

# **Economic Impact Analysis**

## **The Manufacturing Industry Sector in Bay, Calhoun, Escambia, Franklin, Gulf, Holmes, Jackson, Liberty, Okaloosa, Santa Rosa, Walton, and Washington Counties**

**Florida Department of Economic Opportunity  
Bureau of Labor Market Statistics  
August 8, 2013**

107 East Madison Street  
Caldwell Building  
Tallahassee, Florida 32399  
[www.floridajobs.org](http://www.floridajobs.org)



## Overview

The purpose of this study is to determine the economic impact of the existing manufacturing industry sector in the 12-county area comprised of Bay, Calhoun, Escambia, Franklin, Gulf, Holmes, Jackson, Liberty, Okaloosa, Santa Rosa, Walton, and Washington counties. This analysis is concerned with the impact of an entire industry's existence in a region, rather than impacts resulting from changes to industries in the region. In the 12-county region in 2013, the private manufacturing industry sector contributed 31,581 total jobs; \$1,587,858,597 in total labor income; \$2,587,056,974 in total value added; and \$7,965,021,776 in total output (sales) in 2013 dollars.

## Results

All private manufacturing effects are presented for the year 2013. Values displayed below may not add up to the totals due to rounding. All dollar values are in 2013 dollars.

The manufacturing industry sector directly contributes 14,518 jobs to the 12-county region in 2013, which results in an additional gain of 9,743 jobs in local businesses. In addition, another 7,319 jobs in the region are gained due to increased household sector demand. The direct 14,518 jobs result in a total of 31,581 jobs.

Expressed in terms of a multiplier, for every job in manufacturing, another 1.175 jobs are generated in the region, for a total of 2.175 jobs.

The total 2013 labor income contribution from manufacturing in the region is \$1,587,858,597. The direct labor income contribution from manufacturing amounts to \$985,365,955. An additional \$355,277,404 in labor income arises indirectly and another \$247,215,239 results from increased household demand.

Value added represents the region's gross domestic product (GDP). The 12-county region is estimated to receive \$2,587,056,974 in total 2013 GDP from manufacturing. Of this total, \$1,439,903,868 results directly from manufacturing and an additional \$644,050,338 and \$503,102,768 in indirect and induced effects are generated.

Manufacturing's total contribution to output, or industry sales, in the region is \$7,965,021,776. Direct manufacturing output amounts to \$5,921,508,275 with additional indirect and induced output of \$1,200,712,377 and \$842,801,124 being generated in the region.

## 2013 Manufacturing Industry Sector Contributions (2013 \$)

Impact Type	Employment	Labor Income	Value Added	Output
Direct Effect	14,518	\$985,365,955	\$1,439,903,868	\$5,921,508,275
Indirect Effect	9,743	\$355,277,404	\$644,050,338	\$1,200,712,377
Induced Effect	7,319	\$247,215,239	\$503,102,768	\$842,801,124
Total Effect	31,581	\$1,587,858,597	\$2,587,056,974	\$7,965,021,776
Multipliers	2.175	1.611	1.797	1.345

Source: MIG, Inc., IMPLAN System (data and software), 502 2nd Street, Suite 301, Hudson, WI 54016 [www.implan.com](http://www.implan.com)

## Methodology

This economic impact study uses IMPLAN V3 economic modeling software with 2011 base year data. **MIG, Inc** (formerly **Minnesota IMPLAN Group, Inc.**) is the sole-source provider of the IMPLAN® (**IM**ppact analysis for **PLAN**ning) economic impact modeling system. IMPLAN is used to create complete, extremely detailed multi-regional Social Accounting Matrices (SAMs) and multiplier models of economies ranging from national to state, county or ZIP-Code levels. The IMPLAN system uses input-output analysis. Input-output analysis is a means of examining relationships within an economy, both between businesses and between businesses and final consumers. It captures all monetary market transactions for consumption in a given time period. The resulting mathematical formula allows for examinations of the effects of a change in one or several economic activities on an entire economy (impact analysis).

The manufacturing industry sector, as it is defined in the North American Industry Classification System (NAICS), is comprised of 473 detailed industries. There are a total of 278 IMPLAN manufacturing industries which match to individual NAICS manufacturing industries or groups of manufacturing industries. Of these 278 IMPLAN industries, 111 were found to not exist in the study area. This left 167 usable IMPLAN industries for this study. A detailed list of all of the included and excluded industries can be found in the appendix.

After identifying the industries in the model, adjustments were made to the commodity production and trade flow variables for each of the 167 included manufacturing industries to prevent them from having interactions with themselves. This limits the effects within manufacturing industries to direct effects only. This step is necessary because in industry contribution analysis, the direct effect values for employment, labor income, value added, and output represent the total values that exist in the industry. In studies where one or more establishments within an industry are being affected in some way, intra-industry interactions are allowable. When the entity being affected is the entire industry itself, these interactions are not permitted. Additional effects in nonmanufacturing industries are still permissible and arise from interaction with the manufacturing industries. The additional effects in nonmanufacturing industries count toward the overall contribution of the manufacturing

industry sector to the area. The goal of all of these adjustments is to keep the final manufacturing contribution from being overstated.

Having made the needed adjustments, the study area output for each of the manufacturing industries was found and entered as a change in industry sales for each manufacturing industry. The resulting effects from these output changes to manufacturing industries in the 12-county region are presented in aggregate as the contribution of the private manufacturing industry sector to the region in terms of employment, labor income, value added, and output. All variables measured in dollars were converted into 2013 dollar values.

# Appendix

## IMPLAN Manufacturing Industries in the Study Area

IMPLAN Industry	Corresponding NAICS
Dog and cat food manufacturing	311111
Other animal food manufacturing	311119
Flour milling and malt manufacturing	31121
Confectionery manufacturing from purchased chocolate	31133
Nonchocolate confectionery manufacturing	31134
Frozen food manufacturing	31141
Ice cream and frozen dessert manufacturing	311520
Animal (except poultry) slaughtering, rendering, and processing	311611-3
Seafood product preparation and packaging	3117
Bread and bakery product manufacturing	31181
Tortilla manufacturing	31183
Snack food manufacturing	31191
Seasoning and dressing manufacturing	31194
All other food manufacturing	31199
Soft drink and ice manufacturing	31211
Breweries	31212
Broadwoven fabric mills	31321
Narrow fabric mills and schiffli machine embroidery	31322
Nonwoven fabric mills	31323
Textile and fabric finishing mills	31331
Carpet and rug mills	31411
Curtain and linen mills	31412
Textile bag and canvas mills	31491
All other textile product mills	31499
Cut and sew apparel contractors	31521
Men's and boys' cut and sew apparel manufacturing	31522
Apparel accessories and other apparel manufacturing	3159
Other leather and allied product manufacturing	3169
Sawmills and wood preservation	3211
Veneer and plywood manufacturing	321211-2
Engineered wood member and truss manufacturing	321213-4
Wood windows and doors and millwork	32191
Wood container and pallet manufacturing	32192
Prefabricated wood building manufacturing	321992
All other miscellaneous wood product manufacturing	321999
Paper mills	32212
Paperboard container manufacturing	32221
Coated and laminated paper, packaging paper and plastics film manufacturing	322221-2
All other paper bag and coated and treated paper manufacturing	322223-6
Stationery product manufacturing	32223
Sanitary paper product manufacturing	322291
Printing	32311☐
Support activities for printing	32312
Asphalt paving mixture and block manufacturing	324121

## Included Industries Continued

<b>IMPLAN Industry</b>	<b>Corresponding NAICS</b>
Petroleum lubricating oil and grease manufacturing	324191
All other petroleum and coal products manufacturing	324199
Industrial gas manufacturing	32512
All other basic inorganic chemical manufacturing	325188
Other basic organic chemical manufacturing	32519
Plastics material and resin manufacturing	325211
Synthetic rubber manufacturing	325212
Artificial and synthetic fibers and filaments manufacturing	32522
Pharmaceutical preparation manufacturing	325412
Paint and coating manufacturing	32551
Soap and cleaning compound manufacturing	32561
All other chemical product and preparation manufacturing	32592, 32599
Plastics packaging materials and unlaminated film and sheet manufacturing	32611
Unlaminated plastics profile shape manufacturing	326121
Plastics pipe and pipe fitting manufacturing	326122
Polystyrene foam product manufacturing	32614
Other plastics product manufacturing	32619
Other rubber product manufacturing	32629
Pottery, ceramics, and plumbing fixture manufacturing	32711
Glass product manufacturing made of purchased glass	327215
Ready-mix concrete manufacturing	32732
Concrete pipe, brick, and block manufacturing	32733
Other concrete product manufacturing	32739
Lime and gypsum product manufacturing	3274
Cut stone and stone product manufacturing	327991
Mineral wool manufacturing	327993
Iron and steel mills and ferroalloy manufacturing	3311
Steel product manufacturing from purchased steel	33121, 33122
Aluminum product manufacturing from purchased aluminum	331315, 331316, 331319
Copper rolling, drawing, extruding and alloying	33142
Nonferrous metal (except copper and aluminum) rolling, drawing, extruding and alloying	33149
Ferrous metal foundries	33151
All other forging, stamping, and sintering	332111-2, 332117
Crown and closure manufacturing and metal stamping	332115-6
Cutlery, utensil, pot, and pan manufacturing	332211, 332214
Plate work and fabricated structural product manufacturing	33231
Ornamental and architectural metal products manufacturing	33232
Power boiler and heat exchanger manufacturing	33241
Metal tank (heavy gauge) manufacturing	33242
Metal can, box, and other metal container (light gauge) manufacturing	33243
Arms, ordnance, and accessories manufacturing	332994-5
Spring and wire product manufacturing	3326
Machine shops	33271
Turned product and screw, nut, and bolt manufacturing	33272

## Included Industries Continued

<b>IMPLAN Industry</b>	<b>Corresponding NAICS</b>
Coating, engraving, heat treating and allied activities	3328
Valve and fittings other than plumbing	332911-2, 332919
Plumbing fixture fitting and trim manufacturing	332913
Fabricated pipe and pipe fitting manufacturing	332996
Other fabricated metal manufacturing	332997-9
Lawn and garden equipment manufacturing	333112
Other industrial machinery manufacturing	33321, 333291-4, 333298
Plastics and rubber industry machinery manufacturing	33322
Vending, commercial, industrial, and office machinery manufacturing	333311-3
Other commercial and service industry machinery manufacturing	333319
Heating equipment (except warm air furnaces) manufacturing	333414
Air conditioning, refrigeration, and warm air heating equipment manufacturing	333415
Industrial mold manufacturing	333511
Metal cutting and forming machine tool manufacturing	333512-3
Special tool, die, jig, and fixture manufacturing	333514
Turbine and turbine generator set units manufacturing	333611
Pump and pumping equipment manufacturing	333911, 333913
Material handling equipment manufacturing	333921-4
Power-driven handtool manufacturing	333991
Other general purpose machinery manufacturing	333992, 333997, 333999
Electronic computer manufacturing	334111
Computer storage device manufacturing	334112
Computer terminals and other computer peripheral equipment manufacturing	334113, 334119
Broadcast and wireless communications equipment	33422
Other communications equipment manufacturing	33429
Electron tube manufacturing	334411
Bare printed circuit board manufacturing	334412
Printed circuit assembly (electronic assembly) manufacturing	334418
Other electronic component manufacturing	334419
Electromedical and electrotherapeutic apparatus manufacturing	334510
Search, detection, and navigation instruments manufacturing	334511
Automatic environmental control manufacturing	334512
Industrial process variable instruments manufacturing	334513
Totalizing fluid meters and counting devices manufacturing	334514
Electricity and signal testing instruments manufacturing	334515
Analytical laboratory instrument manufacturing	334516
Software, audio, and video media reproducing	334611-2
Lighting fixture manufacturing	33512
Power, distribution, and specialty transformer manufacturing	335311
Motor and generator manufacturing	335312
Relay and industrial control manufacturing	335314
Communication and energy wire and cable manufacturing	33592
Wiring device manufacturing	33593
All other miscellaneous electrical equipment and component manufacturing	335999

## Included Industries Continued

<b>IMPLAN Industry</b>	<b>Corresponding NAICS</b>
Automobile manufacturing	336111
Truck trailer manufacturing	336212
Travel trailer and camper manufacturing	336214
Motor vehicle parts manufacturing	3363
Aircraft manufacturing	336411
Aircraft engine and engine parts manufacturing	336412
Other aircraft parts and auxiliary equipment manufacturing	336413
Guided missile and space vehicle manufacturing	336414
Propulsion units and parts for space vehicles and guided missiles	336415, 336419
Railroad rolling stock manufacturing	3365
Ship building and repairing	336611
Boat building	336612
Motorcycle, bicycle, and parts manufacturing	336991
All other transportation equipment manufacturing	336999
Wood kitchen cabinet and countertop manufacturing	33711
Upholstered household furniture manufacturing	337121
Nonupholstered wood household furniture manufacturing	337122
Metal and other household furniture (except wood) manufacturing <sup>1</sup>	337124-5
Institutional furniture manufacturing	337127
Wood television, radio, and sewing machine cabinet manufacturing <sup>1</sup>	337129
Office furniture and custom architectural woodwork and millwork manufacturing <sup>1</sup>	337211, 337212, 337214
Showcase, partition, shelving, and locker manufacturing	337215
Mattress manufacturing	33791
Blind and shade manufacturing	33792
Surgical and medical instrument manufacturing	339112
Surgical appliance and supplies manufacturing	339113
Ophthalmic goods manufacturing	339115
Dental laboratories	339116
Jewelry and silverware manufacturing	33991
Sporting and athletic goods manufacturing	33992
Doll, toy, and game manufacturing	33993
Sign manufacturing	33995
Musical instrument manufacturing	339992
All other miscellaneous manufacturing	339993, 339995, 339999
Broom, brush, and mop manufacturing	339994

## IMPLAN Manufacturing Industries Not in the Study Area

<b>IMPLAN Industry</b>	<b>Corresponding NAICS</b>
Wet corn milling	311221
Soybean and other oilseed processing	311222-3
Fats and oils refining and blending	311225
Breakfast cereal manufacturing	311230
Sugar cane mills and refining	311311-2
Beet sugar manufacturing	311313
Chocolate and confectionery manufacturing from cacao beans	31132
Fruit and vegetable canning, pickling, and drying	31142
Fluid milk and butter manufacturing	311511-2
Cheese manufacturing	311513
Dry, condensed, and evaporated dairy product manufacturing	311514
Poultry processing	311615
Cookie, cracker, and pasta manufacturing	31182
Coffee and tea manufacturing	31192
Flavoring syrup and concentrate manufacturing	31193
Wineries	31213
Distilleries	31214
Tobacco product manufacturing	3122
Fiber, yarn, and thread mills	3131
Knit fabric mills	31324
Fabric coating mills	31332
Apparel knitting mills	31511, 31519
Women's and girls' cut and sew apparel manufacturing	31523
Other cut and sew apparel manufacturing	31529
Leather and hide tanning and finishing	3161
Footwear manufacturing	3162
Reconstituted wood product manufacturing	321219
Manufactured home (mobile home) manufacturing	321991
Pulp mills	32211
Paperboard Mills	32213
All other converted paper product manufacturing	322299
Petroleum refineries	32411
Asphalt shingle and coating materials manufacturing	324122
Petrochemical manufacturing	32511
Synthetic dye and pigment manufacturing	32513
Alkalies and chlorine manufacturing	325181
Carbon black manufacturing	325182
Fertilizer manufacturing	325311-4
Pesticide and other agricultural chemical manufacturing	325320
Medicinal and botanical manufacturing	325411
In-vitro diagnostic substance manufacturing	325413
Biological product (except diagnostic) manufacturing	325414
Adhesive manufacturing	32552
Toilet preparation manufacturing	32562

## Excluded Industries Continued

<b>IMPLAN Industry</b>	<b>Corresponding NAICS</b>
Printing ink manufacturing	32591
Laminated plastics plate, sheet (except packaging), and shape manufacturing	32613
Urethane and other foam product (except polystyrene) manufacturing	32615
Plastics bottle manufacturing	32616
Tire manufacturing	32621
Rubber and plastics hoses and belting manufacturing	32622
Brick, tile, and other structural clay product manufacturing	327121-3
Clay and nonclay refractory manufacturing	327124-5
Flat glass manufacturing	327211
Other pressed and blown glass and glassware manufacturing	327212
Glass container manufacturing	327213
Cement manufacturing	32731
Abrasive product manufacturing	32791
Ground or treated mineral and earth manufacturing	327992
Miscellaneous nonmetallic mineral products	327999
Alumina refining and primary aluminum production	331311-2
Secondary smelting and alloying of aluminum	331314
Primary smelting and refining of copper	331411
Primary smelting and refining of nonferrous metal (except copper and aluminum)	331419
Nonferrous metal foundries	33152
Custom roll forming	332114
Handtool manufacturing	332212-3
Ammunition manufacturing	332992-3
Hardware manufacturing	3325
Ball and roller bearing manufacturing	332991
Farm machinery and equipment manufacturing	333111
Construction machinery manufacturing	33312
Mining and oil and gas field machinery manufacturing	33313
Semiconductor machinery manufacturing	333295
Optical instrument and lens manufacturing	333314
Photographic and photocopying equipment manufacturing	333315
Air purification and ventilation equipment manufacturing	333411-2
Cutting tool and machine tool accessory manufacturing	333515
Rolling mill and other metalworking machinery manufacturing	333516, 333518
Speed changer, industrial high-speed drive, and gear manufacturing	333612
Mechanical power transmission equipment manufacturing	333613
Other engine equipment manufacturing	333618
Air and gas compressor manufacturing	333912
Packaging machinery manufacturing	333993
Industrial process furnace and oven manufacturing	333994
Fluid power process machinery	333995-6
Telephone apparatus manufacturing	33421
Audio and video equipment manufacturing	3343
Semiconductor and related device manufacturing	334413

## Excluded Industries Continued

<b>IMPLAN Industry</b>	<b>Corresponding NAICS</b>
Electronic capacitor, resistor, coil, transformer, and other inductor manufacturing	334414-6
Electronic connector manufacturing	334417
Irradiation apparatus manufacturing	334517
Watch, clock, and other measuring and controlling device manufacturing	334518-9
Magnetic and optical recording media manufacturing	334613
Electric lamp bulb and part manufacturing	33511
Small electrical appliance manufacturing	33521
Household cooking appliance manufacturing	335221
Household refrigerator and home freezer manufacturing	335222
Household laundry equipment manufacturing	335224
Other major household appliance manufacturing	335228
Switchgear and switchboard apparatus manufacturing	335313
Storage battery manufacturing	335911
Primary battery manufacturing	335912
Carbon and graphite product manufacturing	335991
Light truck and utility vehicle manufacturing	336112
Heavy duty truck manufacturing	336120
Motor vehicle body manufacturing	336211
Motor home manufacturing	336213
Military armored vehicle, tank, and tank component manufacturing	336992
Dental equipment and supplies manufacturing	339114
Office supplies (except paper) manufacturing	33994
Gasket, packing, and sealing device manufacturing	339991

## Effects of the Inflow of Expenditures into an Economy

The **direct effect** measures the initial inflow of expenditures into an industry in a defined economy. For this study, the direct effect is the total of existing values for manufacturing employment, labor income, value added, and output in Bay, Calhoun, Escambia, Franklin, Gulf, Holmes, Jackson, Liberty, Okaloosa, Santa Rosa, Walton, and Washington counties.

The **indirect effect** occurs from the expenditures of the industry receiving the initial stimulus to the various industries that provide support to that industry. This is referred to as inter-industry purchases. These support industries re-spend the money received and generate indirect effects. In this study, these effects come purely from nonmanufacturing industries. We are using the entire manufacturing industry sector area values as direct effects, so manufacturing is not permitted to interact with itself. There cannot be effects in manufacturing greater than what exists directly.

The **induced effect** is the response by an economy to an initial change (direct effect) that occurs through re-spending of income received by businesses (indirect effect) and the subsequent spending by households as employment and income increases. Again, in this study these effects arise in nonmanufacturing industries, because intra-industry interaction in manufacturing is not permitted.

### Multipliers

Multipliers are based on effects, which are derived from the economic data about the economy. Multipliers are computed from the direct, indirect, and induced effects (total effect) by the following formula:

$$\text{Multiplier} = \frac{(\text{Direct} + \text{Indirect} + \text{Induced})}{\text{Direct}}$$

### Labor Income

Labor Income is defined as all forms of employment income, including employee compensation (wages and benefits) and proprietor income. Proprietor income consists of payments received by self-employed individuals and unincorporated business owners. This income also includes the capital consumption allowance and is recorded on Federal Tax form 1040C.

**Value Added**

This is the value added to a good at each stage of the production process. It is not the sum of the value at each stage of the production process, but only the marginal value added. This is basically how gross domestic product is calculated. Value added is the difference between an industry's or an establishment's total output and the cost of its intermediate inputs. It is equal to gross output (sales or receipts and other operating income, plus inventory change) minus intermediate inputs (consumption of goods and services purchased from other industries or imported).

**Output**

Output is the value of industry production. For manufacturers this would be sales plus/minus change in inventory. For service sectors production = sales. For Retail and wholesale trade, output = gross margin and not gross sales.