

2021 Manufacturing Economic Impact Report

AN ECONOMIC ASSESSMENT OF IDAHO'S MANUFACTURING INDUSTRY



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Foreword

On behalf of the Board of Directors and staff at the Idaho Manufacturing Alliance (IMA), I am privileged to present this Manufacturing Economic Impact Report for the State of Idaho.

Thanks to our partners at the University of Idaho and Alturas, we've been able to fulfill a long-time organizational goal of formally highlighting how important manufacturing is to the Idaho economy. Manufacturing benefits the individuals who are employed within its companies, the families it supports, and the communities they are a part of. Manufacturing makes Idaho a better place.

IMA's three main activities are to connect, support and promote manufacturing. We're hopeful that this does all three.

If you feel as strongly about Idaho manufacturing as we do, join us! We have various ways to get involved.

For the good of Idaho and its manufacturing industry,



Sheri Johnson
Co -Founder & Executive Director
Idaho Manufacturing Alliance

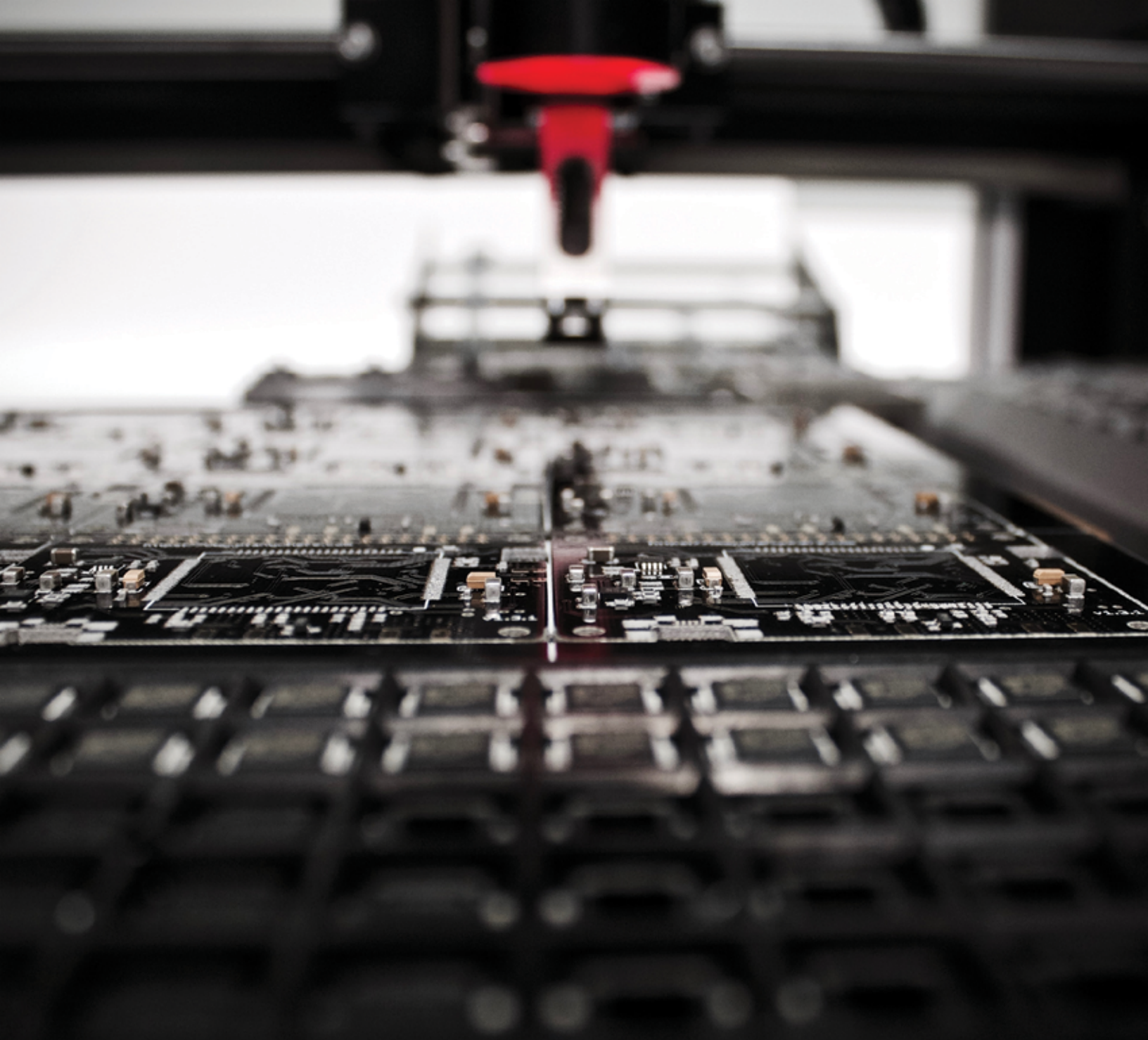






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Overview of the Study

This is a report of the economic footprint of Idaho's manufacturing sector for the year 2020. The sponsor is the Idaho Manufacturing Alliance and authored by the Vandal Impact Center. The student authors are Jacob Spence, Christopher Giddings, Josh Gehring, and Keegan Opdahl. The faculty advisor is Steven Peterson, who has conducted over 150 studies on nearly every Idaho industry in his career¹. The study was completed in November 2021.

¹ The results and findings of this study are those of the author, Steven Peterson, and do not necessarily represent the University of Idaho or any of the aforementioned organizations or individuals.

Summary Results

Manufacturing is one of Idaho's most important and emerging industries.

170,210

TOTAL JOBS
20% OF IDAHO'S TOTAL JOBS

\$16.2 BILLION

GROSS STATE PRODUCT (GSP)
19% OF TOTAL GSP

\$10.1 BILLION

SALARIES & BENEFITS
18% OF IDAHO'S TOTAL COMPENSATION

\$1.16 BILLION

PROPERTY, SALES, EXCISE,
AND INCOME TAXES

Idaho manufacturing creates jobs and output.

- Employed 70,577 workers in 2020 or 8.2% of Idaho's total employment (Page 6).
- Increased 14,771 new manufacturing jobs in the last decade (2010 to 2020) (Page 6).
- Ranked 1st place as Idaho's largest industry, as measured by the direct contribution to gross state product.
- Ranked 4th place as measured by direct contributions to Idaho's employment (behind only government, health care, and retail trade (Page 6).
- Total manufacturing jobs increased by 26%, the *second highest* rate of increase in the U.S., (2010 to 2020), behind only Nevada at 51% (Page 10).
- Food processing employed the most manufacturing workers at 19,329, followed by computer and electronic manufacturing (11,558), wood products (6,977), and fabricated metal (6,113) (Page 9).
- The fastest growing manufacturing sector (2010 to 2020) in *percentage increase* in jobs was textile product mills (170%), electrical equipment and appliance (126%), beverage/tobacco (104%),
- The fastest growing manufacturing sector (2010 to 2020) in *net new jobs* created was food processing (3,447 jobs), wood products (1,904), and fabricated metal product (1,341).

Idaho manufacturing pays living wages.

- Average salary package pays \$76,655 (including benefits), 40% above Idaho average salary package of (\$54,927) (Page 7).
- Average salaries range from a high computer/electronic manufacturing (\$157,510) to a low of \$28,725 in Textile Product Mills (considered an Idaho living wage) (Page 8).

Manufacturing creates economic contributions.

- An economic model of the economy measured the economic contributions of manufacturing including the multiplier effects.

Key Conclusion

If manufacturing did not exist, Idaho's economy would shrink by 20%.

(When considering the multiplier effect)

Idaho Manufacturing Sectors

A Sampling of Idaho Companies

Food Processing (NAICS 311-312)

CS Beef Packers
HB Specialty Foods
JR Simplot Company
Lactalis American Group
Materne North America/GoGo squeeZ
Milne Microdried
ZoRoCo Packaging

Textiles (NAICS 313-316)

Worry Free Manufacturing
Shurco
Owyhee Group Companies
Fabricspan

Wood Products (NAICS 321)

Gem State Truss
Woodgrain Inc
Fiberon
Idaho Forest Group
PotlatchDeltic Corporation
J.D. Lumber
Inteframe

Paper Manufacturing (NAICS 322-323)

Dixon Container Corp
Packaging Corporation of America
Westrock Paper and Packaging

Petroleum Manufacturing (NAICS 324)

Idaho Asphalt Company
Valley Paving and Asphalt

Chemical Manufacturing (NAICS 325)

Bandz USA
Lubrication Sciences International
Itafos Conda
Redox Chemicals
Technichem Corp
Watertech Inc

Plastics (NAICS 326)

Bestbath
Smoke Guard
Panic Plastics
Quintex Molding
Yellowstone Plastics
Ipex USA
Kellogg Plastics

Nonmetallic Mineral Product Manufacturing (NAICS 327)

JR Simplot Company
Bayer Incorporated
CXT Incorporated
Ash Grove Cement Company
Idaho Concrete Company

Primary Metal Manufacturing (NAICS 331)

LA Aluminum Casting Company
Hern Iron Works
Pine Creek Industries
Boise Foundry

Fabricated Metal Product Manufacturing (NAICS 332)

Accura Outdoors
Drill Pro International
Sapphire Metal Finishing
AceCo Industrial Knives
Chris Reeve Knives
Buck Knives
R&M Steel Co.
Gayle Manufacturing Company

Machinery Manufacturing (NAICS 333)

House of Design
Milstak
Precision Automation & Pumping Systems
Price Pump
VersaBuilt
Johnson Thermal Systems
Hydroblend

Computer and Electronic Product Manufacturing (NAICS 334)

Acclima Inc
American Semiconductor
ON Semiconductor
American Semiconductor
Black Sage Technologies
Insignis Technology Corp
Micron Technology Inc
Silicon Mountain Contract Services
Percussionaire

Electrical Equipment, Appliance, and Component Manufacturing (NAICS 335)

NxEdge/AceCo Precision Manufacturing
Blue Wolf
Diversified Fluid Solutions
Campbell Company
ECCO Safety Group
Schweitzer Engineering Laboratories
Fiberguide Industries/Molex
VTC Corp

Transportation Equipment Manufacturing (NAICS 336)

ATC Manufacturing
Heatercraft Marine Products
In The Ditch Towing Company - Innovative Group
Klim
ProMoto Billet
Rekluse Motor Sports
Trinity Trailers
Valor Trailers
Western Trailers

Furniture and Related Product Manufacturing (NAICS 337)

Greyloch Custom Cabinetry
Woodland Furniture
Pacific Cabinets
T&L Cedar Lawn Furniture

Miscellaneous Manufacturing (NAICS 339)

Image National Signs
IndieDwell
Unger Powder Coating
Lytle Signs
Autovol



Strong Stable Job Growth

Added 14,771 New Jobs - 2010 to 2020

Idaho creates nearly 1,500 new manufacturing jobs every year—a 2.4% average annual growth rate

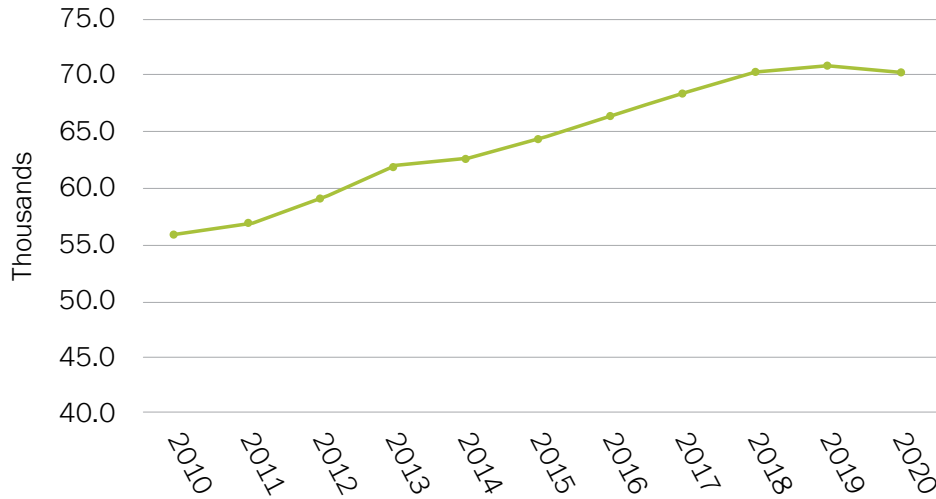


Figure 1. Idaho Manufacturing Job Growth 2010 to 2020. Source: Emsi 2021 Q3

Idaho's 4th Largest Industry Ranked by Employment

8.2% of Total Employment—70,577 jobs

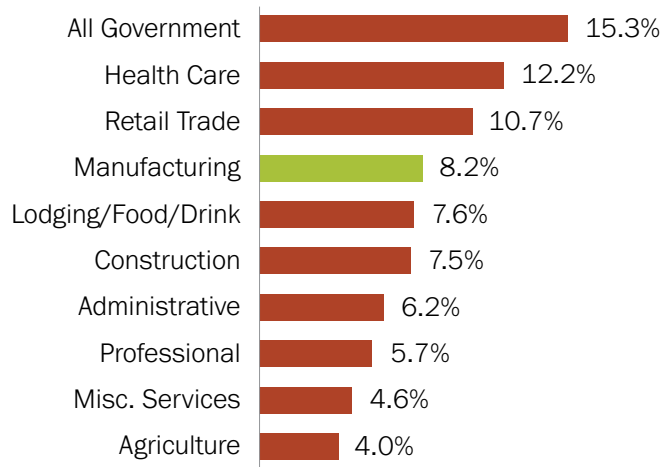


Figure 2. Top Ten Idaho Industries in 2020 (North American Industrial Classification (NAICS) Two Digit Level). Source: Emsi 2021 Q3



Idaho's Average Annual Salaries

Manufacturing Pays 40% Higher Idaho Wages and Benefits (\$78,926) Versus Idaho's Average Salary (\$56,563)

Highest Salaries: Utilities (\$131,041)

Lowest Salaries: Accommodation/Food Services (\$21,400)

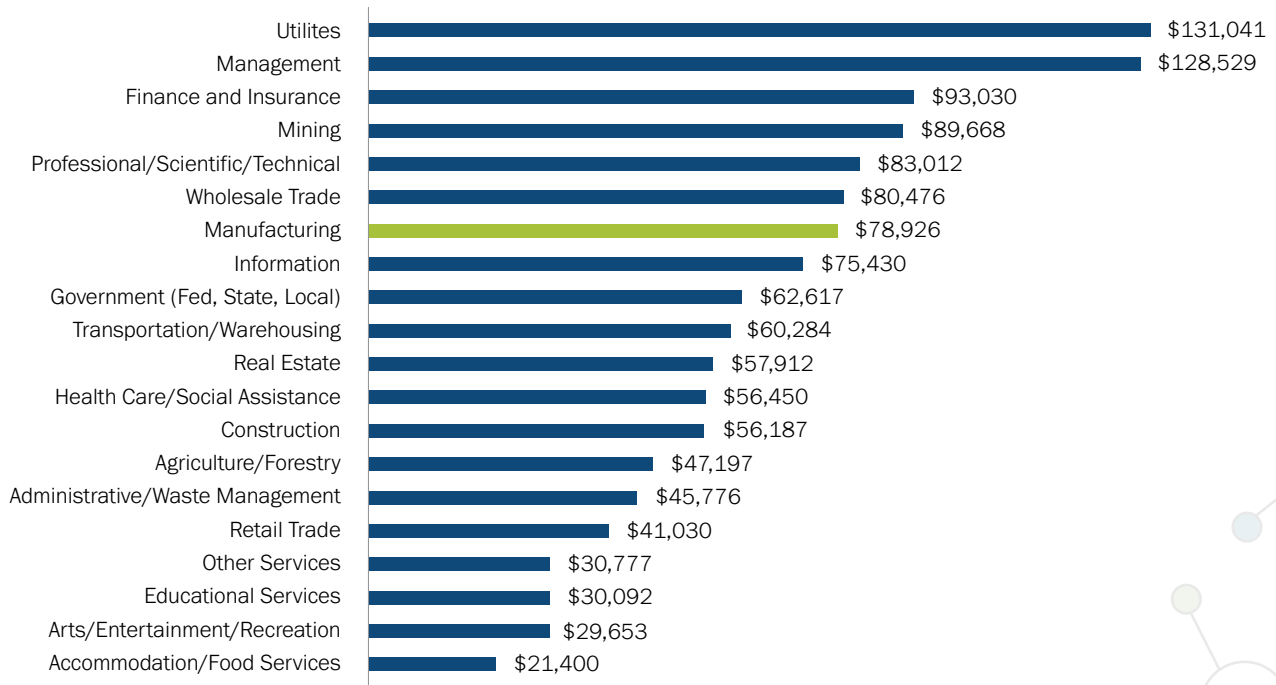


Figure 4. Average Annual Salary Package Across All Idaho Industries (2-Digit NAICS). Source: Emsi

2020 Manufacturing Job Rankings by Sector

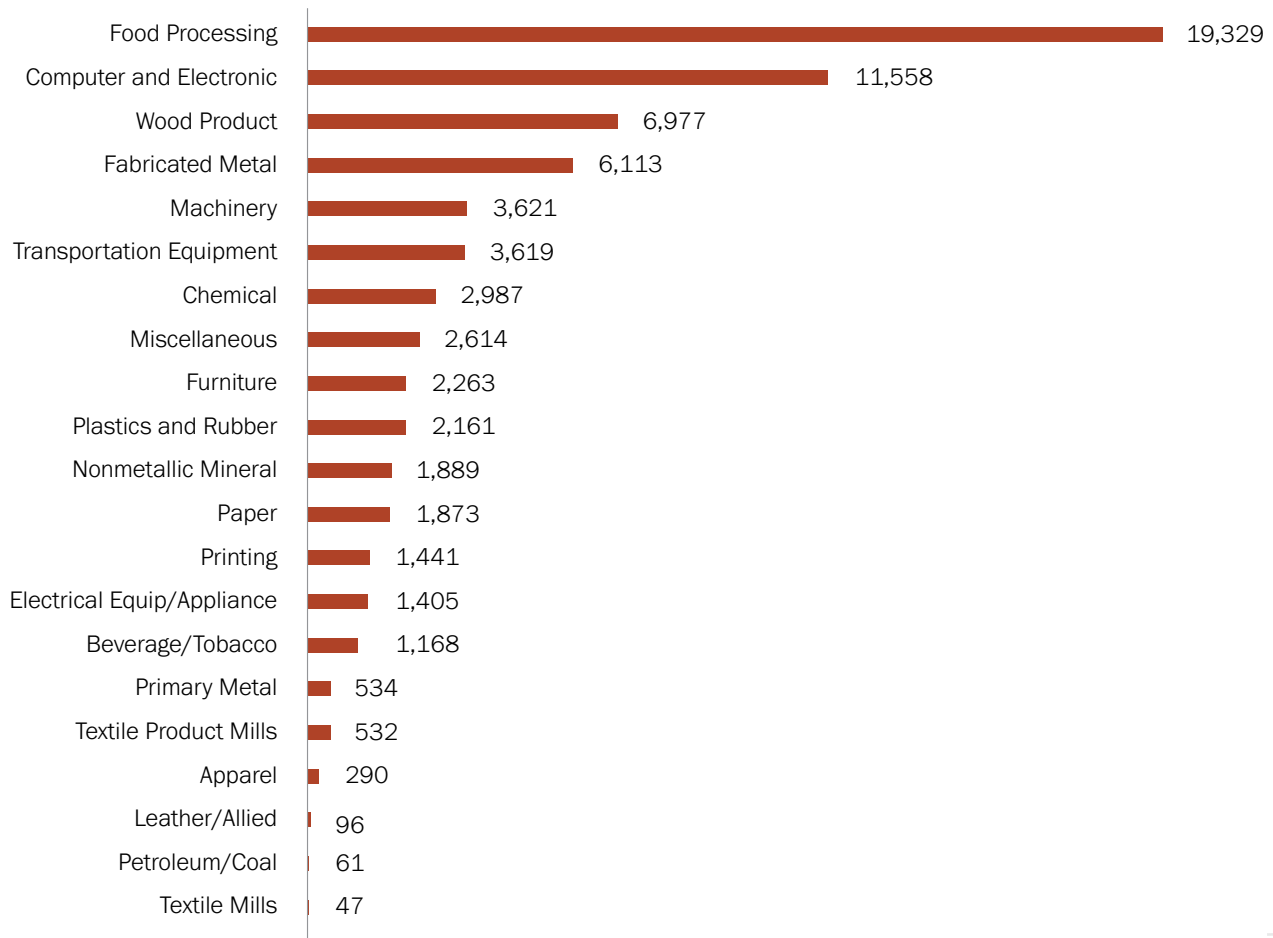


Figure 6. 2020 Manufacturing Jobs by Industry (3-Digit NAICS Code). Source: Emsi 2021 Q3

The two largest manufacturing sectors represent Idaho's changing economy, both its past and its future. Production agriculture has been the historic bedrock of Idaho's economy. Recent expansion of agricultural processing and value-added agricultural products is the future, as represented by the expansion of dairy, cheese, and yogurt production. *Food processing* directly employs 19,329 workers and pays \$63,464 in salary and benefits per year.



Wages and Benefits by Manufacturing Sector

(Range: \$157,510 Computer/Electronic jobs—to \$28,725 for Textile Product Mills)

Average Idaho Wage and Benefit Package is \$78,926.

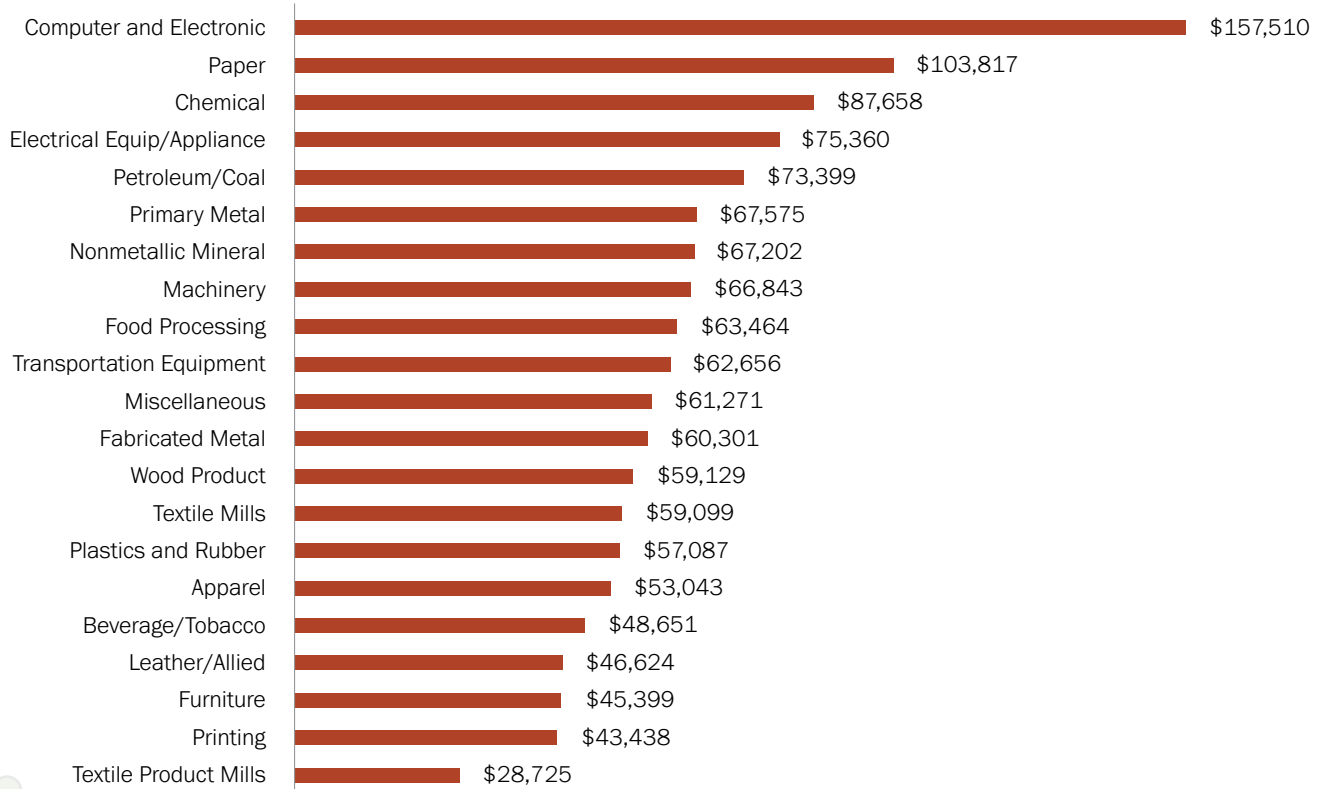


Figure 5. Wages and benefits by Manufacturing Sector (3-Digit NAICS Code). Source: Emsi 2021 Q3

The second largest manufacturing industry is *computer and electronic product manufacturing* that employs 11,558 workers and pays an average of \$157,510 *including benefits and salaries*. The epicenter of high technology manufacturing is the Treasure Valley, and a good representative firm is Micron Technology Inc in Boise. High-tech manufacturing is expanding throughout Idaho and represents Idaho's future economy.

26% Cumulative Job Growth - 2010 to 2020

Second Fastest Growing in the U.S.

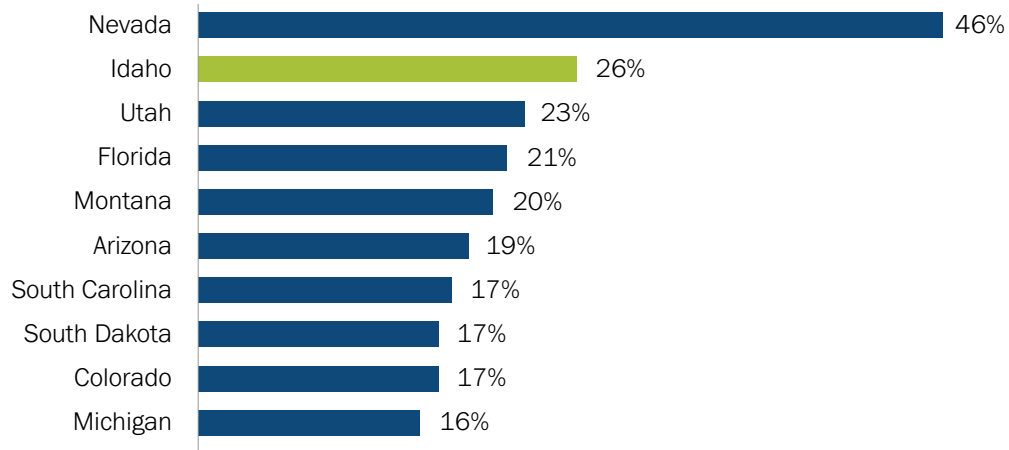


Figure 3. Top Ten U.S. States Ranked by Cumulative Manufacturing Growth 2010 to 2020. Source: Emsi 2021 Q3

Manufacturing Employment Changes by Sector - 2010 to 2020

Sector	Idaho Job Count	Idaho % Change	U.S. % Change
Food Processing	3,447	22%	11%
Wood Product	1,904	38%	13%
Fabricated Metal	1,341	28%	7%
Transportation Equipment	1,219	51%	20%
Machinery	1,068	42%	1%
Computer and Electronic	961	9%	(4%)
Electrical Equip/Appliance	783	126%	7%
Miscellaneous	736	39%	1%
Plastics and Rubber	654	43%	11%
Chemical	622	26%	7%
Beverage/Tobacco	594	104%	50%
Furniture	557	33%	1%
Nonmetallic Mineral	484	34%	7%
Textile Product Mills	335	170%	(14%)
Paper	294	19%	(10%)
Printing	56	4%	(22%)
Petroleum/Coal	30	97%	(3%)
Textile Mills	(26)	(35%)	(21%)
Leather/Allied	(47)	(33%)	(11%)
Apparel	(83)	(22%)	(41%)
Primary Metal	(158)	(23%)	(3%)

Table 1. Employment Changes by Manufacturing Sector 2010 to 2020. Source: Emsi 2021 Q3



Idaho *food processing* increased by 3,447 jobs over the last decade, a cumulative 22% change. This is followed by *wood products* (1,904 jobs, 38%), *fabricated metal* (1,341 jobs, 28%), *transportation equipment* (1,219 jobs, 51%), and *computer and machinery* (1,068 jobs, 42%).

The fastest growing Idaho sector measured by percentage change was *textile product mills* (170%), *electrical equip/appliance* (126%), *beverage/tobacco* (126%), and *petroleum/coal* (97%).

3,447

INCREASE IN
FOOD PROCESSING JOBS

1,904

INCREASE IN
WOOD PRODUCT JOBS

1,341

INCREASE IN
FABRICATED METAL JOBS

170%

TEXTILE PRODUCT MILLS
GROWTH

126%

ELECTRICAL EQUIPMENT/
APPLIANCE GROWTH

104%

BEVERAGE/TOBACCO
GROWTH

Idaho's Largest Industry

As Measured by Direct Contributions to Gross State Product (GSP), in Billions

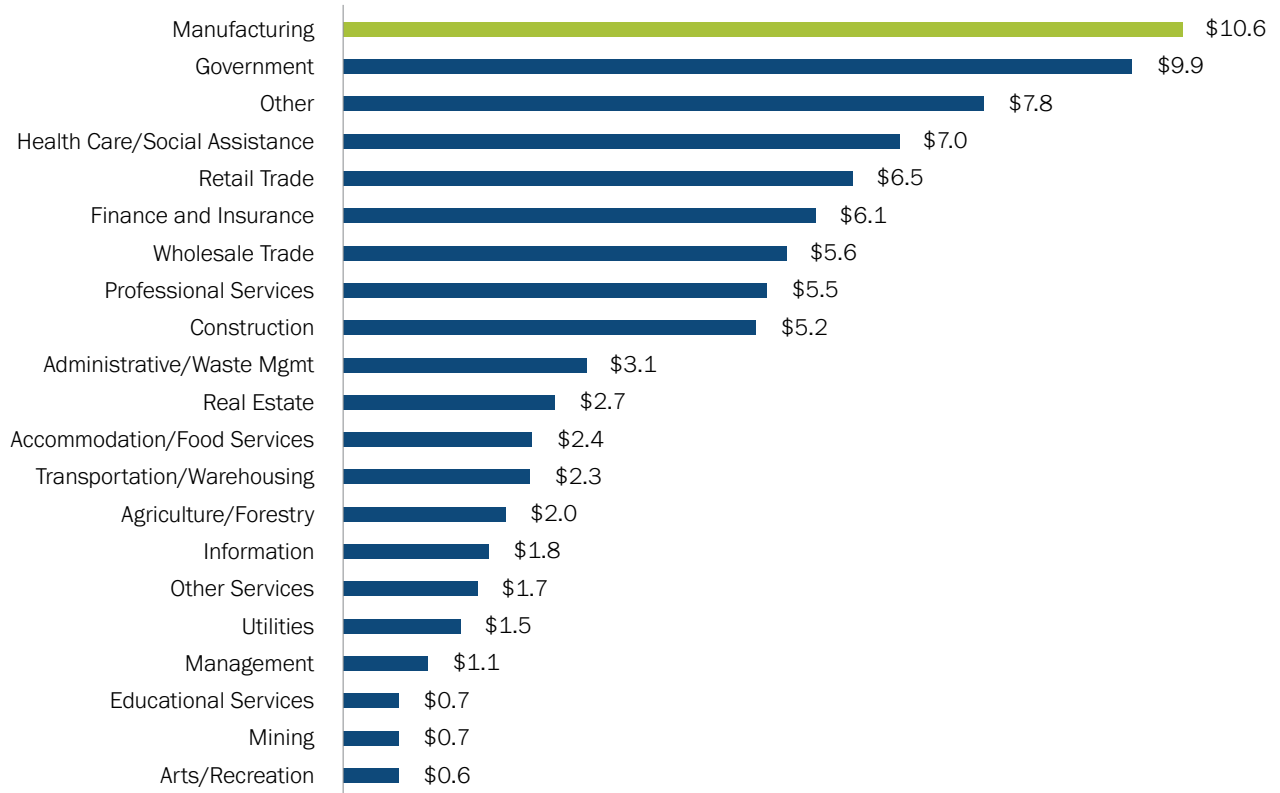


Figure 7. Direct Contributions to Idaho Gross State Product (GSP) by Industry (2-Digit NAICS). Source: Emsi 2021 Q3



Contributions by Manufacturing Sector, in Billions

Idaho Manufacturing Contributed \$10.6 billion to Idaho's Gross State Product in 2020

Computer and Electronic Manufacturing Contributes \$3.15 billion alone!

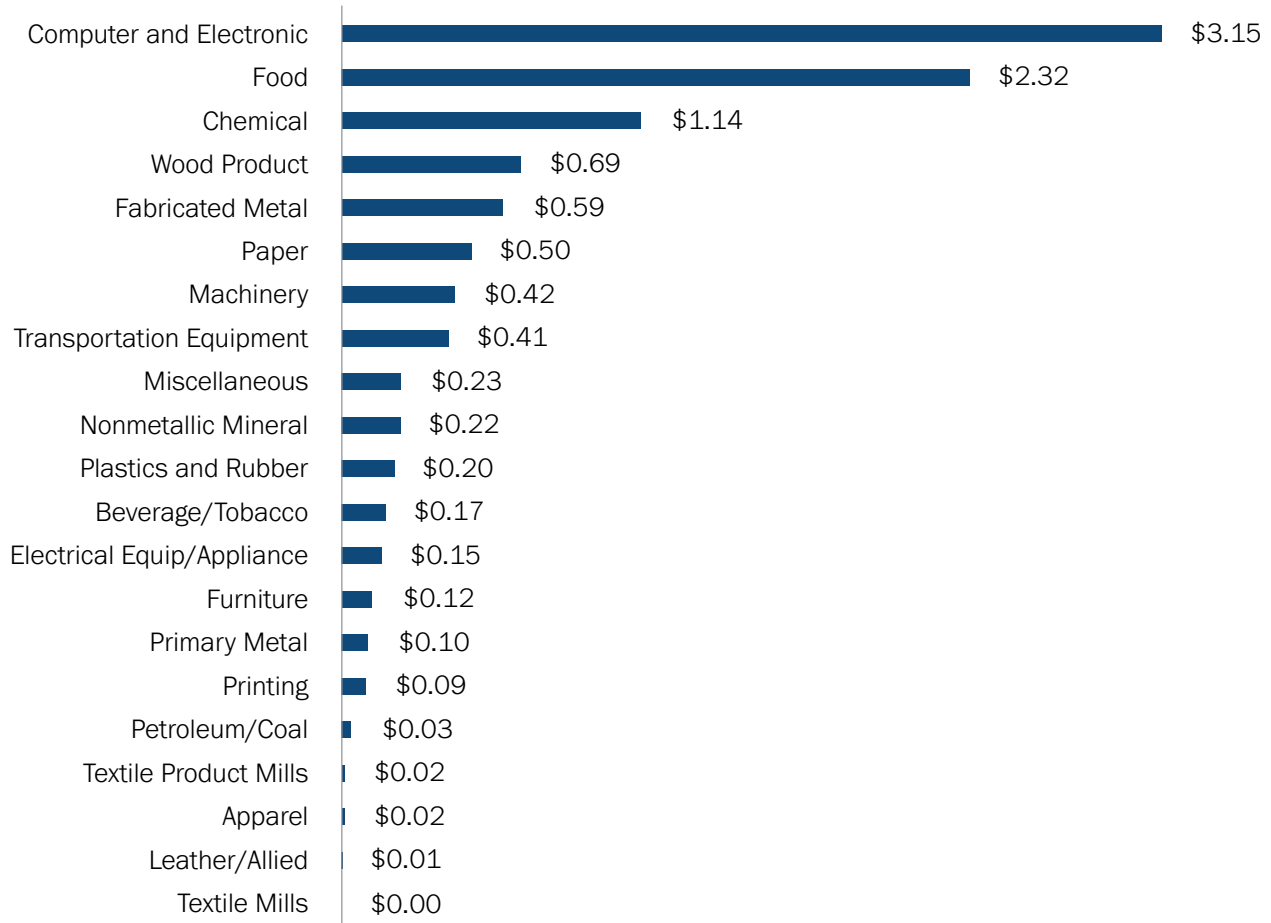


Figure 8. Direct 2020 Gross State Product by Sector. Source: Emsi 2021 Q3

While *food processing* (manufacturing) is the largest manufacturing sector in terms of jobs, *computer and electronic* manufacturing is the largest sector in terms of generating direct contributions to gross state product (GSP).

Economic Contributions

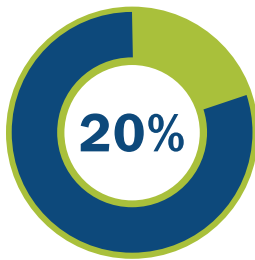
Including the Multiplier Effects (Direct, Indirect, and Induced Impacts)

The results are generated from an IMPLAN (IMpacts from PLANNing) input-output Model.

Manufacturing creates:

170,210

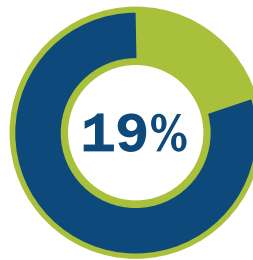
TOTAL JOBS



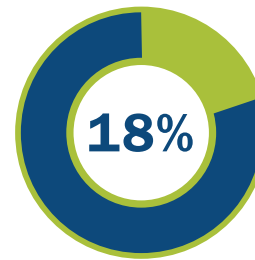
OF IDAHO JOBS

\$10.1B

SALARIES AND BENEFITS



OF IDAHO GSP



OF TOTAL IDAHO
COMPENSATION

\$16.2B

GROSS STATE PRODUCT

\$1.16B

STATE AND LOCAL TAXES

Manufacturing Industry	Idaho Economic Contributions			
	Jobs	Wages and Benefits	Gross State Product	Taxes
Food Processing	62,377	\$3,444,786,894	\$5,474,890,960	\$397,396,264
Textiles	1,710	\$58,742,942	\$89,978,291	\$6,469,525
Wood Products	13,608	\$806,267,581	\$1,195,946,881	\$78,897,519
Paper	7,007	\$386,718,370	\$683,699,255	\$45,854,334
Petroleum	277	\$15,380,635	\$26,251,833	\$4,115,006
Chemical	9,015	\$559,079,133	\$870,186,182	\$90,948,881
Plastics	4,218	\$215,618,809	\$395,790,986	\$25,445,112
Nonmetallic Mineral	1,964	\$102,711,140	\$169,320,586	\$12,096,670
Primary Metal	1,985	\$104,622,508	\$257,742,181	\$14,390,275
Fabricated Metal	10,600	\$560,798,820	\$892,211,360	\$59,578,062
Machinery	6,313	\$345,960,424	\$545,374,220	\$40,564,297
Computer/Electronic	33,546	\$2,679,197,125	\$4,354,773,193	\$277,257,491
Electrical Equipment/Appl.	2,997	\$173,748,647	\$312,430,684	\$24,093,623
Transportation Equip.	5,935	\$325,469,444	\$439,746,711	\$39,496,987
Furniture	3,416	\$154,710,193	\$218,759,217	\$14,631,738
Miscellaneous	5,243	\$185,201,136	\$307,116,746	\$24,880,781
Total Manufacturing Contributions	170,210	\$10,119,013,801	\$16,234,219,286	\$1,156,116,565

Table 2. Results by Manufacturing Sector Including Multiplier Effects

Employment Contributions of Manufacturing Employment

Including the Multiplier Effects

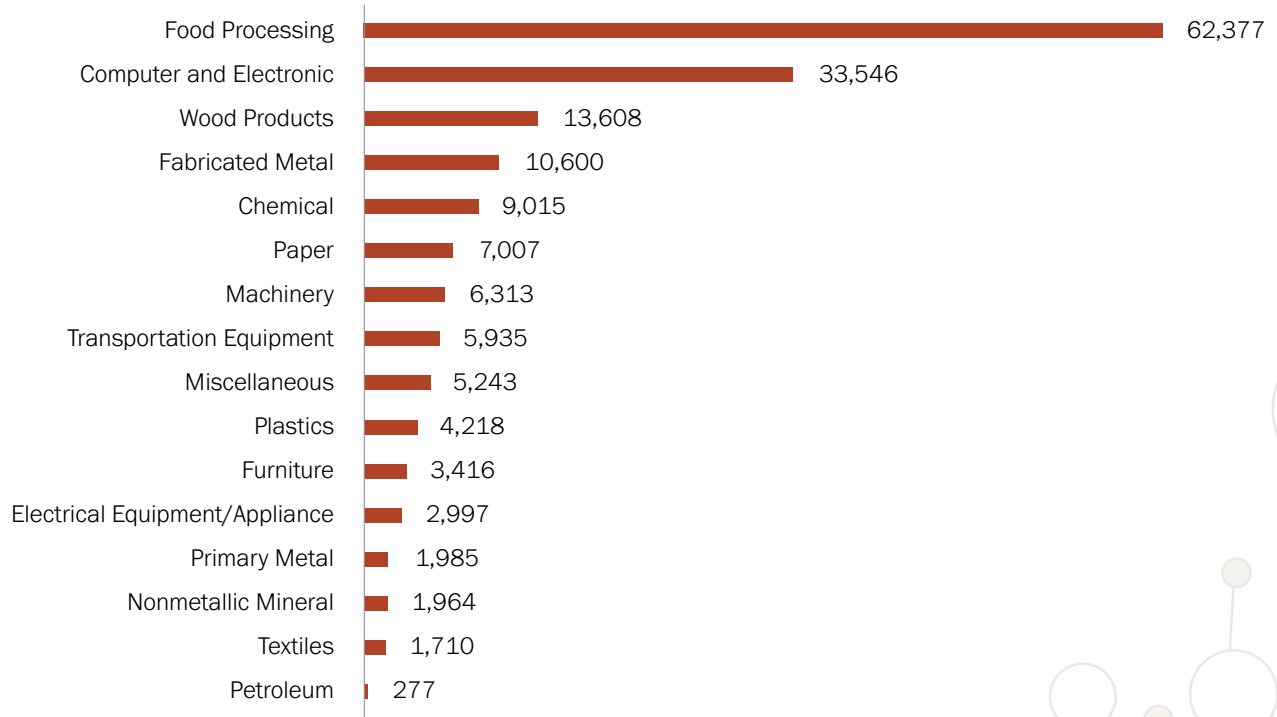


Figure 9. Economic contributions of jobs by manufacturing industry including the multiplier effects



Technical Notes

Economic Impact Assessment and Contribution Assessment

Economic Base Assessment

This analysis is founded on economic base theory. A local or regional economy has two types of industries: base industries and non-base industries. Any economic activity that brings money into the local economy from the outside is considered a base industry. A base industry is sometimes identified as an export industry, which is defined as any economic activity that brings new monies into the community from outside. For example, base industries can include high-technology companies, federal government operations, and other manufacturing and service firms. Firms providing services to individuals living outside the region's trade center, such as medical and legal services, are included in the region's economic base. Payments from state and federal governments (including Social Security, Medicare, university funding, retirement accounts, and welfare payments) are sources of outside income to businesses and residents. These are counted as part of the economic base.

Non-base industries are defined as economic activity within a region that support local consumers and businesses within the base sector. They re-circulate incomes generated within the region from the base industries. Such activities include, but are not limited to, shopping malls that serve the local population, business and personal services consumed locally, barbers, medical services consumed locally, and local construction contracts. Non-base industries support the base industries.

Base industries are sometimes confused with non-base industries. For example, some county economies have large retail trade sectors that produce a paradox: they employ a substantial percentage of the workforce but actually contribute little to the local economy because most of the retail sales are local. They bring little new money into the community. Thus, it appears from the size effect that the retail trade sector contributes a large amount of employment and earnings to the economy. Most of this employment and earning activity is allocated or attributed to other local "export" industries that bring revenues into the community from outside sales. From an economic base perspective, which determines the economic "drivers" of the economy, the retail trade sector is much smaller. Only the retail trade activities serving visitors from outside the area can be counted as economic base activity.

Economic base analysis is important for identifying the vital export industries of a region. Non-base industries, on the other hand, are important for keeping money within a region and stimulating local economic activity for residents. In this respect, non-base industries are said to deepen the economy while export industries are said to broaden it. For example, suppose a Washington patient elects surgery at a local hospital instead of traveling to a medical center in Salt Lake City, Utah for specialized treatment. The substitution of local services for an imported service represents an increase in the demand for local business services. Keeping income in the community enhances the multiplier effects of the export industries. The overall effect of import substitution can be viewed as an analogous increase in demand for an export industry. Our economic model in this section is founded on economic base theory.

Defining and Explaining Economic Impacts

Economic impacts measure the magnitude or importance of the expenditures of basic (export) industries. Our economic model estimates multipliers for each industrial sector. Suppose you have a (hypothetical) multiplier of 1.45. Every dollar of direct expenditures creates \$1.45 dollars of total new spending in the community's economy.

Impacts are apportioned into two levels: the direct impact and the multiplier effects. The first level is the direct impact of value-added expenditures on the regional economy (i.e., the jobs, payroll and earnings, value added, and sales that are directly created by the industry of study through their exports). The second is comprised of two parts: a) the impacts on other regional businesses that provide goods or services in support of the industry of study (i.e., the indirect impacts), and b) the effect of employee and related consumer spending on the economy (i.e., the induced impacts). The indirect and induced impacts are the so-called "ripple" or multiplier effects of value-added expenditures in the regional economy. The direct effects are driven by exports whereas the multiplier effects are driven by local expenditures and the deepening of an economy. Exports, the new money coming into an economy, set off a web of transactions as each business seeks to fulfill the demands of their customers.

A manufacturer's impact upon the economy is thus comprised of the magnitude of the exports and magnitude of the multiplier(s). The sum of the direct, indirect, and induced effects measures the total impact of an industry to an economy.

Terminology

Results are reported in several different measures:

Sales (Output): The total transactions in dollars from direct and indirect manufacturer's economic activity. This gross measure of economic activity is considered less accurate than gross regional product or job creation.

Gross regional product GRP (value-added): This is a state measure of Gross Domestic Product) and a subset of sales (output). GSP includes employee compensation, proprietary income, other property income, and indirect business taxes. GSP is a measure of economic activity. It is distinguished from sales in that double-counting has been eliminated. Some products are utilized by other products in the manufacturing process. When adding them up in sales, they get counted twice or more. Some steel is used in automobile manufacturing, for example, and gets counted both as steel production and in the cost of the automobile. Value added eliminates any double counting. The steel utilized in autos is netted out when tallying total steel production.

Total Compensation (wages and salaries): The wage/salary and proprietor's income to individuals including employer contributions and fringe benefits. This is a subset of gross regional product.

Jobs: The total employment resulting from operations, firms, and entities associated with manufacturing.

Indirect Taxes: All taxes generated from manufacturing's economic activity excluding personal and corporate income taxes. These consist of mostly sales taxes and property taxes.

Other measures or terminology:

Direct spending (effects): This represents the actual sales, income, and jobs from the Port's operations and enterprises.

Indirect effects: These are the downstream economic effects on sales, income, jobs, and indirect taxes in the regional economy from direct spending. For example, the Port and associated firms and operations purchase goods and services in the community. This supports other area businesses, which in turn, purchase even more goods and services as the effects ripple through the economy. These are part of the multiplier effects of direct spending.

Induced effects: These are downstream effects of employee and consumer spending on the economy. They are part of the multiplier effects.

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Josh Gehring

Keegan Opdahl

The Idaho Manufacturing Alliance was formed in 2014 by manufacturers, for manufacturers. We exist to connect, support, and promote Idaho manufacturers and the industry as a whole.

To learn more or get involved, reach out.

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