386877	3.383095	4.398774	34.168746	1.128211	1.294914
482 Car washes	47.286812	2.569454	5.831766	55.688032	1.054338	1.177665
483 Automotive repair and maintenance, except car	17.038830	3.151810	4.716984	24.907623	1.184978	1.461815
484 Electronic equipment repair and maintenance	10.996780	3.331828	3.924680	18.253289	1.302982	1.659876
485 Commercial machinery repair and maintenance	10.806009	2.927669	4.058402	17.792080	1.270930	1.646499
486 Household goods repair and maintenance	7.635078	3.531632	2.840698	14.007408	1.462554	1.834612
487 Personal care services	25.900496	3.325096	5.041263	34.266854	1.128380	1.323019

488 Death care services	16.852236	2.815323	4.877831	24.545389	1.167059	1.456506
489 Drycleaning and laundry services	26.892288	3.078045	5.529624	35.499957	1.114458	1.320079
490 Other personal services	10.605770	4.166966	2.823137	17.595874	1.392896	1.659085
491 Religious organizations	42.949615	1.959248	7.253972	52.162835	1.045617	1.214512
492 Grantmaking and giving and social advocacy or	13.512530	4.477141	4.594540	22.584212	1.331333	1.671353
493 Civic, social, professional and similar organ	16.406380	3.550417	4.953605	24.910401	1.216405	1.518336
494 Private households	193.746246	-193.746246	203.149384	203.149384	0.000000	1.048533
495 Federal electric utilities	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
496 Other Federal Government enterprises	10.207994	1.184868	2.670192	14.063054	1.116073	1.377651
497 State and local government passenger transit	29.038771	3.978674	8.402206	41.419651	1.137012	1.426357
498 State and local government electric utilities	1.600672	0.929296	1.031731	3.561699	1.580566	2.225127
499 Other State and local government enterprises	4.809705	1.854740	2.271820	8.936265	1.385625	1.857965
500 Noncomparable imports	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
501 Scrap	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
502 Used and secondhand goods	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
503 State & Local Education	27.399555	-27.399555	36.802681	36.802681	0.000000	1.343185
504 State & Local Non-Education	25.187067	-25.187067	34.590191	34.590191	0.000000	1.373331
505 Federal Military	22.082415	-22.082415	31.485540	31.485540	0.000000	1.425820
506 Federal Non-Military	11.611391	-11.611391	21.014517	21.014517	0.000000	1.809819
507 Rest of the world adjustment to final uses	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
508 Inventory valuation adjustment	0.000000	0.000000	0.000000	0.000000	0.000000	0.000000
509 Owner-occupied dwellings	0.000000	1.408420	0.428551	1.836971	0.000000	0.000000