

Economic Contribution of Agriculture and Forestry Production and Processing in Mississippi: An Input-Output Analysis



Agriculture and forestry are major components of Mississippi's economy. In 2019 alone, agricultural and forestry production and processing sectors directly accounted for 123,983 jobs paying \$5.63 billion in wages and salaries (Table 1). In addition, agriculture- and forestry-related sectors also directly accounted for \$26.3 billion in sales with a value-added generation of \$7.6 billion. Clearly, agriculture and forestry provide a major contribution to Mississippi's economy.

Yet this contribution actually has a much larger effect on the Mississippi economy. A larger total contribution results when accounting for the stimulative effect to the Mississippi economy that results from spending by the agricultural and forestry industries and their employees. This report provides an estimate of the economic contribution of agricultural and forestry sectors using the most recent data available on the value of production (e.g., commodities, timber harvests), primary processing activities (e.g., cotton ginning, paper mills), and value-added products (e.g., snack food manufacturing, stationery product manufacturing). This report focuses on the total economic contribution made by agricultural and forestry activities on employment and income.

Methods

The total economic contribution is the sum of direct effects, indirect effects, and induced effects. Direct effects represent the economic activity from businesses defined to belong in agriculture and forestry (i.e., producers, processors, and agricultural support services). Indirect effects represent the economic activity from businesses and organizations not traditionally thought of as agriculture-related (e.g., education, information, and insurance) though they may supply goods and services to agricultural businesses. Indirect effects are a basic response to agricultural activities and reflect the interdependence between businesses and industries throughout the economy. Induced effects simply reflect spending by households in the form of wages and salaries earned by employees.

Data for the direct effects and estimation of the indirect and induced effects came from a well-known input-output modeling system called Impact for Planning and Analysis (IMPLAN), which is updated annually by the IMPLAN Group LLC. IMPLAN is a computerized database and modeling system for constructing regional economic accounts and regional input-output tables. The IMPLAN 536 sector input-output model is based primarily on data from the U.S. Bureau of Economic Analysis, U.S. Bureau of Labor Statistics, U.S. Census Bureau, U.S. Department of Agriculture, and U.S. Geological Survey. This study used an input-output model constructed with IMPLAN software and the most recent 2019 IMPLAN data.

The total economic contribution of agriculture and forestry (direct, indirect, and induced) was estimated by removing these sectors from the modeled economy and comparing the resulting effects on the Mississippi economy. The difference represents the sectors' contribution to the rest of the economy, which is an estimate of how much economic activity is supported by these sectors. This procedure for estimating the economic contribution of an industry is explained in Henderson and Evans (2017).

This study combines the 544 sectors into 31 aggregated sectors—12 agriculture and forestry sectors and 19 sectors representing the rest of the Mississippi economy (Table A.1). The 12 agriculture and forestry production and processing sector groups include agriculture support activities, cattle and dairy, commercial fishing and wildlife, cotton farms, food and fiber products, soybean and grain farms, logging, other animal production (hogs, horses, aquaculture), other farms (vegetable and melon), poultry, wood and paper products, and wood furniture manufacturing. This procedure follows Barnett and Reinschmiedt (1996), who modeled the Mississippi economy using 45 aggregated sectors—26 food and fiber sectors and 18 non-food and non-fiber sectors.

The economic contribution of agriculture- and forestry-related sectors on Mississippi can be measured by four key statistics:

- employment: the number of full- and part-time jobs in the sector
- employee compensation: the wages paid by the sector
- output: the sector's total value of production
- value-added: total sector output minus the costs of purchased inputs

Value-added represents the amount of money made available for disbursement—in the form of wages, owner compensation, or taxes—as a result of the economic activity of the agricultural and forestry sectors.

Results

The agricultural and forestry production and processing sectors had a substantial combined total economic effect on the Mississippi economy as measured by jobs, employee compensation, total output, and value-added (Table 2). Values shown for all agriculture-related sectors indicate direct effects, while values for NAICS sectors 21–92 represent indirect and induced effects to the rest of the Mississippi economy that are attributable to agricultural and forestry production and processing in Mississippi.

Employment is the annual average number of full-time and part-time jobs in the private and public sectors. This measure represents those employed for wages as well as self-employed people. Agricultural and forestry activities contributed to an estimated total employment of 264,135 jobs in the state, or about 16.3 percent of all jobs in Mississippi.

Employee compensation is the annual monetary wages and salaries paid to employees and the self-employed and includes the value of benefits. Agricultural and forestry activities contributed an estimated \$11.7 billion, or 16.3 percent of the state's total employee compensation.

Output represents the total gross sales for goods and services throughout the state. In 2019, agricultural and forestry activities, including production and processing, directly and indirectly accounted for \$45.8 billion, or 17.3 percent of all economic activity in Mississippi.

Value-added is the residual value of a sector's outputs after it pays for its inputs. This performance measure avoids double-counting the value of an output from one sector that is used as an input in another sector. A sector's value-added is distributed as wages and salaries, rental payments, royalties from contracts, dividends from corporations, corporate profits, or indirect business taxes (such as property, excise, and sales taxes). In 2019, agricultural and forestry activities contributed \$18.1 billion in value-added, or 15.2 percent of new wealth generation in the state.

Agricultural and forestry production and processing also generate a considerable amount of tax revenue. The tax contribution of the food and fiber system includes tax revenue for federal, state, and local governments. The total tax contribution was estimated to be \$3.24 billion. The federal tax revenue contribution was estimated at \$2.19 billion, while the state and local government contribution equaled \$1.05 billion.

Summary

Agricultural and forestry production and processing is a \$45.8 billion industry in Mississippi. These production and processing industries provide a major economic contribution to the state economy, accounting for 16.3 percent of all jobs, 16.3 percent of wages and salaries, 17.3 percent of all sales, and 15.2 percent of value-added. Clearly, agriculture and forestry are important to the Mississippi economy.

References

- Barnett, B., & Reinschmiedt, L. (1996). *Agriculture and forestry in Mississippi: An analysis of the impacts of food and fiber related sectors on the Mississippi economy*. Agricultural Economics Technical Bulletin No. 95. Mississippi State University.
- IMPLAN Group LLC. IMPLAN System 2019. Huntersville, NC. IMPLAN.com
- Henderson, J. E., & Evans, G. K. (2017). *Single and multiple industry economic contribution analysis using IMPLAN*. Forest and Wildlife Research Center Research Bulletin FO468. Mississippi State University.

Table 1. Direct effects on Mississippi employment, compensation, output, and value-added of the aggregated industrial sectors (2019).*

Model Sectors	Employment	Wages and Salaries (\$MM)	Total Industry Output (\$MM)	Value-Added (\$MM)
Soybean and grain farms	5,248	612.62	1,258.82	542.64
Other farms	13,472	126.04	346.05	149.53
Cotton farms	5,335	222.32	541.14	263.44
Cattle and dairy	3,594	112.77	273.36	140.97
Poultry and egg	6,276	140.16	2,572.05	185.88
Aquaculture and other animal production	4,308	200.28	285.61	272.99
logging	14,274	849.04	1,224.75	758.59
Commercial fishing and wildlife	1,608	42.39	150.95	141.80
Agricultural and forestry support activities	7,661	288.41	324.66	259.19
Food and fiber products	33,080	1,420.43	10,721.91	2,251.35
Wood and paper products	13,523	865.76	5,804.98	1,795.21
Wood furniture manufacturing	15,603	746.25	2,796.47	856.38
All agriculture-related sectors	123,983	5,626.47	26,300.74	7,617.98
21 Mining	12,260	611.19	3,812.29	754.46
22 Utilities	9,375	1,029.97	9,212.62	3,518.43
23 Construction	91,395	4,062.75	11,069.76	4,994.78
31–33 Manufacturing	91,514	6,627.09	61,378.96	13,307.07
42 Wholesale trade	39,058	2,718.13	11,319.09	6,114.17
44–45 Retail trade	149,653	4,374.78	13,018.26	7,508.43
48–49 Transportation and warehousing	80,104	3,836.48	10,367.02	5,125.56
51 Information	13,859	706.69	7,310.54	2,434.44
52 Finance and insurance	57,626	2,668.08	14,410.39	5,667.85
53 Real estate and rental	56,366	1,017.63	21,565.72	13,955.98
54 Professional–scientific and tech services	70,265	3,940.17	9,113.60	4,717.83
55 Management of companies	13,021	1,157.75	2,559.81	1,373.35
56 Administrative and waste services	102,159	2,621.45	7,110.15	3,171.75
61 Educational services	19,426	600.06	1,074.88	670.33
62 Health and social services	162,497	8,523.46	16,194.84	9,439.94
71 Arts–entertainment and recreation	23,289	393.80	1,646.25	811.91
72 Accommodation and food services	144,905	3,001.59	9,972.25	5,013.01
81 Other services	110,005	3,731.29	7,967.23	4,351.91
92 Government and non-NAICs	249,099	14,701.21	19,200.13	18,061.44
All non-agriculture-related sectors	1,495,876	66,323.55	238,303.79	110,992.65
Total economy	1,619,859	71,950.02	264,604.53	118,610.63

*Values are expressed in 2019 dollars.

Table 2. Total effects of agricultural and forestry production and processing on Mississippi employment, wages, output, and value-added for the aggregated industrial sectors (2019).*

Model Sectors	Employment	Wages and Salaries (\$MM)	Total Industry Output (\$MM)	Value-Added (\$MM)
Soybean and grain farms	5,248	612.62	1,258.82	542.64
Other farms	13,472	126.04	346.05	149.53
Cotton farms	5,335	222.32	541.14	263.44
Cattle and dairy	3,594	112.77	273.36	140.97
Poultry and egg	6,276	140.16	2,572.05	185.88
Aquaculture and other animal production	4,308	200.28	285.61	272.99
Logging	14,274	849.04	1,224.75	758.59
Commercial fishing and wildlife	1,608	42.39	150.95	141.80
Agricultural and forestry support activities	7,661	288.41	324.66	259.19
Food and fiber products	33,080	1,420.43	10,721.91	2,251.35
Wood and paper products	13,523	865.76	5,804.98	1,795.21
Wood furniture manufacturing	15,603	746.25	2,796.47	856.38
All agriculture-related sectors	123,983	5,626.47	26,300.74	7,617.98
21 Mining	496	25.89	140.82	32.64
22 Utilities	822	87.27	770.68	294.50
23 Construction	7,926	351.90	975.84	434.79
31–33 Manufacturing	1,288	87.91	1,037.83	217.60
42 Wholesale trade	7,902	518.80	1,923.39	998.40
44–45 Retail trade	15,745	446.96	1,349.01	765.58
48–49 Transportation and warehousing	11,107	530.40	1,482.18	730.22
51 Information	1,279	64.96	557.29	191.36
52 Finance and insurance	6,359	299.13	1,611.68	640.05
53 Real estate and rental	7,063	124.71	2,724.11	1,752.24
54 Professional–scientific and tech services	6,804	373.81	860.14	452.55
55 Management of companies	2,090	185.84	410.90	220.45
56 Administrative and waste services	9,778	249.41	661.83	301.72
61 Educational services	1,824	57.14	101.74	63.02
62 Health and social services	16,890	925.46	1,725.17	1,021.02
71 Arts–entertainment and recreation	1,989	28.44	122.41	55.37
72 Accommodation and food services	11,892	224.59	749.69	365.69
81 Other services	8,566	293.37	653.86	376.69
92 Government and non-NAICs	20,334	1,238.53	1,650.90	1,538.09
Total indirect and induced	140,152	6,114.52	19,509.49	10,451.97
Total contribution	264,135	11,741.00	45,810.23	18,069.95

*Values are expressed in 2019 dollars.

Table A.1. Aggregation scheme of commercial sectors used for IMPLAN input-output analysis of agricultural and forestry production and processing on the Mississippi economy (2019).

Model Sectors	Original IMPLAN Sectors
Soybean farms	1 Oilseed farming
Grain farms	2 Grain farming
Other farms	3 Vegetable and melon farming; 4 Fruit farming; 5 Tree nut farming; 6 Greenhouse, nursery, and floriculture production; 7 Tobacco farming; 9 Sugarcane and sugar beet farming; 10 All other crop farming
Cotton farms	8 Cotton farming
Cattle and dairy	11 Cattle ranching and farming; 12 Dairy cattle and milk production
Poultry and egg	13 Poultry and egg production
Aquaculture and other animal production	14 Animal production, except cattle and poultry and eggs
Logging	15 Forestry, forest products, and timber tract production; 16 Commercial logging
Commercial fishing and wildlife	17 Commercial fishing; 18 Commercial hunting and trapping
Agricultural and forestry support activities	19 Support activities for agriculture and forestry
Food and fiber products	63 Dog and cat food manufacturing; 64 Other animal food manufacturing; 65 Flour milling; 66 Rice milling; 67 Malt manufacturing; 68 Wet corn milling; 69 Soybean and other oilseed processing; 70 Fats and oils refining and blending; 71 Breakfast cereal manufacturing; 72 Beet sugar manufacturing; 73 Sugar cane mills and refining; 74 Nonchocolate confectionery manufacturing; 75 Chocolate and confectionery manufacturing from cacao beans; 76 Confectionery manufacturing from purchased chocolate; 77 Frozen fruits, juices and vegetables manufacturing; 78 Frozen specialties manufacturing; 79 Canned fruits and vegetables manufacturing; 80 Canned specialties; 81 Dehydrated food products manufacturing; 82 Cheese manufacturing; 83 Dry, condensed, and evaporated dairy product manufacturing; 84 Fluid milk manufacturing; 85 Creamery butter manufacturing; 86 Ice cream and frozen dessert manufacturing; 87 Frozen cakes and other pastries manufacturing; 88 Poultry processing; 89 Animal, except poultry, slaughtering; 90 Meat processed from carcasses; 91 Rendering and meat byproduct processing; 92 Seafood product preparation and packaging; 93 Bread and bakery product, except frozen, manufacturing; 94 Cookie and cracker manufacturing; 95 Dry pasta, mixes, and dough manufacturing; 96 Tortilla manufacturing; 97 Roasted nuts and peanut butter manufacturing; 98 Other snack food manufacturing; 99 Coffee and tea manufacturing; 100 Flavoring syrup and concentrate manufacturing; 101 Mayonnaise, dressing, and sauce manufacturing; 102 Spice and extract manufacturing; 103 All other food manufacturing; 104 Bottled and canned soft drinks & water; 105 Manufactured ice; 106 Breweries; 107 Wineries; 108 Distilleries; 109 Tobacco product manufacturing; 110 Fiber, yarn, and thread mills; 111 Broadwoven fabric mills; 112 Narrow fabric mills and schiffli machine embroidery; 113 Nonwoven fabric mills; 114 Knit fabric mills; 115 Textile and fabric finishing mills; 116 Fabric coating mills; 117 Carpet and rug mills; 118 Curtain and linen mills; 119 Textile bag and canvas mills; 120 Rope, cordage, twine, tire cord and tire fabric mills; 121 Other textile product mills; 122 Hosiery and sock mills; 123 Other apparel knitting mills; 124 Cut and sew apparel contractors; 125 Mens and boys cut and sew apparel manufacturing; 126 Womens and girls cut and sew apparel manufacturing; 127 Other cut and sew apparel manufacturing; 128 Apparel accessories and other apparel manufacturing; 129 Leather and hide tanning and finishing; 130 Footwear manufacturing; 131 Other leather and allied product manufacturing
Wood and paper products	132 Sawmills; 133 Wood preservation; 134 Veneer and plywood manufacturing; 135 Engineered wood member and truss manufacturing; 136 Reconstituted wood product manufacturing; 137 Wood windows and door manufacturing; 138 Cut stock, resawing lumber, and planing; 139 Other millwork, including flooring; 140 Wood container and pallet manufacturing; 142 Prefabricated wood building manufacturing; 143 All other miscellaneous wood product manufacturing; 144 Pulp mills; 145 Paper mills; 146 Paperboard mills; 147 Paperboard container manufacturing; 148 Paper bag and coated and treated paper manufacturing; 149 Stationery product manufacturing; 150 Sanitary paper product manufacturing; 151 All other converted paper product manufacturing
Wood furniture manufacturing	365 Wood kitchen cabinet and countertop manufacturing; 366 Upholstered household furniture manufacturing; 367 Nonupholstered wood household furniture manufacturing; 370 Wood office furniture manufacturing; 371 Custom architectural woodwork and millwork
Mining	20 Oil and gas extraction; 21 Coal mining; 22 Copper, nickel, lead, and zinc mining; 23 Iron ore mining; 24 Gold ore mining; 25 Silver ore mining; 26 Uranium-radium-vanadium ore mining; 27 Other metal ore mining; 28 Stone mining and quarrying; 29 Sand and gravel mining; 30 Other clay, ceramic, refractory minerals mining; 31 Potash, soda, and borate mineral mining; 32 Phosphate rock mining; 33 Other chemical and fertilizer mineral mining; 34 Other nonmetallic minerals; 35 Drilling oil and gas wells; 36 Support activities for oil and gas operations; 37 Metal mining services; 38 Other nonmetallic minerals services
Utilities	39 Electric power generation - Hydroelectric; 40 Electric power generation - Fossil fuel; 41 Electric power generation - Nuclear; 42 Electric power generation - Solar; 43 Electric power generation - Wind; 44 Electric power generation - Geothermal; 45 Electric power generation - Biomass; 46 Electric power generation - All other; 47 Electric power transmission and distribution; 48 Natural gas distribution; 49 Water, sewage and other systems; 527 Federal electric utilities; 530 State government electric utilities; 533 Local government electric utilities

Model Sectors	Original IMPLAN Sectors
Construction	50 Construction of new health care structures; 51 Construction of new manufacturing structures; 52 Construction of new power and communication structures; 53 Construction of new educational and vocational structures; 54 Construction of new highways and streets; 55 Construction of new commercial structures, including farm structures; 56 Construction of other new nonresidential structures; 57 Construction of new single-family residential structures; 58 Construction of new multifamily residential structures; 59 Construction of other new residential structures; 60 Maintenance and repair construction of nonresidential structures; 61 Maintenance and repair construction of residential structures; 62 Maintenance and repair construction of highways, streets, bridges, and tunnels
Manufacturing	141 Manufactured home (mobile home) manufacturing; 152 Printing; 153 Support activities for printing; 154 Petroleum refineries; 155 Asphalt paving mixture and block manufacturing; 156 Asphalt shingle and coating materials manufacturing; 157 Petroleum lubricating oil and grease manufacturing; 158 All other petroleum and coal products manufacturing; 159 Petrochemical manufacturing; 160 Industrial gas manufacturing; 161 Synthetic dye and pigment manufacturing; 162 Other basic inorganic chemical manufacturing; 163 Other basic organic chemical manufacturing; 164 Plastics material and resin manufacturing; 165 Synthetic rubber manufacturing; 166 Artificial and synthetic fibers and filaments manufacturing; 167 Nitrogenous fertilizer manufacturing; 168 Phosphatic fertilizer manufacturing; 169 Fertilizer mixing; 170 Pesticide and other agricultural chemical manufacturing; 171 Medicinal and botanical manufacturing; 172 Pharmaceutical preparation manufacturing; 173 In-vitro diagnostic substance manufacturing; 174 Biological product (except diagnostic) manufacturing; 175 Paint and coating manufacturing; 176 Adhesive manufacturing; 177 Soap and other detergent manufacturing; 178 Polish and other sanitation good manufacturing; 179 Surface active agent manufacturing; 180 Toilet preparation manufacturing; 181 Printing ink manufacturing; 182 Explosives manufacturing; 183 Custom compounding of purchased resins; 184 Photographic film and chemical manufacturing; 185 Other miscellaneous chemical product manufacturing; 186 Plastics packaging materials and unlaminated film and sheet manufacturing; 187 Unlaminated plastics profile shape manufacturing; 188 Plastics pipe and pipe fitting manufacturing; 189 Laminated plastics plate, sheet (except packaging), and shape manufacturing; 190 Polystyrene foam product manufacturing; 191 Urethane and other foam product (except polystyrene) manufacturing; 192 Plastics bottle manufacturing; 193 Other plastics product manufacturing; 194 Tire manufacturing; 195 Rubber and plastics hoses and belting manufacturing; 196 Other rubber product manufacturing; 197 Pottery, ceramics, and plumbing fixture manufacturing; 198 Brick, tile, and other structural clay product manufacturing; 199 Flat glass manufacturing; 200 Other pressed and blown glass and glassware manufacturing; 201 Glass container manufacturing; 202 Glass product manufacturing made of purchased glass; 203 Cement manufacturing; 204 Ready-mix concrete manufacturing; 205 Concrete block and brick manufacturing; 206 Concrete pipe manufacturing; 207 Other concrete product manufacturing; 208 Lime manufacturing; 209 Gypsum product manufacturing; 210 Abrasive product manufacturing; 211 Cut stone and stone product manufacturing; 212 Ground or treated mineral and earth manufacturing; 213 Mineral wool manufacturing; 214 Miscellaneous nonmetallic mineral products manufacturing; 215 Iron and steel mills and ferroalloy manufacturing; 216 Iron, steel pipe and tube manufacturing from purchased steel; 217 Rolled steel shape manufacturing; 218 Steel wire drawing; 219 Alumina refining and primary aluminum production; 220 Secondary smelting and alloying of aluminum; 221 Aluminum sheet, plate, and foil manufacturing; 222 Other aluminum rolling, drawing and extruding; 223 Nonferrous metal (exc aluminum) smelting and refining; 224 Copper rolling, drawing, extruding and alloying; 225 Nonferrous metal, except copper and aluminum, shaping; 226 Secondary processing of other nonferrous metals; 227 Ferrous metal foundries; 228 Nonferrous metal foundries; 229 Custom roll forming; 230 Crown and closure manufacturing and metal stamping; 231 Iron and steel forging; 232 Nonferrous forging; 233 Cutlery, utensil, pot, and pan manufacturing; 234 Handtool manufacturing; 235 Prefabricated metal buildings and components manufacturing; 236 Fabricated structural metal manufacturing; 237 Plate work manufacturing; 238 Metal window and door manufacturing; 239 Sheet metal work manufacturing; 240 Ornamental and architectural metal work manufacturing; 241 Power boiler and heat exchanger manufacturing; 242 Metal tank (heavy gauge) manufacturing; 243 Metal cans manufacturing; 244 Metal barrels, drums and pails manufacturing; 245 Hardware manufacturing; 246 Spring and wire product manufacturing; 247 Machine shops; 248 Turned product and screw, nut, and bolt manufacturing; 249 Metal heat treating; 250 Metal coating and nonprecious engraving; 251 Electroplating, anodizing, and coloring metal; 252 Valve and fittings, other than plumbing, manufacturing; 253 Plumbing fixture fitting and trim manufacturing; 254 Ball and roller bearing manufacturing; 255 Small arms ammunition manufacturing; 256 Ammunition, except for small arms, manufacturing; 257 Small arms, ordnance, and accessories manufacturing; 258 Fabricated pipe and pipe fitting manufacturing; 259 Other fabricated metal manufacturing; 260 Farm machinery and equipment manufacturing; 261 Lawn and garden equipment manufacturing; 262 Construction machinery manufacturing; 263 Mining machinery and equipment manufacturing; 264 Oil and gas field machinery and equipment manufacturing; 265 Semiconductor machinery manufacturing; 266 Food product machinery manufacturing; 267 Sawmill, woodworking, and paper machinery; 268 Printing machinery and equipment manufacturing; 269 All other industrial machinery manufacturing; 270 Optical instrument and lens manufacturing; 271 Photographic and photocopying equipment manufacturing; 272 Other commercial service industry machinery manufacturing; 273 Air purification and ventilation equipment manufacturing; 274 Heating equipment (except warm air furnaces) manufacturing; 275 Air conditioning, refrigeration, and warm air heating equipment manufacturing; 276 Industrial mold manufacturing; 277 Special tool, die, jig, and fixture manufacturing; 278 Cutting tool and machine tool accessory manufacturing; 279 Machine tool manufacturing; 280 Rolling mill and other metalworking machinery manufacturing; 281 Turbine and turbine generator set units manufacturing; 282 Speed changer, industrial high-speed drive, and gear manufacturing; 283 Mechanical power transmission equipment manufacturing; 284 Other engine equipment manufacturing; 285 Pump and pumping equipment manufacturing; 286 Air and gas compressor manufacturing; 287 Elevator and moving stairway manufacturing; 288 Conveyor and conveying equipment manufacturing; ; 289 Overhead cranes, hoists, and monorail systems manufacturing; 290 Industrial truck, trailer, and stacker manufacturing; 291 Power-driven handtool manufacturing; 292 Welding and soldering equipment manufacturing; 293 Packaging machinery manufacturing; 294 Industrial process furnace and oven manufacturing; 295 Fluid power cylinder and actuator manufacturing; 296 Fluid power pump and motor manufacturing; 297 Scales, balances, and miscellaneous general purpose machinery manufacturing; 298 Electronic computer manufacturing; 299 Computer storage device manufacturing; 300 Computer terminals and other computer peripheral equipment manufacturing; 301 Telephone apparatus manufacturing; 302 Broadcast and wireless communications equipment manufacturing; 303 Other communications equipment manufacturing; 304 Audio and video equipment manufacturing;

Model Sectors	Original IMPLAN Sectors
Manufacturing (continued)	305 Printed circuit assembly (electronic assembly) manufacturing; 306 Bare printed circuit board manufacturing; 307 Semiconductor and related device manufacturing; 308 Capacitor, resistor, coil, transformer, and other inductor manufacturing; 309 Electronic connector manufacturing; 310 Other electronic component manufacturing; 311 Electromedical and electrotherapeutic apparatus manufacturing; 312 Search, detection, and navigation instruments manufacturing; 313 Automatic environmental control manufacturing; 314 Industrial process variable instruments manufacturing; 315 Totalizing fluid meter and counting device manufacturing; 316 Electricity and signal testing instruments manufacturing; 317 Analytical laboratory instrument manufacturing; 318 Irradiation apparatus manufacturing; 319 Watch, clock, and other measuring and controlling device manufacturing; 320 Blank magnetic and optical recording media manufacturing; 321 Software and other prerecorded and record reproducing; 322 Electric lamp bulb and part manufacturing; 323 Lighting fixture manufacturing; 324 Small electrical appliance manufacturing; 325 Household cooking appliance manufacturing; 326 Household refrigerator and home freezer manufacturing; 327 Household laundry equipment manufacturing; 328 Other major household appliance manufacturing; 329 Power, distribution, and specialty transformer manufacturing; 330 Motor and generator manufacturing; 331 Switchgear and switchboard apparatus manufacturing; 332 Relay and industrial control manufacturing; 333 Storage battery manufacturing; 334 Primary battery manufacturing; 335 Fiber optic cable manufacturing; 336 Other communication and energy wire manufacturing; 337 Wiring device manufacturing; 338 Carbon and graphite product manufacturing; 339 All other miscellaneous electrical equipment and component manufacturing; 340 Automobile manufacturing; 341 Light truck and utility vehicle manufacturing; 342 Heavy duty truck manufacturing; 343 Motor vehicle body manufacturing; 344 Truck trailer manufacturing; 345 Motor home manufacturing; 346 Travel trailer and camper manufacturing; 347 Motor vehicle gasoline engine and engine parts manufacturing; 348 Motor vehicle electrical and electronic equipment manufacturing; 349 Motor vehicle transmission and power train parts manufacturing; 350 Motor vehicle seating and interior trim manufacturing; 351 Motor vehicle metal stamping; 352 Other motor vehicle parts manufacturing; 353 Motor vehicle steering, suspension component (except spring), and brake systems manufacturing; 354 Aircraft manufacturing; 355 Aircraft engine and engine parts manufacturing; 356 Other aircraft parts and auxiliary equipment manufacturing; 357 Guided missile and space vehicle manufacturing; 358 Propulsion units and parts for space vehicles and guided missiles manufacturing; 359 Railroad rolling stock manufacturing; 360 Ship building and repairing; 361 Boat building; 362 Motorcycle, bicycle, and parts manufacturing; 363 Military armored vehicle, tank, and tank component manufacturing; 364 All other transportation equipment manufacturing; 368 Other household nonupholstered furniture manufacturing; 369 Institutional furniture manufacturing; 372 Office furniture, except wood, manufacturing; 373 Showcase, partition, shelving, and locker manufacturing; 374 Mattress manufacturing; 375 Blind and shade manufacturing; 376 Surgical and medical instrument manufacturing; 377 Surgical appliance and supplies manufacturing; 378 Dental equipment and supplies manufacturing; 379 Ophthalmic goods manufacturing; 380 Dental laboratories; 381 Jewelry and silverware manufacturing; 382 Sporting and athletic goods manufacturing; 383 Doll, toy, and game manufacturing; 384 Office supplies (except paper) manufacturing; 385 Sign manufacturing; 386 Gasket, packing, and sealing device manufacturing; 387 Musical instrument manufacturing; 388 Fasteners, buttons, needles, and pins manufacturing; 389 Broom, brush, and mop manufacturing; 390 Burial casket manufacturing; 391 All other miscellaneous manufacturing
Wholesale trade	392 Wholesale - Motor vehicle and motor vehicle parts and supplies; 393 Wholesale - Professional and commercial equipment and supplies; 394 Wholesale - Household appliances and electrical and electronic goods; 395 Wholesale - Machinery, equipment, and supplies; 396 Wholesale - Other durable goods merchant wholesalers; 397 Wholesale - Drugs and druggists' sundries; 398 Wholesale - Grocery and related product wholesalers; 399 Wholesale - Petroleum and petroleum products; 400 Wholesale - Other nondurable goods merchant wholesalers; 401 Wholesale - Wholesale electronic markets and agents and brokers
Retail trade	402 Retail - Motor vehicle and parts dealers; 403 Retail - Furniture and home furnishings stores; 404 Retail - Electronics and appliance stores; 405 Retail - Building material and garden equipment and supplies stores; 406 Retail - Food and beverage stores; 407 Retail - Health and personal care stores; 408 Retail - Gasoline stores; 409 Retail - Clothing and clothing accessories stores; 410 Retail - Sporting goods, hobby, musical instrument and book stores; 411 Retail - General merchandise stores; 412 Retail - Miscellaneous store retailers; 413 Retail - Nonstore retailers
Transportation and warehousing	414 Air transportation; 415 Rail transportation; 416 Water transportation; 417 Truck transportation; 418 Transit and ground passenger transportation; 419 Pipeline transportation; 420 Scenic and sightseeing transportation and support activities for transportation; 421 Couriers and messengers; 422 Warehousing and storage; 526 Postal service; 529 State government passenger transit; 532 Local government passenger transit
Information	423 Newspaper publishers; 424 Periodical publishers; 425 Book publishers; 426 Directory, mailing list, and other publishers; 427 Greeting card publishing; 428 Software publishers; 429 Motion picture and video industries; 430 Sound recording industries; 431 Radio and television broadcasting; 432 Cable and other subscription programming; 433 Wired telecommunications carriers; 434 Wireless telecommunications carriers (except satellite); 435 Satellite, telecommunications resellers, and all other telecommunications; 436 Data processing, hosting, and related services; 437 News syndicates, libraries, archives and all other information services; 438 Internet publishing and broadcasting and web search portals
Finance and insurance	439 Nondepository credit intermediation and related activities; 440 Securities and commodity contracts intermediation and brokerage; 441 Monetary authorities and depository credit intermediation; 442 Other financial investment activities; 443 Direct life insurance carriers; 444 Insurance carriers, except direct life; 445 Insurance agencies, brokerages, and related activities; 446 Funds, trusts, and other financial vehicles
Real estate and rental	447 Other real estate; 448 Tenant-occupied housing; 449 Owner-occupied dwellings; 450 Automotive equipment rental and leasing; 451 General and consumer goods rental except video tapes and discs; 452 Video tape and disc rental; 453 Commercial and industrial machinery and equipment rental and leasing; 454 Lessors of nonfinancial intangible assets
Professional–scientific and tech services	455 Legal services; 456 Accounting, tax preparation, bookkeeping, and payroll services; 457 Architectural, engineering, and related services; 458 Specialized design services; 459 Custom computer programming services; 460 Computer systems design services; 461 Other computer related services, including facilities management; 462 Management consulting services; 463 Environmental and other technical consulting services; 464 Scientific research and development services; 465 Advertising, public relations, and related services; 466 Photographic services; 467 Veterinary services; 468 Marketing research and all other miscellaneous professional, scientific, and technical services

Model Sectors	Original IMPLAN Sectors
Management of companies	469 Management of companies and enterprises
Administrative and waste services	470 Office administrative services; 471 Facilities support services; 472 Employment services; 473 Business support services; 474 Travel arrangement and reservation services; 475 Investigation and security services; 476 Services to buildings; 477 Landscape and horticultural services; 478 Other support services; 479 Waste management and remediation services
Educational services	480 Elementary and secondary schools; 481 Junior colleges, colleges, universities, and professional schools; 482 Other educational services
Health and social services	483 Offices of physicians; 484 Offices of dentists; 485 Offices of other health practitioners; 486 Outpatient care centers; 487 Medical and diagnostic laboratories; 488 Home health care services; 489 Other ambulatory health care services; 490 Hospitals; 491 Nursing and community care facilities; 492 Residential mental retardation, mental health, substance abuse and other facilities; 493 Individual and family services; 494 Child day care services; 495 Community food, housing, and other relief services, including rehabilitation services
Arts—entertainment and recreation	496 Performing arts companies; 497 Commercial Sports Except Racing; 498 Racing and Track Operation; 499 Independent artists, writers, and performers; 500 Promoters of performing arts and sports and agents for public figures; 501 Museums, historical sites, zoos, and parks; 502 Amusement parks and arcades; 503 Gambling industries (except casino hotels); 504 Other amusement and recreation industries; 505 Fitness and recreational sports centers; 506 Bowling centers
Accommodation and food services	507 Hotels and motels, including casino hotels; 508 Other accommodations; 509 Full-service restaurants; 510 Limited-service restaurants; 511 All other food and drinking places
Other services	512 Automotive repair and maintenance, except car washes; 513 Car washes; 514 Electronic and precision equipment repair and maintenance; 515 Commercial and industrial machinery and equipment repair and maintenance; 516 Personal and household goods repair and maintenance; 517 Personal care services; 518 Death care services; 519 Dry-cleaning and laundry services; 520 Other personal services; 521 Religious organizations; 522 Grantmaking, giving, and social advocacy organizations; 523 Business and professional associations; 524 Labor and civic organizations; 525 Private households
Government and non-NAICs	528 Other federal government enterprises; 531 Other state government enterprises; 534 Other local government enterprises; 535 * Not an industry (Used and secondhand goods); 536 * Not an industry (Scrap); 537 * Not an industry (Rest of world adjustment); 538 * Not an industry (Noncomparable foreign imports); 539 * Employment and payroll of state govt, education; 540 * Employment and payroll of state govt, non-education; 541 * Employment and payroll of local govt, education; 542 * Employment and payroll of local govt, non-education; 543 * Employment and payroll of federal govt, military; 544 * Employment and payroll of federal govt, non-military

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